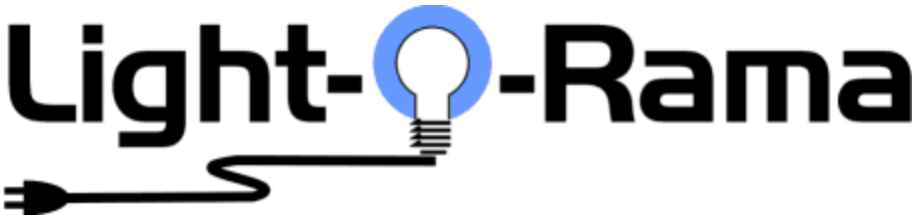

version 5.6.4

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1 Getting Started with Light-O-Rama

Welcome to Light-O-Rama

Light-O-Rama is a computerized lighting system designed to control elaborate or simple lighting displays. The Light-O-Rama system can be applied to almost any lighting situation, from stand-alone controllers to synchronizing hundreds of controllers.

This page gives a high-level overview of how to start controlling your lights using Light-O-Rama:

- Getting Help about Light-O-Rama
- Important Terms and Information
- Connecting the Lights Using Light-O-Rama Controllers
- Creating a Show

For more detailed information, please see Light-O-Rama Concepts and the Light-O-Rama Software Package.

Experienced users may wish to see what's new in the latest version of Light-O-Rama.

Getting Help about Light-O-Rama

This help file contains a lot of information about the Light-O-Rama Software Suite. If you need more help, please visit the Light-O-Rama website. Click the word "Support" at the top of the page to find links to more resources, including tutorials, Frequently Asked Questions, our User Forum, and our Help Desk.

Important Terms and Information

Companion Unit

A **companion unit** is a Light-O-Rama controller that receives lighting commands from another source - either a PC running Light-O-Rama software, or from another controller known as a director unit.

Control Panel

The **Light-O-Rama Control Panel** is a program that can be used to manage the Light-O-Rama system on your PC. The Control Panel runs in the system tray (where the PC's clock is displayed). Light-O-Rama is made up of a number of different programs, and the Control Panel is a convenient way of accessing them. The Control Panel must be running in order to control shows from your PC.

Daisy Chain

This is the term generally used to describe the manner in which Light-O-Rama light controllers are connected. A wire goes from the source (a PC running Light-O-Rama software or a director unit) to a companion unit. Another wire goes from that companion unit to another companion unit, and so on, until all companion units are "chained" together.

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Do not put "Y"s or forks in the data cable. Only connect the units in this daisy chain configuration.

Data Cable

Light-O-Rama controllers can be connected using both data cables and phone cables, but you *must* know which type of cable it is (for the purposes of Light-O-Rama, a cable is considered a **data cable** if its wires are connected straight through).

How do you know if it is a data cable? Well, most likely the only cable that you will see that is *not* a data cable is a wire that is intended specifically for phones. If you go to your local hardware store and purchase a phone extension cable, then that wire is *not* a data cable. The distinction between data cables and phone cables is important, because the wires are swapped around. There are selectors or jumpers on most Light-O-Rama controllers that allow you to specify which wire type you are using.

Only the wire coming into a controller (from the previous controller or from a PC running Light-O-Rama software) should be used to determine which selector setting to use. The wire leaving a controller (if there is one) can be of any type, and has no bearing on which selector setting should be used. For example, if a controller has a phone cable coming in from the previous controller, and a data cable leaving to the next controller, the selector should be set for "phone cable".

Director Unit

A **director unit** is a Light-O-Rama controller that sends lighting commands to other controllers (known as companion units). Controllers can run individually in standalone mode, but to synchronize multiple controllers together, they must be directed either by a PC running Light-O-Rama software, or by a director unit.

Standalone sequences may contain lighting commands for a number of different units. A director unit is a unit that is running standalone - i.e. not connected to a PC - that contains lighting commands for other units cabled to it (the companion units). The director unit can also control its own lights, simultaneously.

There is no difference in the hardware of a director unit and a companion unit - the only difference is the mode that they are in.

A PC running Light-O-Rama software can also be thought of as a director unit, in that it can send lighting commands to Light-O-Rama controllers. There must be one *and only one* director unit (or PC running Light-O-Rama software) on a daisy chained group of controllers.

Hardware Utility

The **Light-O-Rama Hardware Utility** is a program that can be used to set up and test the hardware used to control lights, as well as download sequences to standalone controllers or director units.

Phone Cable

Light-O-Rama controllers can be connected using either data cables or **phone cables**, but you must know which type of cable you are using. See data cables for details.

Preview

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A preview is a representation of your light display. It defines the lighting elements, how they are arranged, and what channels they use. Creating a preview is required before you can create a sequence. One preview can be associated with multiple sequences. Update the preview once, and the next time you open any sequence associated with that preview, the update will automatically be applied. The display elements in a preview are referred to as 'props'. You must add a prop to the preview for every display element that you want to control. A prop could be a single string of lights, a wireframe, an arch, a wreath, or a tree. In fact you can model just about any lighting element in a preview.

The Sequencer program is used to create and modify previews.

Schedule

A **schedule** is a list of shows and the times at which those shows are to be played.

If the Light-O-Rama Control Panel is running on a PC, and its "Enable Schedule" option is turned on, then the schedule will be monitored, and its shows will be started and stopped at the appropriate times.

The Schedule Editor program is used to create and modify schedules.

Sequence

A **sequence** is a file that contains a set of lighting commands to be sent to Light-O-Rama controllers. There are two types of sequences: musical sequences, which have an associated music or video file that is to be played at the same time, and animation sequences, which do not.

Before creating a sequence, you must create a preview. The lights you can control in the sequence are defined by the props in the preview.

Sequences can be grouped together into shows.

The Sequencer program is used to create and modify sequences.

Show

A **show** is a file that contains a number of sequences, and the order in which they should be played.

A schedule can be created to specify the times at which various shows should be played.

The Show Editor program is used to create and modify shows.

Standalone

A Light-O-Rama controller can be controlled by another controller (or a PC running Light-O-Rama software), or it can control itself and/or other controllers, in **standalone mode**. A sequence, created using the Sequencer, can be downloaded to a standalone controller using the Hardware Utility. The controller can then be set up to run this sequence whenever it has power, or, if the unit is a model with an internal clock, it can be instructed to run the sequence during a particular time.

A standalone controller whose sequence contains lighting commands for other controllers will transmit those commands to the other controllers. In this case, the controller is known as a director unit.

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Unit

A **unit** is another term for a Light-O-Rama controller. Each unit has a number of circuits, each of which can be used to control lights independently of each other. Each unit is identified by a unit ID.

Unit ID

Each unit has an identifier assigned to it, known as a **unit ID**. When a lighting command is sent to a unit, all of the units that are daisy chained together can see that command. However, the command contains a unit ID; only the units having that unit ID will act upon that command.

For Light-O-Rama controllers, the unit ID is a two characters, each of which can have any of the values 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F. For example, "01", "25", "37", "5C", "BD", or "E2". However, not all possible combinations are allowed: "00" and "F1" through "FF" are disallowed.

Controllers other than Light-O-Rama controllers use different formats for their unit IDs.

Connecting the Lights Using Light-O-Rama Controllers

To connect lights using Light-O-Rama controllers, take the following three steps:

1. Determine the serial port and hook up a controller.
2. Select a unit ID.
3. Test the lights.

Step 1. Determine the Serial Port and Hook Up a Controller

Insert an SC485 converter into your PC's DB9 serial connector which you plan on using for the Light-O-Rama network. If you are using a USB/RS-232 converter, then make sure that it is properly installed, and that the SC485 converter is connected. If you're not sure what all this is about, simply try to find a connector on the back of your PC that has nine pins and which will accept the SC485 adaptor.

Using a cable, connect a Light-O-Rama controller to the SC485 adaptor. Make sure that the LOR controller is powered on. The LED in the controller should be blinking.

Using the Light-O-Rama Control Panel, start the Hardware Utility program. In the Hardware Utility's **Setup Comm Port** section, use the **Auto Configure** button. This will cause the Hardware Utility to look for the attached controller and determine which comm port is being used.

Step 2. Select a Unit ID

If your controller has unit ID selection switches, you can select its ID by adjusting the selectors to the desired ID. If your controller does not have these unit ID selection switches, then you will need to set its unit ID by using the Hardware Utility:

To set the unit ID using the Hardware Utility, connect ***one and only one*** unit to the PC using the SC485 adaptor and a cable. In the **Set Unit IDs** section, go to **Set New Unit ID**, select the ID that you wish to use for the controller, and click the **Set Unit ID** button. This button will only work on

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new units that have never been assigned a unit ID (to change the unit ID of a unit that already has one assigned, use the **Change Existing ID** section instead).

TIP: Assign unit IDs sequentially, starting at 01. This will make maintenance of the units faster.

Step 3. Test the Lights

With the unit connected to the PC, attach lights and power the unit on. In the Hardware Utility, click the **Refresh** button in the top center of the screen. After a short time, your unit should appear in the dropdown list to the right of the **Refresh** button. Select the unit, and you can then test the lights using the various controls in the **Test Unit's Operation** section of the Hardware Utility.

TIP: Before clicking **Refresh**, set the Hardware Utility's **Max Unit ID** to as low a value as possible. This is the maximum unit ID of controllers that you plan on using (you can always change it to a higher value if you add more controllers later). Setting it to a low value makes the Hardware Utility run faster (though it will not find any connected units with higher unit IDs).

Creating a Scheduled Lights Display

To create a lights display and have it run at certain times, take the following steps:

1. Make your sequences.
2. Make a show.
3. Make a schedule.
4. Turn on the Control Panel's "Enable Schedule".

Step 1. Make Your Sequences

Using the Sequencer, create the sequences that will be used in your show.

You can test how the lights will look for a sequence while in the Sequencer: Make sure **Control Lights** is enabled, and that you have assigned the channels in the sequence to a controller that is hooked up to your PC. Then, click the play button (which is the green arrow in the toolbar).

Step 2. Make a Show

A show is a collection of sequences. A show can be created using the Show Editor program.

Shows have several sections, each of which can have sequences:

- **Background:** Sequences listed in the "background" section will be played for the entire duration of the show.
- **Startup:** Sequences listed in the "startup" section will be played when the show first begins.
- **Animation** and **Musical**: After the "startup" sequences have completed, sequences in both of these sections will run, until it is time for the show to stop.
- **Shutdown:** When it is time for the show to stop, the "animation" and "musical" sequences will stop running, and the sequences in the "shutdown" section will start. Only after the "shutdown" sequences are finished will the show truly end.

In the Show Editor, you can add sequences to any of these sections by selecting the appropriate section's tab, and hitting the big PLUS button.

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After you have created your show, you should save it using the "Save" or "Save As" button. Assign the show a meaningful name - this is the file name that you will be using in the next step.

Step 3. Make a Schedule

Unlike sequences, you cannot run a show interactively. Instead, to test a show, put that show into a schedule, using the Schedule Editor program:

In the Schedule Editor, click the **Add** button, and select the show file with the name that you created in the previous step. Select a start and end time that will allow the show to start at a convenient time for you to view it. Then click **Save** to save your schedule.

Step 4. Turn On the Control Panel's "Enable Schedule"

To view the scheduled show, turn on the "Enable Schedule" option in the Light-O-Rama Control Panel. Doing this will cause the Control Panel to monitor your schedule, and start and stop your show at the appropriate times.

2 What's New?

What's New in the Latest Version

- What's New in Version 5.6.4
- What's New in Version 5.6.2
- What's New in Version 5.6.0
- What's New in Version 5.5.18
- What's New in Version 5.5.16
- What's New in Version 5.5.14
- What's New in Version 5.5.12
- What's New in Version 5.5.10
- What's New in Version 5.5.8
- What's New in Version 5.5.6
- What's New in Version 5.5.4
- What's New in Version 5.5.2
- What's New in Version 5.5.0
- What's New in Version 5.4.2
- What's New in Version 5.4.0
- What's New in Version 5.3.14
- What's New in Version 5.3.12
- What's New in Version 5.3.10
- What's New in Version 5.3.8
- What's New in Version 5.3.6
- What's New in Version 5.3.4
- What's New in Version 5.3.2
- What's New in Version 5.3.0
- What's New in Version 5.2.4
- What's New in Version 5.2.2
- What's New in Version 5.2.0
- What's New in Version 5.1.4

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- What's New in Version 5.1.2
- What's New in Version 5.1.0

What's New in Version 5.6.4

Bug Fixes

- In the Sequencer, playback to actual lights did not work when a non-enhanced LOR network was active.
- As playback was started in the Sequencer, a warning was issued when motion effects were present on an LOR network that was not defined in Network Preferences.
- When importing a grid configuration into the Sequencer, there is a new check to make sure channel level effects on pixel props don't get deleted. This could happen when channel level for a pixel prop is enabled in the sequence but disabled in the grid configuration import file.

What's New in Version 5.6.2

- Sequencer Improvements
- SuperStar Improvements
- Network Preferences Changes
- New Pixie Firmware Version 1.07
- Hardware Utility Changes
- Bug Fixes

Sequencer Improvements

- Added ability to make certain bulk changes from the String Summary tab of Preview Design. Actions include setting bulb shape, and setting the dimming curve. To use, select some grid cells by dragging the cursor or using Shift-click, then right-click and choose the action from the pop-up menu. You can also double-click on any grid cell to edit the prop.
- Added "Outer Limit" and "Inward" parameters to the Ripple motion effect -- allowing it move inwards as well as outwards.
- Added option to use a picture file instead of a standard shape to the Simple Shape motion effect.
- Added a continuous rotation option to the Simple Shape motion effect.
- Added Solid Color option to the Scanner motion effect.
- Add a sparkle mode to the Twinkle effect.
- Using a WMV file in a Movie effect now calculates about 7x faster.
- Revamped Online Prop Import screen to make it load faster and be easier to use.
- The headings on the last row of the sequence grid toolbar have been updated to improve clarity:
  "Select Action" becomes "On Mouse Click".
  "Range" and "Slope" are now combined into "Intensity Range & Slope".
  "Type" becomes "Effect Type"
  "Effect" becomes "Channel Effect"
  "Source" for motion effects becomes "Motion Effect Source"
  "Source for SuperStar effects becomes "SuperStar Source"
- When right-clicking on the last row of the sequence grid toolbar, 2 options have been added to the pop-up menu: "Clicking Effect Type Selects Create" and "Essential Color Buttons Only". Both items are toggle features and are remembered across sessions. Turning off "Clicking Effect Type Selects Create" will leave the "Select Action" (now "On Mouse Click") selection alone when you change Effect Type. When "Essential Color Buttons Only" is enabled, the Choose and Random

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color buttons are hidden. In this mode, users can still click on the left or right side of the color sample to choose colors.
- Added "Maximum number of files to display on the Start Page" option on the Start Up tab of Sequencer Preferences. Added "Clean Up" button to Start Page, which can be used to remove file names from the Recently Used list.
  https://forums.lightorama.com/topic/54111-recent-sequences/
- You can now add a new motion effect to multiple rows at once. You can also select multiple motion effect rows, right-click and select one of the Prompt For New Effect options, and the change will be applied to all selected effects.
- When adding new motion effect rows via the Subdivide option, naming of the new motion rows has been improved. There are new fields on the subdivide dialog that give you full control over the names for the motion rows.
- States defined in an xmodel file will now be imported as additional motion effect rows.

SuperStar Improvements

- Added ability to change between normal and wrap-around in the Preferences dialog box
- Added the "modify stretch/shrink" check boxes in the group modify spiral, and group modify fan dialog boxes
- Added SineWave effect to the smooth effects dialog box
- Added ability to view the audio waveform

Network Preferences Changes

- Simple Mode has been removed. Click on a row in the LOR or DMX tab to edit it -- as you would in the old Advanced mode.
- On the LOR tab, a check box at the top allows you to toggle between seeing just the Regular network or all networks. This check box may disabled if you already have more than network defined (Advanced or Pro), or your license only gives you access to one network (Basic, Basic Plus, or Standard).
- When editing an LOR network, the recommended speed is always displayed and will change based on whether the Enhanced box is checked.
- When editing an LOR network, a check box option will filter the list of comm ports to only those currently attached to the computer.
- When editing a DMX network, the standard E1.31 port is clearly identified.
- When editing a DMX network, you can now set up to 192 universes the same way -- in support of the PixieLink controller.
- On the DMX tab, there is now a Clear Range button, so DMX universes that are no longer in use can be quickly erased.
- Clicking the "Find/Configure PixCon16" button now opens a new PixCon16 utility. This utility has all of the same options as the previous utility, but has an improved ability to find your controller. The new utility will NOT set your DMX universes in Network Preferences, so after configuring the PixCon16 controller, you will need to set your DMX universes on the DMX tab as a separate step.

New Pixie Firmware Version 1.07

- Firmware 1.07 has been released for Pixie controllers to support the new CMB24D emulation option and a new Pixel IC: UCS1903.

Hardware Utility

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- When configuring a Pixie that has Firmware 1.07 or higher, there is now an option to emulate CMB24D controllers with dumb RGB pixels. Pixie2/Pixie4/Pixie8 controllers can look like CMB24D controllers to the show director with 2/4/8 dumb RGB pixel strings. The Pixie16 looks like two CMB24D controllers with sequential unit IDs, each with 8 dumb RGB pixel strings. Sequences that use a CMB24D do not need to be updated and can be replaced with a Pixie using this option.
- A new Pixel IC, UCS1903, is supported by Pixies that have Firmware 1.07 or higher.
- Pixies that have Firmware 1.07 or higher can recognize if the JP5 Jumper is in use and will warn the user that the Jumper may override the configuration in the Hardware Utility.

Bug Fixes

- When creating or modifying a SuperStar effect from the Sequencer, the time that the Sequencer waits for a SuperStar response was Increased.
- When upgrading a sequence to S5, legacy channels defined as independent red, green, and blue channels (not inside an RGB channel), did not match up to S5 RGB channels (dumb RGB or smart pixels).
- In the Sequencer, the New Musical Sequence window is now a little smaller so it fits more easily on standard resolution laptop screens (1366x768).
- In the Sequencer, when changing the layout for a prop with a custom shape, the prop's motion row defaults were not updated to reflect the changes.
- In the Sequencer, the Playback and Audio Settings windows could dock in the center area (in the same area as open sequences). This is no longer allowed.
- In the Sequencer, when importing an S4 Sequence Editor animation from the Previews window, the Sequencer would crash if the Sequence Editor file was corrupt.
- In the Sequencer, when defining preview groups with an arrangement of "Nested", "H Stack, V Fill", or "V Stack, H Fill", setting orientation of a group member to anything but "normal" would not work correctly and could cause an error.
- In the Sequencer, fixed Sphere and Cylinder shapes when the number of quarters was less than 4 (less than 360 degrees around).
  https://forums.lightorama.com/topic/54218-12-sphere-prop-not-showing-effects-properly/
- In SuperStar, fixed a crash bug that could happen in smooth effects if aspect was small
- In SuperStar, fixed a bug in rendering of spirals and fans, there were sometimes gaps in the rendering
- In SuperStar, fixed a bug where pixels would flicker when playing back to superstar screen when there are duplicate pixels and Time Layer Priority feature is enabled. This can happen when using a preview that uses hfill or vfill.
- In SuperStar, made the duplicate pixels on the sequencing grid be dynamic. Before it was only handling one duplicate pixel.
- In SuperStar, increased the maximum channel elements for a sequence from 50,000,000 to 100,000,000
- In SuperStar, increased the maximum number of pixel height for a scene from 127 to 360
- In SuperStar, fixed bug where save of a .sup file didn't save groups correctly if a group was expanded at the time of the save.
- In SuperStar, made it so instant sequence themes that contained scenes work properly for grids of length longer than 50
- In SuperStar, fixed a bug where if you have an effect dialog box up that is not the scene dialog box and you do "new" or load another sequence, then you go into scene mode, but the old dialog box stays up and may not be functional until you click on an effect type button again.
- In SuperStar, fixed a bug where auto sequence singing faces did not work properly beyond 5:28 into a sequence
- In SuperStar, fixed a bug where if you select VisEffect in the morph dialog box and deselect "Shrink visualization for visEffects" then select it again, the visualization fails to shrink

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- In the Hardware Utility, when configuring a Pixie the "First Pixel as Status Indicator" check box did not change the configuration and did not always reflect the current configuration.

What's New in Version 5.6.0

- Sequencer Improvements
- SuperStar Improvements
- Bug Fixes

Sequencer Improvements

- A new Audio Settings window controls which audio data is displayed for a sequence, and allows that data to be customized. It replaces the "Audio Filter and Scale" and "Waveform Colors" dialogs in prior versions, and does a lot more.
- In addition to the audio waveform, users with a Pro license now have the option to display the audio as a spectrogram. Two types of spectrograms can be displayed: 1) a standard frequency versus time representation, and 2) one with pitch detection applied. Pitch detection tries to find the actual notes being played in a song and eliminates many of the harmonics that clutter a typical spectrogram. See the Audio Settings topic for examples. Users can choose whether spectrograms are calculated for their sequence using the Audio Information field of the New Musical Sequence dialog. The Audio Information setting can be modified using the Sequence Information dialog.
- A new Audio motion effect is now available, which reacts to the music as it is played. It has many options, including an audio equalizer type display, as well as a color organ option. Open the new 5.6.0 sample sequence in your Sequences\Samples folder to see it in action.
- A new "Icicle" prop shape adds support for both traditional and pixel-based icicle strings.
- The Sequencer will now run as a 64-bit application on 64-bit versions of Windows. This means it can use more memory if necessary, allowing you to create larger sequences, control more lights, and/or have more sequences loaded at one time. 32-bit versions of Windows are still supported.
- Some of our favorite motion effects are now included with the Sequencer. These are listed in the favorites area of the Motion Effect Generator in a separate folder called "LOR Shared Favorites". Have some favorites that you think are awesome and want to share with the Light-O-Rama community? Export them and attach the export file to a Help Desk ticket. We will review them for possible inclusion in a future update.
- In Preview Design's Layout View, a new option can display grid lines for empty cells. This can help when trying to identify the row and column numbers for a pixel in a custom shape.
- In the sequence grid, timing marks now stop at the last prop in the grid.
- After right-clicking on an item name in the sequence grid, "Hide Item" has been renamed "Remove Item from This Grid View" to better reflect what it does.
- In the Beats, Tapper, and VU Wizards, the list of timing grids will now only show freeform grids. If no timing grid is selected when you click "Apply", you will be asked if you want to create one. Previously, fixed timing grids were included in the list, but these could not accept the newly created timings.
- You can now select files with a JPEG file extension (note the "E" in the middle) for picture effects or the preview background image. Previously, only JPG, PNG, and BMP extensions were allowed.
- The Sequence Information screen now includes the preview revision number. For musical sequences, it also shows the audio sample rate.

SuperStar Improvements

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- Added snap to beat marks if you click in the timing marks area. Also made it so effects get displayed to .01 seconds instead of truncating to .05 seconds.
- In the Layout dialog box, in the Pixel Extender section, added the ability to stretch / shrink in the x direction
- For the smooth effects, added ability to stretch / shrink in the x and y direction

Bug Fixes

- In the Sequencer, using the mouse wheel to scroll the sequence grid on a secondary monitor did not work properly and could sometimes cause a crash.
- In the Sequencer, single channel props with a custom shape would not play back in some cases.
- In the Sequencer, fixed a bug in the way motion effect rows were handled when importing a grid configuration.
- In the SpinFade motion effect with style set to "circles 3d", the edges of the circles are now transparent and have smooth edges when used with alpha blending.
- While changing colors or shape in the Prop Definition window, the channel list could go empty, which resulted in the start channel being reset to unit 01, circuit 1.
- In SuperStar, the markers for the start and end of a prop in the green grid were not working, this has been fixed
- In SuperStar, when launched from the S5 Sequencer previews were being displayed tall and skinny. Made it so they are stretched horizontally by a factor of 1.45.
- In SuperStar's scale part of "move or scale selected effects" improved the scaling of smooth effects

What's New in Version 5.5.18

- Sequencer Improvements
- Hub Improvements
- Pixie 16 Support for Props Extended to All Ports
- Bug Fixes

Sequencer Improvements

- Added Revision Number to the Preview Design screen as a read-only field. Previously, the program maintained this value but it was not visible.
- Added "Export Selected Items" to the menu when you right-click on the design canvas in Preview Design.
- In the Map Preview To Sequence Dialog, you can now specify the number of motion effect rows that will be created for new pixel props.
- Added the Circles Nested shape to Prop Definition.
- In Prop Definition, increased the maximum number of pixels per string on matrix, tree and fan shapes from 1000 to 9999. https://forums.lightorama.com/topic/53836-32-by-64-horizontal-matrix/
- In the Motion Effect Generator, shift-clicking on the Reset Effect Parameters icon now sets the effect to None.
- When starting a new musical sequence and the selected media file is outside of the Light-O-Rama audio folder, you will now be asked if you want to copy that file into the Light-O-Rama audio folder.
- If a crash is caused by the graphics system, the user will now get an error message asking them to update their display drivers.
- In the help file, there is a new Motion Effect Reference page which covers all of the controls for all of the motion effects.

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Hub Improvements

- Hub will now warn the user if they attempt to create an SD Card using the 'Simple' button and any sequence in the show contains Motion Effects. In this situation, the 'Advanced' button must be used to correctly create the SD card.
- MP3 directors require SD cards be formatted as FAT16 or FAT32. Hub will now warn the user if the card is not formatted properly and needs to be re-formatted.

Pixie 16 Support for Props Extended to All Ports

- Previously, a Pixie 16 could control up to 4 LOR props (like singing trees) on the first 8 ports of the controller. It can now control up to 8 props on any of the 16 ports. Firmware version 1.06 or higher is required.

Bug Fixes

- In Preview Design, when creating the layout for a prop with a custom shape, the Crop function would stop at areas that had been deleted during the current edit.
- In the Sequencer, fixed a possible crash when copying a list of warning messages to the clipboard (e.g. warnings displayed after opening a sequence).
- In the Sequencer, fixed the check for newer versions, which was no longer working.
- In the Sequencer, fixed a crash when defining a prop with a custom shape and the number of columns exceeds 655.
- In the Sequencer, fixed a possible crash when assigning a different preview to a sequence.
- In the Sequencer, if you scrolled down the sequence grid and right-clicked on a prop/channel name, the wrong menu would be displayed in some cases.
- In the Sequencer, fixed a potential crash when creating a chase by prop.
- In the Sequencer, fixed a potential crash when upgrading a legacy sequence
- In the Sequencer, fixed a potential crash when displaying the Layout View for a preview group
- When the Sequencer opens a Light-O-Rama Store sequence in LMS format, it now downloads the latest store sequence preview before upgrading.
- In the Sequencer, when the preview for a sequence changed and new pixel-based props were added, motion rows were not created for the new props.
- In the Sequencer, when copying a prop in Preview Design, the copies were spaced far apart in the vertical direction.
- In the current version of the Sequencer, the zoom level of the playback window is saved with each grid view in the sequence file. In the new version, a change to the zoom level will now mark the sequence as modified (asterisk is displayed in front of the file name shown on the sequence tab), and you will get prompted to save the sequence when you close it. https://forums.lightorama.com/topic/53832-sequencer-saves-preview-zoom-for-each-grid-view/
- Added support for the xmodel "circle" shape when importing props. This allows the Boscoyo Mesmerizer spinner to import successfully.
- Added support for the xmodel "sphere" shape when importing props. This allows the Boscoyo ChromaStar 3D to import successfully.
- When applying MotionPaks in Hub, the program will now find older base sequences that use the naming scheme <title>-RTG-<artist> or <title>-YCM-<artist>.
- In Hub a crash could occur if ID3 information attached to the MP3 was corrupted and 'Strip MP3 Header'.option was in use (which is the default for Simple mode as well)..
- In Hub the option "Copy MP3 with header stripped" was being ignored - the MP3 was always having its header stripped.
- Previously in Hub, warnings generated by the S5 sequence engine were ignored when creating an SD card. Those warnings now prevent an SD card from being created and must be corrected before the sequence can be written.

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- In SuperStar, if after a fresh installation of the S5 software the user attempted to launch SuperStar in stand-alone mode an then attempted to create a Quick Visualization, the program could crash.
- In some cases when SuperStar is launched from within the S5 Sequencer while in Morph Mode, a right click of the mouse did not properly define the 2A and 2B points.
- In SuperStar when using "Change Orientation" within the "Move or scale selected effects" dialog box:
    - The initial values of width and height were reversed
    - If the effect had a clip rectangle, the effect would no longer render.

What's New in Version 5.5.16

- Bug Fixes
- New Pixie Firmware Version 1.06

Bug Fixes

- In the Sequencer, background images are now stored internally with a maximum width and height of 2000 pixels, saving on memory and improving stability. The file used for the background image is not changed.
- In the Sequencer, fixed a potential crash when opening Sequencer Preferences.
- In the Sequencer, fixed a potential crash when saving a screen image from Preview Design or the Wiring View. You capture a screen image by clicking this icon:
- In the Sequencer, when assigning a different preview to a sequence, if a prop was archived as a result of the change, the prop's unique identifier in the original preview was mistakenly changed (affecting any other sequence associated with the original preview). Prop identifiers are used by the program internally, but are not visible to the user.
- Fixed a potential hang when the Show Player plays a song with parentheses in the file name.
- In the Hardware Utility, under some circumstances a firmware update or parameter update of a controller can cause it to hang/crash.
- In the Show Editor, allow protected sequences to be selected for triggered shows.
- In the Show Editor, the default tab is now the 'Musical' tab.
- In LOR Hub, creating a simple PC show with 11 or more sequences could lead to corruption of the list of sequences to be run.

New Pixie Firmware Version 1.06

- Firmware 1.06 has been released for Pixie controllers to support the upcoming PixieLink product.

What's New in Version 5.5.14

- Sequencer Improvements
- Bug Fixes

Sequencer Improvements

- In Preview Design, you can now undo the setting or clearing of the background image.

Bug Fixes

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- In the Hardware Utility, loading of stand-alone sequences onto a controller has been fixed. This feature was broken starting in version 5.5.8.
- In the Sequencer, background images might not display during playback after editing the preview in Preview Design, or after upgrading a legacy sequence using a preview that has a background image.
- Changing a preview's background image while upgrading a legacy sequence now works.

What's New in Version 5.5.12

- Support for PixieLink Products
- Bug Fixes

Support for PixieLink Products

- The Hardware Utility can now update firmware at higher speeds. The higher speed will initially only be supported on the forthcoming PixieLink product.
- New firmware for Pixie 2/4/8/16 with performance enhancements required to support PixieLink high-speed products.
- Initial firmware for PixieLink V1.02

Bug Fixes

- In the Show Editor, Protected LOR S5 sequences (.lorprot) were not being shown when "S5 Sequences" was used while adding files.
- In some cases, a preview with a large background image that also had Save Image With Preview checked would not load into Preview Design.
- In Preview Design, attempting to import online props when the computer (or web site) was offline could result in a crash.
- If Windows 'Controlled Folder Access' (also known as Ransomware Protection) was enabled, the Sequencer would close without displaying an error message to the user.
- Existing motion effect rows will no longer be automatically removed on groups with Arrangement set to none. Motion effects on such groups cannot control lights, so the user will now receive a warning when opening a sequence where such groups exist.
- In the Sequencer, the performance of Paste Special with Repeat Horizontally set to "All the way to the end of the sequence" has been much improved.
- In the Sequencer, you once again get a warning when you press one of the play buttons, and Control Lights is enabled, and there are channel conflicts in the preview. This check has failed to work properly since version 5.5.0.
- In the Hardware Utility, moving the main window on some high resolution monitors could cause the form size to grow.

What's New in Version 5.5.10

- Bug Fixes

Bug Fixes

- In the Sequencer, after finishing an edit to a motion effect or SuperStar effect, the program could crash.
- In the Sequencer, sequence windows were allowed to dock at the edges of the main window.

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- In Preview Design, when editing a prop's custom or advanced layout with auto-number enabled, clicking on the row or column header of the grid would result in an error.
- In the Sequencer, audio was played back at 0 volume if the playback window hadn't been opened.
- In the Sequencer, a crash could occur if the sequence tab was closed while intensity data is being calculated.
- In SuperStar, the ability to use ctrl+left or right click to set/clear all pixels in a scene or in image mode has been removed and replaced with ctl+mousedrag in image or text mode.
- In SuperStar, added support for foreign characters in the song name and path and in the sequence name and path. (when launched from the S5 Sequencer)

What's New in Version 5.5.8

- Sequencer Improvements
- Bug Fixes

Sequencer Improvements

- When exporting as protected, you will now be prompted for a supplemental text message. When a user opens the protected sequence in the Sequencer, they will see the extra text that was specified during the export.
- Added a new menu option in Preview Design to delete groups with no members.
- Floating windows now have a maximize button. This enables you to quickly maximize the playback window (or other floating windows) on a second monitor.
- When opening a sequence purchased from the Light-O-Rama Store (LMS file), the Sequencer now offers to upgrade the sequence using the official preview for Light-O-Rama Store sequences, bypassing the upgrade screen.
- The error message "The following items have motion effects that cannot be played because they are on an LOR network that is not enhanced." has been enhanced to include the LOR network that is causing the issue.
- When creating a custom subsection in Add/Modify Motion Effect Rows, you can now flip the custom subsection horizontally or vertically.
- After creating a custom subsection in Add/Modify Motion Effect Rows for a prop with a custom shape and then subsequently changing the custom layout, it is possible to end up with nodes in the custom subsection that are no longer on a pixel. Use the new "Delete marks not on a pixel" menu item to clean up such nodes.

Bug Fixes

- In Preview Design, when defining a preview group, clicking on the radio button for the "H Stack V Fill" arrangement did not update the group size shown on the screen.
- Fixed crash when copying a prop or group in Preview Design and one or more entries in the "New Names" list is blank.
- Fixed crash when attempting to delete props when no props were selected in the Channel Conflicts & Bulk Changes tab in Preview Design.
- Fixed potential crash when closing a sequence tab and intensity data calculations were in progress.
- In the Sequencer, the user is now allowed to cancel out of deleting a loop level in an animation sequence.
- In Preview Design's Online Import screen, pressing the Refresh or Cancel buttons while the online content was still being downloaded would result in a crash.

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- In the Motion Effect Generator, you could not save your first motion effect favorite. There was no issue if you already had one or more favorites already saved.
- When using the Motion Effect Generator with no sequences open, you could select groups with an arrangement of none. Motion effects on such groups are not allowed.
- When importing an S4 Visualizer file into a preview, RGB channels that left one or more channels undefined now import correctly.
- In SuperStar when using the "Move or Scale Selected Effects" window, the state was not initialized properly.
- In SuperStar when using the Scene, Morph, or Text dialog boxes, and incorrect error message was produced that said to use a value between 0-255. That should have been 0-100.
- When scrolling large images across a matrix In SuperStar, the program could crash.

What's New in Version 5.5.6

- Sequencer Improvements
- Bug Fixes

Sequencer Improvements

- After enabling channel level sequencing on pixel-based props, the prop's RGB channels are labeled with the row and column number (e.g. "r01 c01"). In order to help identify the pixel associated with that row and column:
  - Row and column labels were added to the Layout View in Preview Design.
  - When viewing node labels on pixel props in Preview Design, you can now format the labels as pixel numbers or row/column notation.

- On the screen that is displayed when opening a sequence and the preview has changed (the Map Preview to Sequence Dialog):
  - Added the preview name and its revision
  - Renamed the "revert" button to make it clearer what it does.
  - There is a new button that adds the preview stored in the sequence file as a new preview.

- The Timing Grid Import screen now allows for the import of freeform timing grids directly from another S5 sequence without having to export the timings first.

Bug Fixes

- In the Sequencer, fixed fire effect on props that are 1 pixel wide or 1 pixel high. This used to work, but was broken starting with version 5.4.0.
- In the Sequencer, fixed possible crash when sorting the sequence grid by physical channel.
- In the Sequencer, fixed possible crash when double-clicking on a channel effect.
- When changing the selected effect in the Motion Effect Generator, the controls for the new effect's parameters (e.g. sliders) were occasionally not displayed.
- In the Sequencer, fixed occasional internal error when using the Pinwheel effect with "inner and outer" color mode.
- In the Sequencer, fixed possible crash when editing the channel grid in Prop Definition.
- In the Sequencer, fixed possible crash when editing Text and TextPE motion effects.
- The Sequencer was not returning to the last selected grid view when a sequence was re-opened. http://forums.lightorama.com/topic/52683-554-always-opens-sequnce-with-show-all-items-view/

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- In the Sequencer, DMX intensity effects were lost when upgrading a legacy sequence. This bug was introduced in version 5.5.0. http://forums.lightorama.com/topic/52685-lost-dmx-values-from-s4-sequence-to-s5/
- In the Sequencer, when entering the spacing for a new fixed timing grid, more than 2 digits were allowed after the decimal point, even though those digits were ignored.
- In the Sequencer, subsequences were not working correctly, and adding a new subsequence could cause a crash.
- In the Sequencer, when defining the motion effect rows for a prop or group, deleting a row's name could cause a crash.

What's New in Version 5.5.4

- Sequencer Improvements
- Bug Fixes

Sequencer Improvements

- The Sequencer starts up in less time due to faster initialization of the Motion Effect Generator. Improvement will vary from 2 to 6 seconds depending on the speed of your computer - slower computers will see a bigger improvement.
- The Playback Window zoom and scroll bar settings are now saved with the current grid view. So now if you have a grid view that deals with just a portion of your display, you can zoom into it, and that zoom setting will be restored every time you switch back to that grid view.
- Added support for node ranges specified via "face information" in Preview Design's xmodel file import. These node ranges become motion row defaults. Previously only node ranges specified as a sub-model were supported.
- The setting at Sequence > Smooth To Fades Level no longer applies to DMX Intensity channel effects. The level will always be "none" for DMX Intensity effects. This ensures that if you enter a specific DMX intensity value on a channel, it will always be that value.

Bug Fixes

- In the Sequencer, if you clicked on a cell and then immediately clicked a shortcut key, the 2 actions could interact. An example is clicking on a cell then pressing the spacebar key to start playback - playback could unexpectedly stop. http://forums.lightorama.com/topic/52567-552-glitching-with-startstop-sequence-motion-effects/
- In the Sequencer, fixed an internal error when creating a new musical or animation sequence with a license level less than Pro.
- In the Sequencer, fixed possible crash when displaying the audio waveform.
- In the Sequencer, fixed possible crash when importing multiple online props at one time in Preview Design.
- In the Sequencer, fixed possible crash when updating a preview while the associated sequence is open.
- In the Sequencer, fixed possible crash when copying text to the clipboard from a pop-up message box using Ctrl-C.
- In the Sequencer, added check to see if Windows Media Player is installed, and give a specific error message if it is missing.
- In the Sequencer, fixed possible crash when displaying item names on the left side of the sequence grid.
- In the Sequencer, fixed crash if you closed a sequence tab before the audio file finished loading.

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- In the Sequencer, fixed crash if the toolbar options were set to Create > Motion Effect and the user quickly pressed the Enter key multiple times.
- In the Network Preferences program, some PixCon16 firmware versions could incorrectly indicate that the LOR software was too old and needed to be updated when configuring a board.

What's New in Version 5.5.2

- Bug Fixes

Bug Fixes

- After upgrading a legacy sequence using an existing preview, you could receive the error "Parameter is not valid", or the program could crash when you try to edit the preview.
- The Sequencer could crash when editing a SuperStar effect.
- When a sequence was played at 1/2 or 3/4 speed, all effects appeared as shimmer effects in the playback window even though the actual effect commands in the Sequencer remained unchanged. Normal and 2x speed were fine. http://forums.lightorama.com/topic/52529-550-bug-shimmer-effects-at-12-and-34-speed/
- When a sequence with a fixed timing grid was displayed on a computer using a display driver from AMD (e.g. Radeon graphics), the vertical lines of the timing grid might be displayed with multiple colors. http://forums.lightorama.com/topic/52529-550-bug-shimmer-effects-at-12-and-34-speed/
- When creating a prop with a Custom shape and using copy/paste, the program could crash if the clipboard was in use by another application.
- Added option to the the Timing Grid menu that enables or disables the highlighting of timing marks that fall on the second. http://forums.lightorama.com/topic/52547-1-second-timing-lines/
- Bug fix: When importing a channel configuration, the "Enable Channel Level on Pixel Prop" setting was not being applied correctly. Going forward, the channel configuration export will also include the "Hide group members" and Motion Rows Overlay/Blend settings for each item. http://forums.lightorama.com/topic/52543-crosshatched-rows-in-new-musical-sequence-in-55/
- In Preview Design, using the Copy function on a group would result in a crash. In addition, the orientation of group members was not preserved in the copy.
- Hub is now Large Address Aware which should help with creating SD cards with large sequences
- Hub will now note if a sequence is protected or not not when creating an SD card. This should help with duplicate sequences being displayed (one protected, one not).

What's New in Version 5.5.0

- Easier PixCon16 Configuration
- Support for PixCon16 MKII Firmware up to and including V2.0.25
- SuperStar Changes
- Comm Listener Change
- Sequencer Improvements
- Bug Fixes

Easier PixCon16 Configuration

- In the Network Preferences program, you must now select a Network Adapter Card to use when configuring PixCon16 controllers. This should make loading the configuration for a board easier as

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you no longer have to properly configure routing tables/metrics in Windows on computers with 2 or more Network Interface Cards (NICs)

Support for PixCon16 MKII Firmware up to and including V2.0.25

- For LOR PixCon16 MKII boards, the software now supports firmware versions up to and including V2.0.25. Please note that upgrading firmware on PixCon boards is not as easy as on other LOR controllers. Unless you are having an issue that is fixed with new firmware, please do not attempt to update your board. New Firmwares for the PixCon16 are available from support, but only after consulting with them about an issue.

SuperStar Changes

- New Select Effects in Clip Rectangle feature
- Fixed a bug in the "Move or Scale Selected Effects" dialog box. The initial state was not always being initialized properly.
- Fixed a bug. If superstar launched from Sequencer and click on "New" button superstar crashed. Fixed it so the "New" button is grayed out when launched from S5 Sequencer.
- Fixed a bug in the Scene, Morph, and Text dialog boxes. If you typed a large value such as 500 for a color value then it would give an error saying "enter a value between 0-255." Fixed it so it always says "enter a value between 0-100"

Comm Listener Change

- In prior versions, when the Comm Listener was unable to open an Enhanced LOR comm port, it would display "Error opening comm port: 2" to the screen. This caused some confusion because "2" is the error code, not the port number. This has been changed to now show "Error opening comm port: COM9 (code 2)" going forward - so you know which port has the problem. http://forums.lightorama.com/topic/51964-s5-error-opening-com-port-2/

Sequencer Improvements

- Increased the maximum number of motion effect rows per prop, from 32 to 100. http://forums.lightorama.com/topic/51663-s5-motion-effect-row-limits/
- After selecting Add/Modify Motion Effect Rows and adding a second motion row, the sequence grid now automatically expands to show the second row.
- Sequences in the S5 format (.LOREDIT and .LORPROT) are now allowed as subsequences.
- When adding a new subsequence, the subsequence row will now be turned on by default for the entire length of the sequence.
- After you have opened a sequence and have the green check-mark displayed on the top toolbar, you can now click on the check-mark, changing it to a pause icon.

  While the pause icon is displayed, intensity data will not be calculated, allowing you to change motion effects without any delays. When you play the sequence, intensity data will be calculated at that point. You can click the pause icon to return to the green check-mark at any time. Calculations will then be performed after every change to the sequence.
- Added Ctrl-D and Ctrl-U shortcut keys that will apply a fade down/up to the effects in the selected area of the grid.
- The process for upgrading a legacy sequence to S5 has been completely revamped. During the upgrade process, you can now combine Visualizer, Pixel Editor, and SE animations into a single preview. You can manually draw strings or flood lights, and move props around. You also have visibility to the list of channels that will be archived before the upgrade takes place. You can

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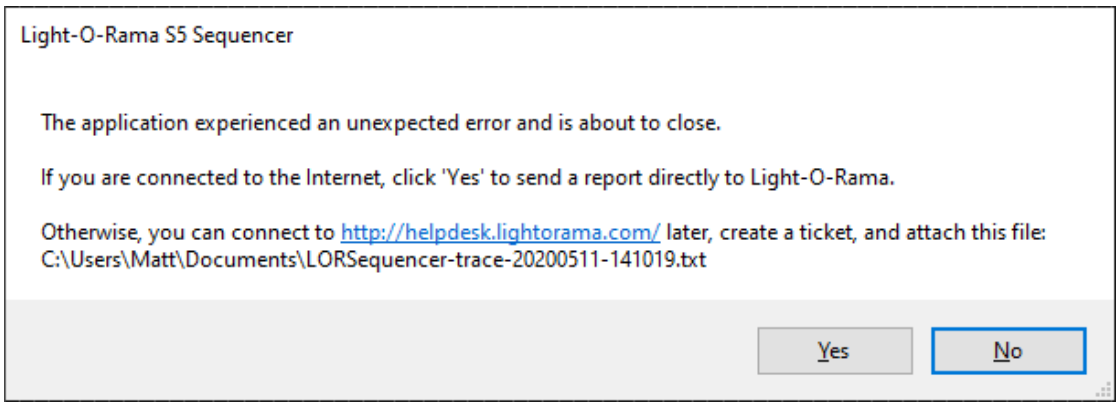
choose which legacy channels to auto-create as S5 props on the preview, and undo it if you don't like the result.

- In prior versions, double-clicking on an existing effect to modify it only worked when the toolbar's "Select Action" was set to Select. In this release, you can modify an existing effect by double-clicking on it, regardless of the "Select Action" setting. However, this results in a slight loss of responsiveness when clicking rapidly in the sequence grid to create effects. If this interferes with your sequencing rhythm, there is an alternate mode that can be activated in Sequencer Preferences. On the "Editing" tab, select the "Control-Shift double-click" option. As the name implies, you will need to hold the Control and Shift keys down when double-clicking to modify an effect.
- If the Sequencer crashes, you will now get a message asking if you would like to send your report directly to Light-O-Rama. If you click "Yes", then Light-O-Rama will receive your crash report directly -- without you having to create a help desk ticket. Please note that, while Light-O-Rama will use your crash report to improve the Sequencer, the information you provide is anonymous and we have no way of responding back to you about the status of your report.



- If the Sequencer crashes, a copy of the log file will be made so that it can be submitted to the LOR help desk if desired. Previously, the log file was overwritten as soon as you ran the Sequencer again. The copy will still be in the Documents folder, but have the date and time added to the name.
- The playback window can now be manually zoomed in and out -- letting you zoom in on any area you like -- whether that is a single prop or a particular region of your display. You can even change the zoom level while playback is occurring. Because of this enhancement, the "Zoomed Playback" feature (accessed by right-clicking on a prop name in the sequence grid) is no longer needed and has been removed.
- The Sequencer preference that allowed the background image to be hidden has been removed, as it is no longer needed. If you don't want to see the background image, just turn the image brightness all of the way down.
- Increased the maximum number of stars in the "Stars Nested" shape from 6 to 10.
- In Preview Design, you can now right-click on the design canvas and select "Save as picture" to save the preview as a picture in PNG format.
- Extended the drag edges tool to also work on RGB channels.
- Added a Sequencer preference that enables the drag edges tool when a sequence is opened (for those that like to use it all of the time).
- Added new keyboard shortcuts:
  - Ctrl-Left-Arrow: scroll one screen to the left (same as S4 Sequence Editor)
  - Ctrl-Right-Arrow: scroll one screen to the right (same as S4 Sequence Editor)
  - Alt-Up-Arrow: make grid rows shorter (same as S4 Sequence Editor)
  - Alt-Down-Arrow: make grid rows taller (same as S4 Sequence Editor)
  - Alt-Page-Up: make grid rows as short as possible (same as S4 Sequence Editor)

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  - Alt-Page-Down: make grid rows as tall as possible (same as S4 Sequence Editor)
  - Ctrl-Alt-Plus: zoom time in all of the way
  - Ctrl-Alt-Minus: zoom time out all of the way
  - Ctrl-R: toggle view fades as ramps setting
  - Ctrl-E: toggle drag edges tool on and off
  - P key: display a sequence grid tooltip (same as S4 Sequence Editor)
- Don't like the shortcuts? You can now create your own in Keyboard Preferences. It will even import S4 keyboard maps - with a few limitations.
- Select Effect (E shortcut key) now works across multiple rows.
- Clicking on the small down-arrow next to the Select Tool gives you a choice of 4 selection modes - cells, effects, rows, and freeform. Holding the Ctrl key down used to automatically switch you to Freeform select mode. Now you get the same 4 selection mode options when the Ctrl key is pressed - i.e. you get to choose which selection mode happens when the Ctrl key is pressed. The default mode when the Ctrl key is pressed has been changed from Freeform to Effects. If you don't like the new default, it is easy to change it. See the Selecting Cells topic for more information.
- Added support for wiring the Fan shape from the outside in.
- Added check so that it is no longer possible to create a group in Preview Design with the same name as a prop. Having a group and prop with same name becomes very confusing in the sequence grid.
- Increased the number of "Recent Sequences" shown on the Start Page.
- Previously, if a sequence had a Windows shell command, that command was run when the sequence was played in the Show Player and the Sequencer. A new Sequencer Preference now controls whether Windows shell commands are run in the Sequencer (they will always be run by the Show Player). http://forums.lightorama.com/topic/52249-windows-commands/
- Several improvements were made to the Motion Effect Generator:
  - The toolbar for the left and right effects as been updated
    - The icon for resetting the effect parameters has been updated to more clearly show its purpose.
    - The dialogs for selecting and managing palettes have been combined and there is now just a single icon for that. In that dialog, you can now rearrange the order of the palettes.
    - There is a new clipboard that holds a single effect (left or right side) with corresponding copy and paste buttons. This allows you to copy the left or right side of one effect and paste it into the left or right side of another effect. i.e. you can now combine the left side of one effect with the right side of a different effect.
  - The favorites tree has been revamped
    - It looks a lot like the old one, but if you start dragging an effect you will see which effect you are dragging as you drag it.
    - You can reorder effects by dragging.
    - The tree stays open to the last place you were. So if you were at a particular place in the tree for one effect, the next time the Motion Effect Generator opens, the tree will still be in the same place.
    - A new option on the right-click menu allows you to sort a branch of the tree.
    - The star icon next to each effect was changed from yellow to blue, so that it was easier to distinguish from the yellow folder icons.
- You can export an S5 sequence in legacy format by selecting File > Export as LMS/LAS from the main menu. There are some limitations, among them that motion effect rows are excluded from the export.
- If you change a preview and then subsequently open a sequence that uses that preview, you will see a new Map Preview To Sequence dialog window that allows you to control what happens to props and groups in the sequence that do not match the new preview. This same dialog will also be displayed when assigning a different preview to a sequence.

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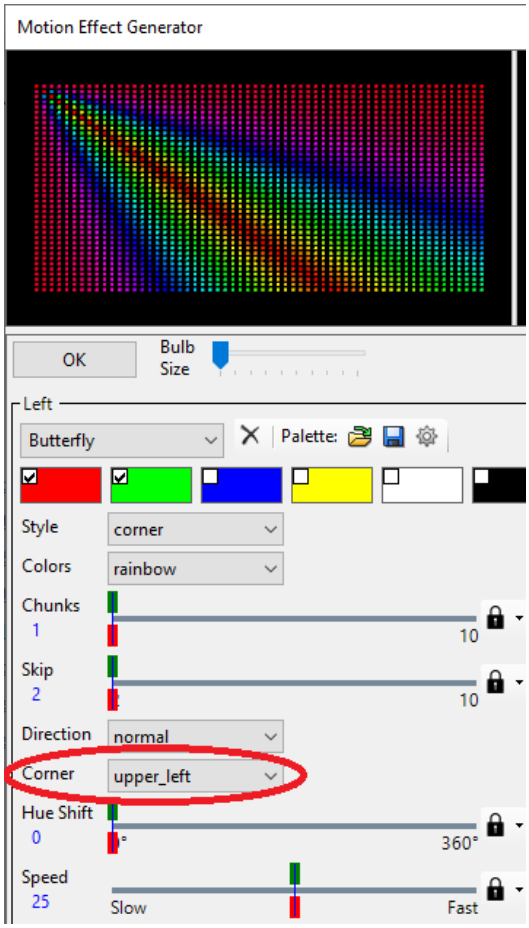
- The classic Light-O-Rama sample sequences "LOR_CHASE_SAMPLE" and "LOR_LOOP_SAMPLE" are now included in S5 format in the Sequences\Samples folder.
- When a fixed timing grid is active, timing marks that fall on exact seconds (1.00, 2.00, etc) are displayed a shade lighter, making them easy to pick out and use as a reference.
- If you update the motion row defaults for a prop in Prop Definition, it is now much easier to get those defaults into an existing sequence -- just click the new "Merge Defaults" button in the Add/Modify Motion Effect Rows dialog.
- Added new playback marker style of "moving marker and highlight the current column".
- In Group Definition, there is a new arrangement setting of "H Stack, V Fill".
- Added a new option to the Butterfly effect that let's you specify which corner the effect should originate from.



Bug Fixes

- In the Sequencer, when creating a new sequence and using the Quick Preview feature, the list of previews shown in the Previews window did not update.
- In the Sequencer, if you selected an entire motion effect row that contained existing effects, then selected "Insert Motion Effect" from the right click menu, then the new effect would overwrite the first effect in the selection instead of filling up the entire selection. http://forums.lightorama.com/topic/51676-s5-motion-effect-editing-issue-video-request/
- In the Sequencer, if you selected an entire motion effect row that contained existing effects, then selected "Prompt For New Effect > Modify Existing Effects" from the right click menu, then the

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new effect would only only modify the first effect in the selection instead of all selected effects. http://forums.lightorama.com/topic/51676-s5-motion-effect-editing-issue-video-request/
- In the Sequencer, if you deleted a subsequence, it was not reflected in sequence playback until you closed the main sequence and re-opened it.
- In the Sequencer, if a sequence was open in the Sequencer, and an LOR network was changed from not-enhanced to enhanced (or vice versa) in Network Preferences, then the open sequence would no longer control lights correctly on the affected networks -- until the sequence was closed and reloaded. Now the Sequencer will update open sequences automatically without having to close and reload them.
- In the Sequencer, in certain cases, double clicking on a motion effect would result in the Motion Effect Generator opening a second time, after the first edit was completed.
- In the Sequencer, Preview Design did not maintain the aspect ratio of a background image if "Save image with preview" was checked. http://forums.lightorama.com/topic/51890-possible-bug-in-s5-preview-version-542/
- In the Sequencer, if you had a prop which was a standard AC channel with one color and defined as "channel per color", then added the prop into a group, added a motion effect row, and added a motion effect with multiple colors, then when you played back the motion effect it turned that prop on and off as expected. For example, a red prop will turn on when the color red (or another color which features red in it) plays in the motion effect. However, if you changed the prop definition to "multicolor" and left everything else the same (still one color selected for the prop), the motion effect would turn on the prop all the time at a lower intensity and it would not work as expected.
- In Preview Design, the xmodel import of custom models would sometimes fail because of incorrect data in the file. The import process has been improved such that it now ignores some of that incorrect data and imports the file anyway. Also, if the import fails in the new release, you should get a more specific message indicating the cause of the error.
- In the Sequencer, effect and row selection modes did not work when using right-click selection.
- In the Sequencer, when opening the Motion Effect Generator for an effect with custom transitions, the wrong transition could be displayed.
- In the Sequencer, after double-clicking on a motion effect to edit it, playback in the Motion Effect Generator would not start at the beginning of the effect.
- In the Sequencer, modifying small intensity values in the red, green, or blue sub-channels of an RGB channel could result in a crash.
- In the Sequencer's Add/Modify Motion Effect Rows dialog, when clicking the down arrow icon, you could not move a row to the very bottom (only second to the bottom).
- When clicking on a color swatch in the Motion Effect Generator, the Color Transition dialog would sometimes be positioned on top of the color swatch. When that happened, a double-click on the color swatch could result in an inadvertent click on a button in the Color Transition dialog. Now the Color Transition dialog will be placed above or below the color swatch.
- In the Sequencer's Prop Definition window, when switching a prop from another shape to the Matrix-Horizontal-Quad or Matrix-Vertical-Quad shapes, the program would display an error.
- With a Basic Plus license, the Sequencer's VU wizard would operate as a demo feature (should be fully supported).
- After making changes to effects on a beat channel and then playing the sequence, the color samples displayed to the right of a beat channel name during playback would not reflect the latest changes.
- The Sequencer would hang during start-up for a few users with high-end NVidia graphics cards driving multiple monitors. Changes have been made to address this problem, but testing has yielded mixed results. If you experience this problem, please contact the help desk.
- In a traditional prop with a custom shape, changing the layout of the custom shape could cause the effects for that prop to be erased.
- The Curtain motion effect would sometimes render incorrectly when the curtain edge was set to top, middle, or bottom, and the movement was set to open-then-close or close-then-open.

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- For many Sequencer users, when you clicked on one of the playback buttons music would start almost immediately, but there was a 200-300 millisecond delay until the first update on the playback window. http://forums.lightorama.com/topic/52349-dwell-at-the-beginning-of-songs/
- "Sort by Color" is no longer listed as an option when you right-click on an RGB channel in the sequence grid. Sort by Color is intended for props with traditional lights.
- When importing a Visualizer file into a preview, any fixture names with curly brackets { } would cause the import to fail.
- When creating SD cards in Hub, it was possible to use the same LOR network on 2 ports, but with different protocols. This could cause some shows to fail to run.

What's New in Version 5.4.2

- Installation
- Sequencer Motion Effects Changes and Additions
- Sequencer Improvements
- Bug Fixes

Installation

- Bug fix: due to a problem during installation, when the user enabled a show they might get an error stating ”Shows cannot be enabled because of an error. ActiveX component can’t create object/LORMonitor". Also, LORHub may crash when trying to create an SD card.

Sequencer Motion Effects Changes and Additions

- Added an option for the Text motion effect to display smooth (anti-aliased) text.
- Restored the ability to left, center, or right justify text in the Text motion effect. This setting only applies when there is more than one line of text.

Sequencer Improvements

- A light bulb icon is now displayed in the lower right corner of the Sequencer -- on the status bar. It will be dark when control lights is off, and bright yellow when control lights is on. This way the user can know the light control status without having to open the Control Lights panel.

Bug Fixes

- In the Sequencer, the new Motion Effect Row "overlay" combination mode did not work on prop subsections. http://forums.lightorama.com/topic/51605-xmodel/
- When running the demo version of the Sequencer and then registering, the Control Lights panel did not update. The Control Lights check box was still disabled and the message "Controlling lights requires a license" was still shown.
- After any Paste operation in the Sequencer, all of the cells that were pasted into should be selected. However, after a Paste Special with the Flip Vertical option enabled, the paste would work correctly but the wrong selection would be shown.

What's New in Version 5.4.0

- New Installation Executable
- Sequencer Motion Effects Changes and Additions

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- Sequencer Improvements
- SuperStar Improvements
- Bug Fixes

New Installation Executable

- The Light-O-Rama installer process and installer executable have been updated:
  - This should eliminate some installer errors such as files not being cleaned from the LOR Programs directory when installing new versions.
  - The installer size has been reduced by approximately 20 meg.
  - Previously the DirectX installer was always called regardless if a machine needed DirectX 9 installed or not. Now only machines that need to have DirectX will execute the install.
  - Additional files are now electronically signed by LOR to ensure their authenticity. This will allow Windows to prompt the user to obtain necessary permissions.
  - The installer will now place a shortcut on the users desktop to start the LOR Control Panel. At the end of the install, you will be asked if you want to start the control panel. This should help new users get started using the software.
  - The installer will not run on older Windows machines. You must have Windows 7 or newer as per the requirements of the software. Previously the software could be installed, but some programs would not work.
  - When starting the Control Panel for the first time, users will be shown a new screen that briefly describes how to use the control panel and software. Again, this is an effort to help new users get started.
- Note: Should you have any issue with the new installer process, first uninstall any LOR programs, then run the LOR Registry Wipe and then re-install. This should fix most installer issues. Please contact the help desk if needed.

Sequencer Motion Effects Changes and Additions

- New motion effects added: Spinner, Spin Fade, Archimedes Spiral, and PictureXY. Spinner, Spin Fade, and Archimedes Spiral should work especially well on pixel-based stars, spinners, wheels, and snowflakes that use a Custom shape. PictureXY is a simplified picture effect that gives you direct control over image size and placement.
- Pinwheel: the rendering quality has been improved and a new color mode has been added (multicolor arms).
- Picture: added a "Numbered Sequence" check-box. Prior to this version, image sequences were detected automatically. Now they are indicated by checking the new box. If you have an existing sequence that uses numbered image files for an animation, your sequence will no longer work as originally intended until you reopen the sequence and update the applicable Picture effects.
- Color Wash: added dither and gradient options. Also, a small change was made to the "fade left to right" and "fade right to left" options, as they did not produce symmetrical results The same applies to the "fade top to bottom" and "fade bottom to top" options. This was only apparent on very small props.
- Fire: fire can now emanate from any or all sides. It was also fixed so that it now works with the "Alpha Blend" mixer mode.
- When setting colors in the Motion Effect Generator, "transparent" is now an option. This is useful in the "Alpha Blend" mixer mode and when motion rows are combined using the new "overlay" mode (see below).

Sequencer Improvements

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- In the Add/Modify Motion Rows dialog, you can now specify how the rows are merged together during rendering:
  - Blend: the maximum brightness for each pixel is taken from the effects across all rows -- backward compatible with prior versions, including the S4 Pixel Editor.
  - Overlay: rows are overlaid one on top of the other using alpha blending (i.e. effects can have areas that are transparent). The first row listed in the dialog is used as the background, then successive rows are layered on top of it. Note that you can use the dialog to change the order of the rows, thus changing the order in which rows get overlaid.
- In the Paste Special dialog:
  - you now have options to flip the pasted data horizontally and/or vertically
  - you can now override the Paste Mode shown on the toolbar from within the dialog
  - the maximum number of times a clipboard can be repeated horizontally or vertically was increased from 100 to 10,000
  - repeating vertically to the end of the sequence is fixed
- When selecting a playback range by dragging across the timeline, the Playback Window will now display the preview at the time indicated by the cursor's location (sometimes referred to as scrubbing).
- Added the ability to embed files for the Picture Effect inside the sequence file. This makes it easier to move sequences from one computer to another because you don't have to also transfer the associated picture files. Use the new menu item Sequence > Manage Picture Effects.
- The Skew Selection and Skew Entire Sequence dialogs now remember the last settings that were used.
- Added the ability to import xLights model files (.xmodel) into Preview Design. This capability is limited to custom models.
- In Preview Design, bulb transparency can now be applied to any bulb shape.

SuperStar Improvements

- SuperStar now supports audio files with a sampling rate of 48,000 as well as the standard 44,100 sampling rate.

Bug Fixes

- In the Sequencer, when adding new SuperStar effects to a group, the effects did not render correctly.
- Closing a sequence before the initial calculations had finished (wait icon was still spinning) could cause the Sequencer to crash.
- In the Sequencer, after importing an LPEPROP file into Preview Design, the Channel Conflicts tab was not updated.
- In the Sequencer, removing channel level from a pixel-based prop did not cause the playback on the screen to be recalculated.
- In the Sequencer, when selecting props for a new grid view, clicking a check-box did not highlight the prop name; so if you subsequently used the up or down arrow keys to navigate the list, the wrong item was selected.
- In the Sequencer, after stopping playback in an animation sequence, the ribbon's Waveform button would get enabled.
- In the Sequencer's Motion Effect Generator, the drop-down to select an effect would sometimes pause before opening.
- In the Sequencer, when the "RGB Split" Sequencer preference was enabled, pasting into a collapsed group of RGB channels would produce the wrong result.
- In the Sequencer, when the "RGB Split" Sequencer preference was disabled, pasting from a legacy clipboard file (one created with S4 or earlier) into RGB channels would produce the wrong result.

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- When the Sequencer window was minimized and you used Windows File Explorer to open a sequence that was already open, the pop-up message stating that the sequence was already open could get stuck behind another window, requiring that the Sequencer be force-closed.
- In the Sequencer, starting to play a sequence while control lights was enabled could result in a message window being displayed that was larger than the screen (if there were props with motion effects that used LOR networks that were not enhanced).
- The Copy function in Preview Design will no longer create props beyond the limits of the design canvas. Also, you can now Undo the results of a Copy.

What's New in Version 5.3.14

- Sequencer Improvements
- New N4g4MP3 (4 Port, Generation 4 MP3 Director) Firmware, V 6.7
- New CTB32LN (LOR1600g3/LOR1602g3) and CTP16PCg3 Controller Firmware, V1.17/V1.10
- Bug Fixes

Sequencer Improvements

- The status bar now shows the current selection mode: cells, effects, rows, or freeform.

New N4G4MP3 (4 Port, Generation 4 MP3 Director) Firmware V 6.7

- When starting a new show, there can be a slight delay of up to 2 seconds before the first sequence starts to play. During this time, heartbeat messages were not sent to controllers allowing them to possibly loose synchronization. If the controllers lost sync, approximately the first second of the first sequence could be lost while the controller re-synchronized with the MP3 director.

New CTB32LN (LOR1600g3/LOR1602g3) and CTB16PCg3 Controller Firmware, V1.17/V1.10

- When running in Enhanced mode, which does not support LOR Advanced commands like Twinkle and Shimmer, the controller could unexpectedly place channels into Shimmer or Twinkle mode. For LOR160xg3 controllers this is fixed in Firmware 1.17. For CTB16PCg3 controllers this is fixed in firmware V1.10. Only G3 controllers support enhanced mode, so other controllers do not need to be updated.

Bug Fixes

- When creating a Simple PC show in Hub, the time entry form incorrectly allowed for typing in a start or end time. This could lead to incorrect start/end times being displayed and scheduled shows not starting/ending properly.
- When creating an SD card show in Hub for G3 or later MP3 directors that had 2 or more ports with firmware 5.36 or below, the files created did not have the correct extension.
- In the Hardware Utility it was still possible to configure and change both DIO boards and X-10 settings. Support for both was removed for S5. The contents of these tabs has been removed, and the tabs themselves will be removed with a later release.
- On the Sequencer's Prop Definition screen, pasting invalid data into the Unit ID or Circuit fields could result in a weird error message or a crash.

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- In the Sequencer, added a preview check to ensure only groups with arrangement of 'none' can contain members that are groups with an arrangement of 'none'. http://forums.lightorama.com/topic/51061-arithmetic-overflow/
- The Sequence Compressor tool now handles shows that contain S5 sequences (LOREDIT files). You can also select an LOREDIT file when compressing a single sequence. This can be used to prepare an entire show for playback before its scheduled start time.
- In the Sequencer, the program could hang when inserting a SuperStar effect on top of an existing Motion Effect.
- In the Sequencer, inserting SuperStar effects on motion rows that use only some of the pixels of a prop or group (i.e. a subsection) was not working correctly.
- When playing a sequence in a show, performance was improved for channel effects on DMX networks. For sequences with many channel effects on DMX networks, you will want to regenerate the playback files. Use the Sequence Compressor with the "Force Compression" option enabled to do this.

What's New in Version 5.3.12

- Sequencer Improvements
- Bug Fixes

Sequencer Improvements

- In the Motion Effect Generator, there is a new button that allows the user to reset all of an effect's parameters back to their default values.
- Users now get a warning if they are about to overwrite existing SuperStar effects with a new SuperStar effect.
- Users now get a warning if they try to insert a SuperStar effect that is less than 1 second long.

Bug Fixes

- When creating an SD card in Hub, you could not select S5 files for filler or starter sequences. An option on the open dialog has now been added.
- When creating an SD card in Hub, if any time (scheduled start or end) started with '12', the time could be incorrectly set in the SD card configuration file. The show would not then start/stop at the correct time.
- When creating an SD card in Hub, if you were using an S5 Filler, Hub would correctly call the conversion of the file to S4 but then would validate the 'start' sequence file name. If a start file did not exist, Hub could then crash.
- When creating an SD card in Hub, while creating a new show on an new SD card show, if a SHOW01.CFG file existed on the SD card AND that configuration didn't actually contain any sequences, Hub would still attempt to use it even though it was not valid. Later on, Hub would attempt to use the bad configuration and in some instances crash.
- When creating an SD card in Hub, the program was not checking to see if any error was returned from the S5 Sequencer pre-process. If an error was returned, and depending on what the error actually was, subsequent calls to the Sequencer from Hub could be made to functions that were not initialized and hub could crash.
- In the Sequencer, users with a demo license for SuperStar could not save effects to a motion effect row in the Sequencer.
- In the Sequencer's Prop Definition screen, added validation when entering a start circuit/channel to prevent a crash.

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- When running the Sequencer for the first time after a fresh install, the user would get this erroneous message 'The master list of previews, palettes or motion effect favorites has been changed by an external program. Restart to load the updates.'
- In the Sequencer's VU Wizard, moving the threshold slider is now more responsive
- Motion effects that respond to the music (musical note icon next to the slider) worked correctly in the Sequencer, but not in the Show Player or when written to an SD card.
- In SuperStar, the name of images could revert back to "image xx" after doing "manipulate images".
- In SuperStar, a degree symbol in the image name would cause the sequencer to fail to save the file.
- In SuperStar, increased allowed DMX size from 100 to 200.
- In SuperStar, added the ability to add or subtract from color values in an image by pressing the '+' or '-' key while clicking on image pixels
- In SuperStar, when servicing a SuperStar Request, if we fail to load the data file then display a "failed to read file" error.

What's New in Version 5.3.10

- Bug Fixes

Bug Fixes

- On some Windows Systems, usually but not limited to Windows 7, the LOR Show Player would crash upon trying to start a show. When it crashed, the LOR Control Panel would attempt to recover and restart the Show Player. This would cause the Show Player to loop on these machines and not actually play a show.
- In the Sequencer brightness adjustment on the Playback window was disabled when the background image was embedded with the preview.
- In the Sequencer the title bar of the playback window showed "Playback stopped" during playback after a sequence loops and continues to play back.
- In the Sequencer new sequences lose motion effect rows with "custom" subsections that were defined in the preview. Custom subsections appear often on props loaded using the Boscoyo import. http://forums.lightorama.com/topic/49712-motion-effect-rows-disappear-536

What's New in Version 5.3.8

- Sequencer Improvements
- SuperStar Improvements
- Generation 4 MP3 Director Firmware Updates (N1 & N4)
- Bug Fixes

Sequencer Improvements

- In Preview Group Definition, there is a new arrangement setting of "custom". When set, 2 additional columns (TOP and LEFT) will appear in the group definition grid. This allows you to specify where each prop is placed in the effects buffer for the group. This is especially useful for SuperStar users with complex layouts. http://forums.lightorama.com/topic/47742-matrix/
- New Chase option: Same Row Type. If selected, the chase will only occur on rows of the same type as the first row. For example, if the first row is a regular channel, any RGB channels or

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motion effect rows will be skipped. If there is no check mark next to this option, then the chase will proceed through all selected rows, regardless of type. Requested by Drew Hickman.
- Changed the way SuperStar effects are stored in the Sequencer in order to handle larger SuperStar sequences, like those created using Instant Sequencing.

SUPERSTAR EFFECTS STORED USING THIS VERSION OF THE SEQUENCER CANNOT BE LOADED INTO PREVIOUS VERSIONS OF THE SEQUENCER.

SuperStar Improvements

- Added a "Change Orientation" section to the Move or Scale Selected Effects dialog. It changes a sequence from vertical to horizontal or horizontal to vertical.
- Added the "Prorated" button to the "Manipulate Selected Images" dialog box. Rotation Angle, Brightness, Move, and Scale can be applied the same to all images, or can be "prorated" across the selected images.
- Added "Clip Rectangle" as an option in "Move or Scale Selected Effects." Previously if you moved or scaled effects it did not move or scale the clip rectangle. Now, if "Clip Rectangle" is selected "Move", "Scale", and "Change Orientation" change the clip rectangle as well.
- In the "Image Setup" dialog box "Rotation" has been added as an option for an Image Action. Rotation can be 0, 90, 180, or 270.

Generation 4 MP3 Director Firmware Updates (N1 & N4)

- The firmware for the N1uMP3g4 MP3 Director (One Network, Black Plastic Case, Generation **4**) has been updated to resolve an issue which caused the director to sometimes lock up on boot, as well as an update to fix issues with trigger inputs.
- The firmware for the N4MP3g4 MP3 Director (Four Network, Linkable, Metal Case, Generation **4**) has been updated to resolve an issue which caused the director to sometimes lock up on boot.

Bug Fixes

- In the Sequencer, when assigning a different preview to a sequence and there were preview groups that share the same name in the old and new previews, the new groups would not render effects until the sequence was closed and then re-opened. Reported by Drew Hickman.
- In the Sequencer, when changing among the bulb and various line shapes of a prop in the Prop Definition screen, the points that define the shape are now preserved.
- In the Sequencer, when changing the shape of a prop in the Prop Definition screen, parameter values will no longer revert to their default values when the parameter for the prior shape and the new shape have the exact same meaning.
- In the Sequencer, when upgrading a legacy sequence to S5, RGB channels would not import unless the "Split RGB" Sequencer preference was enabled. Now they will import correctly regardless of the preference setting.
- In the Sequencer, if a secondary monitor has been unplugged since the time the Sequencer was last run, any floating windows on the secondary monitor will now be re-positioned onto one of the remaining monitors. Reported by user TitusCarnathan. http://forums.lightorama.com/topic/49700-tc-73-playback-windows-disappears/
- In the Sequencer, when a prop used the Tree 360 Up & Over shape with pixels and a starting location that specified a clock-wise wiring order, the pixels were offset by 180 degrees in the effect buffer. Reported by Drew Hickman.
- In the Sequencer, when adding an LOR device in Preview Design, if you entered a name and then changed the device, the name you entered would get overwritten. Reported by user ndutton. http://forums.lightorama.com/topic/49762-automation-bugs-in-prop-generation/

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- In the Sequencer, sorting the current grid view was including the prefix character. Now the prefix character is ignored so everything sorts in alphabetical order.
- In the Sequencer, trailing spaces in prop names are now ignored when the Sequencer decides whether to archive a prop or not.
- In the Sequencer, when you open a protected LMS file and then save it (not "save as" but "save") the file name shown on the tab goes away. Reported by Drew Hickman.
- In Superstar, fixed a bug where the Clip Rectangle was not being drawn when in Image mode. This bug was introduced in the previous release when drawing in image mode was optimized.
- In Superstar, fixed a bug where a large grid with 100 ribbons or more would not create a scene using ribbon 100
- In Superstar, fixed an issue where creating a 7 tier, 360 degree of traditional lights could cause a crash.
- In LORHub when creating SD cards, an incorrect (old) version of an S5 .LID (enhanced file) could be detected and incorrectly used.
- In LORHub when creating SD cards using some sequences, the MP3 file attached to the sequence was not copied to the SD card
- In LORHub when creating SD cards that used a trigger, the 'Normally Closed' switch option was not working.

What's New in Version 5.3.6

- Sequencer Improvements
- SuperStar Improvements
- Bug Fixes

Sequencer Improvements

- A new Sequencer Preference on the Channel Effects tab controls whether an RGB channel is displayed with its red / green / blue sub-channels or not. Turning this option off can save memory, allowing larger sequences to be loaded. Requested by user dougd. http://forums.lightorama.com/topic/49460-reverted-back-to-524
- You can now specify a "default paste mode" on the Startup Tab of Sequencer Preferences. The Default Paste Mode will be shown whenever a sequence is opened. Requested by user User dgrant. http://forums.lightorama.com/topic/49611-editor-preferences/
- On Preview Design's Channel Conflicts & Bulk Changes tab, you can now use the "Set LOR Network" and "Set DMX Universe" to change props from LOR to DMX or vice versa. Changes were also made to the "Select All" check box on this tab to make it more intuitive.
- On Preview Design's Design tab, you can now choose to save the background image with the preview (see the Background tab). If you export such a preview and send the export file (LORPREV extension) to someone else, the background image will be included. The background image will also be included if you send a sequence to another user and the sequence uses such a preview.

SuperStar Improvements

- Added "rotation angle" to the "Manipulate Selected Images" dialog box.
  - If one image is selected then it sets the rotation angle of that image
  - If more than one image is selected, the angles get applied proportionally to each image. For example, if you selected 4 images and apply 33 degrees, then 0, 11, 22, and 33 degrees get applied to the 4 selected images.

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Bug Fixes

- When nothing was set in Network Preferences, it was possible for the Sequencer to initialize with the Control Lights box checked and no obvious way to turn it off. Going forward, when nothing is set in Network Preferences the Control Lights button will be unchecked, and a message will remind the user "Network Preferences must be set before you can control lights". Reported by Drew Hickman.
- In the Sequencer, when you created a prop with the custom shape using version 5.3.4 and earlier, the autonumber function had a maximum value of 16,000 and would crash when it tried to insert 16,001 in the custom grid. Going forward, the maximum value has been increased to 999,999 and the program will not crash if you exceed that number. Reported by Jeff Banbor via the help desk.
- The Sequencer could crash when clicking on a motion effect in the grid or when opening the Motion Effect Generator. Reported by Jeff Banbor and others.
- In the Sequencer, in certain situations, clicking any of the play buttons on the Playback Window would result in a message of "Unable to Start Playback", whereas the play buttons above the sequence grid would recalculate data and then start playing the sequence. Reported by user stevehoyt. http://forums.lightorama.com/topic/49605-unable-to-start-playback/
- In LOR Hub, when editing or creating a computer based simple show, the 'remove' button would not remove a selected sequence properly.
- In LOR Show Editor, only legacy (.LAS, or .LMS) sequences could be selected for interactive shows and cleanup sequences. This has been fixed to include S5 Sequencer (.loredit and .lorprot) files.
- In Superstar, if you switched to large grid and then did Instant Sequence the program would crash.
- In Superstar, the progress dialog box was not updating.
- In Superstar, enhanced the "Set group time range" button on the toolbar so that it proportionally sets the start and end time of all selected effects. This is particularly useful if you have a bunch of adjacent image actions and want to change the time range of the entire group.

What's New in Version 5.3.4

- Sequencer Enhancements
- Bug Fixes

Sequencer Enhancements

- Added a text filter to the Online Prop Import dialog, so you can filter the listed props by their description. Requested by Light-O-Rama.
- The timeline now uses a little less vertical space, and is displayed with a better font. Requested by Light-O-Rama.
- Converted the "Timing" select action to a lock icon on the timing grid toolbar. This allows a user to create effects and adjust timing marks without having to go back and click on the toolbar. Requested by Drew Hickman.
- Added a new playback marker style: show moving marker and highlight timing marks. Selectable in the Playback tab of Sequencer Preferences. Requested by users at Christmas Expo 2019.
- The portion of the toolbar related to the timing grid can now be positioned on the left or right side by right-clicking anywhere on the top toolbar and picking an option from the pop-up menu. Requested by users at Christmas Expo 2019.
- Clicking an effect "Type" button on the toolbar will automatically change the select action to "Create". Requested by users at Christmas Expo 2019.

Bug Fixes

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- In the Sequencer, resizing the Effect Samples window when color favorites are displayed can cause the color samples to be redrawn incorrectly (stutter pattern). Reported by Light-O-Rama.
- In the Sequencer, with license levels of Advanced or below, the Color Favorites buttons at the top of the Effect Samples window do not wrap around if the window is too narrow to display them all. Reported by Light-O-Rama.
- In the Sequencer, disable the background brightness slider on the playback window when a motion effect is playing, or if the sequence's preview doesn't have a background image. Reported by Light-O-Rama.
- In the Sequencer, tick marks on the timeline and timing marks on the sequence grid were misaligned by 1 pixel in many cases. Reported by Light-O-Rama.
- In the Sequencer, subsequence names were not being displayed on the grid. Reported by users at Christmas Expo 2019.
- In the Sequencer, when creating color fade effects, the Slope setting is now taken into account. The "O" shortcut key simply selects the Color Fade effect type on the toolbar, it doesn't actually create an effect. To create color fade effects with shortcut keys, use "A", "I", "D", and "U". Reported by users at Christmas Expo 2019.
- When playing a show or creating an SD card, fixed issue with playback file creation checking the preview revision. As a fix, the preview revision number is now part of the playback file name. Reported by user default. http://forums.lightorama.com/topic/49511-bug-report-pm02-show-player-processes-all-files-and-updates-playback-files-every-time-it-restarts-even-if-the-base-files-have-not-changed/
- On a very limited number of computers, LOR Hub could refuse to open and/or crash with a runtime error 50003. This error was related to certain graphics used in the application, and those graphics have been replaced. Many thanks to Monty C. for helping us track down this issue.
- When creating SD cards with LOR Hub using Sequencer '.loredit' files, Hub would refuse to create the card with a generic 'There was a problem creating your SD Card' error. Hub was improved to display a more descriptive error, and the bug preventing the creation of the SD cards was fixed.
- When creating SD cards that use triggers and the 'Round Robin' style of play, an incorrect configuration was created on the SD card.
- In LOR Hub, when creating a simple PC show, S5 sequences were not sorted properly.
- In Superstar, if you have two screens with the main screen in one monitor and the sequencing grid in another monitor and the main screen is shorter in height than the grid screen, then the click and drag drawing in image mode on the grid screen stops working when you go beyond the height of the main screen.
- In Superstar, scene elements with a Y coordinate beyond 128 were not working.
- In Superstar, when adding images from a gif, it was not remembering the rotation angle.
- In Superstar, "image" now works in group modify.
- In Superstar, fixed it so you can use "large grid" in the "image setup" dialog box when superstar is launched from the S5 Sequencer. Also allow setting the size of the "large grid".
- In Superstar, optimized the "click and drag" drawing speed on the green sequencing grid so you can more easily draw images on pixel grids with large numbers of pixels.
- In Superstar, improved layout of green pixel grid so it fits onto the screen for large numbers of pixels.
- In Superstar, changed the terminology for the license level from things like "2_CCR" to "100_pixels".

What's New in Version 5.3.2

- Bug Fixes

Bug Fixes

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- In LOR Hub, certain store web pages would generate Javascript errors. Instead of opening these pages in Hub itself, now an external web browser is opened.
- In the Sequencer, the user now has a choice of displaying the tool buttons along the right side of the grid, or immediately above it. User can right-click in the tool button area to access available display options. Reported by user PhilMassey and others.
- In the Sequencer, a new select action of "Timing" has been added. It replaces the "Lock Timings" option that was present in a couple of menus in prior versions. The new Timing button is only enabled when a Freeform Timing Grid is selected. If the new Timing button is selected, then timing marks are unlocked and right-clicking on the grid opens directly to the Timing Mark menu. For any other Select Action, timing marks are locked, and right-clicking on the grid opens the context menu present in previous versions (Timing Mark is a sub-menu). Reported by user PhilMassey. http://forums.lightorama.com/topic/49037-thoughts-on-s5/
- Sequencer bug fix: when chasing an RGB color, for example green, the chase becomes white when the chase crosses from one grid view group to the next. Reported by user PhilMassey.
- In the Sequencer, you can now right-click on the toolbar that includes the playback buttons to set the maximum size of the buttons. Choices are: large, medium, and compact. Reported by Drew Hickman.
- When dragging effect edges in the Sequencer, if you drag the beginning of an effect to the right past the effect's end, the effect will now be deleted. Similarly, if you drag the end of an effect to the left past the effect's beginning, the effect will be deleted. Reported by Drew Hickman.
- In the Sequencer, when the motion effect source is set to "Samples", the Effect Samples window will be made visible if it is hidden. Reported by Light-O-Rama.
- Sequencer bug fix: after modifying a preview, you might get the following error while opening a sequence: "An entry with the same key already exists". Reported by NJ Malenke via the help desk.

What's New in Version 5.3.0

- Creating Shows/SD Cards/Controller Stand-Alone sequences with Native LOR Sequences
- Support for N4G4 Linked Directors
- New Firmware for N4G4 Directors
- Upcoming changes to LOR Hardware Utility
- Auto Sequencing of Singing Faces in Superstar
- Sequencer Motion Effect Changes and Additions
- Sequencer Improvements
- Bug Fixes

Creating Shows/SD Cards/Controller Stand-Alone sequences with Native LOR Sequences

In previous versions of the software, you could not directly schedule, load to a controller (stand-alone mode), or create SD cards with native (IE .loredit) files. Instead, you first needed to create legacy files (IE .LMS or .LAS - sometimes referred to as 'playback files'), and then use those. The suite can now instead take native .loredit files for all of these functions without the need for manually creating 'Playback' files, and use them directly.

LOR Hub, LOR Show Editor, and LOR Hardware (stand-alone loading only) can now accept native S5 files.

Support for G4 Linked Directors

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With the newest generation of LOR MP3 directors (Generation 4), some directors have the ability to be 'linked' together - allowing for a show with an almost unlimited number of networks or DMX universes to be run from these directors.

LOR Hub is required to create the SD card sets for linked directors, and you must use the Advanced SD Card Wizard to create them. N4G4 Directors require at least firmware version 6.2 to use director link.

New Firmware for N4G4 directors

New firmware for N4G4 directors has been released to support Director Link mode.

Upcoming changes to LOR Hardware Utility

LOR Hub has now taken over all SD card creation tasks for MP3 directors. In the future, the SD card creation process that is available in the LOR Hardware Utility will be removed. You should be using LORHub for ALL SD card creation tasks.

Auto Sequencing of Singing Faces in SuperStar

A new feature has been added to auto-sequence singing faces in SuperStar..

Sequencer Motion Effects Changes and Additions

Added new parameter to the Meteor motion effect called "Speed Mode". Speed mode has 2 values: "pixel rate" uses the existing fall rate calculation; "scaled rate" will cause meteors to fall at a rate that scales with the size of the prop. Requested by Light-O-Rama.

Added a new parameter to the Meteor motion effect called "Drop Mode", which adds new patterns to meteor drops (in addition to the existing random pattern). Requested by Light-O-Rama.

Added new option to fill corners on the Marquee motion effect. Requested by Steve Warner.

Added additional options to pre-scale an image in the picture effect: fit-to-width and fit-to-height -- which maintain the image's aspect ratio. Also increased maximum horizontal and vertical scale values from 100% to 400% so images can be stretched if needed. Requested by Steve Warner.

Added movement options to the Picture and Text effects that are essentially the second half of the Peek-a-boo movement. The options are: reverse, exit_left, exit_right, exit_top, and exit_bottom. Reverse is the default and replicates the functionality of prior versions. Requested by Drew Hickman and user Little_b.

Added ability to adjust red level, green level, and blue level independently in the picture Picture effect. Also added the ability to adjust transparency of the picture. Requested by Light-O-Rama.

Made picture and movie effect references stored in a sequence file relative to the sequence directory. This makes it easier to move the sequence to another computer, as long as the picture and movie files are stored in the sequence folder or in a sub-folder below it. Implemented in response to a help desk ticket.

Sequencer Improvements

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You can now select S5 sequences (LOREDIT extension) when creating a show. They can also be selected when creating an SD card in LOR Hub. Playback files are now created and updated automatically behind the scenes. "Create Playback Files" has been removed from the Sequencer File menu, as it is no longer needed. Requested by Light-O-Rama.

The motion effect toolbar button has been combined with the motion effect selection window. Now, when the motion effect toolbar button is selected, the motion effect tool window will open; and when another toolbar button is selected, the window will close. This works in a similar manner to the Color Fade tool. Requested by Light-O-Rama.

Added the ability to drag the ends of channel and motion effects to adjust timing or create a fade. This feature is enabled or disabled by clicking on a new toolbar button next to the "nudge" tools. Requested by Light-O-Rama.

On the toolbar, the channel effect selection has been changed from a drop-down, to a series of buttons. A new "foreground" button allows you to change the intensity of existing effects. Requested by Drew Hickman.

Changed the preview name on the toolbar from a drop-down menu, to a button. Now clicking on the preview name takes you directly into Preview Design. Requested by Light-O-Rama.

The preview name is now displayed on the toolbar in a fixed width box, so that toolbar button location won't vary based on the length of the preview name. If the preview name is longer than the box, you can hover your cursor over it and a tootip will the full name of the preview will be displayed. Requested by Drew Hickman.

Moved audio wizard items on the main menu from the Sequence menu to the Tools menu (to be more consistent with the S4 Sequence Editor). Menu items have also moved one level up, so they take one less click to access. The audio wizards can also be accessed from various context (right-click) menus -- and those remain unchanged. Requested by Drew Hickman.

Converted the right-click menu of the playback window (play, stop, and background image brightness) to a toolbar, to make it more user-friendly. Requested by Light-O-Rama.

Increased the number of tiers on a "Tree 360 Panels" shape from 12 to 25, and added a pixel offset parameter for each tier. Panels with traditional lights are now supported. Requested by Drew Hickman.

"Tree 360 Wedges" using traditional strings (megatrees) will now display their channels in the correct order when a sequence is first created. Requested by Drew Hickman.

Megatrees and segmented arches with traditional strings will now avoid the r/c nomenclature in their names and instead use "string" or "bundle". Requested by Light-O-Rama.

In File References, allow the user to change a file name, not just a directory. Requested by Light-O-Rama.

In prior versions, space-bar playback moved the selection when stopping, but clicking the stop button on the toolbar did not. Now, clicking the stop button during playback will also move the selection (like the S4 Sequence Editor). You can prevent the selection from moving by shift-clicking on the stop button. Requested by Drew Hickman.

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Changed "Unit #" to "Unit ID" in Prop Definition dialog to be consistent with controller documentation. Requested by Light-O-Rama.

On the "Channel Conflicts & Bulk Changes" tab in Preview Design, renamed the "Renumber Strings" menu item to "Reorder Circuit/Channel Numbers". The new name better reflects the function. Requested by Light-O-Rama.

On the "Channel Conflicts & Bulk Changes" tab in Preview Design, added the "Add Leading Zeros To Numbered Prop Names" menu item. Any selected props that have a number in their name will have leading zeros added to the number. This can aid in sorting the props in the desired order on the sequence grid. Requested by Light-O-Rama.

On the "Channel Conflicts & Bulk Changes" tab in Preview Design, added the "Replace Text In Prop Names" menu item. This function gives you the ability to search for and replace text in prop names, just like you would in a word processor. Requested by Light-O-Rama.

Added ability to sort the current grid view. Sort option is on the grid view menu. Requested by Drew Hickman.

Added ability to sort channels by physical channel settings. Requested by Drew Hickman.

When opening the motion effect generator with more than one motion effect row selected, you will now get an error message. Also, when editing a motion effect in a sequence, you can no longer change the prop/group drop-down. Requested by Drew Hickman.

When the toolbar tool is set to Motion Effect or SuperStar, the cursor is now sensitive to the type of row it is over and will only display the pencil cursor when over a motion effect row. Requested by Drew Hickman.

Improved the display of Motion Effect thumbnails for the built-in effects. Requested by Light-O-Rama.

The SuperStar toolbar button now has an option to always apply the effect to the entire row. Requested by Light-O-Rama.

The "Add/Modify Motion Effect Rows" dialog is now resizable, along with other tweaks. Requested by Light-O-Rama.

Importing Boscoyo props will now create Motion Row Defaults where they exist in the Boscoyo data (e.g. Chroma Bulbs). Requested by Light-O-Rama.

Added ability to create and edit custom motion effect subsections (subsections no longer have to be rectangular). Requested by Light-O-Rama.

Made it easier to start dragging timing marks on the grid -- the mouse pointer no longer needs to be directly over the timing mark, it can now be within a few pixels of it. Requested by Light-O-Rama.

The motion effect and SuperStar buttons on the toolbar are now disabled when the current grid view does not contain any motion rows. Requested by Drew Hickman.

If have a Pro license: after changing the preview assigned to a sequence, if there are pixel-based props without a motion effect row, you will be asked whether you want to add a motion effect row to each of those props. Requested by Light-O-Rama.

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The sequence file name on the tab header had an asterisk suffix when there were unsaved changes in the sequence. However, being at the end, the asterisk wasn't always visible. So the asterisk indicating unsaved changes has been moved to the front of the file name. Requested by Light-O-Rama.

When selecting a region of the grid using the mouse and you reach the grid's edge, the screen will start automatically scrolling. Now the scroll speed will increase the further outside the grid boundary you get (like SE). Requested by user dgrant.
http://forums.lightorama.com/topic/49296-s5-suggestions/

Bug Fixes

For LOR Sequencer:
The pencil cursor now scales with Windows scaling. Reported at Expo 2018.

After selecting "Add/Modify Motion Effect Rows" and then changing the size of a row's subsection, then clicking OK to close the dialog, the preview did not recalculate and display effects using the new subsection size. Reported by Light-O-Rama.

"Add/Modify Motion Effect Rows" and "Delete Motion Effect Row" (and a few other entries on the Item List's right click menu) are now disabled while calculations are running, as this could cause data corruption. Reported by Light-O-Rama.

Animated GIF images used in a Picture motion effect may flicker. Reported by user default.
http://forums.lightorama.com/topic/49129-ver-524-problem-with-picture-motion-effect-animated-gifs/

Text in the title of the Playback window was changing appropriately when the window was docked to the main form, but not when it was undocked/floating. Reported by Light-O-Rama.

When the Playback window was undocked/floating and had focus, the space bar would not start sequence playback. Reported by Drew Hickman.

When double-clicking on a cell in a motion effect row, then cancelling out of the Motion Effect Generator, the playback window no longer displays a motion effect. Reported by Light-O-Rama.

When upgrading a sequence and using the Sequence Editor animation for the preview, for any RGB channels in the sequence that were not in the animation, S5 created an RGB channel prop as well as props for each of its red, green, and blue components. Now it correctly creates a single prop in this situation. Reported by Light-O-Rama.

When creating a new preview group, sub-props (props where the "Uses the same channels as" field is set) were allowed to be members of the group. Reported by Drew Hickman.

If a sequence had beat channels or loop rows, it was possible for the yellow box indicating the selected area to be incorrectly drawn and overlap between fixed rows at the top and the main part of the grid. Reported by Light-O-Rama.

In the Motion Effect Generator, you can now mute and un-mute during the middle of effect playback.

Clipboard files (.LCB file extension) created in S4 (or earlier versions) that contain RGB channel data now paste correctly into S5 RGB channels. Reported by Stephen Chapman via the help desk.

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What's New in Version 5.2.4

- LOR Hub now supports all SD card options
- LOR Hub can now turn off SD card schedule days if desired
- Improvements in LOR Hub for creating SD cards with PC configuration
- Simple Show Builder is being removed with the next release
- Superstar Improvements
- Sequencer Improvements
- Sequencer Bug Fixes
- Bug Fixes

LOR Hub now supports all SD card options

The LOR Hub program can now create SD cards with a full range of options, including triggers, filler sequences, starter sequences, etc. In a future release, SD card building will be removed from the Hardware Utility and the Simple Show Builder will be removed from the suite.

LOR Hub can now turn off SD card schedule days if desired

Previously there was no way to stop an SD card show from running on a particular day, except by using a workaround of setting the start and end times for a particular day the same. LOR Hub can now properly turn OFF a schedule for a particular day.

Improvements in LOR Hub for creating SD cards with PC configuration

When creating an SD card in Advanced mode in Hub, a new option has been added to configure the MP3 Director's ports the same way as those ports are defined on the computer. This can help with ease of setup of MP3 directors.

Simple Show Builder is being removed with the next release

LOR Hub has taken over all functions of the old Simple Show Builder program. In the next release this program will be removed from the suite. Instead, use LOR Hub to create your shows.

Superstar Improvements

- Added support for group modify of "average time length of effects" and "skip inactive grid squares"
- Added the "Do Scene Thinning" option in the "Move or Scale Selected Effects" dialog box
- Added "Orientation" setting in the Preferences dialog box
- Added support to convert 6 channel star effects to white effects on RGB stars from other vendors (previously it only worked for the standard 200 pixel RGB star)

Sequencer Improvements

All 3 windows on the Motion Effect Generator now update simultaneously, which is also a performance improvement. Previously they could update slightly out of sync for very large props. Requested by Light-O-Rama.

If the user selects Create Playback Files from the menu and the sequence hasn't been saved, the user is now offered a chance to save it (without having to cancel, save the sequence, then try and create playback files again). Requested by user ndutton.
http://forums.lightorama.com/topic/48065-reduce-the-clicks/

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Enhancement: when opening a sequence, archived props will automatically be un-archived if a prop with the same name has been added back to the sequence's preview since the sequence was last opened. Same logic will also apply when you change the preview assigned to a sequence. Requested by Light-O-Rama.

Enhancement: more accurate conversion when assigning a different preview to an existing sequence. Requested by Light-O-Rama.

Performance improvements to the Picture motion effect. Requested by user jamills706.
http://forums.lightorama.com/topic/48263-spinning-orange-circle-forever/

In the New Animation Sequence dialog, show the sequence length as words, and give a warning when OK is clicked and the length is more than an hour. Requested by user Rabeiler.
http://forums.lightorama.com/topic/48288-animation-sequence-will-not-preview/

In the sequence grid, the drop-down list of grid views would previously display views in the order they were created. Now, the system grid view (Show All Items) is listed first, and then user-created grid views are listed in alphabetical order. Requested by user Jade Rymkos.
http://forums.lightorama.com/topic/48687-is-there-a-way-to-reorder-grid-views/

Increased the maximum number of bulbs in a bulb shape to 999. Requested by users dibblejr and gsmith37064.
http://forums.lightorama.com/topic/48682-moving-s4-to-s5/

In the Paste Special dialog, you can now specify the spacing between horizontal copies. A negative value yields an overlap, a positive value leaves a blank space between each copy. 0 is always the default value (it is not remembered between uses). Requested by user spascall.

Added new "hold" effect, which freezes the state of the prior effect. For example, you can freeze and unfreeze a spiral effect to the beat of the music by alternating spiral and hold effects on the same motion effect row. The hold effect must be touching the prior effect to work. Requested by Light-O-Rama.

In Prop Definition, added "Arm Thickness" parameter to the Star shape. A value of 1.0 is the normal thickness. Smaller values make the arms thinner. Requested by Light-O-Rama.

New tab on Sequencer Preferences that allows the user to choose among 3 edit cursors. Previously, only the yellow pencil was available. Requested by user bdwillie.
http://forums.lightorama.com/topic/48787-sequencer-pencil-pointer/

"Custom Chase" options are now available on the toolbar via a new drop-down arrow next to the chase button. The chase options will also get saved with the sequence, and recalled the next time the sequence is opened. Requested by Jack Richter via help desk.

Add the "+" shortcut key for the Repeat function (to match SE). Requested by Light-O-Rama.

Added the Enter shortcut key to place an effect in the grid (to match SE). Requested by Light-O-Rama.

Added option in preferences (Channel Effects tab) to view fades as ramps. Requested by multiple users.

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Added option in preferences (Channel Effects tab) to adjust background color of channel rows in the grid. Requested at Christmas Expo.

In Prop Defintion's layout tool for custom and advanced shapes, there is a new "Crop" function that removes extra rows and columns. Requested by Light-O-Rama.

Added Help buttons ("?" icon) to Preview Design, Prop Definition, Group Definition, and Custom Grid screens. Requested by Light-O-Rama.

Increased the max width and height on the SimpleShape effect to 1000% in order to allow shapes to expand beyond the prop boundaries. Requested by user Mike Baldwin.

Sequencer Bug Fixes

Bug fix: in the sequence grid, right-clicking on a "member props" or "member groups" node and selecting "Hide Group Members" from the pop-up menu disabled further highlighting of prop names as the mouse pointer was moved. Reported by John Johnson Jr via help desk.

Bug fix: in rare cases the Sequencer could crash if 1) the LOR Control Panel was running when the Sequencer started, and 2) a Schedule was enabled or Show on Demand was running, and 3) the option to Control Lights when the Sequencer started was enabled. Reported by Jim Wright via help desk.

Bug fix: S5 Verifier checked for application files that don't exist in S5, which resulted in "Message Number 7" errors that were not really errors. Reported by stevehoyt, TitusCarnathan, richmuller and others.
http://forums.lightorama.com/topic/47959-tc-72-verifier-losing-its-mind/
http://forums.lightorama.com/topic/47777-52-verifier-errors/

Bug fix: when using music to control a slider in the Motion Effect Generator, the audio data was being pulled from the wrong part of the sequence. The effect used the correct audio data when placed in the sequence grid -- the error was only when the effect was displayed in the Motion Effect Generator. Reported by Light-O-Rama.

Bug fix: when you imported an S5 prop file in Preview Design, clicked the "Set Channels" button, then changed the name of the prop while setting channels, the resulting list of props and groups to lthe left of the design canvas would no longer be in alphabetical order. Reported by user ndutton.
http://forums.lightorama.com/topic/48041-preview-design-bugs-and-suggestions/

Bug fix: if a sequence gets moved to another folder or to another computer and the media file is in the same folder as the sequence, then playback files created from the new location could point to the wrong folder for the media file. Reported by user ndutton.
http://forums.lightorama.com/topic/48059-missing-files-bugs-and-suggestions/

Bug fix: when the sequence length was changed, the sequence was not marked as containing unsaved changes. Reported by Light-O-Rama.

Bug fix: in rare cases, effects could exist in sequences past the end of the sequence. When using playback files for such sequences, the Show Player would refuse to play the song with the message "ERROR STARTING SEQUENCE (Invalid end centisecond for last replacement event: 78195; channel is 55210 centiseconds)". Reported by NJ Malenke and stevehoyt.

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Bug fix: if Holiday Lights Designer was enabled in S4 and then the user upgraded to S5, the Show Player would display errors in the log like "ERROR PLAYING SEQUENCE (Address in use Trace: UDP SetIntensity Trace: HandleIO)". Reported by Derek Flint via help desk.

Bug fix: certain combinations of removing and renaming props in a preview could leave a sequence unable to be opened (error message "An entry with the same key already exists"). Reported by Michelle Lovering via help desk.

Fix crash when Windows policy "System cryptography: Use FIPS compliant algorithms for encryption, hashing, and signing" is enabled. Reported by Dave Webb via help desk https://support.microsoft.com/en-us/help/811833/system-cryptography-use-fips-compliant-algorithms-for-encryption-hashi

The LOR SC485 serial port adapter (not USB) now works with the S5 Sequencer. Reported by several users via the help desk.

Fixed the online import of "Boscoyo ChromaStar 36 3 ring". Reported by Mike Baldwin via help desk.

Bug fix: in the Motion Effect Generator, double-clicking on a slider did not fully unlock it. Reported by Light-O-Rama.

Bug fix: in the Motion Effect Generator, effects with alpha transparency were not displayed correctly in the left and right windows. The combined window was correct. Reported by Light-O-Rama.

Bug fix: if the user right-clicked on a cell in the sequence grid, and then right-clicked on another cell in a different row, several cells in the clicked column would be selected. Reported by Light-O-Rama.

Bug fix: when doing Repeat, then Undo, then Redo, the Redo was done in the wrong place. Reported by Light-O-Rama.

Fixed a bug with clipboard files, where files created as part of the "Papagayo to LOR" process could not be pasted. Reported by Dennis Holliday via the help desk.

Bug fix: in the Control Lights window, unchecking a box for an enhanced LOR network or for DMX, did not actually stop output from going to those networks. Reported by Light-O-Rama.

Other Bug Fixes

- In LOR Hub and Hardware Utility, sequences with DMX Fades when written to the SD card could cause the MP3 director to go out of sync.
- LOR Hub was not able to properly create an SD Card schedule. The schedule would always revert back to the defaults instead of what the user specified.
- LOR Hub would crash if the user attempted to create an SD card show with no sequences in the create list.
- During installation, the Post Install process was not creating 3 new superstar visualization samples.
- In Superstar, text masks were not working in visualizations where some of the mask is outside of the matrix.
- In Superstar, fixed a bug where the white color control was not appearing if the only white that existed was in images.
- In Superstar, changed it so you can do "merge intensity data files" even in the demo version

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- In Superstar, fixed a bug where scene pixels were getting clipped out if the clip region was on the right half of the wrap around screen

What's New in Version 5.2.2

- Updates to the Sequencer
- Superstar 'Add +' button
- Bug Fixes

Updates to the Sequencer

A "Where Used" function has been added to the File References dialog, so you can find the effect that uses a missing reference. Requested by Michael Lenbom via help desk.

In the Prop Definition screen, when defining a "Tree 360 Up & Over" shape using pixels, the shape diagram will now indicate the location of the first pixel on each string. Requested by Light-O-Rama.

The user now has control over how "smooth to fades" is applied with a new sub-menu: Sequence > Smooth To Fade Level. This setting controls whether adjacent effects are merged together or not. Previously, the level was fixed at the "mild" setting; however, with the mild setting it is impossible to create DMX intensities that are 2 steps apart (for example: 65, 63, 61). Requested by Drew Hickman.

Updated the pencil icon to be more visible, and moved the tip to the upper left. Requested by Ernie McAnally via help desk.

If the user had a Pro license, when they created Playback Files an intensity data file (.LID extension) was always created. Now an intensity data file is only created if the sequence has props that use DMX or Enhanced LOR networks. Requested by Light-O-Rama.

Added a "How Do I Get Started?" link at the top of the "Start Page". Requested by Light-O-Rama.

Superstar 'Add +' button

In the "Image Setup" dialog box, a new button was added called "Add +". The "Add+" button adds the current image to the image action, selects the next image, and bumps the time ruler selection forward. This makes it easy to add a series of images for an animation.

Bug Fixes

- In certain circumstances, LOR Hub could create a computer show with incorrect sequence entries. When enabling the show, LOR Show Player would not be able to find the correct sequence.
- In certain circumstances, LOR Hub could create an SD card with sequences that in the future could not be edited. The SD card would however work.
- If a MotionPak in LOR Hub did not have the same upper/lowercase as the base sequence, LOR Hub would not be able to find it.

What's New in Version 5.2.0

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- New Program: LOR Hub
- Updates to the Sequencer
- Bug Fixes

New Program LOR Hub

A new program for the Showtime Suite has been added called 'Hub'. Hub currently has 2 main functions.

1. It enables our new MotionPak technology which allows you to modify LOR Sequence Store sequences for use with props the LOR Hardware Store will sell. The first props will be 'Singing Faces'
2. It is the replacement for Simple Show Builder. Simple Show Builder is still available in this release, however it will be removed in a future release. If you previously used Simple Show Builder you should move to Hub.
   Hub can create both simple computer shows, as well as SD card shows for MP3 directors.

In future releases, Hub will continue to grow and will be taking over all 'show' type functionality including things like the Show Editor, Show Scheduler, and Building advanced SD cards for MP3 Directors from the Hardware Utility.

Updates to the Sequencer

If the content of the Start Page extends beyond the bottom of the window, the vertical scrollbar that is displayed now spans the entire right edge of the window - making it easier to scroll. Reported by Light-O-Rama.

Bug fix: if the user made the Start Page a floating window, then selecting Window > Reset Window Layout would close the Start Page. Reported by Light-O-Rama.

The first 4 items on the Windows menu have been renamed: "View Playback Window", "Viiew Motion Effects Window", "View Previews Window", and "View Control Lights Window". Also these items will only be shown if the respective window is currently hidden ("X" in the upper right corner of the window has been clicked). This should make it clearer what these menu items do, particularly the Control Lights item. Reported by Light-O-Rama.

If the content of the Control Lights window extends beyond the bottom of the window, a vertical scrollbar is now displayed. Reported by Light-O-Rama.

The Start Page can now be hidden, unhidden, and floated just like the Previews and Control Lights windows. Reported by Light-O-Rama.

Bug fix: the TextPE effect did not display the text specified by the user. Reported by user Dave Trollope via help desk.

Bug fix: if a sequence used video media and Loop At End was enabled for playback and video playback was set for full screen, the video window would often get resized instead of remaining full screen. Reported by user Bry.
http://forums.lightorama.com/topic/47295-video-playback-issue-in-shows/

When you right click on the sequence grid, there is a new sub-menu under Timing Marks > Insert Timing at Selection, with options for Left, Right, and Both. This will insert timing marks at the left and/or right edge of the grid selection. Reported by user Luke Kamp via help desk.

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Bug fix: on Preview Design's Channel Conflict tab, clicking a column heading in the conflict list would crash the program. Now clicking a column heading sorts the table according to the values in that column. Reported by Light-O-Rama.

On Preview Design's Channel Conflict tab, there are now fields for the user to enter text to filter the list by name or by channel. A "Select All" checkbox was also added. Reported by Light-O-Rama.

When dragging a favorite or subfolder in the Motion Effect Generator, the favorites tree will now auto-scroll when the cursor nears the top or bottom edge. Reported by user NJ Malenke via help desk.

Bug fix: when moving a timing mark with "Drag events with timings" enabled, the Sequencer could crash in some cases. Reported by user Peter Dusaitis via help desk.

Bug fix: the "Create an empty freeform timing grid" check box on the New Animation Sequence dialog did not actually create a freeform timing grid. Reported by Light-O-Rama.

You can now right-click on the Playback Window and change the brightness of the background image (if there is one). Reported by Light-O-Rama.

RGB aggregates with one or more sub-channels (red, green, or blue) left undefined, could cause the Sequencer to crash when modifying effects. Reported by user Keith Henrickson via help desk.

Added new dimming curves to the Prop Definition screen: Linear_30pct, Linear_40pct, PixelCurve_30pct, PixelCurve_40pct. Reported by user jamills706.
http://forums.lightorama.com/topic/47355-dimming-curves-question/

Windows Shell Commands get shared between sequences if you use File > Save As to create a new sequence. Specifying a new command from the revised screen will only affect the sequence that is open. Reported by user k6ccc.
http://forums.lightorama.com/topic/47372-windows-command-changes-affects-multiple-sequences/

In rare cases where 2 props in a preview have the same name, the entire preview file would not load at startup. Now the preview is loaded and a warning about duplicate names is shown on the "Other Warnings" tab of Preview Design. Reported by Light-O-Rama.

Fixed playback issues when sequences are arranged side-by-side. Reported by user NJ Malenke via help desk.

A "Copy to Clipboard" function has been added to the File References dialog. For sequences with many motion effect file references, this can allow you to paste the list of files into a spreadsheet or word processor for further analysis. Reported by user Stephen Chapman via help desk.

Bug fix: title bar of Playback Window was not showing the name of the current motion effect when one was clicked on in the sequence grid. Reported by Light-O-Rama.

During sequence playback, the Color Fade tool is now grayed out like the rest of the toolbar. Reported by Light-O-Rama.

If a comm port is unable to be opened, added a tip to the error message: "Make sure shows are disabled and the Hardware Utility is closed". Reported by user stevehoyt.
http://forums.lightorama.com/topic/47470-problem-enabling-comm-port/

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Added new menu items when right-clicking on the Preview Design canvas: Add, Modify, Copy, and Delete. Reported by Light-O-Rama.

Improvements when upgrading Pixel Editor previews and sequences to S5 for non-US customers -- problem occurred on PC's configured to use a comma as the decimal separator in numbers. Reported by user Niklas Adolfsson via help desk.

Bug fix: When using the space bar in the Tapper Wizard -- if you go one tap past when the music ends, the space bar defaults to the “exit” button and closes the wizard (thus erasing all of your “beats”). Reported by user Steve Warner.

Bug fix: the Sequencer could crash when the toolbar channel effect was set to DMX Intensity and you tried to add a motion effect. Reported by user Steve Warner.

Bug fix: clicking the Refresh button on the online prop import screen did not display the updated data correctly. Reported by Light-O-Rama.

In Archived Prop Management, added button to select all props with no effects. Reported by Light-O-Rama.

Bug Fixes

- The Post Install process failed to copy 3 new examples for Superstar.
- The configuration for PixCon16 MKII devices was incorrectly showing 32 ports.
- In Superstar, if the preview uses horizontal orientation and you go into "floating windows" mode, the program could crash.
- In Superstar, the first time beat marks are created they are created without issue. Creating beat marks a second time incorrectly deleted them.
- In Superstar, if you changed timings the program may not prompt you to save your work.
- In Superstar, when using Text Masks along with scenes or morphs, it was possible that the mask was not applied.
- In Superstar, when using a Text Mask or an Image Mask, if Layer Priority was disabled, foreground effects would be incorrect and background effects would not be rendered.
- In Superstar, if the program was launched from S5 changes would not be saved if "Save" or "Save As" was used to save the sequence as a .sup file.
- In Superstar, when using Autosequence effects, the displayed timings may be incorrectly changed to the most recently used Autosequence settings.
- In Superstar, when using Autosequence if "average the time length of effects" was selected then the last few seconds of an autosequence effect may not generate triggers.
- In Superstar, when using Autosequence if "Burst and Return" was used, there could be a compile issue. This happens most frequently with low sensitivity settings such as 1 or 2.
- In Superstar, when using Autosequence morphs with transparency set to transparent were not being saved properly.
- In Superstar, when shrinking using the pixel extender and smooth effects, the shrink did not occur properly.
- In Superstar, the "Center X,Y" control in the Smooth Effects dialog box the buttons were not oriented properly when creating a horizontal sequencing grid.
- In Superstar, if the pixel extender is enabled and a visualization with a sequencing grid was imported with a "max length" , a crash could occur.
- In Superstar, if the pixel extender is enabled and a sequence was being shunk, only half of the effects would get applied.

What's New in Version 5.1.4

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- Registry Wipe can now clean Program Files folder
- Updates to the Sequencer
- Updates to SuperStar

Registry Wipe can now clean Program Files folder

Some versions of the LOR S4/S5 uninstaller can leave behind unwanted programs in the user's Program Files(x86)\Light-O-Rama folder. This can lead to installation problems the next time the user tries to install the software. Registry Wipe can now clean those entries up.

Updates to the Sequencer

Performance improvements:

1. The Sequencer starts about 20% faster. Reported by Light-O-Rama.
2. Improved the calculation time of Text and Picture effects. Reported by Light-O-Rama.

Countdown effect changes:

1. Added a "MM:SS" display option and allow a max of at least 1 hour. Reported by Light-O-Rama.
2. Text can now be positioned in both the X and Y directions. Forum request.

Changes to Preview Design:

1. you can now double-click on a prop in the design area to open its Prop Defintion. Reported by Light-O-Rama.
2. The "Tree 360 Spirals" shape could display an erroneous message regarding the number of folds when the number of revolutions was set to a large number. This message has been removed and the revolution limit restored to 25. Reported by Drew Hickman and user ukoberon. http://forums.lightorama.com/topic/46953-spiral-360-prop-tree-issue-512/
3. Created new "Cylinder Spiral" shape for spiral-wrapped tree trunks and columns. Reported by user jamills706. http://forums.lightorama.com/topic/46949-wrapped-tree-trunk-propmodel/
4. On the Prop Definition screen, if the diagram area was taller than it was wide, many of the shape diagrams would overflow. Now they are properly scaled. Reported by Light-O-Rama.
5. Bug fix: a prop made of pixels that uses the "Tree 360 Spiral" shape could crash the Sequencer. Reported by Light-O-Rama.
6. Bug fix: the Prop Definition window was expecting the "Arial Narrow" font to be installed, but that font is not on all computers. On some computers this could cause the program to show a continual stream of error messages. The program will now check if the font is installed before using it. Reported by user Norm Bowman (via help desk).
7. The "Tree 360 Up & Over" shape now supports folds in the string. When used with pixels, the layout has been redone to represent pixel strings that go up and over the top of the tree. Reported by Drew Hickman and Jesse Tryon.
8. If there are any unsaved changes in the Preview Design screen and you click the Cancel button or click the Windows "X" button to close it, then you will get a message confirming that you want to continue without saving the changes. Reported by user Gordon Varney (via help desk).
9. You can now delete props from the Channel Conflicts tab in Preview Design. Select Change Seleced Props > Delete Props. All of the actions on the Change Selected Props menu are also now available by right-clicking on the selected props in the Channel Conflict list. Reported by Light-O-Rama.
10. When copying a prop in Preview Design (Item > Copy), channels will no longer be renumbered if the "Uses the same channels as" field is set on the source prop. Reported by Light-O-Rama.

Changes to freeform play ranges:

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1. Bug fix: when you were defining a freeform range for playback and you moved the cursor to the left - past the left edge of the grid - it cleared the selection. This made it difficult to select 0:00.00 as the starting point. Reported by Drew Hickman.
2. The following menu items have been added when you right-click on the timeline or the waveform (reported by user spascall):
    a. Set Play Range Start - if no freeform play range exists, it creates a range from the selected point to the end of the sequence; otherwise it moves the start point of the existing range.
    b. Set Play Range End - if no freeform play range exists, it creates a range from the beginning of the sequence to the selected point; otherwise it moves the end point of the existing range.
    c. Clear Freeform Play Range - clears an existing freeform play range.

Do not allow channels to be copied in the "Show All Items" grid view. This grid view is system generated - items can be moved, but not hidden or copied. Reported by user daughjs.
http://forums.lightorama.com/topic/47021-cant-delete-duplicate-channel-button/

In the sequence grid, when you right click on a channel name for a prop that has multiple strings, a new "Set Channel Name" option will appear. This capability will primarily help custom props with multiple strings which get channel names like "Horatio Hornblower: r64 c31". The channel name will be stored with the preview, so it will apply to all sequences that use that preview. Reported by Robert Brescia.

In the Skew All and Skew Selection commands, the maximum offset has been increased from 10 seconds to 600 seconds. Also, the user will now have the option of skewing the current timing grid or all freeform timing grids. Reported by user NJ Malenke.

Bug fix: changes made to the sequence while calculations are occurring (icon in the upper left is spinning), might not be reflected during preview playback. Reported by user k6ccc.
http://forums.lightorama.com/topic/46930-modifying-motion-effects-sometimes-not-taking-the-change-until-after-opening-and-saving-the-effect/

After clicking on a slider in the Motion Effects Generator, you can now fine-tune the value using the left or right arrow keys. If the slider is unlocked, shift-left-arrow and shift-right-arrow can be used to change the ending value. Reported by Drew Hickman.

When you right-click on the timeline or the waveform and select "Zoom In" from the menu, the zoomed sequence grid is now centered on where the right-click took place. Reported by Light-O-Rama.

In rare cases, a preview could get saved that had a prop with an invalid circuit number (like 0). In prior versions, this would result in a popup error message as the Sequencer opened; and if the preview were subsequently opened in Preview Design could result in a crash. Going forward there is no popup message when the program is opened. The preview can then be opened in Preview Design and the error will be reported on the "Channel Conflicts" tab - where it can be corrected. Reported by Light-O-Rama.

Bug fix: you are no longer allowed to drag beat channels into the list of preview props and vice versa. Reported by Light-O-Rama.

The 3 versions of the chase tool (intelligent, by prop, and by row) have been condensed into 2: regular chase and custom chase. Regular chase is the same as intelligent chase (chase by prop when the first row is a motion row, and chase by row for anything else) with the addition that the selected area for the chase is now cleared. For a custom chase, the user is prompted whether they want to chase by row or prop, and whether the selected area should be cleared. A new keyboard shortcut shift-H initiates a custom chase. Custom chase is also accessible from the right-click menu. Reported by user spascall.

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When exporting the grid configuration and "Show All Items" is the current grid view, the user will now get a warning stating that "Show All Items" is a system-generated view and will not be included in the export file. Reported by Drew Hickman.

In the Paste Special window, the "All the way to the end of" drop-down box now includes the last item in the selection and the last row in the grid view. The last row in the grid view is now the default. Reported by user spascall.

Bug fix: motion effects on props should override effects on groups that they are a member of. However, that was not happening in all cases. Reported by user John Trp (via help desk).

Bug fix: the Fill tool would display the message "Trying to fill between effects, but the row is empty!" when the sequence row was not empty. Reported by user lkcubsrule.
http://forums.lightorama.com/topic/47070-s5-fill-error/

Bug fix: Ampersands (&) in prop names would not display correctly in the sequence grid. Reported by Light-O-Rama.

When playing back a sequence to real lights and when saving playback files, the Sequencer now checks if motion effects have been placed on props connected to an LOR network that is not enhanced. If so, then the action is cancelled until the condition is fixed. Reported by Light-O-Rama.

The music is only supposed to play one time when you click the play button in the Motion Effect Generator. However, due to a bug, if the loop button on the toolbar for the sequence was enabled, it would cause the music to repeat in the Motion Effect Generator as well. Reported by Light-O-Rama.

The Motion Effect Generator now has a mute button so users can turn off the music while creating their motion effect. Reported by NJ Malenke.

When using the Max Intensity, Min Intensity, Fade Up, or Fade Down tools, the message "'Motion effect' is selected on the toolbar, but no motion effect is currently displayed in the playback window. Would you like to create an effect using the Motion Effect Generator?" will now only get displayed when motion effect rows are part of the selection. If the effect shown on the toolbar is "motion effect" but only channel rows are selected, then the toolbar effect is changed to the ON effect. Reported by Drew Hickman.

The checkbox to enable or disable looping of effects in the Motion Effect Generator has been replaced by a toggle botton (press on, press off). Also, the loop icon shown there and on the sequence toolbar will now show a red slash through it when disabled. Reported by Light-O-Rama.

Bug fix: when attempting to open a playback file (.play.lms), the program would display an error message, then go ahead and open the file anyway. Now no attempt is made to open the playback file after the error is displayed. Reported by Light-O-Rama.

Fixed the File References dialog so that long sequence names, media file names, and preview background file names wrap if they extend beyond the width of the window. Reported by Light-O-Rama.

Updates to SuperStar

FEATURES:

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- Several new options and effects have been added to Superstar's Auto Sequence tool including effects 'Folding Ricochet', 'Snake Up/Down', along with options to 'Skip Inactive Grid Squares' as well as 'Average the Time Length of Effects'.
- The Sequencer now sends the current timing grid to SuperStar when inserting a SuperStar effect. This allows SuperStar to display the same timings as the Sequencer.

BUG FIXES:

- Exporting as intensity data could cause the program to crash
- Text masks and image silhouette masks were not keyed on their clip rectangle. Any effects that fall entirely with in the mask's clip rectangle get applied to the mask.
- In the Auto Sequence dialog box if the user did not select one of the 8 custom colors, a message is now displayed.
- When saving in the Demo version, the file added to the recent files dialog was incorrectly specified as ',supe.sup'.
- When saving in the Demo Version, the suggested filename was incorrectly defaulted to '.supe.sup'.
- In some cases, opening a valid .supe file would cause an error stating the file was not created on this computer.
- Improved export speed of sequences that use large Visualizations
- Increased the number of images allowed from 1500 to 3000.
- When automatic modification of Star Scenes occurred, it was incorrectly changing the archive status of the file.
- Increased the width of every 5th long tick mark on the edge of the sequence grid
- In sequences with effect groups, after a 'select all' effect groups could no longer be expanded.
- Increased available memory for both 32 and 64 bit systems.
- The number of channel elements has increased from 8 million to 50 million.
- When using Single Step, if the stop button was pressed the first selected effect was not made active. This could lead to a warning or error.
- Writing large images could cause the program to crash.
- The number of fonts has been increased to 30 to allow for user created fonts to be used.
- While using the Pixel Extender, if the Layer Priority feature was active pixels were extended too far.
- When using the Move or Scale effects tools after selecting effects that have a group in the selection, the effects would not be applied.
- When using the Move or Scale effects tools while in wrap around mode, some effects were not wrapped properly.

What's New in Version 5.1.2

- Updates to the Sequencer
- Updates to SuperStar

Updates to the Sequencer

Sequence grid row height:

1. Bug fix: if the user repeatedly shrunk the row height in the sequence grid, they would reach certain sizes where some prop/channel names did not get displayed. Now names are always displayed, regardless of the row height. Reported by user ndutton.

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2. Enhancement: depending on the row height, the Sequencer would choose one of 3 font sizes to display prop/channel names with. Now it will choose among 4 font sizes - a new one was added when the row height is extra tall. Reported by Light-O-Rama.

In Preview Design, renamed "Channel Conflicts" tab to "Channel Conflicts (and bulk change tool)" to better reflect its functionality. Reported by Light-O-Rama.

Audio wizard changes:

1. Bug fix: when the VU Wizard was set to analyze only part of the song, it would still insert timing marks and/or channel effects for the entire song. Reported by Light-O-Rama.
2. The default timing grid shown in the Beat, VU, and Tapper wizards is now the one currently selected in the sequence grid. Reported by Light-O-Rama.
3. Improved performance when the Apply button is clicked in the Beat, VU, and Tapper wizards. Reported by Light-O-Rama.
4. Bug fix: when clicking the "Start" button on the Tapper wizard, typing the space bar did not produce taps. Reported by Drew Hickman and NJ Malenke.

Moved menu item Sequence > Audio Wizards > Add Beat Channel to Sequence > Add New > Beat Channel. On the sequence grid's right-click menu, the Audio Wizards > Add Beat Channel item was removed. Added item to the Grid View menu: Add New > Beat Channel. Reported by user Drew Hickman.

Fixed multiple issues with the Renumber Strings dialog (accessed by going to Preview Design, Channel Conflicts tab, Change Selected Props > Renumber Strings). Also added a "Reverse Order" button to this dialog. Reported by user k6ccc. http://forums.lightorama.com/topic/46721-editing-channel-assignments-information/

The "Other Warnings" tab in Preview Design will now display a warning when the channel assignments for a master prop and sub-prop are out of sync. A sub-prop has the "Uses the same channels as" field populated in the Prop Definition screen. Reported by user k6ccc.
http://forums.lightorama.com/topic/46721-editing-channel-assignments-information/

Renamed the opening "Sequences" tab page to "Start Page" to better reflect its purpose. Reported by Light-O-Rama.

Enhancements to the Prop Definition window:

1. All shape parameters are now displayed in a single column list and a scroll bar will be displayed if the list does not fit in the available space.
2. There are no longer separate tabs for the "Custom" and "Advanced" shapes. The grid to edit those shapes is now accessed from a button which opens a separate window -- giving the user much more screen space to edit custom props.
3. A thumbnail view is now displayed for Custom and Advanced props in the lower portion of the Shape section.
4. The delete key can now be used to clear cells on the grid when editing a Custom or Advanced shape.
5. The last shape you used to create a new prop is now remembered and set as the default the next time you create a prop.
6. The Save and Cancel buttons were moved to the upper left corner to be consistent with the Preview Design window.

New shapes in Prop Definition:

1. Tree 360 panels. This can model large commercial trees that are assembled by tiers, and those tiers are broken into panels/branches. The shape assumes each panel has its own set of channels and that every panel is lit the same way. Requested by user Drew Hickman.

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2. Tree 360 tiers. Also known as "Z trees". This shape does not support RGB pixels. Requested by user spascall.
3. Sphere and Cylinder shapes. These can be configured to display 1, 2, 3, or all 4 quadrants (vertical sections). The Tree 360 Wedges shape was also updated with a parameter to choose the number of quadrants it displays. Requested by user stevehoyt and others. http://forums.lightorama.com/topic/46771-how-to-define-prop-for-tree-shaped-like-a-globe/

If there are no existing previews, the Upgrade Sequence screen now disables the choose existing preview option. Reported by Light-O-Rama.

The sequence upgrade process now does a better job of handling inconsistent settings on RGB channels. Previously, some situations could cause the Sequencer to crash. Reported by user Val Bennett.
http://forums.lightorama.com/topic/46800-upgrading-sequence-error-from-s4-in-s5/

During the sequence upgrade process, warnings about subsequence channels now include the channel name. Reported by Light-O-Rama.

Adjusted the size and layout of the New Animation Sequence and New Musical Sequence dialogs so they display correctly when the "Visual Effects" tab of Window's Performance Options dialog is set to "Adjust for best performance". Reported by user John Hall.

Adjusted the wording of items in Preview Design's "Add New Item" dialog. Reported by Light-O-Rama.

Changes to motion effects:

1. Removed the align left, center, and right buttons for the Text effect -- as they did not have any effect on actual lights. Reported by user k6ccc. http://forums.lightorama.com/topic/46834-feature-request-horizontal-position-offset-in-motion-effects/
2. Added TextPE effect that exactly replicates theÂ S4Â Pixel Editor's text effect to improve sequence upgrades. Adjustments to text effects in upgraded sequences are no longer required. Note there are now 2 text effects in S5: "Text" and "TextPE". Reported by Light-O-Rama.
3. Renamed the "Full Length" option in the Movie effect to "Movie Length Matches Sequence Length". Reported by Light-O-Rama.
4. Bug fix: when inserting a new motion effect, the Motion Effect Generator window could be calculating the effect "None" (blank screen) even though the selection in the drop-down box showed a different effect. This only occurred when Sequencer Preferences > Motion Effects > "When opening, initialize from the current toolbar effect and color" was unchecked. Reported by Light-O-Rama.
5. Bug fix: in some cases the bulb size slider control on the Motion Effects Generator could disappear. Reported by Light-O-Rama.
6. Bug fix: the scanner effect could cause an error during effect calculations and result in the play buttons not being enabled. Reported by Chris Reynolds and Eric Brown.
7. There is no longer a delay when you first open the Motion Effects panel until thumbnail images appear. Reported by Light-O-Rama.

On the grid's toolbar, the Motion Effects and SuperStar tools are now only visible when the user has a PRO level license. Reported by Light-O-Rama.

Added a warning when trying to use the Fill tool on an empty row. Reported by Light-O-Rama.

If the current toolbar effect is set to "Motion Effect" when the Color Fade tool is selected, the toolbar effect is now automatically changed to "On". Reported by Light-O-Rama.

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Updates to SuperStar

FEATURES:

- Added "Snake Up" and "Snake Down" as movement options in the Auto Sequence dialog box
- Added "skip inactive grid squares" option in Auto Sequence dialog box
- Added "Average the Time Length of Effects" option in Auto Sequence dialog box

BUG FIXES:

- Fixed a bug where an encrypted file from previous versions would not read in if it has groups or timings in it.
- Added a check for "Full Range" color mode if launched from a SuperStarRequest. If in "Full Range" mode, SuperStar forces "Balanced" mode and adjusts all the color values to be 100 or less.
- Made it so every 5th long tick mark on the edges of the sequencing grid is thicker.
- Fixed a bug where if you had effect groups in a sequence and you did "select all" then you could no longer expand the effects in the effect groups
- Doubled the amount of memory SuperStar can use This prevents memory errors when compiling large sequences.
- Fixed a bug where writing out a large image could cause the program to crash.
- Fixed it so the Auto Sequence movement options work properly with pixel speeds other than 1.00

What's New in Version 5.1.0

Initial production release of S5 ShowTime Designer Pixels.

3 Feature Comparison

The Light-O-Rama software package must be registered, with a valid license, in order to be used to its full potential. Each license contains two separate types of license levels: the main license level and the SuperStar license level.

The main license level covers all of the Light-O-Rama software package except for the Light-O-Rama SuperStar Sequencer. Several different main license levels exist, each having different features: Basic, Basic Plus, Standard, Advanced, and Pro. Additionally, there is an unlicensed Demo version (which is the same as the Basic version, except that it cannot be used to actually control lights, and has encrypted save files).

The SuperStar license level covers the Light-O-Rama SuperStar Sequencer. Its possible levels have names such as 2_CCR, 24_CCR, 60_CCR, and the like, indicating the number of Cosmic Color Ribbons you can use with SuperStar. Additionally, there is an unlicensed Demo version which does not allow export to an actual sequence.

Any reference in this help file to a "license level" or "feature level" refers to the main license level, not to the SuperStar license level, unless specifically noted otherwise.

You will be given a chance to register your Light-O-Rama software at the time that you install it. To register after that time, or to upgrade to a higher level license, please see the "Register Light-O-Rama" (or "Upgrade Light-O-Rama") menu item on the Sequencer's Help menu, or on the Control Panel's popup menu.

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The following chart summarizes what features are available with each license level, with details on each feature listed below the chart.

If a feature is listed as "(demo mode)", it means that the feature can be used with this license to see what it's like, but it won't be fully supported. For example, if you try one of the Sequencer's demo mode features while building a sequence, you won't be able to save your changes to that sequence. Please see the details for each feature for exactly what "demo mode" means for that feature.

If a feature is listed as "(S4, not S5)", it means that the feature is supported in version 4 of the Light-O-Rama Software Suite, but support has been dropped in version 5.

Any features not listed here are available with all license levels.

FEATURE	DEMO	BASIC	BASIC PLUS	STANDARD	ADVANCED	PRO
Number of LOR Units Supported	0	2	4	8	UNLIMITED	UNLIMITED
Number of Grid Views Supported	2	2	2	4	UNLIMITED	UNLIMITED
Full Access XML Data Storage	No	YES	YES	YES	YES	YES
Beat Wizard	(demo mode)	(demo mode)	YES	YES	YES	YES
VU Wizard	(demo mode)	(demo mode)	YES	YES	YES	YES
Video Playback	Audio Only	Audio Only	Windowed Video	Windowed Video	Full Screen Video	Full Screen Video
Show On Demand	No	No	YES	YES	YES	YES
Schedule Shows Based on Day of Year	(demo mode)	(demo mode)	YES	YES	YES	YES
Startup Sequences in Shows	(demo mode)	(demo mode)	(demo mode)	YES	YES	YES
Shutdown Sequences in Shows	(demo mode)	(demo mode)	(demo mode)	YES	YES	YES
Background Sequences in Shows	(demo mode)	(demo mode)	(demo mode)	YES	YES	YES
Sequence in Sequence	No	No	No	No	YES	YES

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FEATURE	DEMO	BASIC	BASIC PLUS	STANDARD	ADVANCED	PRO
MIDI File Wizard	(demo mode)	(demo mode)	(demo mode)	(demo mode)	YES	YES
Triggered Interactive Sequences	(demo mode)	(demo mode)	(demo mode)	(demo mode)	YES	YES
Show Startup Options	No	No	No	No	YES	YES
Execute Windows Shell Commands	No	No	No	No	YES	YES
Multiple Networks	No	No	No	No	YES	YES
Create Protected Sequences	No	No	No	No	YES	YES
DMX Intensity	No	No	No	No	YES	YES
Native DMX Devices Supported	No	No	No	No	YES	YES
Motion Effects	Create Favorites	Create Favorites	Create Favorites	Create Favorites	Create Favorites	Create favorites and use in sequences
Intensity Files and Enhanced Networks	No	No	No	No	No	YES
Audio Display	Waveform	Waveform	Waveform	Waveform	Waveform	Waveform or Spectrogram
No Longer Supported						
Dasher Controllers Supported	No	No	No	No	(S4, not S5)	(S4, not S5)
X10 Controllers Supported	No	No	No	No	(S4, not S5)	(S4, not S5)
Digital IO Cards Supported	No	No	No	No	(S4, not S5)	(S4, not S5)
BSOFT Digital IO Cards Supported	No	No	No	No	(S4, not S5)	(S4, not S5)

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Number of LOR Units Supported

Except for the Advanced and higher license levels (which support an unlimited number of Light-O-Rama controllers), each license level will send lighting commands to a limited number of Light-O-Rama controllers: Basic supports a single controller, Basic Plus supports four, and Standard supports eight.

Whether a particular controller is supported or not depends on its unit ID. For example, the Basic license level will send lighting commands only to unit ID numbers 1 and 2, while the Standard license level will send lighting commands to any unit that has a unit ID between 1 and 8.

Regardless of whether a particular unit will be sent lighting commands, you can always use the Sequencer to build sequences using that unit; Light-O-Rama simply will not control the lights for that unit unless you upgrade to a higher license level.

The unlicensed Demo version will not send lighting commands to any controllers, so you cannot use it to actually control your lights.

Number of Grid Views Supported

A sequence may have multiple grid views; however, certain license levels will only support a limited number of grid views in any given sequence. The Demo, Basic, and Basic Plus levels support 2 grid views per sequence, Standard supports 4, and Advanced and higher support an unlimited number of grid views per sequence. The system grid view "View All Items" is not counted toward the limit.

You will not be able to add new grid views to a sequence if it already has the maximum supported number. However, you can still open sequences that have more grid views (for example, a sequence that was created by someone who has a higher license level than you do). In this case, the extra grid views can be displayed in the Sequencer, but you will not be able to modify them.

Full Access XML Data Storage

When a sequence is saved using a licensed version of Light-O-Rama, its save file uses a standard XML format, which is designed to be understandable by people. In the S5 version of the software, these files have an LOREDIT extension. Technically advanced users may feel comfortable editing these XML-based sequence files directly with a text editor, or even building their own tools that can be used with these files (although *please* be careful when doing so, as it is not terribly difficult to make a small mistake which may render the sequence file incomprehensible to the Light-O-Rama software package).

On the other hand, when a sequence is saved using the unlicensed Demo version, it is saved encrypted, and so the file itself cannot be easily understood or modified by anyone or anything except the Light-O-Rama software package. Additionally, data from an encrypted sequence cannot be copied and pasted, except on the computer that the sequence was originally encrypted on.

No matter whether a sequence is saved using the open XML format or using encryption, the Light-O-Rama software itself will still be able to use it.

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If you create an encrypted sequence using the unlicensed Demo version, and later purchase a license, you can unencrypt the sequence by resaving it on the same computer it was originally encrypted on, using your licensed version of the software.

Beat Wizard

The Beat Wizard can be used to analyze a song to try to determine its tempo, and to automatically place timings and lighting effects into a sequence based upon that tempo. It is fully supported in license levels Basic Plus and higher.

It is *not* supported in license level Basic (nor in the unlicensed Demo version). However, you can still try it out in a "demo mode" to see what it is like; after trying it on a sequence, you will not be able to save your changes. You will be given a warning about this when you try it, along with a chance to back out before committing to using it. Additionally, if you do decide to use it, and your sequence already has unsaved changes, you will be given a chance to save them before you actually use this feature.

VU Wizard

The VU Wizard can be used to analyze a song to find peaks in the audio - much like a VU meter - and to automatically place timings and lighting effects into a sequence based upon those peaks. It is fully supported in license levels Basic Plus and higher.

It is *not* supported in license level Basic (nor in the unlicensed Demo version). However, you can still try it out in a "demo mode" to see what it is like; after trying it on a sequence, you will not be able to save your changes. You will be given a warning about this when you try it, along with a chance to back out before committing to using it. Additionally, if you do decide to use it, and your sequence already has unsaved changes, you will be given a chance to save them before you actually use this feature.

Video Playback

You can build musical sequences based on audio files (such as MP3) or on video files (such as WMV). When a musical sequence is played, the sound will always play, but the actual video will only be displayed for license levels Basic Plus and higher. License level Basic will not display video.

At the Advanced license level or higher, you can show the video in full screen mode. Basic Plus and Standard will show video inside a window.

Show On Demand

Using license level Basic Plus or above, you can cause a show to be played without having scheduled it. This is done via the "Show On Demand" menu item of the Light-O-Rama Control Panel's popup menu.

Schedule Shows Based on Day of Year

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The Light-O-Rama Schedule Editor can be used to schedule shows to play in two different ways: by the day of the week (such as "from 6:00 PM to 9:00 PM on Friday") or by the day of the year (such as "from 9:00 AM to 9:00 PM on December 25th").

However, scheduling based on the day of the year is fully supported only in license levels Basic Plus, Standard, and Advanced.

Using the Basic license level, you will still be able to use the Schedule Editor based on the day of the year in a sort of "demo mode" to see what it is like, but the Light-O-Rama Show Player will not actually play shows that are scheduled this way - it will only play shows that were scheduled by the day of the week.

Startup Sequences in Shows

The Light-O-Rama Show Editor can be used to build shows with several different sections. Among these is the Startup Section. Sequences in the Startup Section are played immediately upon the show starting up, one at a time, in order. After all of them have been played, the main portion of the show (i.e. the Animation Section and the Musical Section) begins.

However, this section is fully supported only with the Standard or higher license levels.

Using the Basic and Basic Plus license levels, you will still be able to use this section in the Show Editor in a sort of "demo mode", to see what it is like. However, the Light-O-Rama Show Player will not actually play the sequences in a show's Startup section; instead, the show will simply begin play directly with the Animation Section and the Musical Section.

Shutdown Sequences in Shows

The Light-O-Rama Show Editor can be used to build shows with several different sections. Among these is the Shutdown Section. When the scheduled end time for the show is reached, the main portion of the show (the Animation Section and the Musical Section) stops, and the sequences in the Shutdown Section are then played, one at a time, in order. After they have all finished, the show is truly finished.

However, this section is fully supported only with the Standard or higher license levels.

Using the Basic and Basic Plus license levels, you will still be able to use this section in the Show Editor in a sort of "demo mode", to see what it is like. However, the Light-O-Rama Show Player will not actually play the sequences in a show's Shutdown section; instead, when the scheduled end time for the show is reached, the Animation Section and the Musical section will stop, and the show will be over.

Background Sequences in Shows

The Light-O-Rama Show Editor can be used to build shows with several different sections. Among these is the Background Section. All sequences in the Background Section will play simultaneously, looping back to their starts when they reach their ends, throughout the entire course of the show.

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However, this section is fully supported only with the Standard or higher license levels.

Using the Basic and Basic Plus license levels, you will still be able to use this section in the Show Editor in a sort of "demo mode", to see what it is like. However, the Light-O-Rama Show Player will not actually play the sequences in a show's Background Section.

Sequence in Sequence

Sequences can themselves contain subsequences - a parent sequence containing a child sequence. The parent sequence can be set to start or stop the child sequence at any given point during play.

However, subsequences are only fully supported with the Advanced license level or higher.

Using other license levels, you will still be able to use subsequences in a sort of "demo mode", to see what they are like, but you will not be able to save changes to your sequence after having done so.

MIDI File Wizard

The MIDI File Wizard can be used to automatically insert timings and lighting effects into a musical sequence that is based upon a MIDI song. For example, it can make your lights chase each other in time to the music, or turn certain channels on or off based upon what notes are being played.

However, the MIDI File Wizard is fully supported only with the Advanced license level or higher.

Using other license levels, you will still be able to use the MIDI File Wizard in a sort of "demo mode", to see what it is like, but you will not be able to save changes to your sequence after having done so.

Execute Windows Shell Commands

Using the Advanced license level or higher, Light-O-Rama can optionally tell Windows to execute any arbitrary command that you specify when a particular sequence is started. An example of how this might be used: If you broadcast the songs playing during your show over the radio, you might set your sequences up so that they tell Windows to tell your RDS ("Radio Data System") program to also broadcast the name of the song, allowing people with RDS-enabled radios to see the name of the song currently playing in your show.

Triggered Interactive Sequences

In addition to being able to control lights, some Light-O-Rama controllers can also accept input, acting as triggers to start particular sequences on demand during a show. For example, as part of your display, you could have several buttons for people to push, each of which will play a particular song.

However, this feature is fully supported only with the Advanced license level.

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Using other license levels, you will still be able to use this section in the Show Editor in a sort of "demo mode", to see what it is like. However, the Light-O-Rama Show Player will not actually play any sequences which are triggered during your show.

Show Startup Options

Normally, the sequences in a show will start playing immediately at the show's scheduled start time. The Advanced license level or higher allows more control over this; for example, you could hook a big red button labeled "Start the Show" up to one of your Light-O-Rama controllers, and the show will not start until that button is pushed.

For details, please see "Show Startup Options".

Multiple Networks

The Light-O-Rama Software Package can send lighting commands to Light-O-Rama controllers over several different Comm ports simultaneously. This has several potential uses, especially for people with large numbers of controllers, or lights spread out physically far from each other.

However, this is supported only in the Advanced license level or higher. Other license levels will send lighting commands to Light-O-Rama controllers only over a single Comm port.

Create Protected Sequences

The Light-O-Rama Sequencer can be used to create protected sequences, which are sequences which cannot be modified (generally speaking) or viewed in the Sequencer, but which can still be played, control lights, scheduled in shows, and so forth.

However, this is supported only in the Advanced license level or higher. Other license levels can use protected sequences, but cannot create them.

DMX Intensity

Light-O-Rama allows the possible intensity of most lighting effects ranges from 0 to 100, i.e. a percentage of full intensity. DMX devices, however, are capable of taking 256 different intensities (from 0 to 255), rather than 101. Light-O-Rama supports this possibility via the DMX Intensity tool.

However, this is only supported in the Advanced license level or higher. Other license levels will not have access to the DMX Intensity tool.

Native DMX Devices Supported

The Advanced license level or higher can send lighting commands to DMX devices, in addition to Light-O-Rama controllers. Lower license levels can only send lighting commands to Light-O-Rama controllers.

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Motion Effects

Motion Effects can be fully used only with the Pro license level. Lower license levels can use the Motion Effect Generator to test effects and save those effects as favorites, but they cannot be used in sequences.

Intensity Files and Enhanced Networks

The Pro license level can use intensity files and enhanced LOR networks. These can help with displays involving very large numbers of independent lighting elements. Lower license levels cannot use these features.

Audio Display

At any license level, music can be displayed as an audio waveform. At the Pro license level, you can also view the audio as a spectrogram. See the Audio Settings topic for examples.

Dasher Controllers Supported

These controllers are not supported in the S5 version.

X10 Controllers Supported

These controllers are not supported in the S5 version.

Digital IO Cards Supported

These controllers are not supported in the S5 version.

BSOFT Digital IO Cards Supported

These controllers are not supported in the S5 version.

4 Light-O-Rama Concepts

Light-O-Rama allows your computer to control your lights and other equipment in synchronized displays. Such a display is organized into several levels:

At the lowest level, a sequence contains commands to be sent to your Light-O-Rama hardware, which will actually control your lights. For example, a sequence might contain a command to turn on one string of lights while making another string twinkle, and two seconds later, fading the first string down while fading the second string up. A sequence can contain commands for many circuits.

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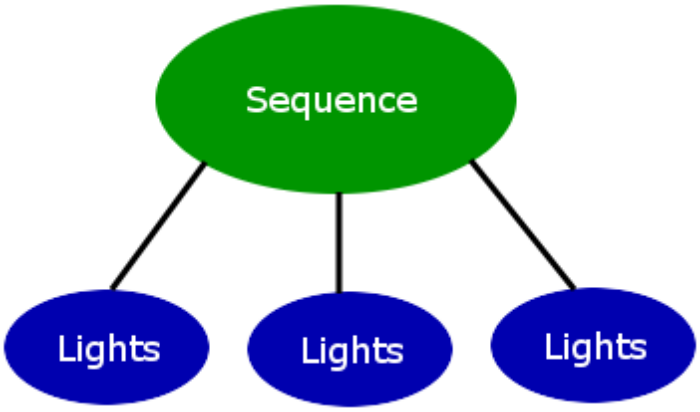
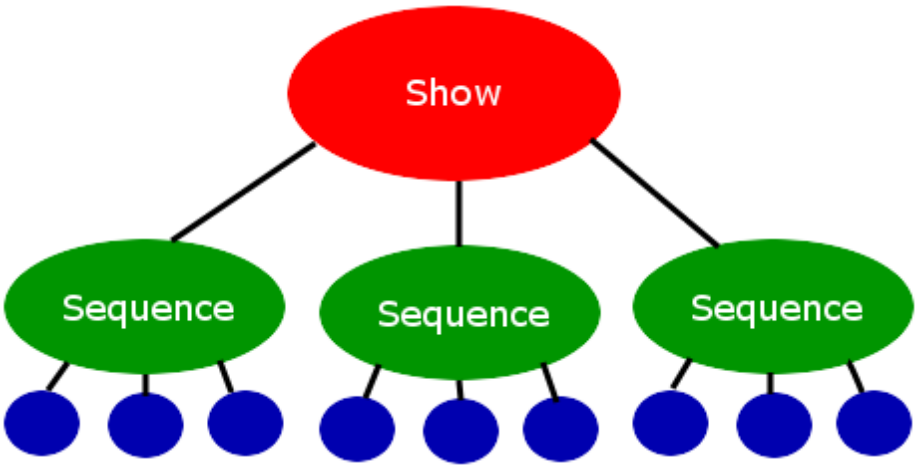


A sequence contains commands to control lights

Typically, people build a sequence per song that they want in their display (known as musical sequences), each one containing all of the lighting commands for its particular song. People also build animation sequences, not associated with any particular song, and often build one for each independent part of their display - for example, one animation sequence to control a group of snowmen having a snowball fight, and another to control a tin soldier firing a cannon.

Sequences can be grouped together into shows. A show allows several sequences to be played at the same time, or sequentially, or in random order. A show can contain different sections - for example, some sequences might be played only at the beginning of a show, others only at the end, others in between, and still others for the entire duration of the show.



A show contains sequences to be played together, or in order, or randomly

Finally, shows can be scheduled to be played at certain times. Only one show (at most) can be playing at any given time, but any number of shows can be scheduled for different times, and the same show can be scheduled to play at many different times.

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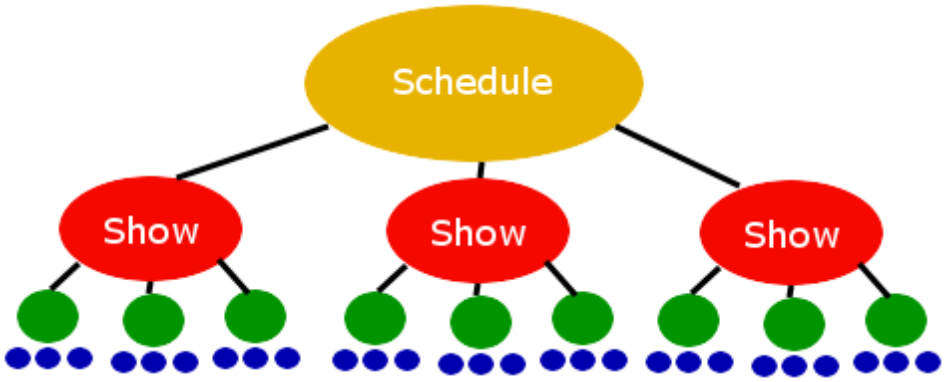

A schedule is used to play shows at specific times

4.1 Sequences

A sequence is a set of commands to be sent to lights - for example, a sequence may command the lights to turn on when the sequence starts, turn off a second later, stay off for a tenth of a second, start twinkling for the next two seconds, and then fade up, from completely off to completely on, during the next three seconds. The Light-O-Rama Sequencer is used to create and modify sequences.

- Key Sequencing Steps
- The Sequence Grid
- More Information

Key Sequencing Steps

There are several key steps in the sequence process as shown in the flowchart below:

- Create a preview
- Create a sequence
- Save a sequence

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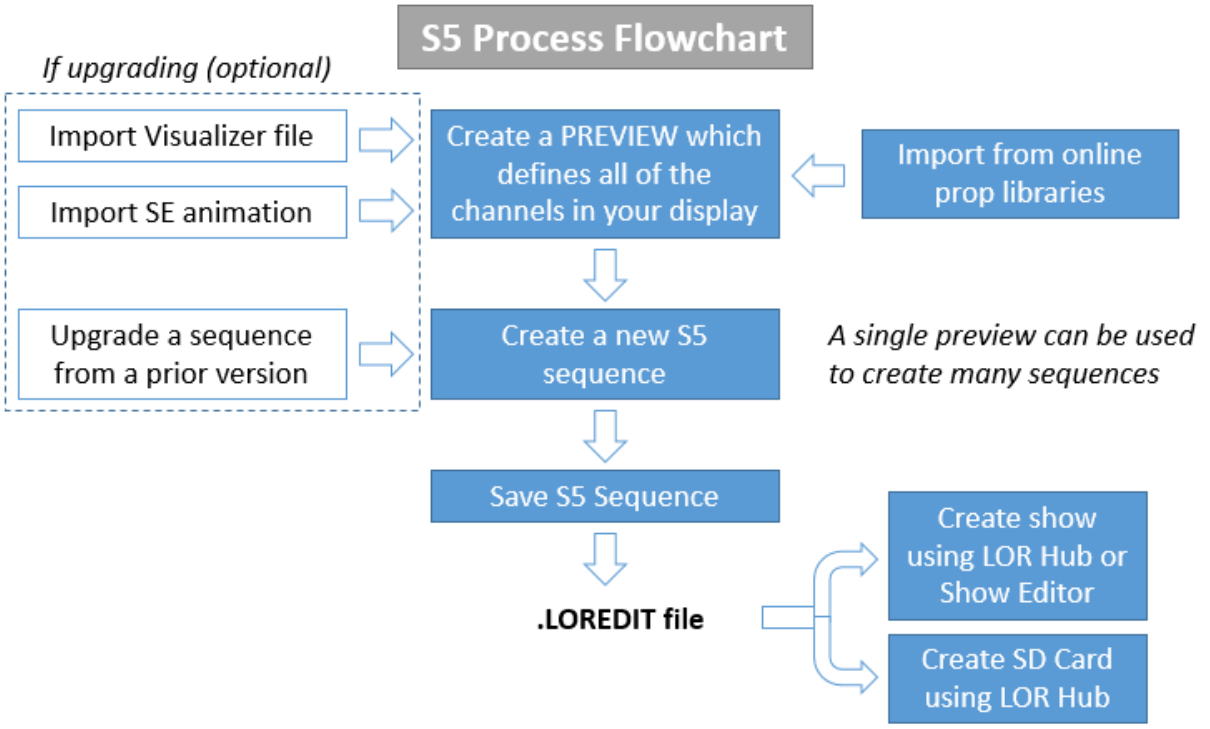
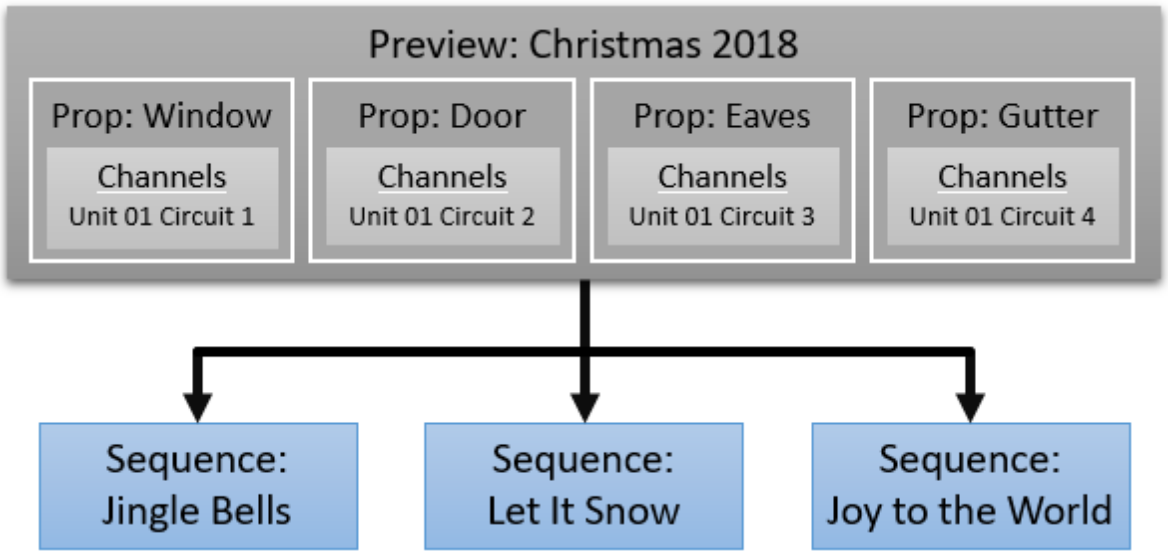


Create a Preview

A sequence can control multiple sets of lights independently of each other. Each set of lights should be hooked up to a particular circuit on a particular controller; each such circuit is referred to as a "channel". Channels are assigned to props, and props are part of a preview. Every sequence is associated with a single preview, and that preview determines the set of channels the sequence can control. A preview can be associated with multiple sequences.



In the example above, the 3 sequences are all assigned to the "Christmas 2018" preview. Each sequence will have 4 props that can be controlled: Window, Door, Eaves, and Gutter.

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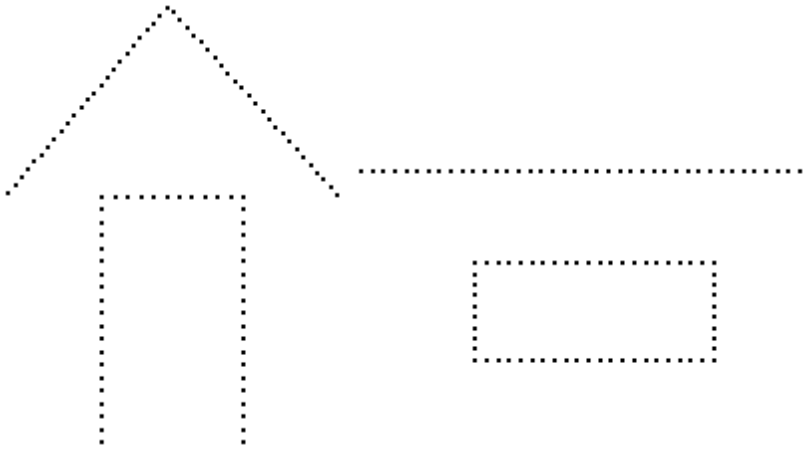
Not only do you assign channels to a prop, but you also assign a shape to each prop. This lets you draw and arrange your lights in a way that resembles your actual display. When you play a sequence in the Sequencer and display its preview, the drawing will behave just like your lights will - the props in your drawing will turn on and off, fade up and down, and so forth.



A preview with Window, Door, Eaves, and Gutter props

Create a Sequence

There are two types of sequences: animation sequences and musical sequences. Musical sequences are associated with songs (or sound effects, videos, etc.); the lights can be made to turn off and on (and do other effects) in sync with the music. Animation sequences are not associated with songs. Many sequences can be played simultaneously, but at most one musical sequence can be playing at a time - all others must be animation sequences. This means that you can control some of your lights in sync to a song via a musical sequence, while simultaneously controlling other lights independently, via animation sequences.

You can create a new sequence:

- from the File Menu,
- by clicking links on the Start Page, or
- by right-clicking on a preview name in the Previews Window.

You can also create an S5 sequence by upgrading a sequence created in a prior version.

Save Your Sequence

It is important to save your sequence often so you don't lose any work if your computer crashes or you lose power. It is also a good idea to make backup copies of your sequences to a flash drive or to the cloud. The Sequencer's Save Copy options can be configured to make time-stamped backup copies every time you save.

S5 sequence files use a different file extension than prior versions:

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	S5 Sequences	Prior Versions
Musical Sequences	LOREDIT	LMS
Animation Sequences	LOREDIT	LAS

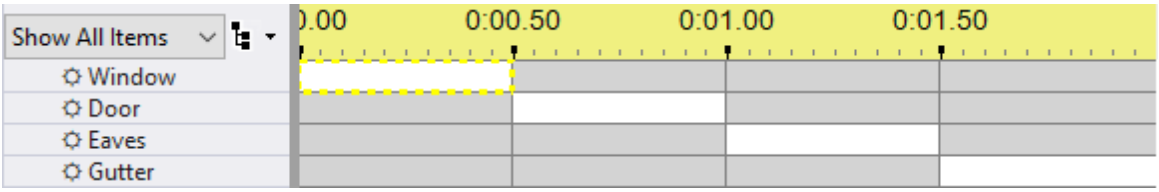
Sequence File Extensions

Once your sequence is complete, you can use the sequence file (LOREDIT extension) to:

- create a show using the Show Editor or LOR Hub
- create an SD card for an LOR MP3 Director using LOR Hub

The Sequence Grid

Here is an example of a simple sequence containing 4 props, as represented in the Sequencer. The props are listed down the left side and a timeline is displayed across the top. As time passes (from left to right), you can see that the Window prop is turned on, then it is turned off and the Door prop is turned on, then *that* is turned off and the Eaves prop is turned on, and so forth, through the 4 channels:

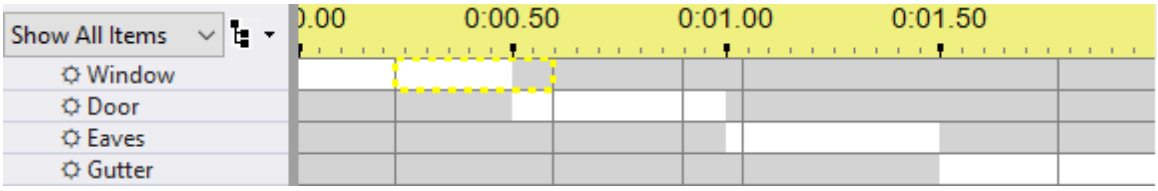


A simple sequence with a fixed timing grid

Timings

The vertical lines in the sequence grid, representing distinct points in time, are known as timings. These timings do not have any direct effect on how your lights will look; instead, they allow you to select time ranges for lighting effects to happen, using various tools in the Sequencer.

Timings are grouped together into timing grids. There are 2 types of timing grids: fixed and freeform. In a fixed timing grid, all of the timings are a fixed distance apart and the timings cannot be moved, deleted, or added to. In a freeform timing grid, timings can be at any location, and can be moved, added, and deleted. A sequence can have more than one timing grid. For example, here is the same sequence, but now with a freeform timing grid displayed:



A simple sequence with a freeform timing grid

Note that the timings in this freeform grid are not the same distance from each other. Also note that the timings and the effects do not line up with each other - there is no reason that they would have to. This is so as to allow flexibility in where effects can be applied, without cluttering the display with many timings.

For example, perhaps you might want a sequence to have some effects that follow the drum beats in a song, and other effects that follow the lead guitar. You could simply add timings representing both the

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drum beats and the guitar to a single timing grid, but if you do, it could be difficult to remember which timing is for which instrument; also, the display might become cluttered with so many timings. So, instead, you could put the timings for the drums into one timing grid, and the timings for the guitar in another timing grid, and use the drop-down box to easily switch between the two timing grids as appropriate. The effects that you add using the timing grid for the drums will not necessarily line up with the timing grid for the guitar, nor the effects added using the timing grid for the guitar with the timing grid for the drums, but neither should they.

Grid Views

A grid view is the group of props displayed in the sequence grid. A sequence can contain multiple grid views. Each grid view can have its own props, or can share props with other grid views, or both. There is one system-generated grid view call "Show All Items" - it automatically shows all props in the preview. You can change the order of the props displayed in the "Show All Items" grid view, but you cannot remove items from it.

Grid Rows

The sequence grid can display several types of grid rows:

- Regular channel rows have a gray background and control a single output channel
- RGB channel rows have a black background and are used for props composed of RGB lights that can display any color
- Motion effect rows are only available with a Pro license. They allow you to apply color patterns to a prop made of RGB pixels. Motion effects can also be applied to groups of pixel props. Motion effects can be created using the Motion Effect Generator or the SuperStar Sequencer (SuperStar is licensed separately).
- Loop rows can be used in animation sequences (but not musical sequences). When playing a sequence that contains a loop, when the end of the loop is reached, the sequence will jump back to the beginning of the loop. It will do this a certain number of times (that you specify), and then will continue past the end of the loop. Each time that it jumps back, you can make it go through the loop faster, slower, or the same speed as before. There can be many loops in a sequence (set up for different time ranges), and loops can even contain other loops.
- Beat channels can be used in musical sequences, and are intended to hold effects related to the beat of the music. They are merely a sequencing convenience and do not control lights.
- Subsequence rows point to a separate sequence file. The subsequence can be turned on or off at different points in the main sequence, and its effects will play only when it is turned on.
- Archived prop rows contain effects for props that were once part of the preview, but have since been deleted.
- RGB aggregate rows aid in the conversion of effects from props made of traditional lights to RGB channels or motion effect rows.

A prefix symbol is added to certain types of grid rows to help identify them. Here is a master list of symbols used:

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More Information

For more detailed information on sequences, please refer to the following sections:

- The Sequencer
- Previews
- Animation Sequences
- Musical Sequences
- Channels
- Timings
- Effects
- Archived Props
- RGB Aggregates
- Freeform Play Range

4.1.1 Previews

A 'Preview' is a representation of your light display. It defines the lighting elements, how they are arranged, and what channels they use. Creating a preview is required before you can create a sequence.

A preview can be a quick rough sketch, or a detailed, highly realistic depiction of your display. It is up to you to decide how much effort you want to put in to it. In any case, the preview must define every channel that will be controlled by your sequences.

When you play a sequence using the Sequencer, you can also watch the sequence's preview in the Playback window. The drawing will change as if it were the lights that the sequence controls - that is, parts of the drawing will turn on and off, fade up and down, twinkle, and shimmer, just as the sequence commands.

Props

The display elements in a preview are referred to as 'props'. You must add a prop to the preview for every display element that you want to control. A prop can be as simple as a single channel string of traditional lights, or as complex as a big pixel tree or matrix. When you create a prop, you define the type and color of lights that it uses, its shape, and the channels assigned to it. If one of the built-in shapes doesn't meet your needs, then you can define a custom shape.

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A sample of some of the shapes that come built-in to S5

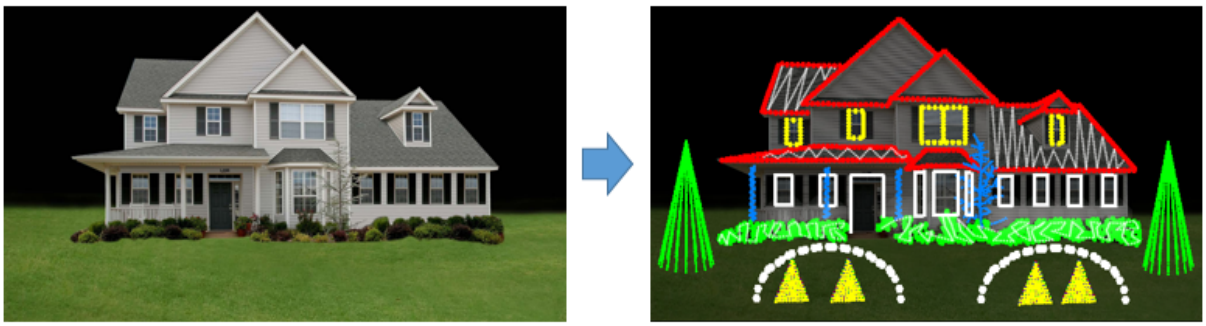
Groups

Props can be grouped together.

- You might do this so that the props appear together in the sequence grid.
- You might also create a group so that you can apply an effect to the group instead of individual props. This enables things like sweeping a color across your entire display.

Background Image

A preview can be assigned a background image (for example, a photo of your house), which you can draw the lights on top of. The brightness of the background image can be adjusted from within the Sequencer.



One Preview > Many Sequences

One preview can be associated with multiple sequences. Update the preview once, and the next time you open any sequence associated with that preview, the update will automatically be applied.

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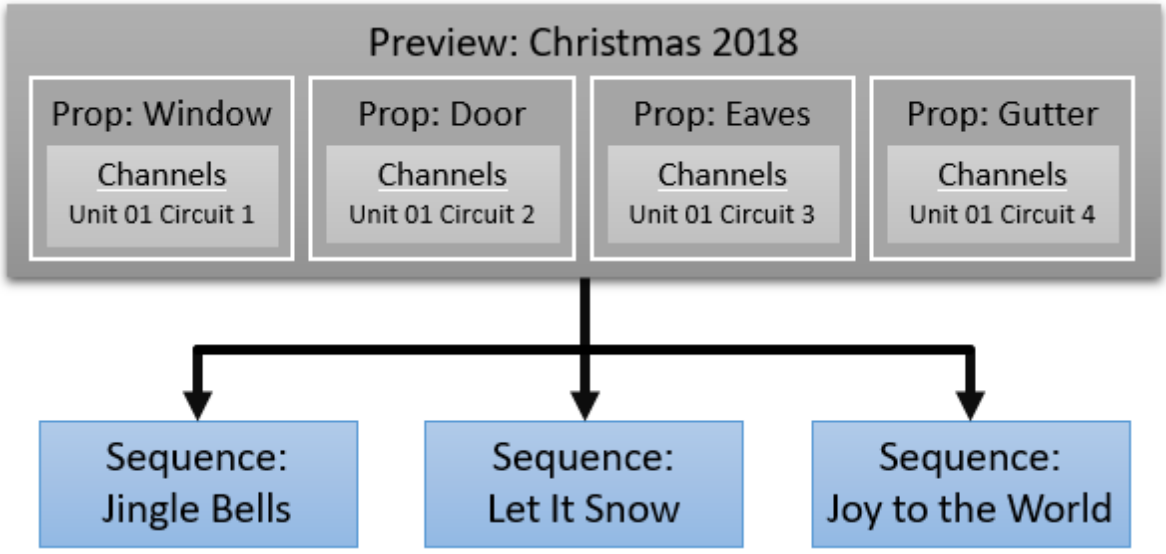
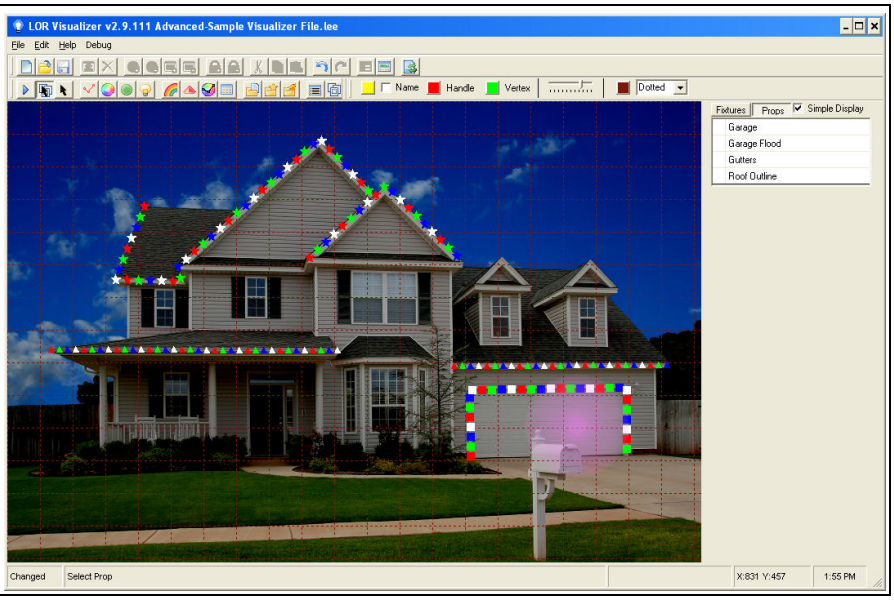


Importing a Preview

You don't necessarily need to create a preview from scratch. S5 can import an existing display definition from a variety of sources.

Import an S4 Visualizer file You can perform the import from the Preview Management window, when upgrading a sequence, or from within Preview Design	

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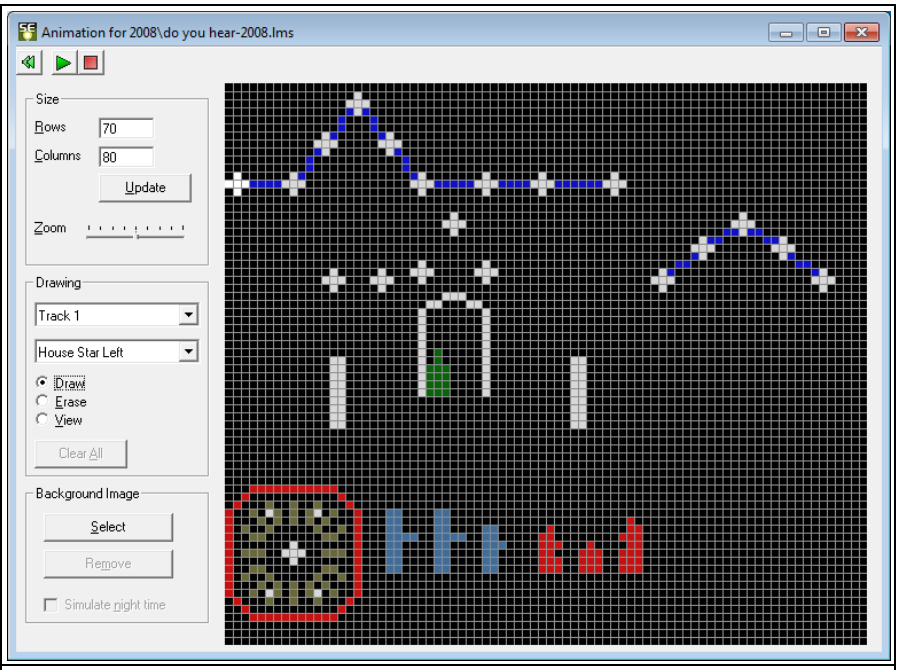
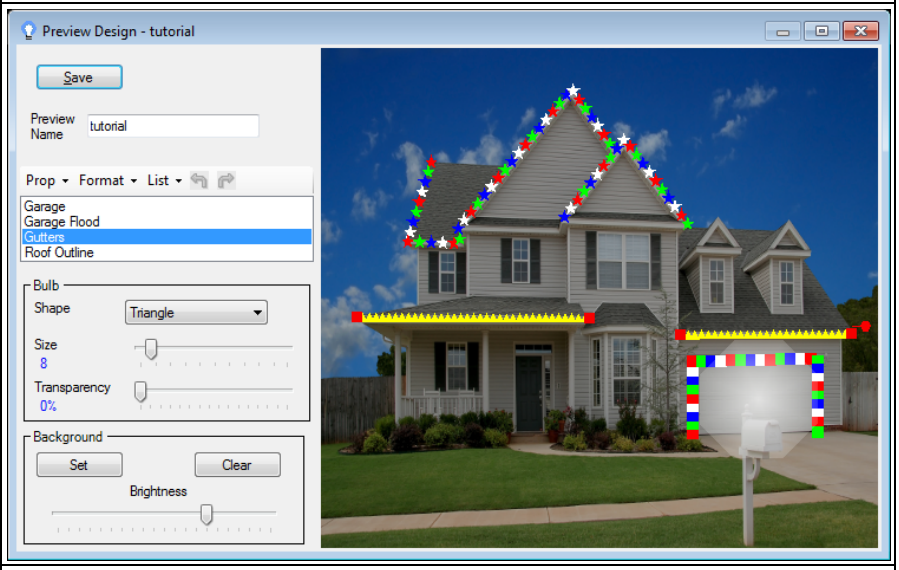
Import a block-style animation defined in a legacy sequence You can perform the import from the Previews Window, or when upgrading a sequence	
Import an S4 Pixel Editor preview Pixel Editor previews are automatically upgraded to S5 previews the first time you run the S5 Sequencer	
Import a preview from an S5 sequence sent to you from someone else Each S5 sequence contains a backup copy of the preview it uses. When you open an S5 sequence that has been sent to you, the copy of the preview inside the sequence will automatically be imported	

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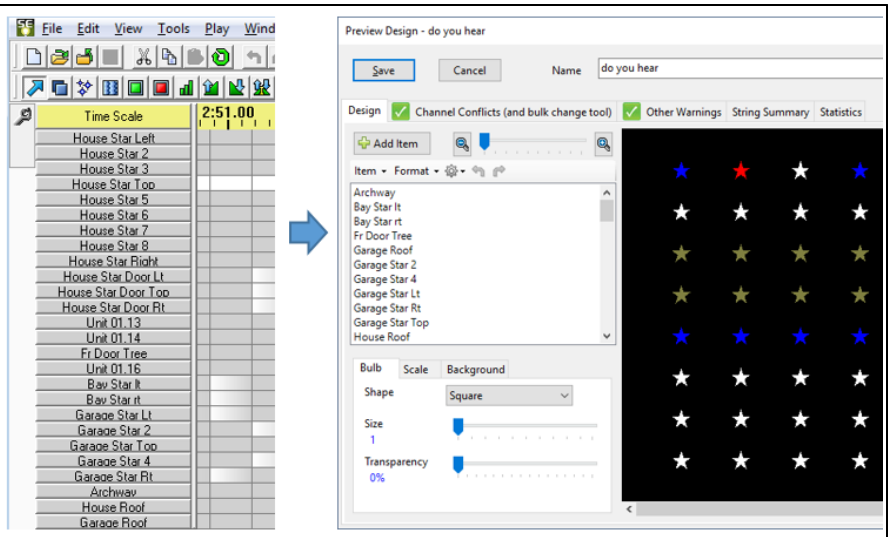
Convert any legacy sequence to an automatically generated preview. The preview won't look like your house, but channel information will be set correctly and it will allow you to get started with your sequencing right away. You can auto-generate a preview when upgrading a legacy sequence, or by using the Quick Preview feature when creating a new S5 sequence.	

The Preview Design Window

Previews are modified using the Preview Design window. It can be accessed several ways:

- To create a preview, go to the Previews window and click the "+" icon.
- To modify a preview, go to the Previews window and double-click on a preview name.
- To modify the preview for an open sequence, click the preview name on the sequence's toolbar and select Preview Design from the drop-down menu; or you can select Preview Design from the Sequence menu.

For details on how to create and modify previews, please see the Preview Design topic.

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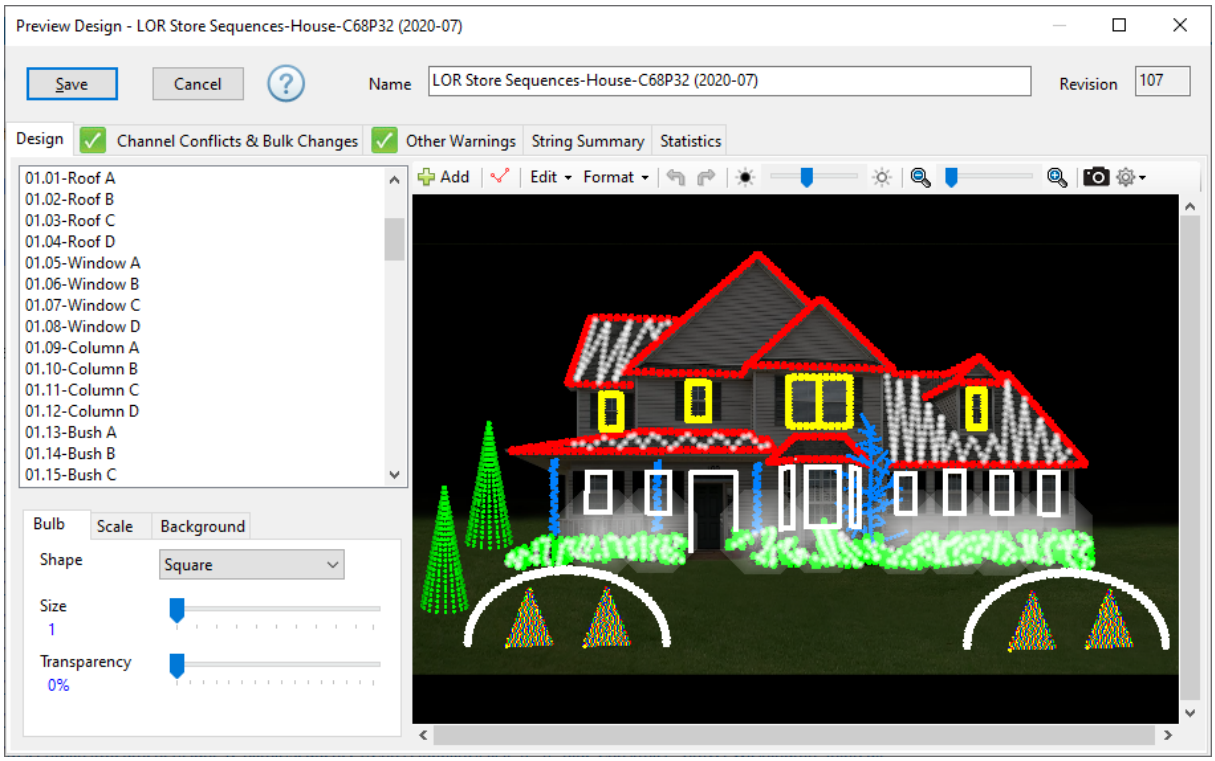

The Preview Design window with lights drawn on top of a background photo of a house

4.1.2 Animation Sequences

An animation sequence is a sequence that is not associated with a song (or video, or other audio file). This is as opposed to a musical sequence.

There are some other differences between animation sequences and musical sequences:

- Animation sequences can contain loops, which musical sequences cannot;
- Various song-related tools such as the Beat Wizard, MIDI File Wizard, VU Wizard and Tapper Wizard are only available for musical sequences.
- Animation sequences cannot contain beat channels.
- Generally speaking, only one musical sequence can be played at a time (although there is an exception to this, described in the help page on musical sequences), whereas many animation sequences can be played simultaneously.

You can convert an animation sequence to a musical sequence by simply setting the media file via Sequence > Media File.

In S5, animation sequences and musical sequences have the same file extension (LOREDIT). This is different from prior versions, where animation sequences had an LAS extension and musical sequences had an LMS extension.

To create an animation sequence in the Sequencer, use the New Animation dialog.

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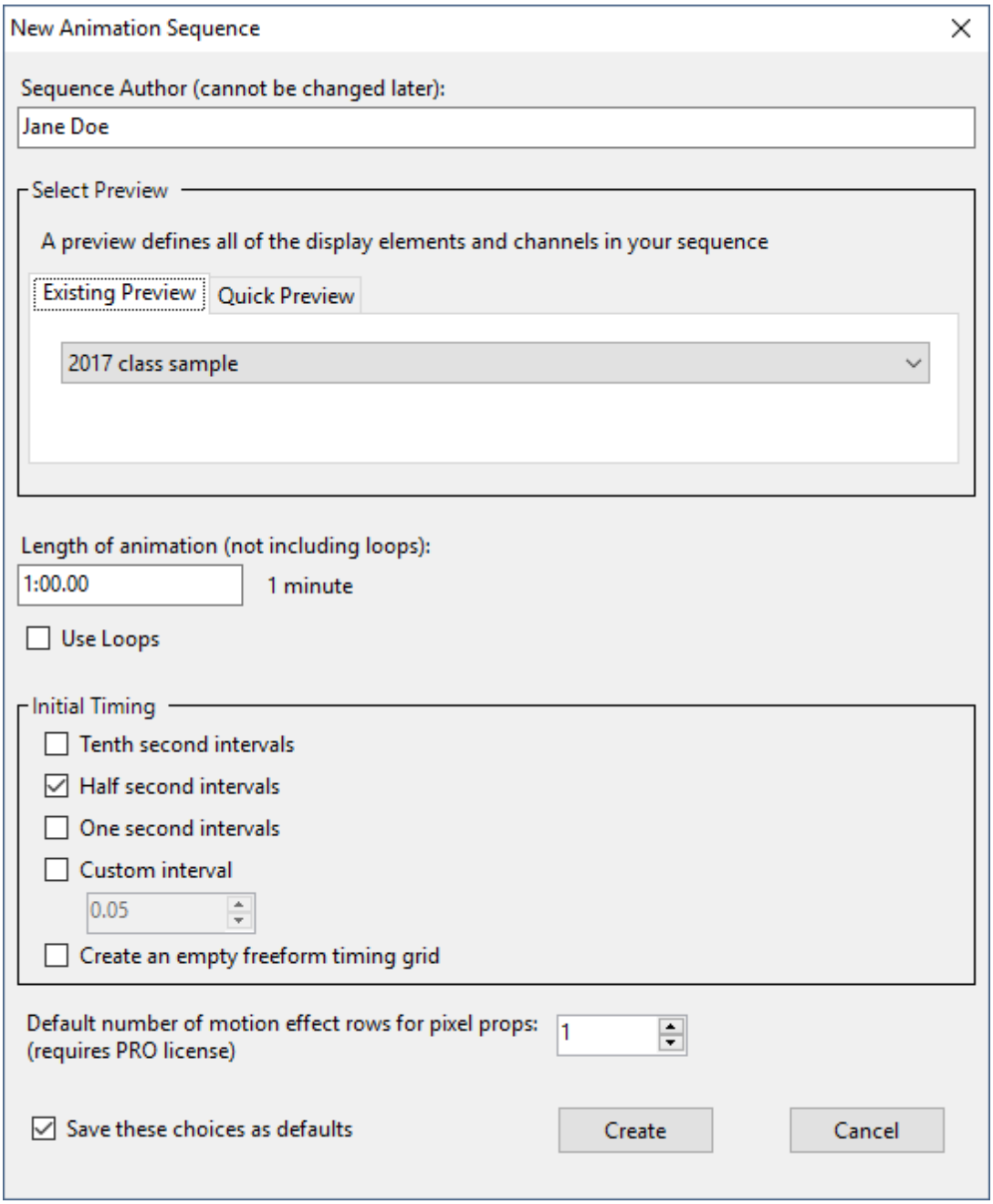

The New Animation dialog

4.1.3 Musical Sequences

A musical sequence is a sequence that is associated with a song (or video, or other audio file), allowing you to synchronize the song with lighting effects. This is as opposed to an animation sequence.

There are some other differences between animation sequences and musical sequences:

- Animation sequences can contain loops, which musical sequences cannot;
- Various song-related tools such as the Beat Wizard, MIDI File Wizard, VU Wizard and Tapper Wizard are only available for musical sequences.

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- Musical sequences can contain beat channels.
- Generally speaking, only one musical sequence can be played at a time (although there is an exception to this, noted below), whereas many animation sequences can be played simultaneously.

The exception to the rule that "only one musical sequence can be played at a time" is that musical sequences put into any section of a show *other* than the musical section are, effectively, treated as animation sequences. That is, their associated songs will *not* be played, and more than one of them can be played simultaneously.

You can convert a musical sequence to an animation sequence with the Sequence > Convert to Animation menu item.

In S5, animation sequences and musical sequences have the same file extension (LOREDIT). This is different from prior versions, where animation sequences had an LAS extension and musical sequences had an LMS extension.

To create a new musical sequence in the Sequencer, use the New Musical Sequence dialog.

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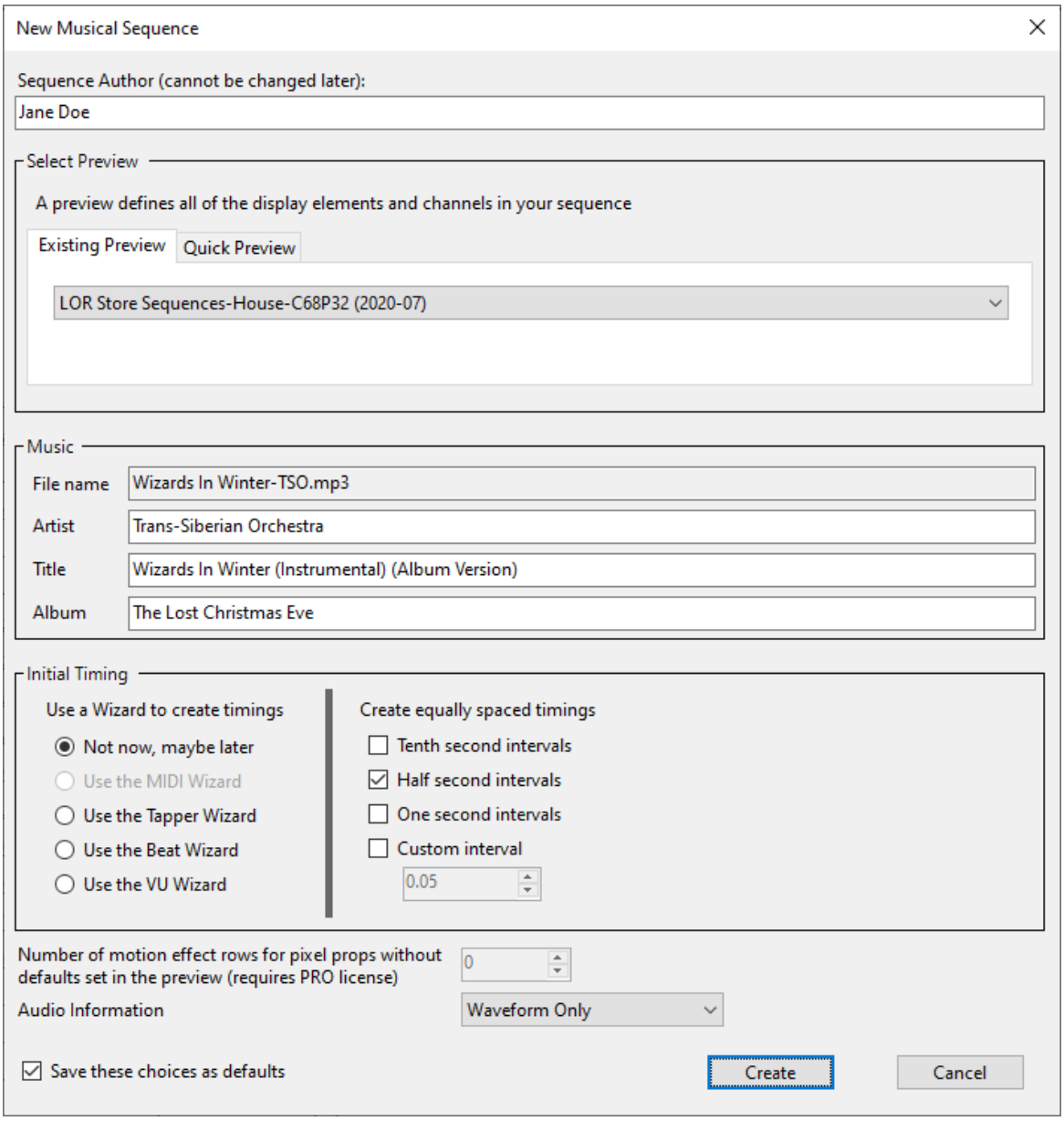

The New Musical Sequence dialog

4.1.4 Channels

A channel is a particular circuit on a particular controller which can control lights (or servos in the case of the Servo Dog controller). The Sequencer can be used to assign effects to channels, to make the lights turn on and off, fade, shimmer, twinkle, and so forth.

Regular Channels

Single channels can control a string of traditional incandescent or LED lights, or a single-color flood light, or perhaps some strobe lights. We will refer to these as "Regular Channels" to distinguish them from "RGB Channels".

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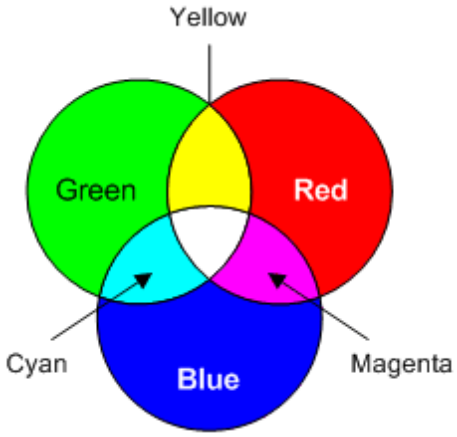
A single channel from an AC controller

RGB Channels

An RGB channel is a group of three channels - a red channel, a green channel, and a blue channel. By varying the amount of red, green, and blue light, any color can be produced. A device may have a single RGB channel, like an RGB flood light (sometimes referred to as "dumb RGB"); or it can have many RGB channels, like a Cosmic Color Ribbon (sometimes referred to as "Smart Pixels").



Mixing red, green, and blue light

Pixels

Pixels are just a collection of RGB channels, 1 RGB channel controls one pixel. So a string with with 50 pixels would have 50 RGB channels. Light-O-Rama Pixie Controllers, as well as the PixCon16 controller, are used to control pixels.

Device Type

When defining a channel, you first start with the Device Type. Device type specifies the type of commands the controller understands (i.e. command protocol). The S5 software can send commands using the Light-O-Rama protocol and also the DMX protocol.

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Light-O-Rama Protocol

When using the Light-O-Rama protocol, a channel has a unique combination of:

- Network, which is the COM port that this channel's controller is hooked up to;
- Unit, which is the unit ID of the controller, allowing different controllers to be distinguished from each other;
- Circuit, which represents an electrical circuit that can controlled. It could be a single output from an AC controller, DC controller, or servo controller. Or a group of circuits could be used to control a string of RGB pixels - one RGB channel per pixel.

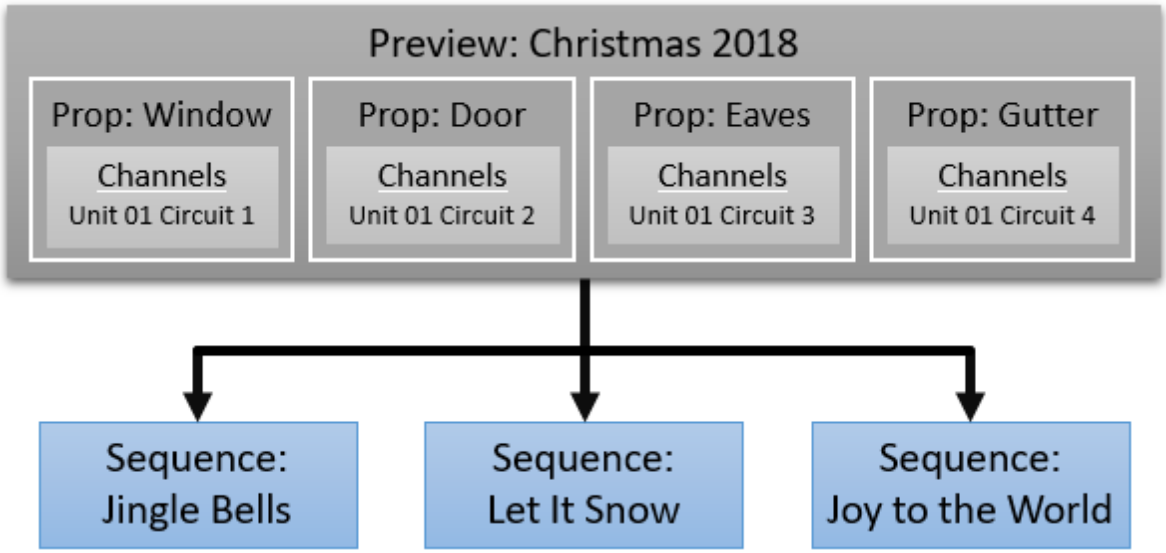
DMX Protocol

When using the DMX protocol, a channel has a unique combination of:

- DMX Universe**,** and
- DMX Channel. There are 512 available channels in each DMX universe.

Assigning Channels

Channels are assigned to props in the Prop Definition screen within Preview Design. A preview is assigned to a sequence, and the sequence can only control the channels defined in its assigned preview.



Network Preferences

There are 2 variants of the Light-O-Rama protocol: there is the non-enhanced protocol for "Gen 1" devices and the enhanced protocol (ELOR) for "Gen 3" and later devices.

There are also 2 variants of the DMX protocol: there is DMX sent over a USB adapter and DMX sent over Ethernet (also known E1.31 and sACN).

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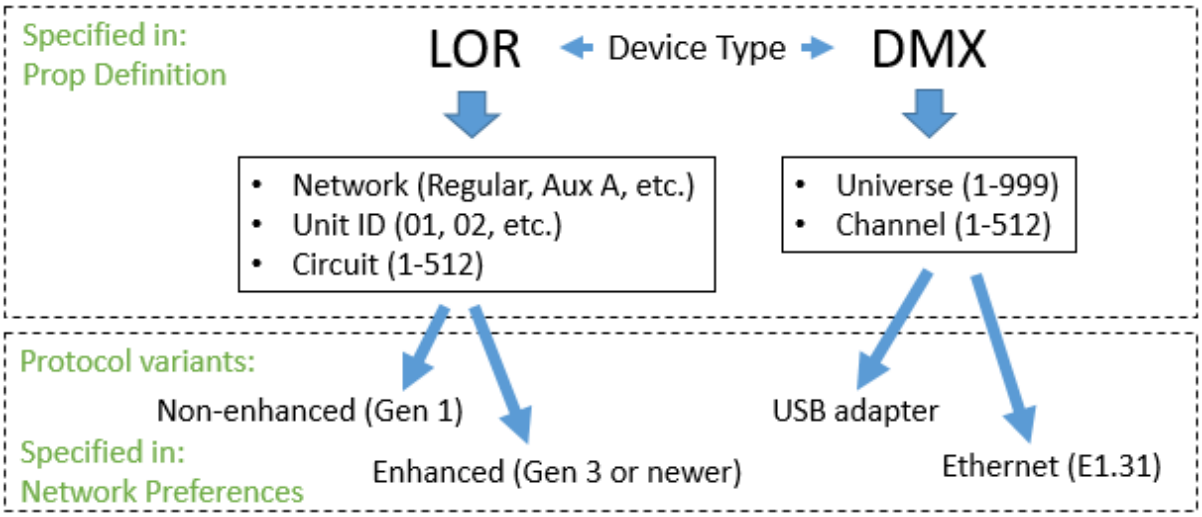
Which variant to use as well as other connection properties are set using the Network Preferences program.



4.1.5 Effects

Lighting effects (or just "effects") turn your lights on at a particular intensity level (brightness), or to a particular color in the case of RGB, or a particular pattern in the case of motion effects for pixels. The lighting effects available depend on the type of channel:

- Regular channels
- RGB channels
- Pixels

Effects for Regular Channels

On

The "On" effect is just what it says - the light turns on. This could be the light turning on at full (100%) intensity, or at some other intensity, or fading on, or fading off.

Twinkle

The "Twinkle" effect causes your lights to quickly vary between on and off. The effect could be twinkling at full (100%) intensity, or at some other intensity, or fading on, or fading off.

The difference between "Twinkle" and "Shimmer" is that twinkle is more random: Two different strings of lights that are both told to shimmer at the same time will quickly turn off and on in sync with each other; if they are instead told to twinkle, they will still quickly turn off and on, but not in sync with each other.

Shimmer

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The "Shimmer" effect causes your lights to quickly vary between on and off. The effect could be shimmering at full (100%) intensity, or at some other intensity, or fading on, or fading off.

The difference between "Shimmer" and "Twinkle" is that twinkle is more random: Two different strings of lights that are both told to shimmer at the same time will quickly turn off and on in sync with each other; if they are instead told to twinkle, they will still quickly turn off and on, but not in sync with each other.

DMX Intensity

DMX devices receive values between 0 and 255. Most of the time it is sufficient to specify that a light be turned on at 50% or 75% brightness - in which case the DMX Intensity effect is not necessary (the Light-O-Rama software will handle the conversion between percentage and DMX value for you). However, there are some DMX devices (moving head lights for example) where a precise DMX value is required. In these cases, the DMX Intensity effect can be used to specify that value.

Effects for RGB Channels (also called dumb RGB)

For RGB channels, the 4 effects for regular channels (on, twinkle, shimmer, and DMX intensity) can be applied in combination with a color or a color transition.

Effects for Pixels (also called smart pixels)

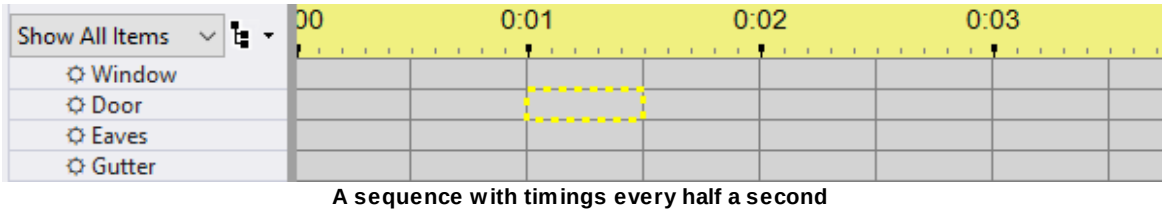
For pixels you have 3 options for creating effects. The S5 Sequencer allows you to mix and match all 3 approaches.

- Assign colors to each pixel individually. This can be tedious work for display elements with more than a few pixels. However, sequences for sale are sometimes delivered this way.
- You can use the SuperStar sequencer (separate license required)
- You can use the Motion Effect Generator that is built in to the Sequencer. Pro license required.

4.1.6 Timings

Timings are the times in a sequence at which you can command the lights to do various effects - to turn on, turn off, fade up, fade down, and so forth.

Timings are represented in the Sequencer by vertical grey lines. For example, the following sequence has timings every half a second, at 0.5 seconds, 1 second, 1.5, 2, 2.5, 3, and so forth:



A sequence with timings every half a second

Timings do not have any direct effect themselves on the behavior of your lights; rather, they simply give you a way to specify a start time and an end time for effects on a grid row. You can fill the space between two timings with an effect by selecting the appropriate tool (such as the "Fade Up" tool) and

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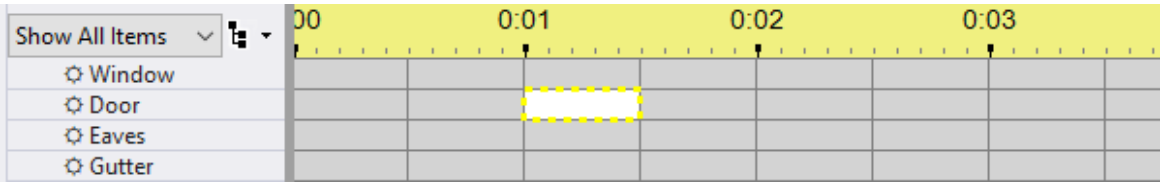
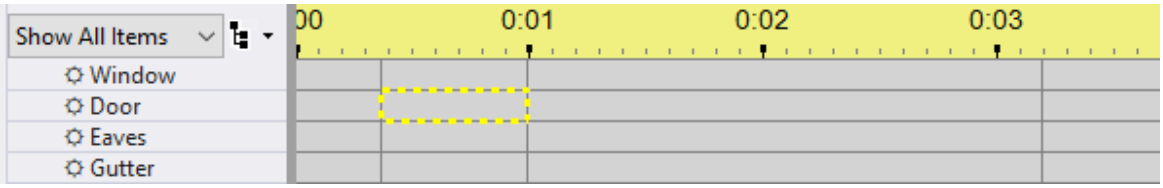
clicking on a grid cell (see Adding Effects for details). For example, selecting the "Max Intensity" tool and clicking the cell between 1 second and 1.5 seconds for the "Door" prop results in:



The Door prop has been turned on, between 1 second and 1.5 seconds

Timings do not have to be equally spaced (as they are in the above example). For example, the following sequence has timings at 0.37 seconds, 1 second, and 3.2 seconds:



A sequence with timings at 0.37 seconds, 1 second, and 3.2 seconds

Timing Grids

A set of timings is known as a "timing grid". A sequence can have more than one timing grid, with one being shown at a time. The timing grid that is currently shown can be changed by selecting from the "Timings" drop-down box on the Toolbar. There are two types of timing grids: fixed grids and freeform grids.

Fixed Timing Grids

In a fixed timing grid, each timing is the same length of time from the next timing. For example, a fixed timing grid might have a timing every second, or every tenth of a second.

The timings in a fixed timing grid cannot be moved, deleted, or added to.

Freeform Timing Grids

In a freeform timing grid, timings do not have to be equidistant. For example, a freeform timing grid might have one timing at time 1.00 (i.e. one second), another half a second later at time 1.50, and another 2.2 seconds past that at time 3.70.

The timings in a freeform grid can be moved or deleted, and new timings can be added.

Creating, Deleting, and Modifying Timings

Timings can be automatically inserted into a sequence when it is created, in a variety of ways. For example, you can tell the Sequencer to insert timings every so often - for example every half second, or, for a musical sequence, insert timings based on the song itself using various tools like the Beat Wizard, VU Wizard, Tapper Wizard, and MIDI File Wizard. If you tell it to insert timings every so often (such as every half second), it will create them in a fixed timing grid. If you tell it to use one of the audio wizards,

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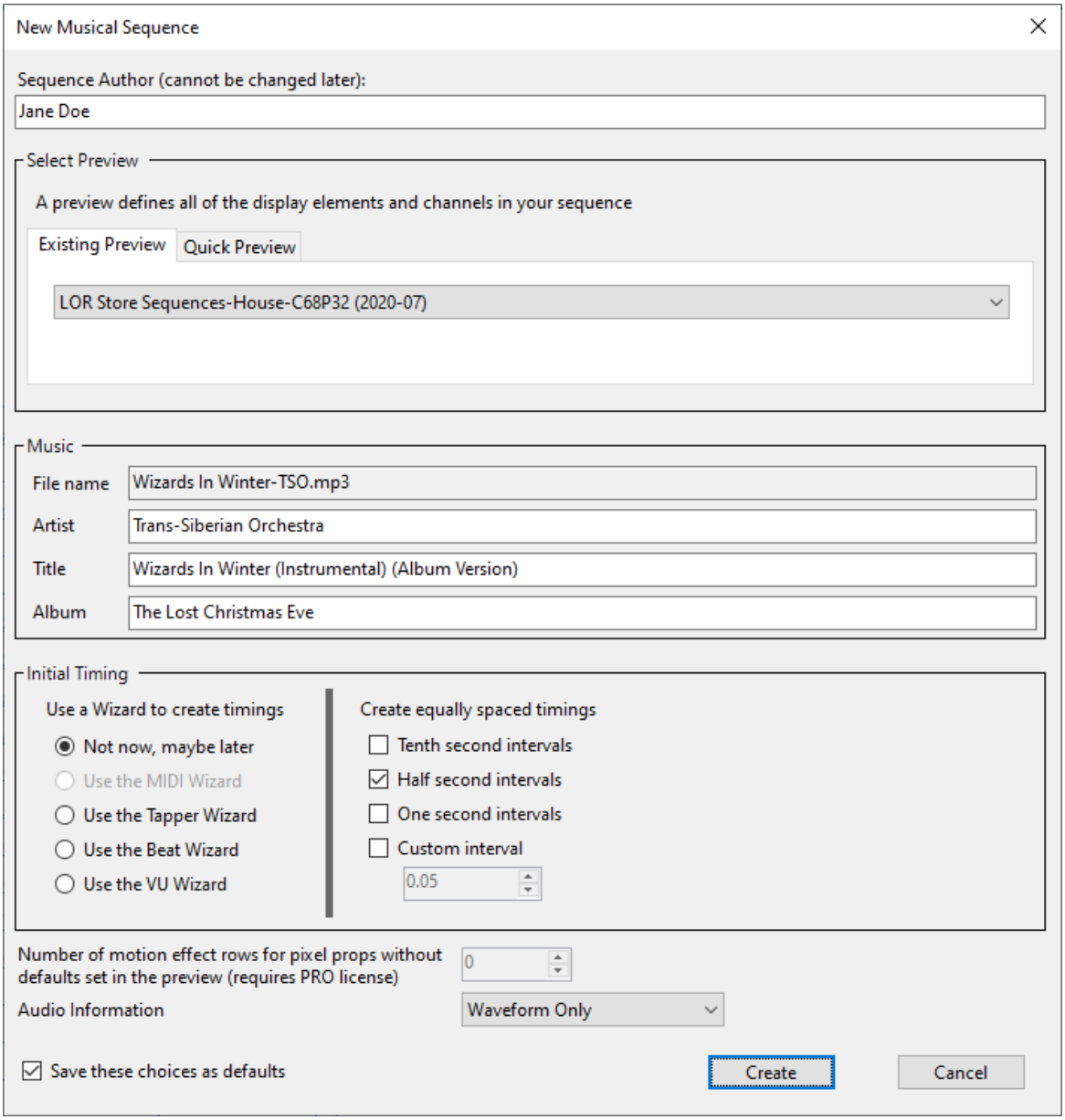
or not to insert timings, it will use a freeform timing grid. Please see the New Animation dialog and New Musical Sequence dialog for details. The audio wizards can also be run at any time after sequence creation.



The New Musical Sequence dialog

In a freeform timing grid:

- Timings can be added during sequence playback by using the "T" shortcut key
- Timings can be moved by clicking and dragging them. This behavior can be turned on or off by "locking" the timings.

Timings can also be added, deleted, and resized in a variety of other ways. See these topics for more information:

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- The toolbar's timings section
- The Timing Mark sub-menu on the grid's right-click menu

4.1.7 Compressed Sequences

The layout of a Light-O-Rama sequence file is somewhat verbose. This is intended to make it easier for third party tools which use LOR sequence files to be created. However, it has a drawback: Large sequences may be fairly slow to load. When loading a large sequence in the Sequencer, this may be an inconvenience. But the real problem is when loading a large sequence in the Show Player: It may take several seconds, during which time your show is effectively paused.

To resolve this issue, Light-O-Rama supports the concept of a "compressed sequence". A compressed sequence is a separate save file, associated with a sequence but containing only enough information to play the sequence in the Show Player, and optimized for loading speed. This can speed up loading times dramatically - for example, for a certain large sequence that takes eight seconds to load on a certain computer, the associated compressed sequence only takes a small fraction of a second to load on that same computer.

Light-O-Rama will automatically create compressed sequences whenever appropriate, and the Show Player will automatically use them instead of the associated sequence file whenever they are present. So, you should not have to take any steps in order to start taking advantage of this feature. You can, however, prevent the Show Player from using compressed sequences (for example, if something unexpected goes wrong with them), in which case it will simply use the sequences instead. This can be controlled through the LOR Control Panel's "Use Compressed Sequences" option.

Animation sequences which contain loops cannot be compressed. All other sequences are eligible for compression.

It is highly recommended that you manually ensure that each of your sequences has an up-to-date compressed sequence built before starting your show. You can do this for an entire show or schedule via the Sequence Compressor program.

Assuming that you do not turn "Use Compressed Sequences" off, the way that the Show Player handles sequences and compressed sequences is this:

When your show calls for a certain sequence to be loaded, the Show Player will first check to see if there is a compressed sequence associated with that sequence. If so, and if the compressed sequence is more recent than the sequence, it will load the compressed sequence instead of the sequence.

Otherwise, it will load the sequence. After loading the sequence, it will check whether or not a compressed sequence can be made for it, and, if so, it will create the compressed sequence. This is so that in future runs of the show, it can simply use the compressed sequence instead of the sequence.

4.1.8 Protected Sequences

A protected sequence is a sequence which, generally speaking, cannot be modified, and whose sequence grid cannot be viewed in the Sequencer. Protected sequences can, however, be played just like any other sequence; they can be scheduled in your shows, they can be played in the Sequencer, they can be downloaded as standalone sequences, and they will control your lights.

There are some things about a protected sequence which can be modified:

- The location of the media file (via Sequence > Media File)
- The preview (via Sequence > Assign Different Preview)

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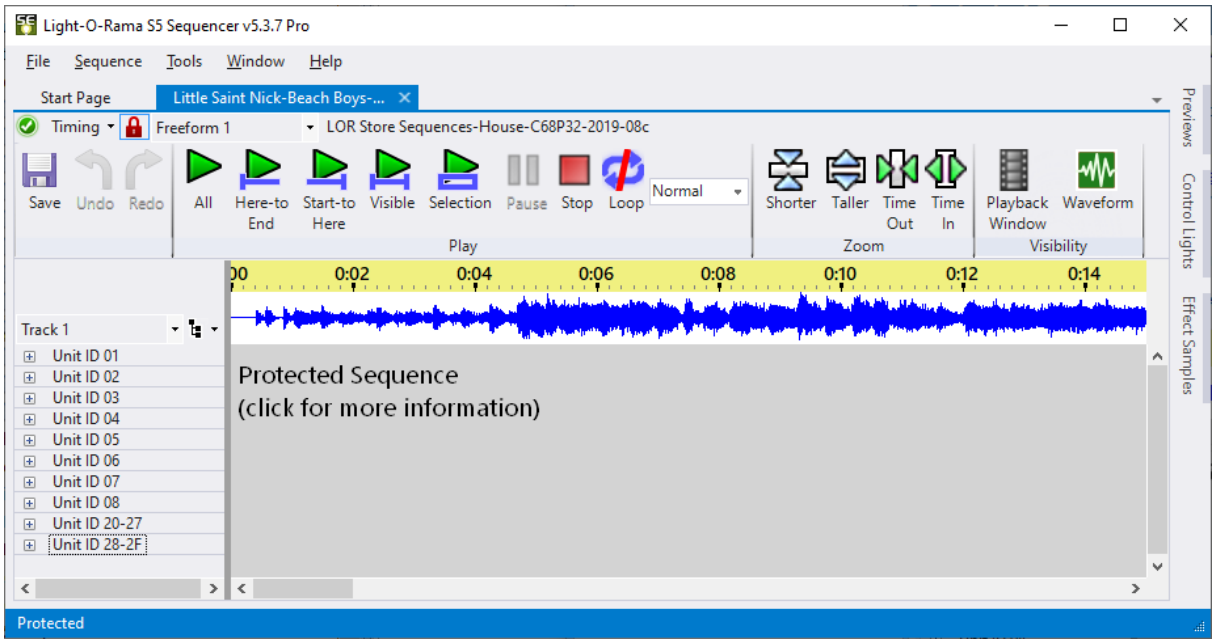
- The Windows shell command (via Sequencer > Windows Command)

To create a protected sequence, open the sequence which you wish to protect, and then select "Export as Protected" from the File menu. It will prompt you to select a file name for the protected sequence. In S5, protected sequences have a different file extension than regular sequences: .LORPROT versus .LOREDIT

The ability to create a protected sequence is available only with the Advanced license level or higher.



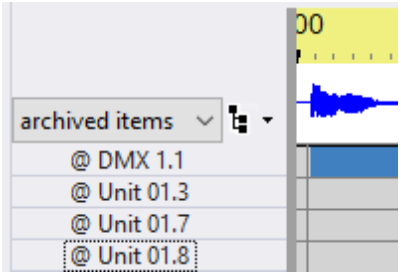
A protected sequence, as displayed in the Sequencer

4.1.9 Archived Props

What Are Archived Props?

Archived props are an inactive part of the sequence. They contain effects and can be displayed on the sequence grid (they are shown with an "@" symbol as a prefix). Each archived prop has its own prop definition that is not part of the preview. Archived props are not shown in the playback window when the sequence is played and they cannot control real lights.

Archived props are a benefit because the sequencing on old props is preserved, allowing you to decide what action to take and when.



4 archived props

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How Are They Created?

If an existing sequence is opened and contains information for props that are no longer part of the preview, those props and their associated sequence are automatically converted to archive props. You cannot create an archive prop manually. Scenarios where this might occur:

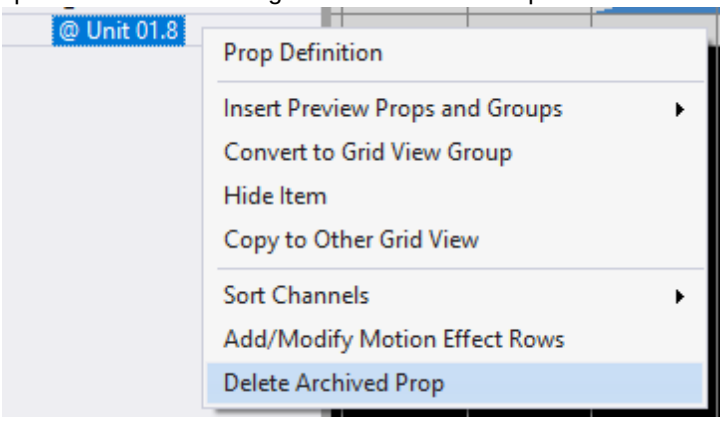
- You are upgrading sequences for S4 and you created your preview by importing a Visualizer file. However, there are some old channels in your sequence that you don't use any and were not in the Visualizer file - and thus won't be in your S5 preview either. Those old channels in the sequence will get archived because they are not in the preview.
- You created an S5 sequence with a last year's preview (e.g. 2017 Christmas) and now you have created a new preview for this year (e.g. 2018 Christmas). Your display has changed from last year and you have retired a few props. If you assign the new 2018 Christmas preview to your 2017 sequences, then the sequencing for the retired props will be archived because they are no longer in the preview.
- You were working on this year's sequence (e.g. Sequence-A), which is currently closed. You edit the preview and remove a prop because you decide you are not going to use it this year. When you next open Sequence-A, the sequencing for the prop you removed from the preview will be archived.

If you delete a group from the preview and your sequence had motion effects on that group, then the group will be archived.

What Can You Do With Them?

You can do several things with archive props:

- You can copy sequencing from the archive prop to other areas of your sequence using copy/paste.
- If the sequence for the archived prop is no longer needed, you can delete it by right-clicking on the prop's name and selecting "Delete Archived Prop".



Delete an archived prop directly from the sequence grid

- From the Manage Archived Props dialog you can perform bulk deletions, convert archived props to beat channels, or add them to your preview (making them a full-fledged members of your sequence, capable of controlling lights).

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4.1.10 RGB Aggregates

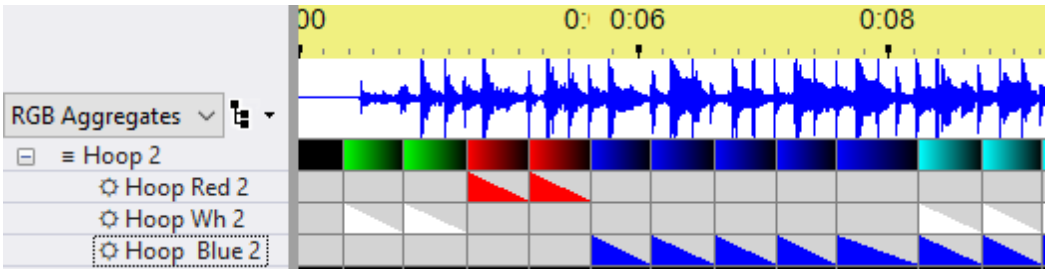
What Are RGB Aggregates?

RGB aggregates allow you to combine any 3 existing channels (the channel colors don't need to be red, green, and blue necessarily), and the combination of the 3 is treated as an RGB channel for sequencing purposes. This can be useful for people who are converting sequences with traditional strings to RGB.

In rare circumstances the S5 sequence upgrade process may create an RGB aggregate, but generally they are manually created as needed by the user.

RGB aggregates do not need to have channels assigned to all 3 slots (red, green, and blue). You could create an RGB aggregate with just the green and blue slots assigned, for example.

In the following example, "Hoop 2" is an RGB aggregate consisting of red, white, and blue traditional channels. The white channel "Hoop Wh 2" is placed in the aggregate's green slot. "Hoop 2" can be sequenced as either an RGB channel or as 3 individual channels. Changes made to the RGB Channel row are immediately reflected on the individual channels, and vice versa.



"Hoop 2" is an RGB Aggregate

How Are They Created?

RGB aggregate channels can be created:

- By selecting "RGB aggregate" from the "Add New" item on the Sequence menu or on the Grid View menu.
- By clicking the "+" icon on the Manage RGB Aggregates dialog.

Right-click on a RGB aggregate's name and select "Modify RGB aggregate" to change its name and/or its assigned channels.

Right-click on a RGB aggregate's name and select "Delete RGB aggregate" to remove it completely from the sequence.

What Can You Do With Them?

Suppose that in last year's display you used several colors of traditional lights (bundles) on your roof outline, and that this year you are replacing them with RGB pixels. You need to somehow change the sequences you used last year to control the new pixels in this year's display.

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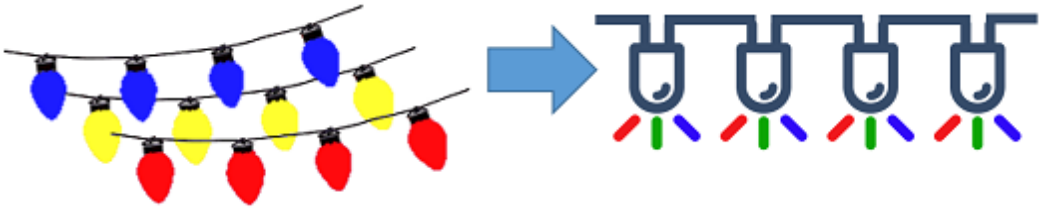

Here are the steps:

1. Copy the preview for last year's display to a new preview.
2. Add the pixels for the roof outline to the new preview, without deleting the strings used the prior year.
3. Open last year's sequence.
4. Assign the new preview to the sequence.
5. Use Save As to give the sequence a new name
6. Create an RGB aggregate for the a bundle in the roof outline
7. Copy the RGB aggregate's RGB channel to the clipboard
8. If you have a Pro license, paste onto the motion effect row for the new pixels. If you have a lower level license, select all of the RGB pixel rows and paste into the selected area.

4.1.11 Time Format

Whenever the Light-O-Rama Sequencer asks you for a length of time, you can generally specify hours, minutes, seconds, and hundredths of a second. You don't have to specify all of them if you don't want to.

The general format is:

HH:MM:SS.hh

Where HH is hours, MM is minutes, SS is seconds, and hh is hundredths of a second. You usually do not have to type all of that in, though; for example, if you are concerned only with seconds, you don't have to type in anything about hours, minutes, or hundredths of seconds.

The Sequencer also uses this same format whenever it displays a length of time to you.

The following examples show how to specify various lengths of time:

Length of Time	Format
Ten seconds	10
Ten and 37/100 seconds	10.37
Three minutes and ten seconds	3:10
Three minutes, ten and 37/100 seconds	3:10.37
Seven hours, three minutes, and ten seconds	7:03:10
Seven hours, three minutes, ten and 37/100 seconds	7:03:10.37

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4.2 Shows

What is a Show?

A show is a collection of sequences, to be played as a set. After creating sequences with the Sequencer, you can build a show from them using the Show Editor. Shows can then be scheduled to play at certain times, using the Schedule Editor, and are then actually played by the Show Player.

Assuming that your license level is at least Basic Plus, you can also cause a show to be played on demand, without scheduling it, via the Light-O-Rama Control Panel.

There are six different parts to a show, each of which consists of sequences:

- The Background Section
- The Startup Section
- The Animation Section
- The Musical Section
- The Interactive Section
- The Shutdown Section

Each of these parts is optional. For example, a show can be built having only a musical section and a shutdown section.

By default, when a show is being played in the Show Player, any given sequence in the show will not be loaded until when it is about to be played for the first time. Depending upon the size of the sequence and the power of the computer, it may take a human-noticeable amount of time to load a sequence; if so, this may cause an undesired delay between sequences, the first time they are played. So, optionally, you can choose to preload all sequences before any of them are played.

Additionally, if your Light-O-Rama software license is for the Advanced feature level, you can modify exactly how your show will start up - for example, immediately at its scheduled start time, or after a certain circuit on a certain Light-O-Rama controller has been triggered (for example, by someone hitting a "start" button). See "Show Startup Options" for details.

Note that the duration of a show is not part of the show itself; rather, it is determined by the schedule.

4.3 Schedules

What Is a Schedule?

The schedule is at the top of the Light-O-Rama schedule/show/sequence hierarchy:

- The schedule is created and modified by the Light-O-Rama Schedule Editor, and played by the Light-O-Rama Show Player.
- It consists of shows, which are created and modified by the Light-O-Rama Show Editor. The schedule schedules these shows to be played at certain times.
- Shows consist of sequences, which are created and modified by the Light-O-Rama Sequencer.

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- Sequences are composed of commands to be sent to your lights, producing various lighting effects.

The schedule has two parts: the weekly schedule and the calendar schedule. The weekly schedule contains information on shows that should be played on a recurring, weekly basis - for example, every Wednesday night from 7:00 PM to 10:00 PM. The calendar schedule contains information on shows that should be played once, at a specific date and time.

When the Light-O-Rama Show Player looks at the schedule to decide whether a show should be played, it first checks the calendar schedule to see if it has any shows scheduled for the current date and time. If there are, the Show Player will play that show. Otherwise, the Show Player will check the weekly schedule.

Example

Suppose you have a single show which you want to play every Friday and Saturday night, from 7:00 PM to 10:00 PM, except for Christmas Eve (when you want it to run from 5:00 PM to 11:00 PM) and Christmas Day (when you want it to run from 8:00 AM to 2:00 PM). Then you would put the Friday and Saturday shows into the weekly schedule, and the Christmas Eve and Christmas Day shows in the calendar schedule. The Light-O-Rama Show Player would then follow the weekly schedule on every day except Christmas Eve and Christmas Day, when it would then follow the calendar schedule.

Considerations

- Unlike the Show Editor, which can be used to create many shows, and the Sequencer, which can be used to create many sequences, the Schedule Editor only maintains a single schedule, and the Show Player only uses that single schedule.
- The Show Player will not play any scheduled shows unless it is started and scheduled shows are enabled, via "Enable Schedule" in the Light-O-Rama Control Panel.
- After modifying your schedule in the Schedule Editor, make sure to save it. Changes to your schedule will not be picked up by the Show Player until the schedule has been changed.

4.4 File Locations

The first time you start the Light-O-Rama software, you will be prompted for the name of the folder where you want to store sequences and other related files. The default choice is to create a "Light-O-Rama" sub-folder below your "Documents" folder, as shown below.

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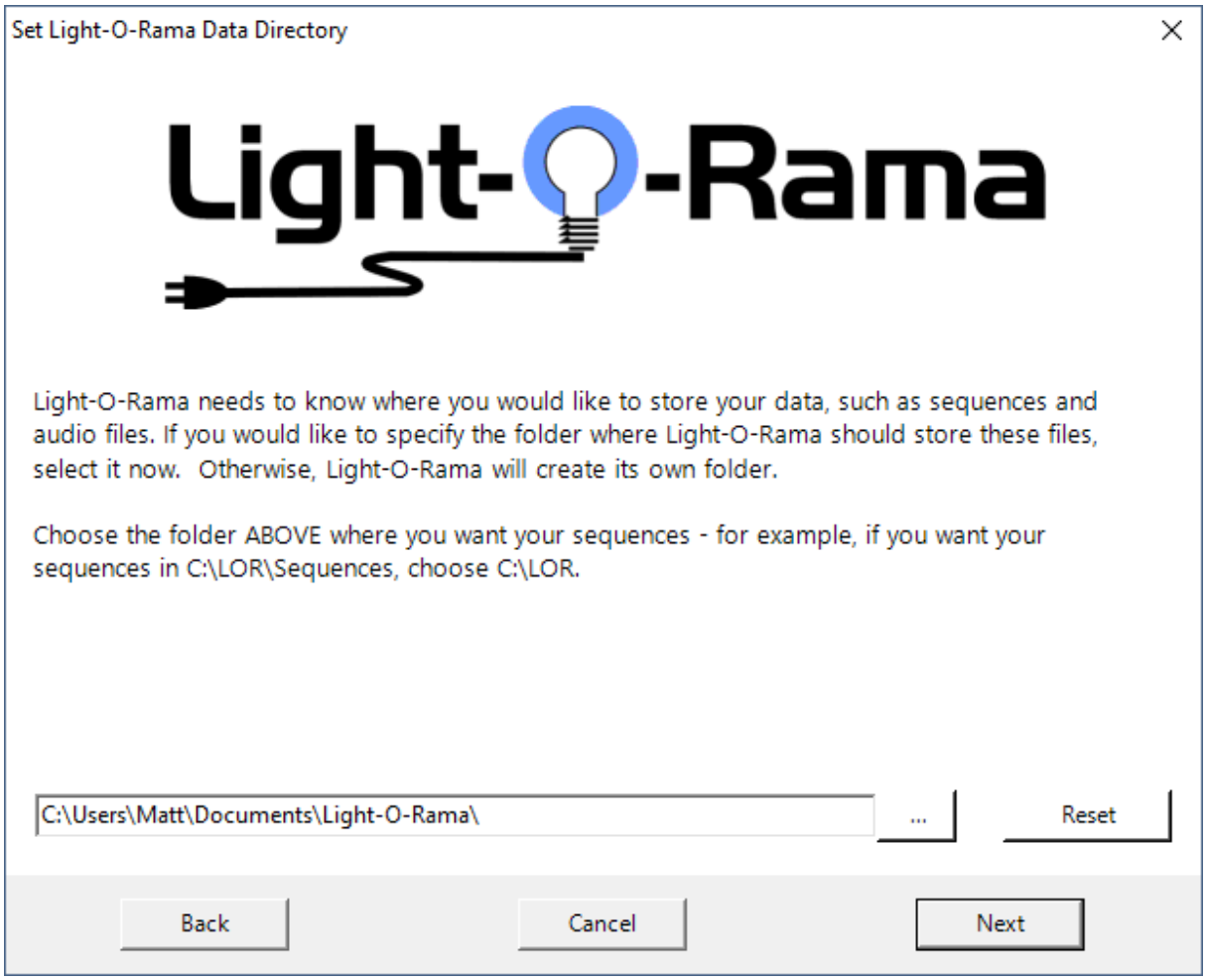

Light-O-Rama Sub-folders

Regardless of where you choose to put the Light-O-Rama data folder, it will contain the following sub-folders:

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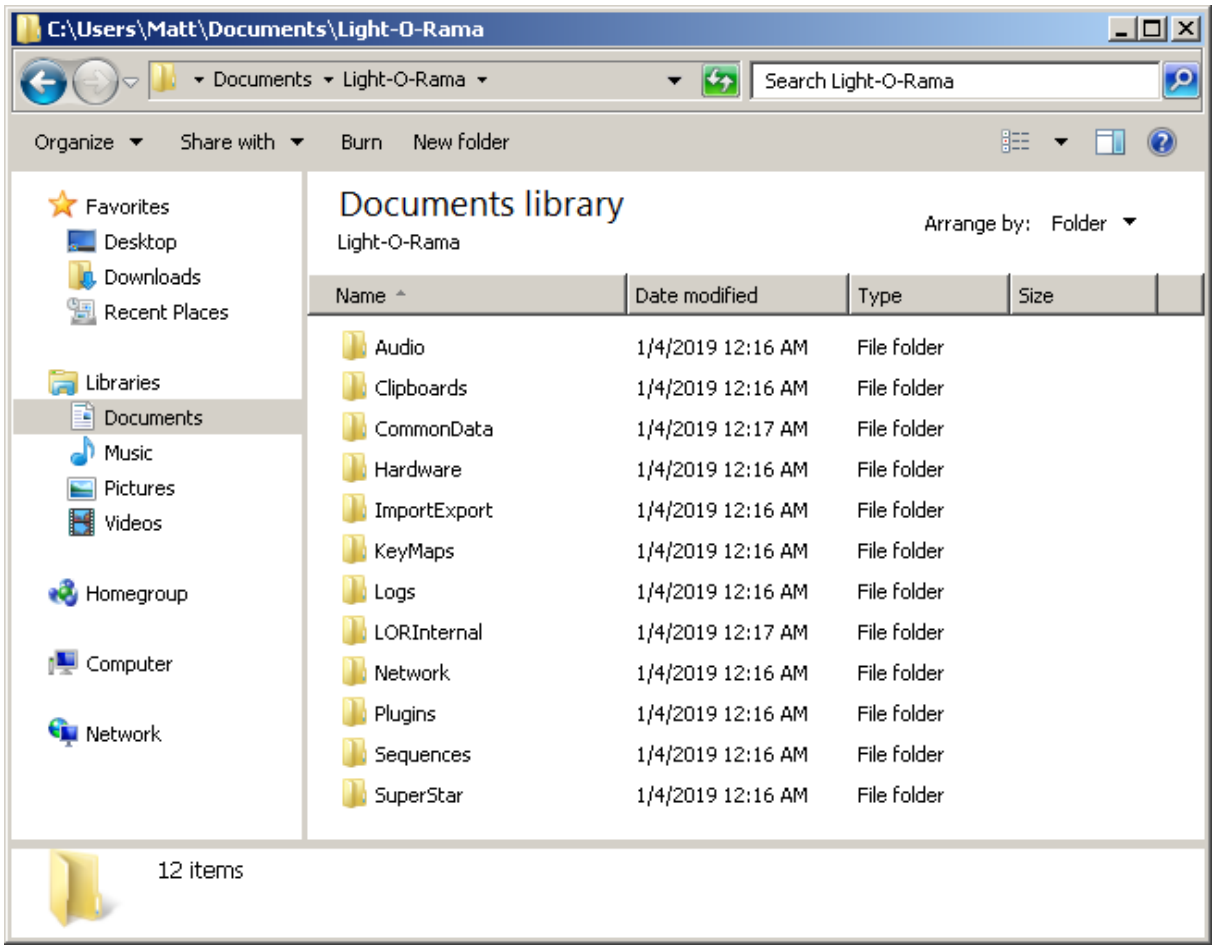

Audio

The "\Light-O-Rama\Audio" folder is where you should store the media files (audio and/or video) that you will use as the music track for your sequences. The advantage of storing them here, is that Light-O-Rama programs will look for the media files here by default. If you move your sequences to a different computer, or share your sequences with another user, as long as you store the media file here, Light-O-Rama programs will always be able to find the media file without prompting.

Clipboards

The "\Light-O-Rama\Clipboards" folder is where clipboards for the Sequencer are stored when cutting, copying, or pasting effects. Clipboard files have a ".LCB" file extension. Clipboard files created by third-party programs should be placed in this folder.

CommonData

The "\Light-O-Rama\CommonData" folder contains a number of important files:

- Previews (LORPreviews.xml)
- Motion Effect Favorites (LORFavorites.xml)
- Color Fade tool favorites (LORGradients.xml)
- Motion Effect Generator palettes (LORPalettes.xml)

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- Custom Keyboard maps (CustomKeyMaps.xml)

Hardware

The "\Light-O-Rama\Hardware" folder stores dimming curves that can be loaded into a controller.

ImportExport

The "\Light-O-Rama\ImportExport" folder is the default location for files exported from the Sequencer, including previews, props, and motion effect favorites.

KeyMaps

The "\Light-O-Rama\KeyMaps" folder holds custom keymap files created in S4 or earlier. S5 custom keymaps are stored in CommonData.

Logs

The "\Light-O-Rama\Logs" folder is not currently used in S5.

LORInternal

The "\Light-O-Rama\LORInternal" folder is used as temporary storage by some Light-O-Rama programs. You should not make any changes to the items stored in this folder or any of its sub-folders.

Network

Below "\Light-O-Rama\Network" folder is a sub-folder called "SavedConfigurations", where exports from Network Preferences are saved. These files have a ".LIV" extension.

Plugins

The "\Light-O-Rama\Plugins" folder contains sub-folders where files can be added to extend the functionality of the Sequencer:

- prop shapes (not yet supported)
- motion effects (not yet supported)
- software dimming curves

Sequences

The "\Light-O-Rama\Sequences" folder is where your sequence files should be stored. S5 Sequence files have a ".LOREDIT" extension.

SuperStar

The "\Light-O-Rama\SuperStar" folder contains files used by the SuperStar Sequencer.

Moving Files To A New Computer

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If you move your Light-O-Rama software to a new computer, you should copy files in all of the sub-folders noted above, with the exception of Logs and LORInternal.

4.5 Hardware

Light-O-Rama can control your lights via Light-O-Rama controllers and Native DMX devices. The S5 version has dropped support for: Dasher controllers, Digital IO cards, BSOFT digital IO cards, and X10 controllers.

When a prop is created in a preview using the Sequencer, the kind of controller (known as "device type") is assigned in the Prop Definition window. It can also be changed on the Channel Conflicts & Bulk Changes tab of Preview Design.

4.5.1 Light-O-Rama Controllers

Light-O-Rama allows your computer to control your lights via a variety of hardware controllers. Primary among these are Light-O-Rama controllers.

Some Light-O-Rama controllers can also act as input triggers, allowing you to start particular sequences on demand (such as when a person pushes a button).

Unit IDs

Each Light-O-Rama controller is assigned a unit ID. A unit ID is an identifier for the controller, and is two characters long, with each character being a digit (0-9) or a letter from A to F. For example, 37, 25, 4B, C8, and DA are all valid unit IDs. Some such combinations are reserved, though, and should not be used for as a unit ID. Specifically, 00, F1 through F9, and FA through FF are not valid unit IDs. See the Unit Id Values topic for a complete list.

Controllers will only react to lighting commands that are intended for their own unit ID; if two controllers on the same network have the same unit ID, both will react simultaneously to the same commands. However, a unit set up to use input triggers must have its own unique unit ID, not shared with any other unit, and must not be on an LOR Enhanced network. Also, the Hardware Utility may react strangely with respect to a unit ID which has more than one unit - for example, detecting them as a single unit, or misdetecting them as some unknown controller type.

The unit ID of a controller is set in one of two ways, depending upon the type of controller:

- Most controllers have physical switches on them that allow you to set the unit ID by moving the switches.
- Otherwise, the Hardware Utility can be used to select a unit ID for controllers without such switches.

It is generally a good habit to assign your unit IDs sequentially starting at 01. This is not necessary, but it will speed up some maintenance such as configuring and testing your controllers in the Hardware Utility.

Circuit IDs

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Within a controller, each string of lights is assigned a specific circuit ID. This allows Light-O-Rama to make different lights do different effects at the same time, using the same controller.

Standalone Mode and Computer Controlled Mode

Light-O-Rama controllers can be set up in standalone mode, in which a sequence is downloaded to them in advance via the Hardware Utility, or hooked up to your computer via a COM port, in which case the Light-O-Rama Show Player will send them lighting commands (during scheduled shows), or the Light-O-Rama Sequencer will (on demand for a single sequence).

A controller in standalone mode can also send lighting commands to other controllers that are hooked up to it via phone lines or data lines, similarly to the way that the Show Player or Sequencer would. Therefore, in standalone mode, a sequence only needs to be downloaded (via the Hardware Utility) to a single controller; the other controllers hooked up to it will receive their commands from it.

Only one source of lighting commands should be present in any group of controllers that are hooked up to each other - either the Show Player, the Sequencer, or a single controller with a downloaded sequence. Having more than one source of commands will cause unexpected and undesired results, as lighting commands will be missed or garbled.

Light-O-Rama Networks

The Show Player and Sequencer can control up to sixteen different networks of Light-O-Rama controllers, each hooked up over a different COM port. These networks are referred to as "Regular" (which is the default), "Aux A", "Aux B", "Aux C", and so on, up to "Aux O".

One main use of multiple networks is for displays with very large numbers of controllers; they enable more lighting commands to be sent out at a single time. They also allow you to set up a sort of star network centered on your PC, rather than a single long daisy chain of controllers; both of these may make such sequences perform more smoothly.

Another use is for displays whose controllers are hooked up using wireless communications, via a Light-O-Rama Easy Light Linker. Wireless communications has a lower top speed than wired, but using multiple wireless networks allows commands to be sent over all of them simultaneously. So, depending upon how many controllers you have and how many lighting effects you send them during your show, using multiple wireless networks could make your show perform more smoothly than using a single wireless network.

It is simplest, though, to just use a single Light-O-Rama network, and in many situations, this is perfectly sufficient.

Light-O-Rama networks can be either normal or "enhanced".

The COM ports represented by each of the networks can be set via the Light-O-Rama Network Preferences program. For example, the following picture shows COM3 assigned to the Regular network, COM12 assigned to auxiliary network "Aux A", and the remainder of the networks unassigned, with Regular (COM3) being an enhanced network:

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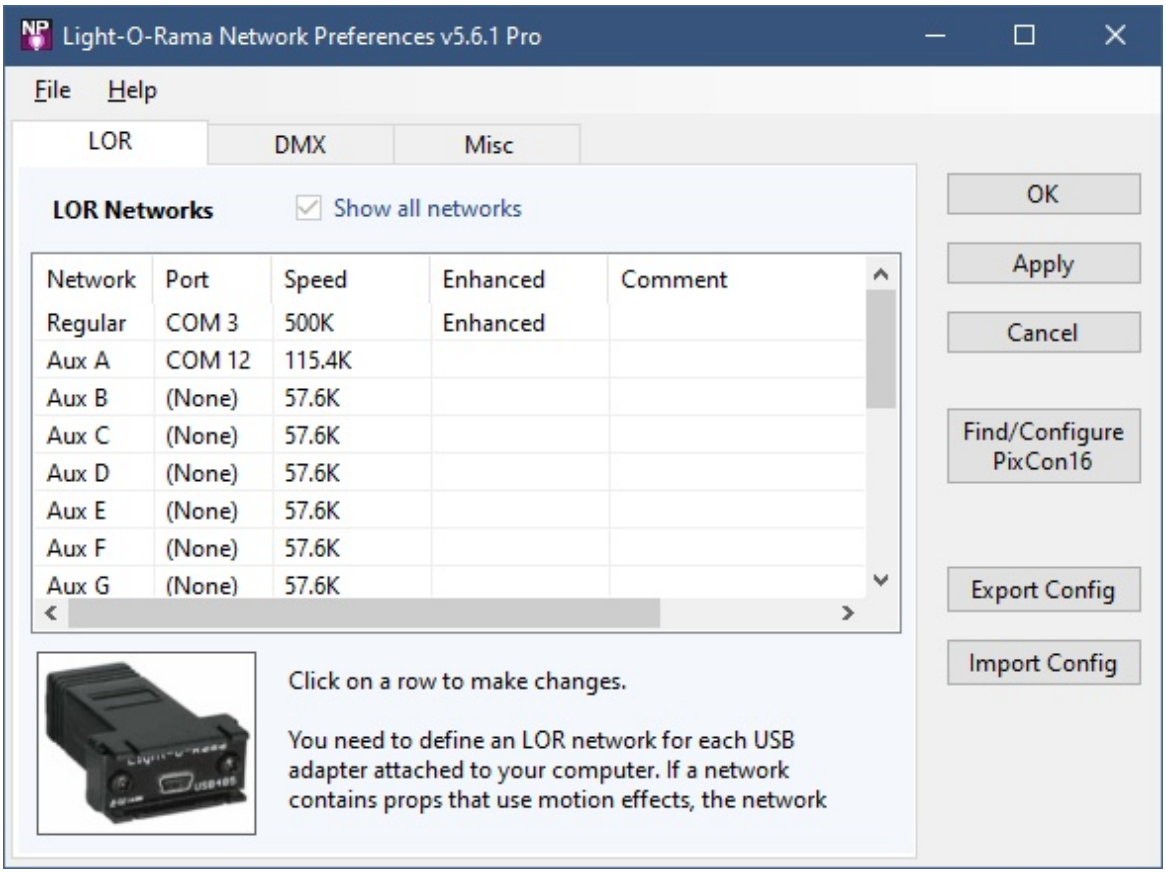

Multiple COM ports assigned to various Light-O-Rama networks

Enhanced Light-O-Rama Networks

A Light-O-Rama network can be an "enhanced" network (set via the Light-O-Rama Network Preferences program). This allows intensity files to be used for controllers on the network, which can be especially helpful with displays having large numbers of channels and lighting effects. Intensity files do not have to be used, though; effects defined in regular sequence files will still work fine on an enhanced LOR network. In fact, effects from both a regular sequence and from its associated intensity file can be used simultaneously.

A Pro level license is required to use this feature, and the Light-O-Rama Comm Listener must be running in order for the lights to be controlled. Not all controllers can be used on such a network, and some controllers may require firmware updates before they are able to be used on an enhanced network. Also, input triggers are not supported on LOR Enhanced networks.

Assigning Circuits in a Sequence

When you add a controller to your display, you add the strings of lights attached to that controller as props in your preview using the Preview Design window.

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4.5.2 Light-O-Rama Pixel Controllers

Light-O-Rama sells several different Pixel Controllers which support multiple different Pixel ICs. The Pixie 16, Pixie 8, and Pixie 4 controllers can support up to 100 pixels per port and fully integrate into the existing Light-O-Rama network.

When you add a pixel controller to your display, you add the strings of pixels attached to that controller as props in your preview using the Preview Design window.

4.5.3 Light-O-Rama PixCon16 Devices

With the introduction of the PixCon 16 controller, Light-O-Rama is now selling and supporting native E1.31 devices. These devices are configured from the Network Preferences program on the advanced tab. To start the configuration of LOR E1.31 devices, press the 'Find/Configure E1.31 devices' button.

When you add a PixCon 16 controller to your display, you add the strings of pixels attached to that controller as props in your preview using the Preview Design window.

4.5.4 Native DMX Devices

In addition to Light-O-Rama controllers and various other types of controllers, Light-O-Rama can control native DMX devices, either directly over a serial port and adapter or over ethernet via E1.31.

When you add a DMX device to your display, you add the controller's channels as props in your preview using the Preview Design window.

Several DMX universes can be used, each having a unique universe number from 1 to 999. Each should be assigned a separate DMX adapter (such as an ENTTEC Open DMX USB adapter) or else E1.31 settings (such as IP address and port). You can assign adapters or E1.31 settings to universes via the Network Preferences program.

Unlike other protocols (such as LOR), the DMX protocol requires that the LOR Control Panel be running in order to actually control the devices. The LOR Control Panel will, in turn, start up the LOR Comm Listener. When a program such as the Sequencer or Show Player wants to send a command to a DMX device, it actually sends the command to the LOR Comm Listener, which in turn sends it out over the adapter or E1.31 address assigned to the device's specified universe.

Note that you do *not* have to use the "DMX Intensity" effect on DMX channels. You can, but you can also use any other effect (such as Fade Up or Twinkle). If you use a DMX Intensity effect, it will have a natural DMX intensity range of 0 to 255. If you use any other effect, it will have a range of 0 to 100, but Light-O-Rama will automatically scale it to DMX's 0 to 255 range immediately before sending it out to the actual DMX device.

4.5.5 LED Pixel and Node Terminology

When discussing individually addressable bulbs, there are many terms that can be used. In an effort to standardize these terms when dealing with RGB devices, Light-O-Rama defines the following:

- **'LED' (or 'Light')**: A single locus (point) of light. One **or more** *LEDs* are part of a *NODE*. *LEDs* (or *LIGHTs*) are elemental - they can **NOT** be broken down further.
- **'Node'**: A single processor for one or more *LEDs*. Nodes are **PHYSICAL**. Think of them as the processor chip on every individual *LED/LIGHT*.

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- **'Pixel'**: A pixel is a collection of one or more *NODEs*. Pixels are **VIRTUAL**, and controlled by a single *TRIPLET*. All nodes that are part of a pixel will react in the same way. Pixels are the 'bridge' between the physical world and the virtual (sequencing) world.
- **'Triplet'**: A group of 3 *CHANNELs* that set the color of a *PIXEL*. When we speak about a triplet we do not specify the order of the *CHANNELs*. For example, some pixels are in RGB order, while some others could be in GRB order. Either of those orders refer to the same triplet.
- **'Channel'**: A channel controls a single color of a *TRIPLET*. A *TRIPLET* consists of 3 channels: Red, Green, Blue in the order specified by the manufacturer of the string.

The number of TRIPLETs required will always be the same as the number of PIXELs. When we talk about something that you can physically touch we use 'Pixel'. When we are talking about it otherwise, say in reference to a sequence, we use 'Triplet'.

Here are some examples to help:

A Light-O-Rama Cosmic Color Ribbon has 150 *LEDs.* Every 3 *LEDs* are attached to a single *NODE*. When you set the resolution of the CCR, you control how many consecutive *NODES* are assigned to a single *PIXEL*. At a resolution of 50, each *NODE* is controlled by 1 *PIXEL* for a total of 50 *PIXELs*. At a resolution of 25, every **two** *NODEs* are controlled by 1 *PIXEL* for a total of 25. In all cases a single *TRIPLET* will control a single *PIXEL*.

You may have a string of 170 RGB *LEDs*. Each one of these *LEDs* is attached to a single *NODE*. If you do not group any of the *NODEs* together, you will have 170 *PIXELs* that are controlled by 170 *TRIPLETs* which consist of 3 *CHANNELs* each for a total of 510 *CHANNELs*.

Separating the notion of Nodes from Pixels also allows virtual addressing to make more sense. For example, say you have 30 pixels that are arranged as a 10 x 3 matrix. When you physically construct this matrix, you will most likely use a snake pattern as that minimizes the amount of wire/etc. Your NODES will look like this:

```
1  2  3  4  5  6  7  8  9  10
20 19 18 17 16 15 14 13 12 11
21 22 23 24 25 26 27 28 29 30
```

Notice how when we get to the right side, we don't start over at the left, but instead go one line lower and in reverse order. While that makes a lot of sense while building the matrix, logically the pixels are not in the correct order. Since we read left-to-right, we'd like to see all the pixels ordered from left to right. If we were to set the 'Zig-Zag' parameter on a PixCon16 to 3, the physical nodes will still be in the same order, **however** the pixels will be numbered:

```
1  2  3  4  5  6  7  8  9  10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
```

Since *NODE* refers to the physical and *PIXEL* refers to the virtual, we now can state 'Node 18 is Pixel 13', and it makes sense.

4.6 Unit Id Values

The numbers we use in everyday life are decimals, where each digit has a value between 0 and 9. Light-O-Rama unit ids are usually represented has hexadecimal numbers (aka "hex"), meaning each digit can take on 16 values: 0 through 9, followed by A through F. The following table can be used to convert between the systems.

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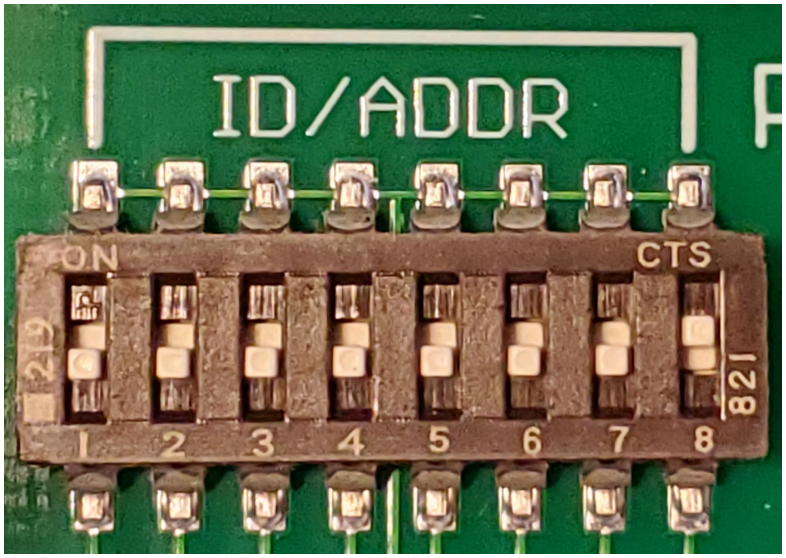
The last 8 columns show how to set the switches on a Pixie controller to achieve the desired unit id. A value of 1 in these columns means the switch is in the "on" position, 0 is "off".



		Pixie Switches (1=on)							
Decimal	**Hex**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	01	0	0	0	0	0	0	0	1
2	02	0	0	0	0	0	0	1	0
3	03	0	0	0	0	0	0	1	1
4	04	0	0	0	0	0	1	0	0
5	05	0	0	0	0	0	1	0	1
6	06	0	0	0	0	0	1	1	0
7	07	0	0	0	0	0	1	1	1
8	08	0	0	0	0	1	0	0	0
9	09	0	0	0	0	1	0	0	1
10	0A	0	0	0	0	1	0	1	0
11	0B	0	0	0	0	1	0	1	1
12	0C	0	0	0	0	1	1	0	0
13	0D	0	0	0	0	1	1	0	1
14	0E	0	0	0	0	1	1	1	0
15	0F	0	0	0	0	1	1	1	1
16	10	0	0	0	1	0	0	0	0
17	11	0	0	0	1	0	0	0	1
18	12	0	0	0	1	0	0	1	0
19	13	0	0	0	1	0	0	1	1
20	14	0	0	0	1	0	1	0	0
21	15	0	0	0	1	0	1	0	1
22	16	0	0	0	1	0	1	1	0
23	17	0	0	0	1	0	1	1	1

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24	18	0	0	0	1	1	0	0	0
25	19	0	0	0	1	1	0	0	1
26	1A	0	0	0	1	1	0	1	0
27	1B	0	0	0	1	1	0	1	1
28	1C	0	0	0	1	1	1	0	0
29	1D	0	0	0	1	1	1	0	1
30	1E	0	0	0	1	1	1	1	0
31	1F	0	0	0	1	1	1	1	1
32	20	0	0	1	0	0	0	0	0
33	21	0	0	1	0	0	0	0	1
34	22	0	0	1	0	0	0	1	0
35	23	0	0	1	0	0	0	1	1
36	24	0	0	1	0	0	1	0	0
37	25	0	0	1	0	0	1	0	1
38	26	0	0	1	0	0	1	1	0
39	27	0	0	1	0	0	1	1	1
40	28	0	0	1	0	1	0	0	0
41	29	0	0	1	0	1	0	0	1
42	2A	0	0	1	0	1	0	1	0
43	2B	0	0	1	0	1	0	1	1
44	2C	0	0	1	0	1	1	0	0
45	2D	0	0	1	0	1	1	0	1
46	2E	0	0	1	0	1	1	1	0
47	2F	0	0	1	0	1	1	1	1
48	30	0	0	1	1	0	0	0	0
49	31	0	0	1	1	0	0	0	1
50	32	0	0	1	1	0	0	1	0
51	33	0	0	1	1	0	0	1	1
52	34	0	0	1	1	0	1	0	0
53	35	0	0	1	1	0	1	0	1
54	36	0	0	1	1	0	1	1	0
55	37	0	0	1	1	0	1	1	1
56	38	0	0	1	1	1	0	0	0
57	39	0	0	1	1	1	0	0	1
58	3A	0	0	1	1	1	0	1	0
59	3B	0	0	1	1	1	0	1	1
60	3C	0	0	1	1	1	1	0	0
61	3D	0	0	1	1	1	1	0	1
62	3E	0	0	1	1	1	1	1	0
63	3F	0	0	1	1	1	1	1	1
64	40	0	1	0	0	0	0	0	0
65	41	0	1	0	0	0	0	0	1

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66	42	0	1	0	0	0	0	1	0
67	43	0	1	0	0	0	0	1	1
68	44	0	1	0	0	0	1	0	0
69	45	0	1	0	0	0	1	0	1
70	46	0	1	0	0	0	1	1	0
71	47	0	1	0	0	0	1	1	1
72	48	0	1	0	0	1	0	0	0
73	49	0	1	0	0	1	0	0	1
74	4A	0	1	0	0	1	0	1	0
75	4B	0	1	0	0	1	0	1	1
76	4C	0	1	0	0	1	1	0	0
77	4D	0	1	0	0	1	1	0	1
78	4E	0	1	0	0	1	1	1	0
79	4F	0	1	0	0	1	1	1	1
80	50	0	1	0	1	0	0	0	0
81	51	0	1	0	1	0	0	0	1
82	52	0	1	0	1	0	0	1	0
83	53	0	1	0	1	0	0	1	1
84	54	0	1	0	1	0	1	0	0
85	55	0	1	0	1	0	1	0	1
86	56	0	1	0	1	0	1	1	0
87	57	0	1	0	1	0	1	1	1
88	58	0	1	0	1	1	0	0	0
89	59	0	1	0	1	1	0	0	1
90	5A	0	1	0	1	1	0	1	0
91	5B	0	1	0	1	1	0	1	1
92	5C	0	1	0	1	1	1	0	0
93	5D	0	1	0	1	1	1	0	1
94	5E	0	1	0	1	1	1	1	0
95	5F	0	1	0	1	1	1	1	1
96	60	0	1	1	0	0	0	0	0
97	61	0	1	1	0	0	0	0	1
98	62	0	1	1	0	0	0	1	0
99	63	0	1	1	0	0	0	1	1
100	64	0	1	1	0	0	1	0	0
101	65	0	1	1	0	0	1	0	1
102	66	0	1	1	0	0	1	1	0
103	67	0	1	1	0	0	1	1	1
104	68	0	1	1	0	1	0	0	0
105	69	0	1	1	0	1	0	0	1
106	6A	0	1	1	0	1	0	1	0
107	6B	0	1	1	0	1	0	1	1

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108	6C	0	1	1	0	1	1	0	0
109	6D	0	1	1	0	1	1	0	1
110	6E	0	1	1	0	1	1	1	0
111	6F	0	1	1	0	1	1	1	1
112	70	0	1	1	1	0	0	0	0
113	71	0	1	1	1	0	0	0	1
114	72	0	1	1	1	0	0	1	0
115	73	0	1	1	1	0	0	1	1
116	74	0	1	1	1	0	1	0	0
117	75	0	1	1	1	0	1	0	1
118	76	0	1	1	1	0	1	1	0
119	77	0	1	1	1	0	1	1	1
120	78	0	1	1	1	1	0	0	0
121	79	0	1	1	1	1	0	0	1
122	7A	0	1	1	1	1	0	1	0
123	7B	0	1	1	1	1	0	1	1
124	7C	0	1	1	1	1	1	0	0
125	7D	0	1	1	1	1	1	0	1
126	7E	0	1	1	1	1	1	1	0
127	7F	0	1	1	1	1	1	1	1
128	80	1	0	0	0	0	0	0	0
129	81	1	0	0	0	0	0	0	1
130	82	1	0	0	0	0	0	1	0
131	83	1	0	0	0	0	0	1	1
132	84	1	0	0	0	0	1	0	0
133	85	1	0	0	0	0	1	0	1
134	86	1	0	0	0	0	1	1	0
135	87	1	0	0	0	0	1	1	1
136	88	1	0	0	0	1	0	0	0
137	89	1	0	0	0	1	0	0	1
138	8A	1	0	0	0	1	0	1	0
139	8B	1	0	0	0	1	0	1	1
140	8C	1	0	0	0	1	1	0	0
141	8D	1	0	0	0	1	1	0	1
142	8E	1	0	0	0	1	1	1	0
143	8F	1	0	0	0	1	1	1	1
144	90	1	0	0	1	0	0	0	0
145	91	1	0	0	1	0	0	0	1
146	92	1	0	0	1	0	0	1	0
147	93	1	0	0	1	0	0	1	1
148	94	1	0	0	1	0	1	0	0
149	95	1	0	0	1	0	1	0	1

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150	96	1	0	0	1	0	1	1	0
151	97	1	0	0	1	0	1	1	1
152	98	1	0	0	1	1	0	0	0
153	99	1	0	0	1	1	0	0	1
154	9A	1	0	0	1	1	0	1	0
155	9B	1	0	0	1	1	0	1	1
156	9C	1	0	0	1	1	1	0	0
157	9D	1	0	0	1	1	1	0	1
158	9E	1	0	0	1	1	1	1	0
159	9F	1	0	0	1	1	1	1	1
160	A0	1	0	1	0	0	0	0	0
161	A1	1	0	1	0	0	0	0	1
162	A2	1	0	1	0	0	0	1	0
163	A3	1	0	1	0	0	0	1	1
164	A4	1	0	1	0	0	1	0	0
165	A5	1	0	1	0	0	1	0	1
166	A6	1	0	1	0	0	1	1	0
167	A7	1	0	1	0	0	1	1	1
168	A8	1	0	1	0	1	0	0	0
169	A9	1	0	1	0	1	0	0	1
170	AA	1	0	1	0	1	0	1	0
171	AB	1	0	1	0	1	0	1	1
172	AC	1	0	1	0	1	1	0	0
173	AD	1	0	1	0	1	1	0	1
174	AE	1	0	1	0	1	1	1	0
175	AF	1	0	1	0	1	1	1	1
176	B0	1	0	1	1	0	0	0	0
177	B1	1	0	1	1	0	0	0	1
178	B2	1	0	1	1	0	0	1	0
179	B3	1	0	1	1	0	0	1	1
180	B4	1	0	1	1	0	1	0	0
181	B5	1	0	1	1	0	1	0	1
182	B6	1	0	1	1	0	1	1	0
183	B7	1	0	1	1	0	1	1	1
184	B8	1	0	1	1	1	0	0	0
185	B9	1	0	1	1	1	0	0	1
186	BA	1	0	1	1	1	0	1	0
187	BB	1	0	1	1	1	0	1	1
188	BC	1	0	1	1	1	1	0	0
189	BD	1	0	1	1	1	1	0	1
190	BE	1	0	1	1	1	1	1	0
191	BF	1	0	1	1	1	1	1	1

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192	C0	1	1	0	0	0	0	0	0
193	C1	1	1	0	0	0	0	0	1
194	C2	1	1	0	0	0	0	1	0
195	C3	1	1	0	0	0	0	1	1
196	C4	1	1	0	0	0	1	0	0
197	C5	1	1	0	0	0	1	0	1
198	C6	1	1	0	0	0	1	1	0
199	C7	1	1	0	0	0	1	1	1
200	C8	1	1	0	0	1	0	0	0
201	C9	1	1	0	0	1	0	0	1
202	CA	1	1	0	0	1	0	1	0
203	CB	1	1	0	0	1	0	1	1
204	CC	1	1	0	0	1	1	0	0
205	CD	1	1	0	0	1	1	0	1
206	CE	1	1	0	0	1	1	1	0
207	CF	1	1	0	0	1	1	1	1
208	D0	1	1	0	1	0	0	0	0
209	D1	1	1	0	1	0	0	0	1
210	D2	1	1	0	1	0	0	1	0
211	D3	1	1	0	1	0	0	1	1
212	D4	1	1	0	1	0	1	0	0
213	D5	1	1	0	1	0	1	0	1
214	D6	1	1	0	1	0	1	1	0
215	D7	1	1	0	1	0	1	1	1
216	D8	1	1	0	1	1	0	0	0
217	D9	1	1	0	1	1	0	0	1
218	DA	1	1	0	1	1	0	1	0
219	DB	1	1	0	1	1	0	1	1
220	DC	1	1	0	1	1	1	0	0
221	DD	1	1	0	1	1	1	0	1
222	DE	1	1	0	1	1	1	1	0
223	DF	1	1	0	1	1	1	1	1
224	E0	1	1	1	0	0	0	0	0
225	E1	1	1	1	0	0	0	0	1
226	E2	1	1	1	0	0	0	1	0
227	E3	1	1	1	0	0	0	1	1
228	E4	1	1	1	0	0	1	0	0
229	E5	1	1	1	0	0	1	0	1
230	E6	1	1	1	0	0	1	1	0
231	E7	1	1	1	0	0	1	1	1
232	E8	1	1	1	0	1	0	0	0
233	E9	1	1	1	0	1	0	0	1

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234	EA	1	1	1	0	1	0	1	0
235	EB	1	1	1	0	1	0	1	1
236	EC	1	1	1	0	1	1	0	0
237	ED	1	1	1	0	1	1	0	1
238	EE	1	1	1	0	1	1	1	0
239	EF	1	1	1	0	1	1	1	1
240	F0	1	1	1	1	0	0	0	0

5 The Light-O-Rama Software Package

The Light-O-Rama software package is a suite of programs, each helping with a different portion of computerized control of your lights to help build a dynamic display:

- The Control Panel runs in your system tray, and gives convenient access to control over your shows.
- The Sequencer is used to create, modify, and test sequences.
- The SuperStar Sequencer can be invoked from the Sequencer and used to create unique effects. It also has auto-sequencing capabilities.
- The Show Editor is used to package sequences together into shows.
- The Schedule Editor is used to schedule shows to play at certain times.
- The Simple Show Builder is an alternative to the Show Editor and the Schedule Editor. It is generally simpler to use, but less flexible.
- The Show Player monitors the schedule, and plays the scheduled shows at the appropriate times.
- The Comm Listener is used by other programs (such as the Sequencer and Show Player) to communicate with DMX devices.
- The Network Preferences program allows you to configure the comm networks that your computer will use to communicate with your controllers.
- The Hardware Utility can be used to test your controllers, and to download sequences to them to be used in standalone mode.
- The ServoDog Utility can be used to configure Light-O-Rama ServoDog controllers.
- The Verifier can be used to check for certain types of problems with your Light-O-Rama configuration, schedule, shows and sequences.
- The Sequence Compressor can be used before shows to make sure that your compressed sequences are up-to-date.
- The Diagnostic is a troubleshooting tool that displays various information about your Light-O-Rama configuration.
- The Offline Registration Utility can be used to register Light-O-Rama on a computer that does not have access to the internet.

The Light-O-Rama software package must be registered with a valid license in order to use it to its full potential. There are several different possible license levels, each having different features available. Light-O-Rama can also be used unlicensed, in Demo mode, but you will not be able to actually control lights while in Demo mode.

Please note that the Light-O-Rama software package must be installed on a local drive; it is not supported when installed on a network drive.

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5.1 Registering Light-O-Rama

The Light-O-Rama Software Package must be registered, with a valid license, before it can be used to its full potential. Without a license, Light-O-Rama can be used as a demo, but it will not actually control your lights.

There are several different license levels, each having different features available; please see the feature comparison for details.

To register Light-O-Rama first visit the Light-O-Rama website, and purchase a license. You will then be able to enter your license information in any of a few different ways:

- When you first install the software, or
- By going to the Sequencer's Help menu and selecting Register Or Upgrade Light-O-Rama, or
- By selecting "Register Light-O-Rama" (or "Upgrade Light-O-Rama") on the Control Panel's popup menu

Doing any of these things will open the Registration dialog:

The Registration Dialog

If your computer is connected to the internet, you can register simply by entering the name and license key from your license information, and clicking "Register" (the license name and key can be copied and pasted from the email in which they were sent to you). Light-O-Rama will then automatically verify your license information, and, if it is valid, register your computer.

You may then have to close any Light-O-Rama programs that are running, and then restart them, before all of your newly available features will be available.

If your computer is not connected to the internet, click on the link at the bottom of the Registration dialog in order to register offline.

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5.1.1 Registering Offline

If your computer is connected to the internet, you can register Light-O-Rama directly in the Registration dialog. If not, though, you can still register while offline. Open the Registration dialog and click the link at its bottom ("Need to register offline? Click here.").

Doing so will open the Offline Registration dialog:

The Offline Registration Dialog

Once this dialog is opened, follow the instructions on it to register offline. A brief summary:

First, enter your license name and license key (these can be copied and pasted from the email in which they are sent to you).

Next,click "Show Offline Registration Key".

At this point, you will need to use your offline registration key to get an offline authorization key. There are two ways to do this:

First, if you have another computer, which is connected to the internet and which has Light-O-Rama installed, you can run the Offline Registration Utility on that computer. Make sure to have your license

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name, license key, and offline registration key available to enter onto that computer; the Offline Registration Utility will use them to create an offline authorization key.

If you do not have another computer that you can use to run the Offline Registration Utility, then you can obtain an offline authorization key by calling Light-O-Rama, at the telephone number shown on the form. Provide the person you speak to with your license name, license key, and offline registration key, and they will provide an offline authorization key to you.

After you have obtained an offline authorization key, type it into the boxes near the bottom of the form, and click "Register".

After you have successfully registered, you may need to close any Light-O-Rama programs that are running and restart them before all of your newly available features can be used.

5.2 Control Panel

What is the Light-O-Rama Control Panel?

The Light-O-Rama Control Panel is an application that runs in your system tray, allowing convenient access to other programs in the Light-O-Rama software package, as well as control over your displays.

The Light-O-Rama control panel *must* be running in order for the Show Player to play your scheduled shows (additionally, "Enable Schedule" must be turned on). It also must be running in order to control lights on LOR Enhanced networks or on DMX networks.

Running the Light-O-Rama Control Panel

To run the Light-O-Rama Control Panel, select it from your computer's Start menu, under All Programs (or "All apps") / Light-O-Rama / Light-O-Rama Control Panel:

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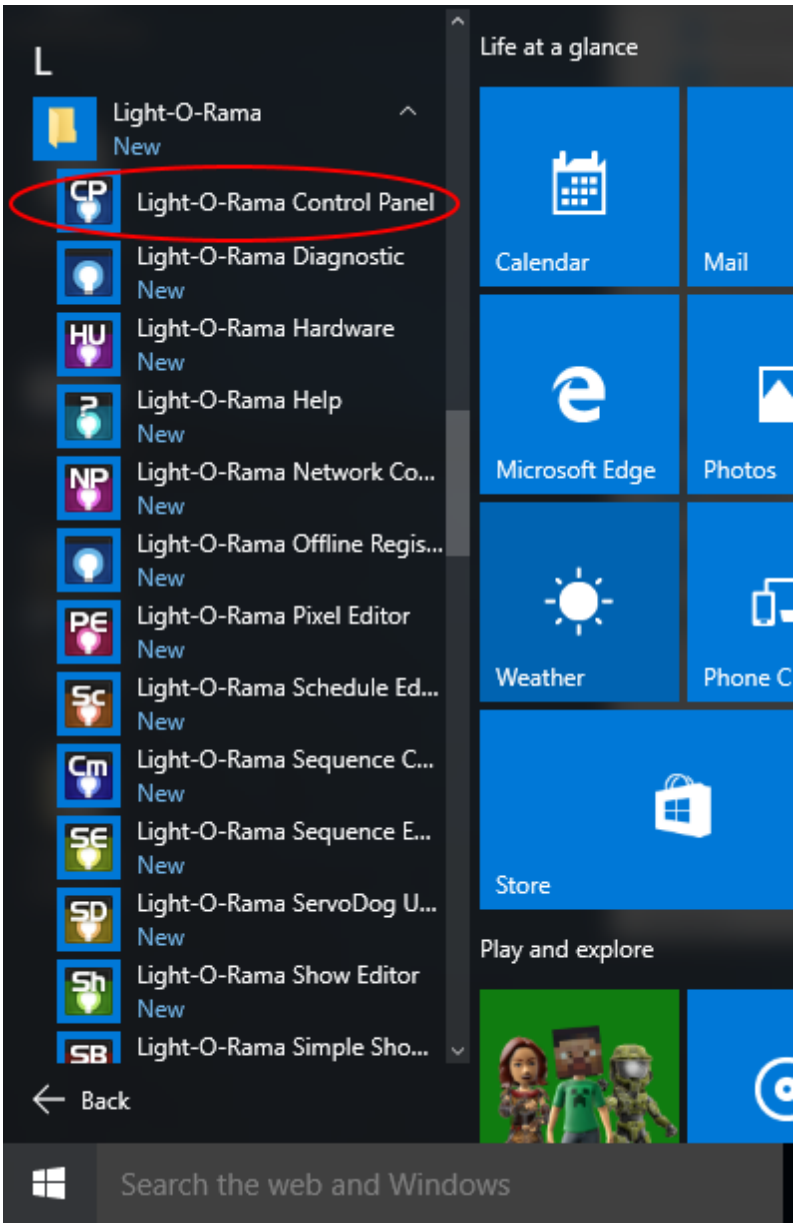

Run the Light-O-Rama Control Panel from your computer's Start menu

System Tray Icon

Once running, the Control Panel will show up as a Light-O-Rama light bulb icon in your system tray:

The Control Panel, running in the system tray

The color of the light bulb describes the current state of the Show Player: If scheduled shows are currently enabled, it will be blue; if they are disabled, but shows on demand are enabled, it will be orange; if shows are disabled entirely, it will be red:

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The different possible colors of the Control Panel

If you wish, you can set it up so that the Control Panel will automatically be run whenever your computer starts up (and therefore you won't have to start it via the Start menu anymore). To do this, select Launch at Startup from the Control Panel's popup menu.

The Status Window

Left-clicking on the Light-O-Rama Control Panel's icon in your computer's system tray opens up the Light-O-Rama status window. This window shows whether or not the Light-O-Rama Show Player is currently monitoring your schedule to play shows at their scheduled times, and, if so, whether a show is currently running, what show that is, and what the next show will be. If any sequences are currently running, it also shows information about all of them.

The Status window also has a "Commands" menu, which has the same menu items as the right-click popup menu.

It also shows various log messages, indicating such things as that a show or a sequence is starting or stopping, that an error occurred playing a sequence, or that an interactive trigger was detected. The "Clear Log" button will clear out all existing messages from the display, and "Copy Log" will copy the log messages to your computer's clipboard, so that you can paste them into a file. Please note that the log does not retain its messages indefinitely; it will periodically clear earlier messages out.

If that Status window shows Light-O-Rama's status as "Scheduled Play is Off", your scheduled shows will not play. If you wish to enable them, select "Enable Schedule" from its "Commands" menu or from the Control Panel's right-click popup menu. Similarly, if the Status window says that they Light-O-Rama is "enabled", your scheduled shows will play; if you wish to disable them, select either "Disable Shows Gracefully" or "Disable Shows Immediately".

The Status window can also say that Light-O-Rama is "enabled (only for on demand shows)", in which case your scheduled shows will not play, but on demand shows will. In this situation, you will be able to either enable your scheduled shows or disable shows entirely (either gracefully or immediately).

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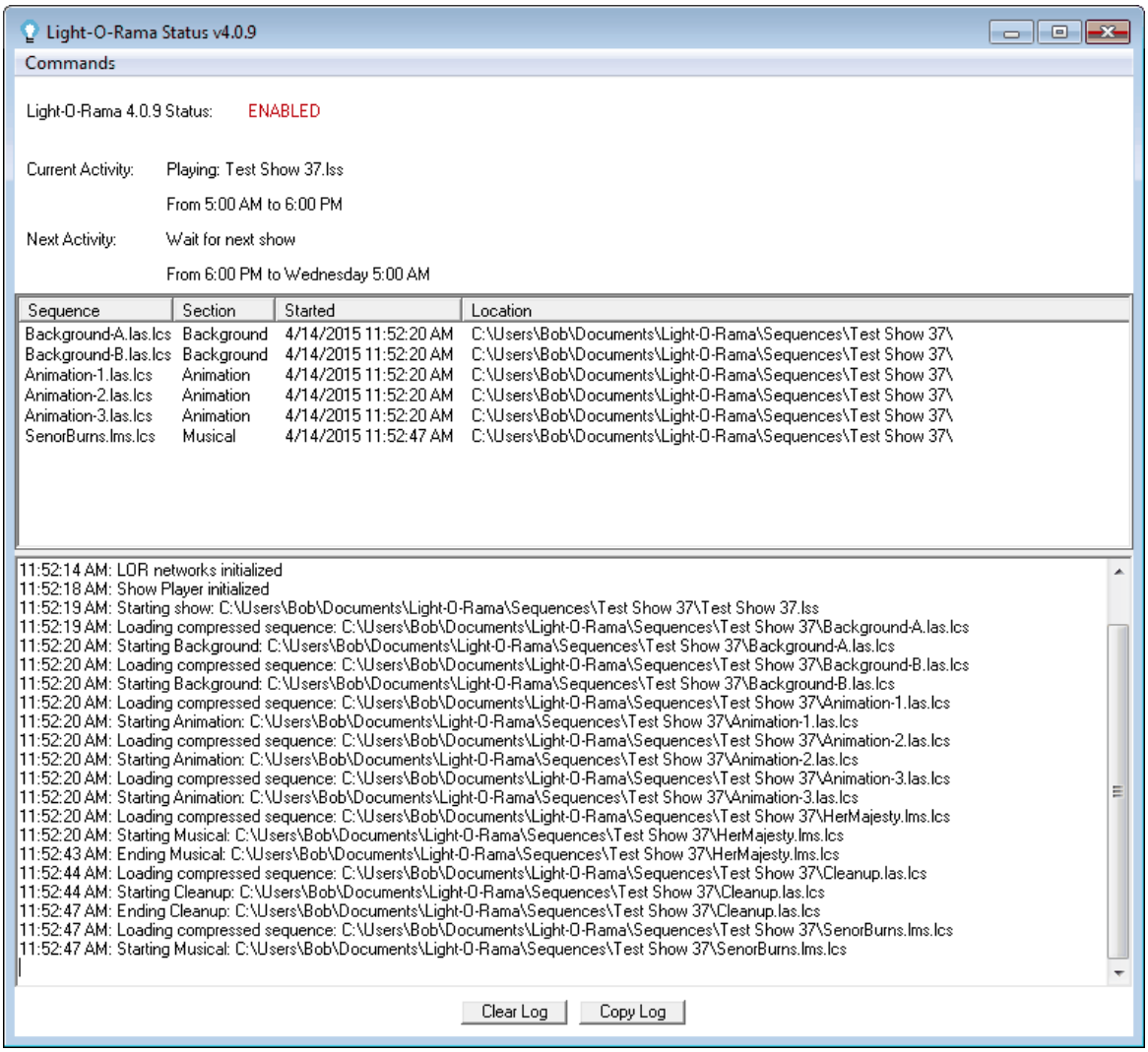

The status window, with scheduled shows enabled and a show currently playing

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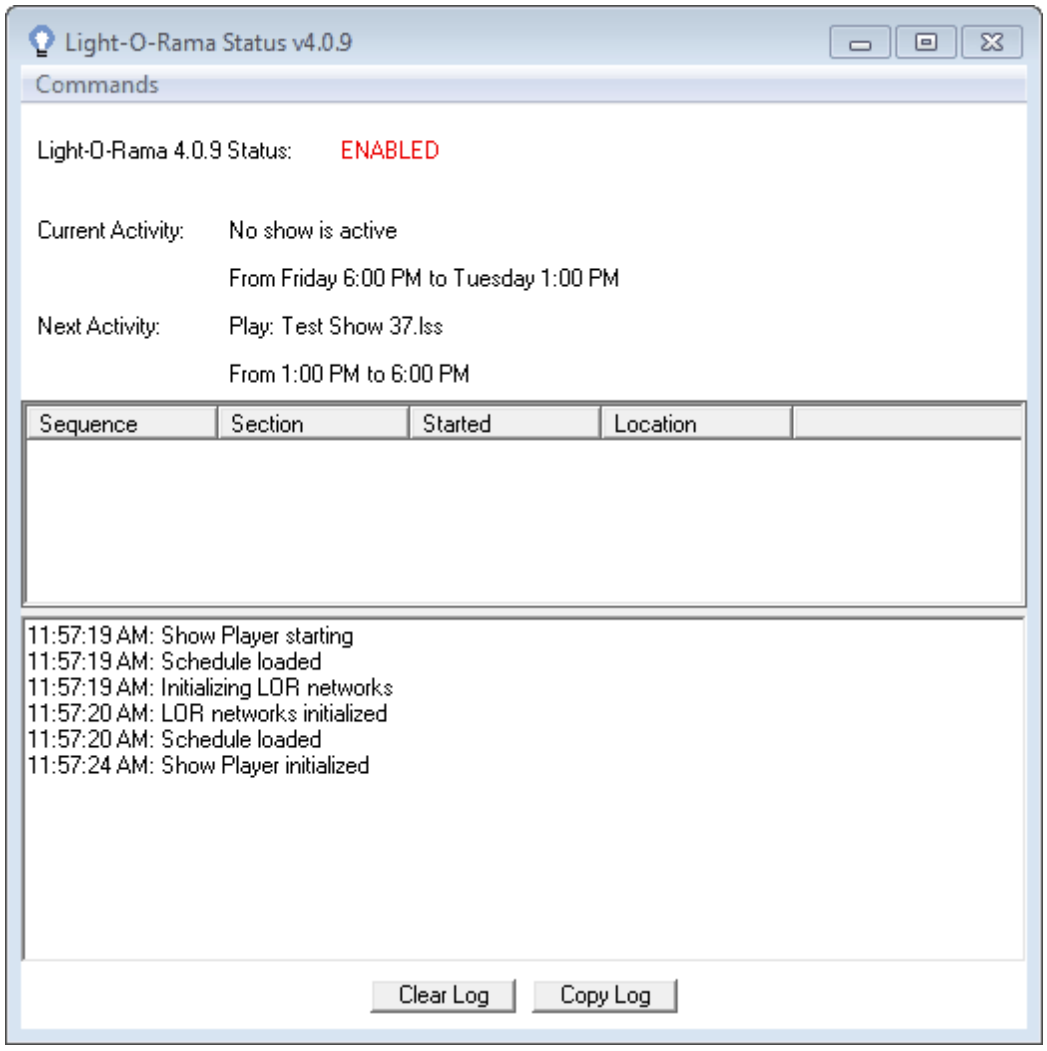

The status window, with scheduled shows enabled, but no show currently playing

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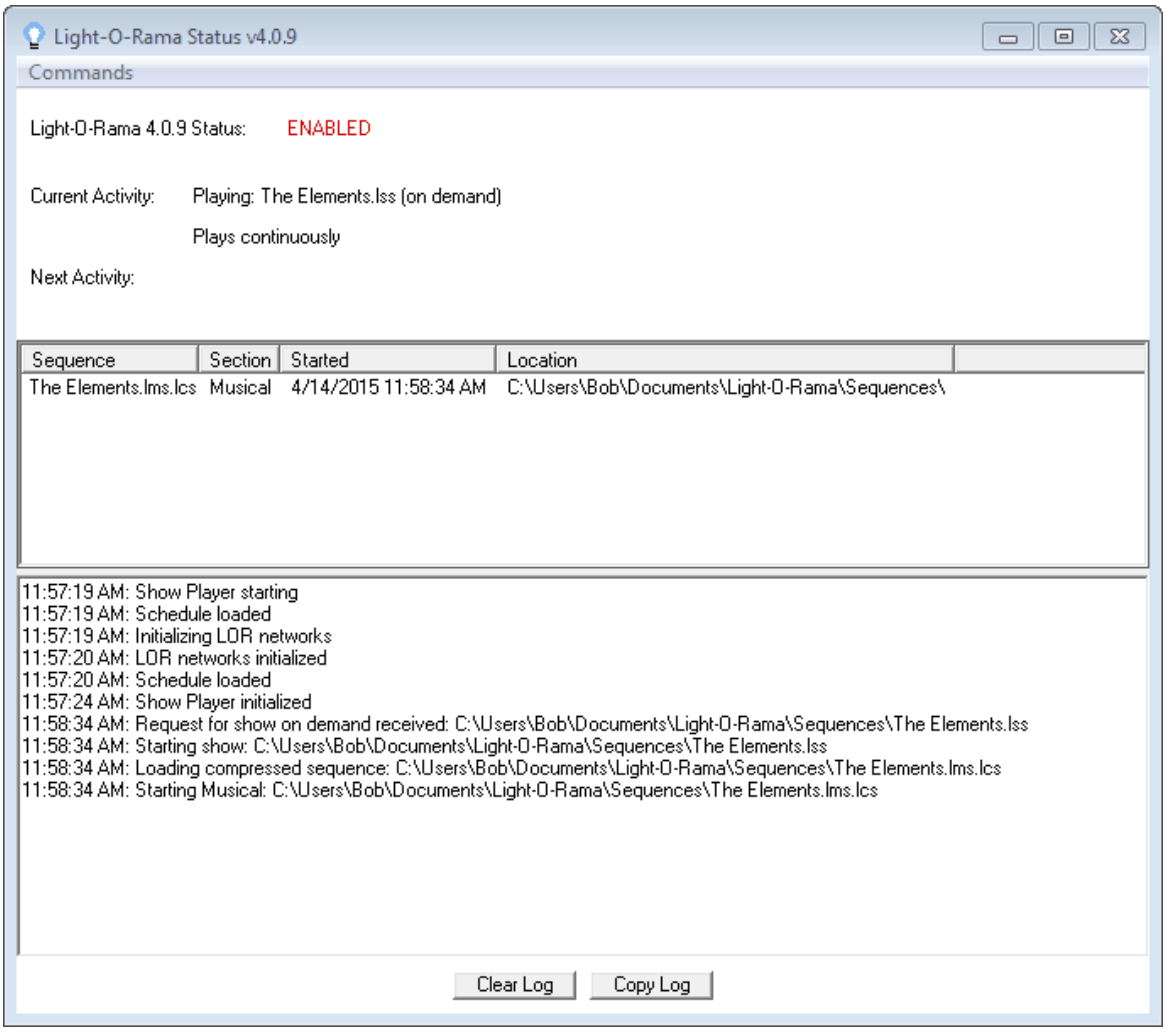

The status window, with on demand shows enabled, but not scheduled shows

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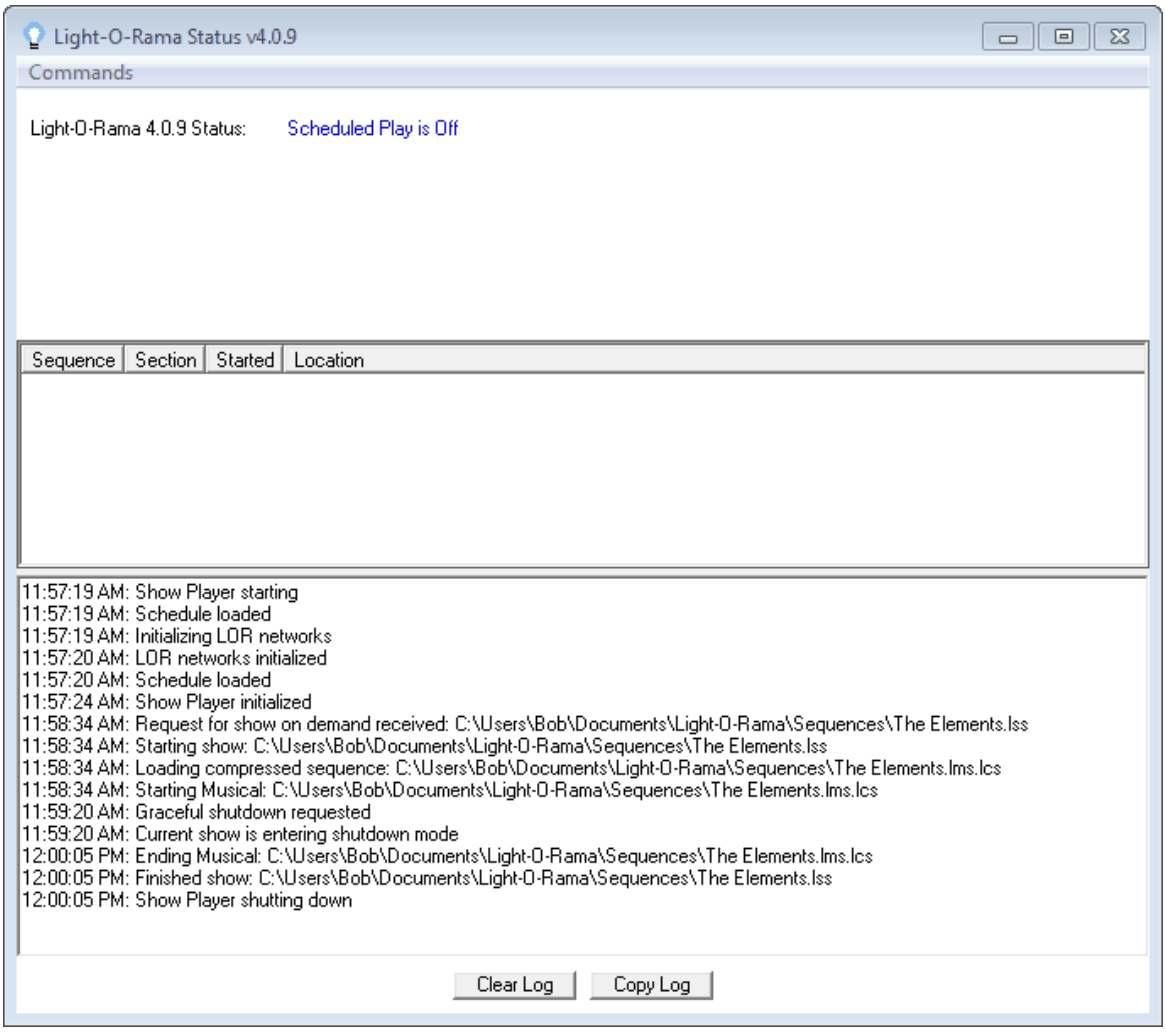

The status window, with shows disabled

The Popup Menu

Right-clicking on the Light-O-Rama Control Panel's icon in the system tray brings up a popup menu (this same menu is also available as the "Commands" menu in the Status window). This menu contains items to quickly launch other programs in the Light-O-Rama software package, and to control your display in various ways:

- Register (or Upgrade) Light-O-Rama
- Sequencer
- SuperStar Sequencer
- Hardware Utility
- ServoDog Utility
- Network Preferences
- Verifier
- Sequence Compressor
- Show Editor
- Schedule Editor
- Simple Show Builder
- Enable Schedule

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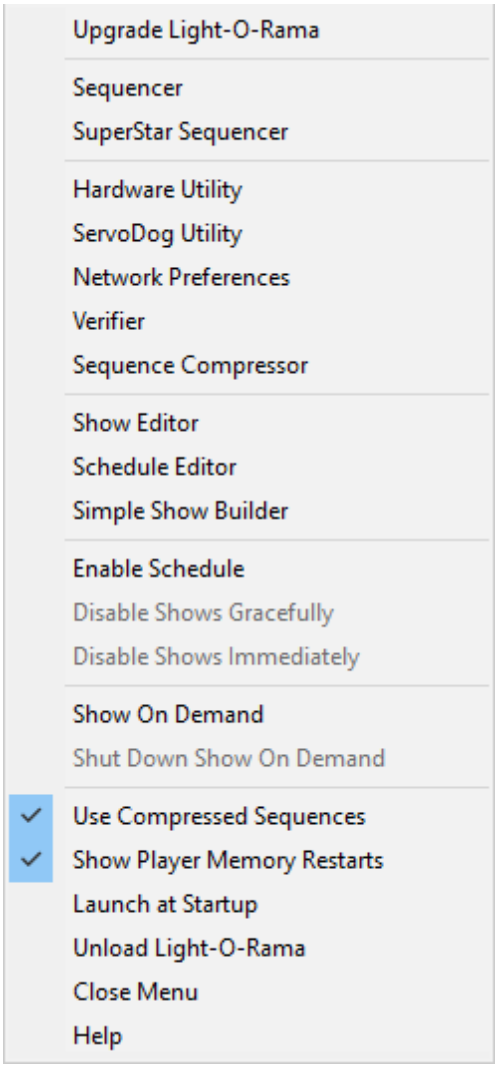
- Disable Shows Gracefully
- Disable Shows Immediately
- Show On Demand
- Shut Down Show On Demand
- Use Compressed Sequences
- Show Player Memory Restarts
- Launch at startup
- Unload Light-O-Rama
- Close Menu
- Help



The Control Panel's right-click popup menu

Register (or Upgrade) Light-O-Rama

Selecting "Register Light-O-Rama" (or "Upgrade Light-O-Rama") from the Control Panel's right-click popup menu allows you to register your Light-O-Rama software, or to upgrade to a higher level license, unlocking various features.

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This item will show up as "Register Light-O-Rama" if you are using the unlicensed Demo version of the software, or "Upgrade" if you are using a license, but it is not the highest possible license level. If you are using the highest possible license level, this item will not be displayed at all.

Sequencer

Selecting "Sequencer" from the Control Panel's right-click popup menu launches the Light-O-Rama Sequencer, used to create, modify, and test sequences.

SuperStar Sequencer

Selecting "SuperStar Sequencer" from the Control Panel's right-click popup menu launches the Light-O-Rama SuperStar Sequencer.

Note: it is recommended to access SuperStar via the Sequencer's SuperStar Effect tool rather than opening SuperStar directly from the Control Panel menu.

Hardware Utility

Selecting "Hardware Utility" from the Control Panel's right-click popup menu launches the Light-O-Rama Hardware Utility, used for various things such as testing controllers and downloading sequences to them for use in standalone mode.

ServoDog Utility

Selecting "ServoDog Utility" from the Control Panel's right-click popup menu launches the Light-O-Rama ServoDog Utility, used to configure Light-O-Rama ServoDog controllers.

Network Preferences

Selecting "Network Preferences" from the Control Panel's right-click popup menu launches the Light-O-Rama Network Preferences program.

Verifier

Selecting "Verifier" from the Control Panel's right-click popup menu launches the Light-O-Rama Verifier, used to check for certain problems with Light-O-Rama's configuration, schedule, scheduled shows, and scheduled sequences.

Sequence Compressor

Selecting "Sequence Compressor" from the Control Panel's right-click popup menu launches the Light-O-Rama Sequence Compressor, which can be used before shows to ensure that all compressed sequences are up-to-date.

Show Editor

Selecting "Show Editor" from the Control Panel's right-click popup menu launches the Light-O-Rama Show Editor, used to create and modify shows.

Schedule Editor

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Selecting "Schedule Editor" from the Control Panel's right-click popup menu launches the Light-O-Rama Schedule Editor, used to schedule shows to be played by the Light-O-Rama Show Player.

Simple Show Builder

Selecting "Simple Show Builder" from the Control Panel's right-click popup menu launches the Light-O-Rama Simple Show Builder, which is intended as an easier to use, but less flexible, alternative to the Show Editor and the Schedule Editor.

Enable Schedule

Selecting "Enable Schedule" from the Control Panel's right-click popup menu causes the Light-O-Rama Show Player to monitor your schedule and to play your shows at their scheduled times.

Note that on demand shows can be played regardless of whether your scheduled shows are enabled or not.

When scheduled shows are enabled, the light bulb icon in the computer's system tray will be blue.

Note: If "Enable Schedule" is greyed out, this means that it has already been selected, and the Show Player is monitoring your schedule. To stop the Show Player from monitoring your schedule, select "Disable Shows Gracefully" or "Disable Shows Immediately".

Disable Shows Gracefully

Selecting "Disable Shows Gracefully" from the Control Panel's right-click popup menu causes the Light-O-Rama Show Player to put your current show (if one is running) into shutdown mode, and to stop monitoring your schedule for shows to be played. When the show goes into shutdown mode, any song from the Musical section that is currently playing will be allowed to finish, and then the show's Shutdown section will start.

To instead shut down your show immediately, including abruptly stopping any sequences or song that might be playing, choose Disable Shows Immediately instead.

When shows are disabled, the light bulb icon in the computer's system tray will be red.

Note: If "Disable Shows Gracefully" is greyed out, this means that the Show Player is *not* monitoring your schedule. To have the Show Player start monitoring your schedule, select "Enable Schedule".

Disable Shows Immediately

Selecting "Disable Shows Immediately" from the Control Panel's right-click popup menu causes the Light-O-Rama Show Player to immediately stop your current show (if one is running), and to stop monitoring your schedule for shows to be played.

Stopping your show immediately will abruptly stop your sequences, including any song that happens to be playing. To have the Show Player stop your show more gracefully, choose Disable Shows Gracefully instead.

When shows are disabled, the light bulb icon in the computer's system tray will be red.

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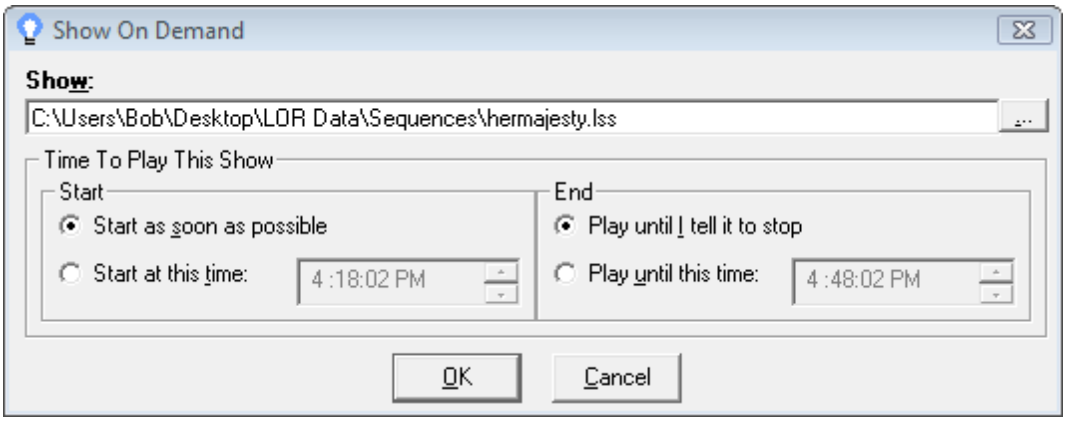
Note: If "Disable Shows Immediately" is greyed out, this means that the Show Player is *not* monitoring your schedule. To have the Show Player start monitoring your schedule, select "Enable Schedule".

Show On Demand

Selecting "Show On Demand" from the Control Panel's right-click popup menu causes the following dialog to open:



The Show On Demand dialog

Using this dialog, you can choose a show file to play immediately, or at a certain time, without needing to add it to your schedule. You can choose to let it play until a certain time, or else indefinitely, in which case it will not stop until you "shut down show on demand", "disable shows gracefully", "disable shows immediately", or "unload Light-O-Rama".

If a show is already playing at the time the on demand show is supposed to start, the playing show will be allowed to stop gracefully before the on demand show will start. That is, if a sequence from its Musical Section is currently playing, that sequence will be allowed to continue to play until its natural end; also, the sequences from its Shutdown Section, if any exist, will be played (after the current sequence from the Musical Section ends, or immediately if there is no current sequence from the Musical Section).

If "Show On Demand" is used when scheduled shows are disabled, it will not enable your scheduled shows; only your on demand show will play (if desired, though, you can enable your scheduled shows too, simply by clicking "Enable Schedule"). When this is the case, the light bulb icon in the computer's system tray will be orange.

Please note that the Show On Demand feature is only available for license level Basic Plus and higher.

Shut Down Show On Demand

If an on demand show is currently playing, selecting "Shut Down Show On Demand" from the Control Panel's right-click popup menu will cause the on demand show to stop. It will be allowed to stop gracefully; that is, if a sequence from its Musical Section is currently playing, that sequence will be allowed to continue to play until its natural end; also, the sequences from its Shutdown Section, if any exist, will be played (after the current sequence from the Musical Section ends, or immediately if there is no current sequence from the Musical Section).

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After the on demand show stops, if scheduled shows are enabled, the Show Player will start whatever show is scheduled for the current time (if any).

"Shut Down Show On Demand" can also be used to cancel an on demand show that has been requested, but not yet started (either due to its start time not having been reached, or else due to another show still being in the process of shutting down).

Use Compressed Sequences

Checking "Use Compressed Sequences" from the Control Panel's right-click popup menu causes the Light-O-Rama Show Player to create and use compressed sequences if possible, which should cut down on the time it takes to load. Unchecking it causes it to ignore compressed sequences, and instead use the regular sequences.

Show Player Memory Restarts

Checking "Show Player Memory Restarts" from the Control Panel's right-click popup menu causes the Show Player to automatically restart in certain situations: When no show is playing, and no show is scheduled to start playing within the next sixty seconds, if the Show Player is using more than 100 megabytes of memory, it will automatically shut down. Assuming that the schedule is enabled, the Light-O-Rama Control Panel will then automatically restart the Show Player. The intention of this is a preventive measure to protect against ill effects of possible memory leaks in the Show Player, which could otherwise build up over time to a point that would cause the Show Player to crash.

Launch at Startup

Checking "Launch at Startup" from the Control Panel's right-click popup menu causes the Light-O-Rama Control Panel to automatically run whenever your computer starts up. Unchecking it causes it not to run at startup time, in which case you can start it manually whenever you like.

Unload Light-O-Rama

Selecting "Unload Light-O-Rama" from the Control Panel's right-click popup menu will shut down both the Light-O-Rama Control Panel and the Light-O-Rama Show Player. Your scheduled shows will *not* run while these are shut down.

To start the Light-O-Rama Control Panel again, run it from your computer's Start menu. Or, if "Launch at startup" has been enabled, the Control Panel will automatically run the next time that your computer starts up.

Close Menu

Selecting "Close Menu" from the Control Panel's right-click popup menu will close the popup menu. The Light-O-Rama control panel will still remain active.

Help

Selecting "Help" from the Control Panel's right-click popup menu will open up the Light-O-Rama help files.

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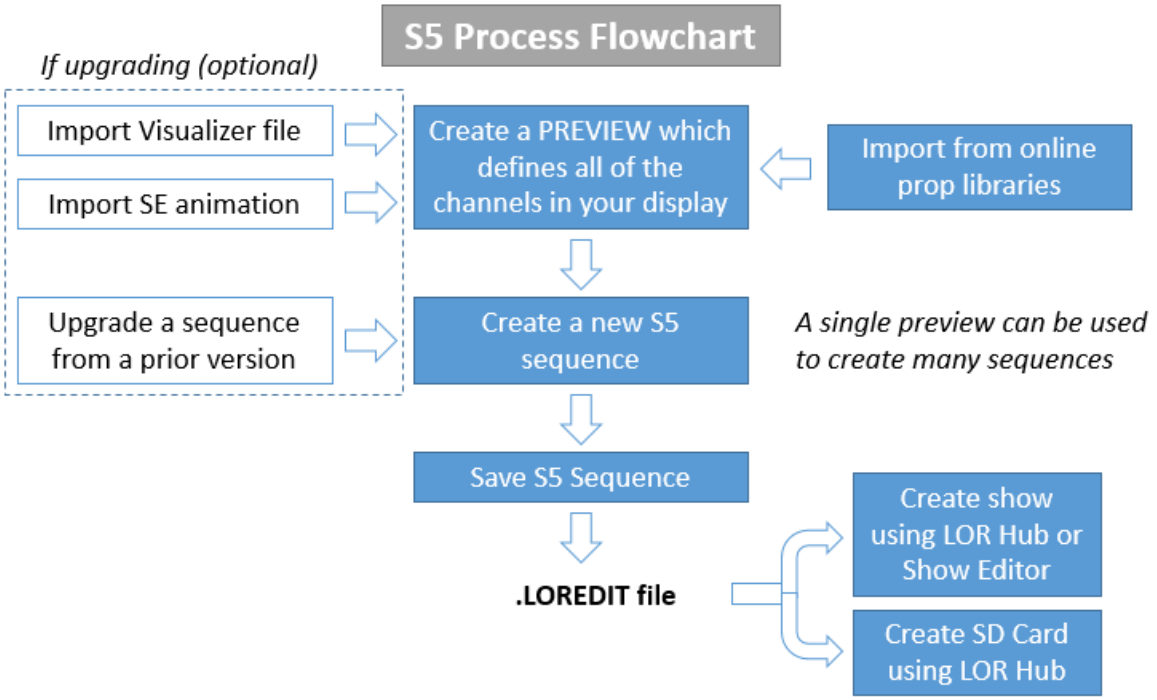
5.3 S5 Sequencer

The Light-O-Rama S5 Sequencer is a tool used to create sequences, which are files that contain commands to be sent to controllers to produce various lighting effects - to turn lights on and off, make them twinkle or shimmer, fade up or down, and so forth.

There are several keys steps in the sequence process as shown in the flowchart below:

- Create a preview
- Create a sequence
- Save a sequence



The main S5 Sequencer window is divided into several sub-windows. In the following picture it is shown with the sub-windows in their default positions; however, the layout of the sub-windows can be easily customized. Also, the S5 Sequencer comes with several themes that control the background and text colors in the main window. In the configuration that is shown, the Playback Window is pinned, meaning it stays open (notice the pin icon in the upper right corner of the window). The Preview Management Window and Control Lights Window on the right side are all unpinned, meaning you can click on the name of the window to open it temporarily, but once you click on something else the window will close. To change a window from pinned mode to unpinned mode (or vice versa), just click the pin icon for that window.

The Start Page gives you links to quickly start a new animation or musical sequence, and to open sequences that have been recently viewed.

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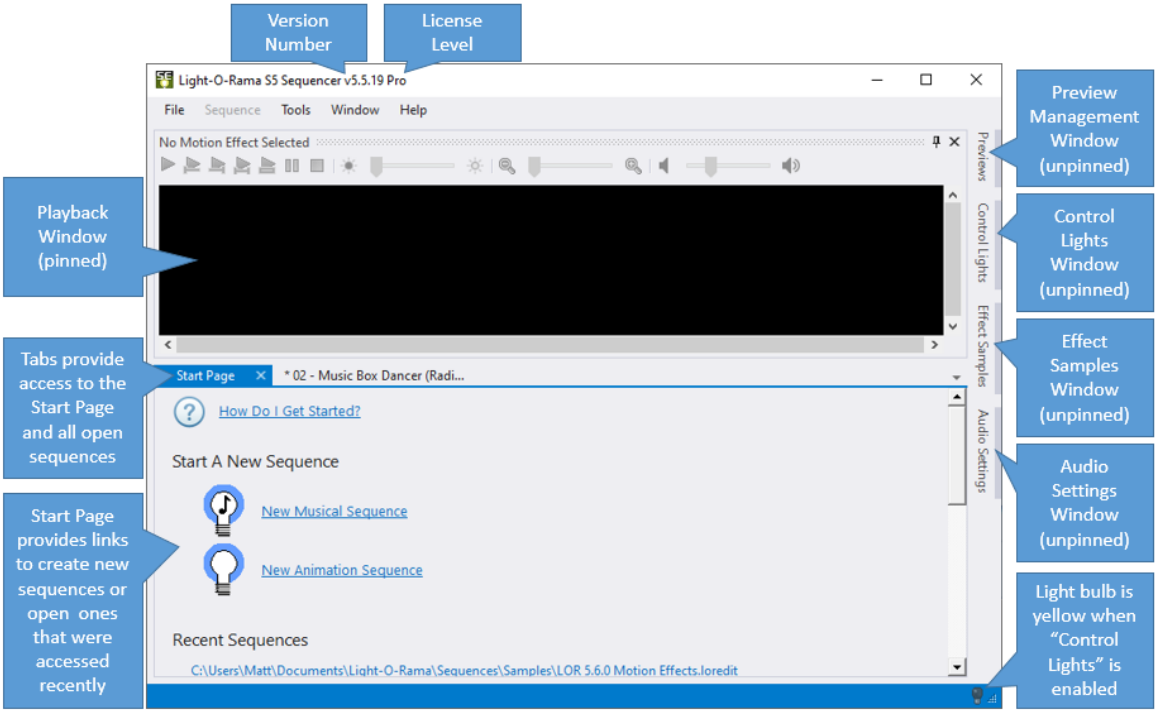
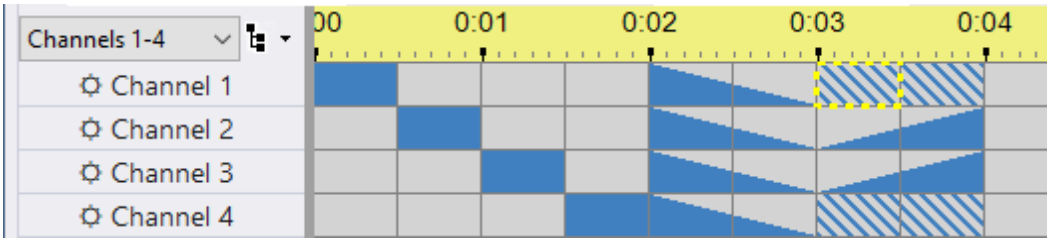


Sequences are displayed in the S5 Sequencer as a grid. Rows represent regular channels, RGB channels, motion effect rows, subsequences, beat channels or loops, and columns represent timings. Cells in the grid therefore represent the lighting effects that will happen on props at various points in time while the sequence is being played.

Regular channels, RGB channels, and motion effect rows are associated with props in the preview or with archived props. Motion effect rows can also be used with preview groups.

As an example, the following sequence has four props, each with a single channel. At the start of the sequence, the first prop's channel turns on. It stays on for half a second, then turns off, and the second prop's channel then turns on. Then it turns off, and the third turns on, and then the third turns off and the fourth turns on. This brings us two seconds into the sequence, at which point all four channels fade down, for a second. After that, the first and fourth channels start shimmering, while the second and third fade up:



A sequence with four channels, and various lighting effects

Notice that one cell is highlighted with a thick yellow box - the cell of the first channel from 3 seconds to 3.5 seconds. That is the currently selected cell. Various tools can be applied to the selected cell (or cells), for example to change the lighting effect used on that channel at that time.

Before proceeding, you should understand what a sequence is and what a preview is.

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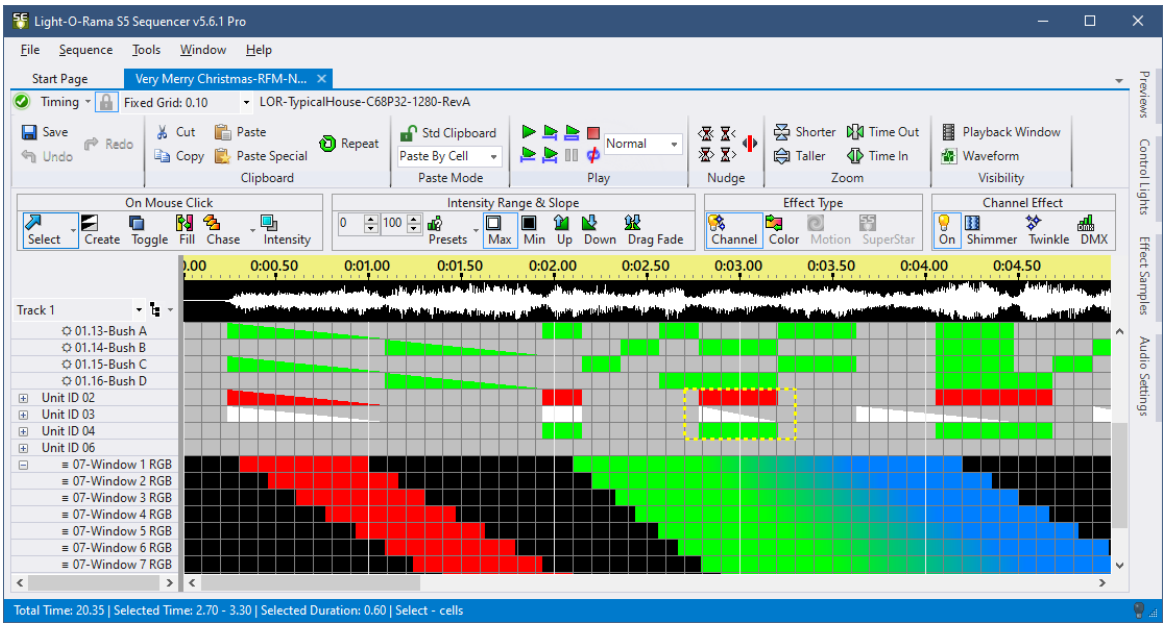
For more detailed information about using the S5 Sequencer, please see the following topics:

- The Main Menu
- The Start Page
- The Previews Window
- Preview Design
- The Sequence Tab (editing a sequence)
- Motion Effect Generator
- Playback Window
- Control Lights Window
- Customizing Window Layouts

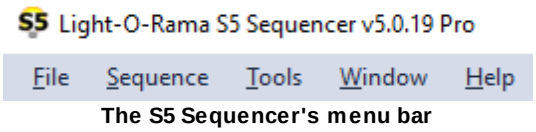


The Sequencer with an open sequence

5.3.1 Menu Bar

The Light-O-Rama S5 Sequencer's menu bar gives access to all of the program's major functionality. For detailed help, please refer to the help pages for each individual menu on the menu bar:

- File Menu
- Sequence Menu
- Tools Menu
- Window Menu
- Help Menu



The S5 Sequencer's menu bar

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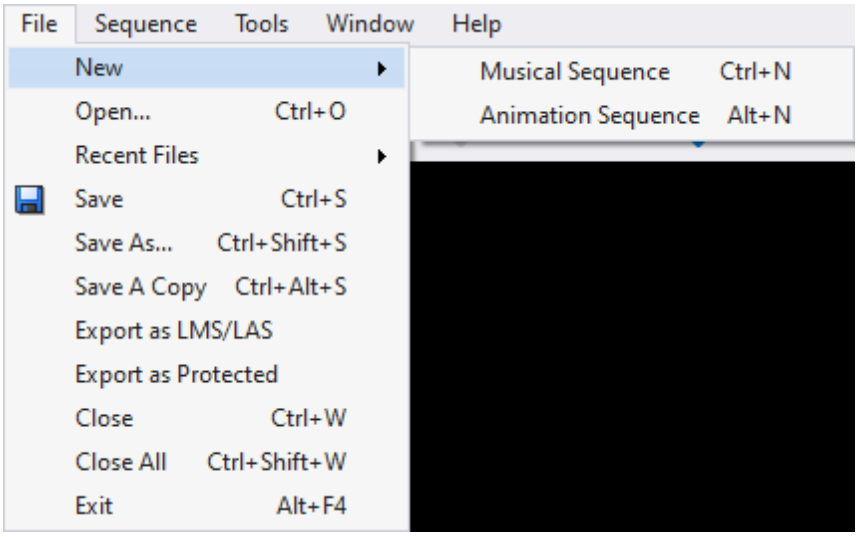
5.3.1.1 File Menu

The Light-O-Rama S5 Sequencer's File menu has menu items related to creating, opening, and saving sequences, as well as exiting the program.

Several of these menu items operate on the "currently selected sequence". Many sequences can be open simultaneously in the S5 Sequencer, but only one is the currently selected sequence. Each open sequence has a tab that displays the sequence's name. The currently selected sequence's tab will be highlighted (the highlight color depends are which theme you are using). To select a sequence, simply click on its tab.

- New
- Open
- Recent Files
- Save
- Save As
- Save A Copy
- Export as LMS/LAS
- Export as Protected
- Close
- Close All
- Exit



The File Menu

New

Selecting "New" on the Sequencer's File menu opens a sub-menu which gives you a choice between creating a new animation sequence or a new musical sequence. You can also initiate the creation of a new musical or animation sequence from the Start Page, or by right-clicking on a preview in the Previews Window.

"New Musical Sequence" has a keyboard hotkey: Ctrl N

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"New Animation Sequence" has a keyboard hotkey:

Open

Selecting "Open" on the Sequencer's File menu opens a dialog that allows you to select a sequence file.

If you select an S5 sequence file (.LOREDIT file extension) the preview for the sequence will be checked. If the preview has been changed since the last time the sequence was opened, the Map New Preview To Sequence Dialog will open; and once you finish that dialog the sequence will open. If the preview has not changed, the sequence will immediately open on a new tab within the Sequencer.

If you choose a sequence file created in an older version like S4 (.LMS or .LAS file extension), then the Upgrade Legacy Sequence dialog will open, guiding you through the sequence upgrade process.

"Open" has a keyboard hotkey:

Recent Files

Selecting "Recent Files" on the Sequencer's File menu opens a sub-menu which lets you select from a list of the most recently opened sequences. The list of files on the "Recent Files" sub-menu are the same ones listed on the Start Page.

Save

Selecting "Save" from the Sequencer's File menu saves the changes that you have made to the currently selected sequence. If the sequence was newly created and has never been saved before, Save will also prompt you for a file name to use for the new sequence.

The Save function will be followed by a Save A Copy function if specified in Save Copy Preferences.

"Save" has a keyboard hotkey:

Save As

Selecting "Save As" from the Sequencer's File menu saves the current sequence to a new file name. The old file will still exist, but will not include any of the changes that you made to the sequence since the last time that you saved it.

Save A Copy

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Selecting "Save A Copy" from the Sequencer's File menu saves the current sequence to a new file name. The old file will still exist, but will not include any of the changes that you made to the sequence since the last time that you saved it.

This function has a several options that control its behavior. See the Save Copy Preferences topic for details. In particular, this function can be used to make backup copies of the sequence when the "Date and Time" suffix is specified.

Export as LMS/LAS

Selecting "Export as LMS/LAS" from the Sequencer's File menu exports the current sequence to the legacy LMS/LAS format. A file with an LMS extension will be created for musical sequences; an LAS extension will be used for sequences without music. You will be prompted for the location of the export file. Files produced using this function are compatible with Light-O-Rama software versions 3.8.2 and later.

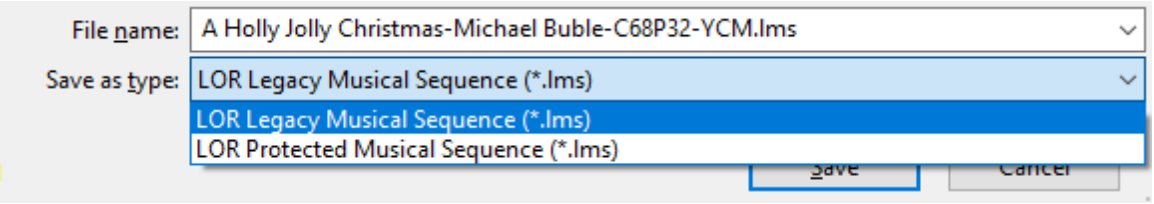
Data included in the export file:

- Regular channels
- RGB channels
- Beat channels
- Subsequences
- Loops in animation sequences
- All timing grids
- The "Show All Items" grid view -- converted to "Track 1" in the export file

Data NOT included:

- Motion effect rows
- Archived props
- Any grid view other than "Show All Items"

If you have a license that allows the creation of protected sequences, you can change the file type in the save dialog to a protected sequence if desired.



Setting the file type during the Legacy Export

Export as Protected

Selecting "Export as Protected" from the Sequencer's File menu can be used to create a protected sequence based upon the current sequence. You will be prompted to enter some supplementary text that will be displayed to the user when they open the protected sequence in the Sequencer. The supplementary text is optional.

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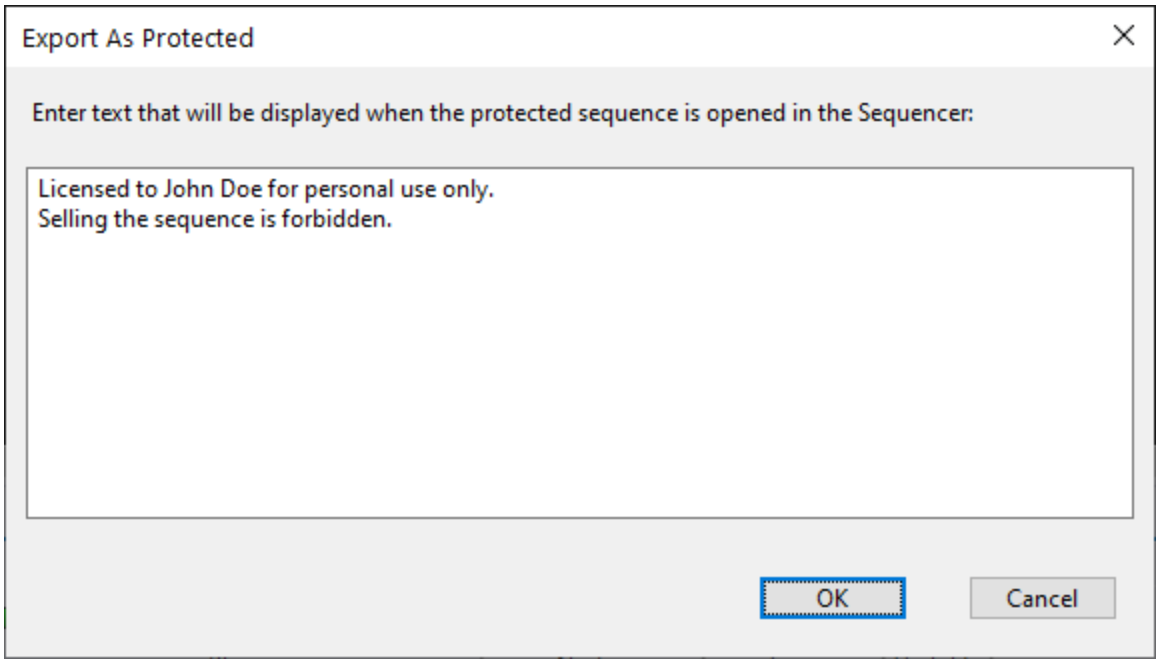
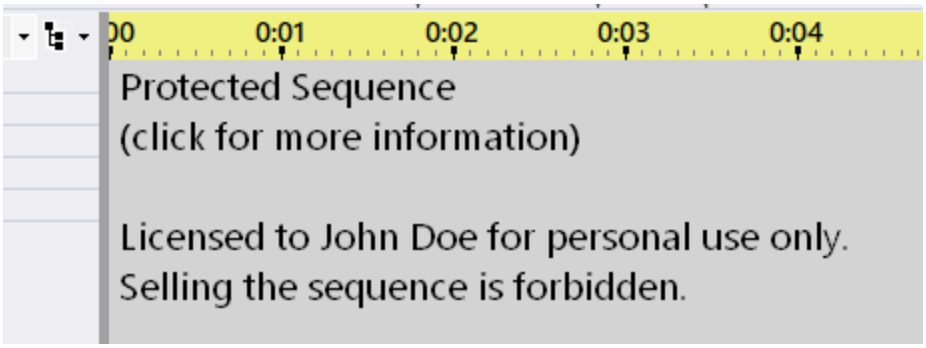


The supplementary text entry screen with some sample text



What the user sees when they open the protected sequence (with the supplementary text entered above)

Close

Selecting "Close" from the Sequencer's File menu closes the currently selected sequence.

If the sequence has unsaved changes, you will be prompted on whether you wish to save the changes or not; if the sequence has never been saved before, and you choose to save it, you will also be prompted to select a filename for the new sequence.

Close All

Selecting "Close All" from the Sequencer's File menu closes all open sequences.

If any of the sequences have unsaved changes, you will be prompted on whether you wish to save them or not; if any of the sequences have never been saved before, and you choose to save them, you will also be prompted to select filenames for the new sequences.

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Exit

Selecting "Exit" from the Sequencer's File menu closes the Sequencer. If any currently open sequences have changes that have not yet been saved, you will be prompted for whether or not you want to save them.

5.3.1.1.1 New Animation Sequence Dialog

The Sequencer's New Animation dialog is used to create a new animation sequence (a sequence with no music). The New Animation dialog can be reached several ways:

- Selecting File > New > Animation Sequence from the main menu
- Clicking the "New Animation Sequence" link on the Start Page
- Right-clicking on a preview in the Previews window and selecting "New Animation Sequence" from the pop-up menu
- Using the keyboard shortcut Alt-N

For detailed help, please refer to the following sections:

- Sequence Author
- Preview
- Sequence Length
- Use Loops
- Initial Timing Grids
- Number Of Motion Effect Rows For Pixel Props
- Save these choices as defaults.

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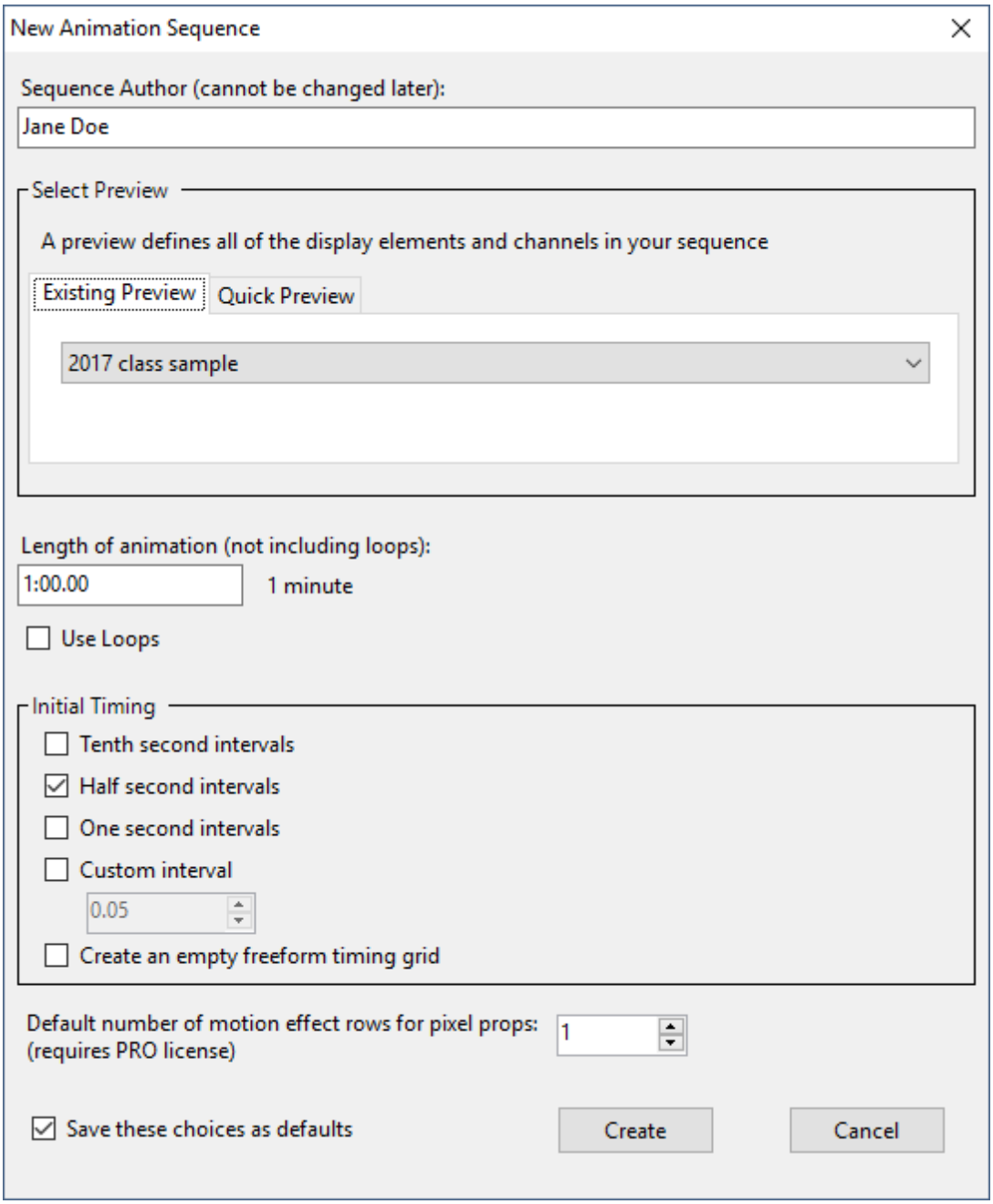

The New Animation Sequence dialog

Sequence Author

If you wish, you can put your name here. It will be saved with the sequence, and will be displayed on the Sequence Information screen. Once set, even if set to a blank value, it cannot be changed.

Preview

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A preview is a representation of your light display. It specifies all of the props that you can apply effects to in your sequence. It also specifies all of the channels your sequence will be able to control.

Normally, you will select a preview that you have already created on the "Existing Previews" tab. However, you can use the Quick Preview feature to create a new preview on the fly.

After assigning a preview here, you may continue to update the preview and those updates will be automatically reflected in the sequence (for example, adding a new prop). You can also later assign a different preview to the sequence; although if you do that, the new preview should be substantially similar to the originally assigned preview.

Sequence Length

This allows you to specify the duration of the sequence. You will be able to change the value later, using Change Sequence Length in the Sequence menu.

The time can include hours, minutes, seconds, and hundredths of a second. For details on the format used to specify various lengths of time, please see Time Format.

Use Loops

If you check the "Use Loops" check box, the newly created sequence will automatically include a loop level, which can be used to insert loops into the sequence.

If you create an animation sequence without having selected "Use Loops", and you later decide that you do want loops in the sequence, you can add a loop level by selecting "Loop Level" from the Add New menu, available on the Sequence menu and the Grid View menu.

Initial Timing Grids

This allows you to tell the Sequencer to automatically insert timings into the new sequence. Timings are the spots in time where you can easily place lighting effects - for example, turn a string of lights on, or have it twinkle, or have it fade down.

If you don't know how far apart you want timings to be, just take a guess. You can always insert, delete, or move timings later. Note that although the New Animation dialog only allows you to set timings up at equal lengths from each other, timings in general can be any length from each other. For example, you could later add a timing three seconds away from another, and a third timing half a second away from that one.

If you select "Custom Interval", you can enter any length you want, rather than one of the defaults. This value must be entered using the standard Time Format.

Number Of Motion Effect Rows For Pixel Props

If you have a Pro level license, then you can use motion effects to sequence your props that utilize RGB pixels. You can also have multiple motion effects playing on a prop at the same time. This

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setting specifies how many motion effect rows should be created for every pixel-based prop. Typically 1 or 2 is a good choice to start. And then you can add more rows to specific props as your sequencing needs dictate.

Save These Choices As Defaults

If you turn this check box on, your answers to the questions in this dialog will be saved so that whenever you create a new animation sequence in the future, those answers will automatically show up in this dialog as the default answers.

5.3.1.1.2 New Musical Sequence Dialog

The Sequencer's New Musical Sequence dialog is used to create a new musical sequence (a sequence with an associated audio or video file). The New Animation dialog can be reached several ways:

- Selecting File > New > Musical Sequence from the main menu
- Clicking the "New Musical Sequence" link on the Start Page
- Right-clicking on a preview in the Previews window and selecting "New Musical Sequence" from the pop-up menu
- Using the keyboard shortcut Ctrl-N

After doing one of these things, but before the New Musical Sequence dialog opens, you will be prompted to select the audio or video file that will be used to build the new sequence. After you select the file, then the New Musical Sequence dialog will open.

Behind the scenes, the Sequencer will open the media file to determine its length. When the new sequence is created, its length will match that of the media file.

For detailed help, please refer to the following sections:

- Sequence Author
- Preview
- Music Information
- Initial Timing Grids
- Number Of Motion Effect Rows For Pixel Props
- Audio Information
- Save These Choices As Defaults

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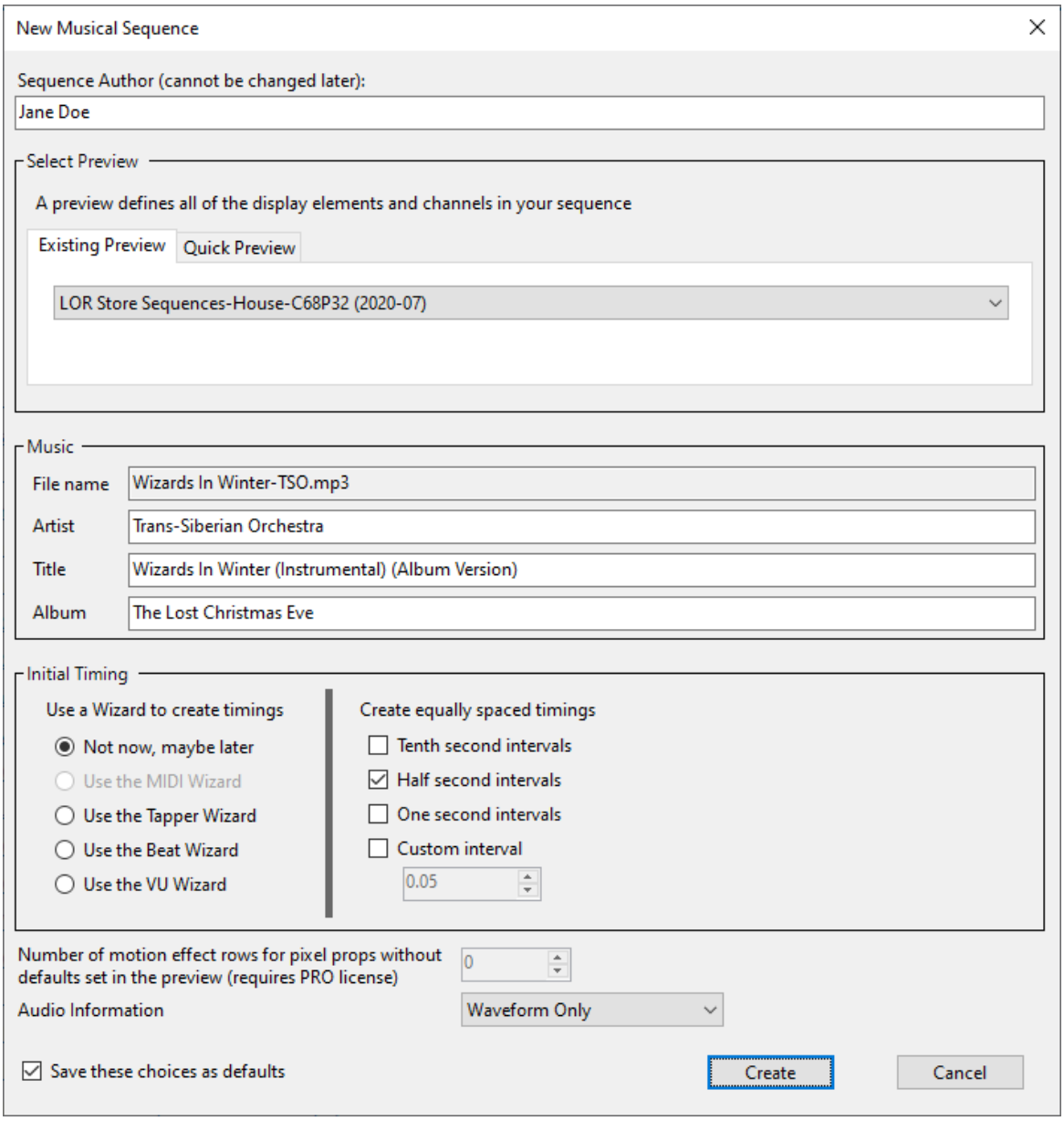

The New Musical Sequence dialog

Sequence Author

If you wish, you can put your name here. It will be saved with the sequence, and will be displayed on the Sequence Information screen. Once set, even if set to a blank value, it cannot be changed.

Preview

A preview is a representation of your light display. It specifies all of the props that you can apply effects to in your sequence. It also specifies all of the channels your sequence will be able to control.

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Normally, you will select a preview that you have already created on the "Existing Previews" tab. However, you can use the Quick Preview feature to create a new preview on the fly.

After assigning a preview here, you may continue to update the preview and those updates will be automatically reflected in the sequence (for example, adding a new prop). You can also later assign a different preview to the sequence; although if you do that, the new preview should be substantially similar to the originally assigned preview.

Music Information

If you wish, you can put the name of the artist, song, and album of the associated song here. It will be saved with the sequence, and will be displayed in the Sequence Information dialog.

Some media files have already been tagged with this information. If you utilize such a media file, the Sequencer will automatically discover those tags and populate the fields in this section (though you can still change or delete it if you wish).

You can change this information later in the Sequence Information dialog.

Initial Timing Grids

This allows you to tell the Sequencer to automatically insert timings into the new sequence. Timings are the spots in time where you can easily place lighting effects - for example, turn a string of lights on, or have it twinkle, or have it fade down.

In addition to placing timings a certain length of time apart (a tenth of a second, a half second, a second, or "Custom Interval"), add adding no timings at all ("Don't add any timings"), you can instruct the Sequencer to use various wizards to insert timings based upon the song itself:

- The MIDI File Wizard can insert timings and effects based upon the beat of a MIDI song, as well as based on the individual notes played by different instruments in the song.
- The Tapper Wizard allows you to tap the keyboard or mouse while the song plays, and will record the times at which you tap.
- The Beat Wizard attempts to determine the tempo of the song, and insert timings and effects based upon it.
- The VU Wizard looks for peaks in the song, much like a VU meter, and inserts timings and effects based upon them.

Not all of these wizards are available for every type of media file; for example, the MIDI File Wizard can only be used with MIDI files. Any wizards that cannot be used with the type of media file being used will be greyed out.

If you select "Custom Interval", you can enter any length you want, rather than one of the defaults. For details on the format used to specify various lengths of time, please see Time Format.

If you choose to have equally spaced timings, then you will be given the option to use a fixed timing grid or a freeform timing grid, by checking or unchecking the "Use a fixed timing grid" box. Otherwise, a freeform timing grid will be used.

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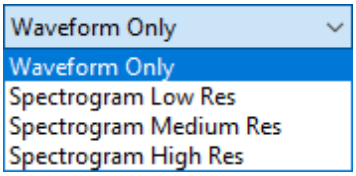
Note that you can always insert, delete or move timings later, in a variety of ways.

Number Of Motion Effect Rows For Pixel Props

If you have a Pro level license, then you can use motion effects to sequence your props that utilize RGB pixels. You can also have multiple motion effects playing on a prop at the same time. This setting specifies how many motion effect rows should be created for every pixel-based prop. Typically 1 or 2 is a good choice to start. And then you can add more rows to specific props as your sequencing needs dictate.

Audio Information



If your license level is below Pro, then "Waveform Only" will be your only choice here. With any media file except MIDI, you will see a waveform displayed when the sequence is opened.

If you have a Pro license, you can also choose to see the audio as a spectrogram (see the Audio Settings topic for examples). The spectrogram takes some extra time to calculate, so sequences will take a little longer to load (the amount of time depends on the speed of your computer and the length of the media file). For a 3 minute song on a fast computer, it should only add a few seconds to the load time.

This setting also impacts the Audio motion effect. If you choose "Waveform Only", then many of the options in the Audio effect will not work.

You can change this setting later using the Sequence Information dialog.

Save These Choices As Defaults

If you turn this checkbox on, your answers to most of the questions in this dialog will be saved so that whenever you create a new musical sequence in the future, those answers will automatically show up in this dialog as the default answers.

The artist name, album name, and song name will not be saved as defaults (though if you use an MP3 tagged with this information, it will automatically be placed into that section).

5.3.1.1.3 Quick Preview

When creating a new sequence, you have the option of associating that sequence with an existing preview, or creating a "Quick Preview". To create a Quick Preview, click on the "Quick Preview" tab in the New Musical Sequence or New Animation Sequence dialog. It only requires 3 pieces of information:

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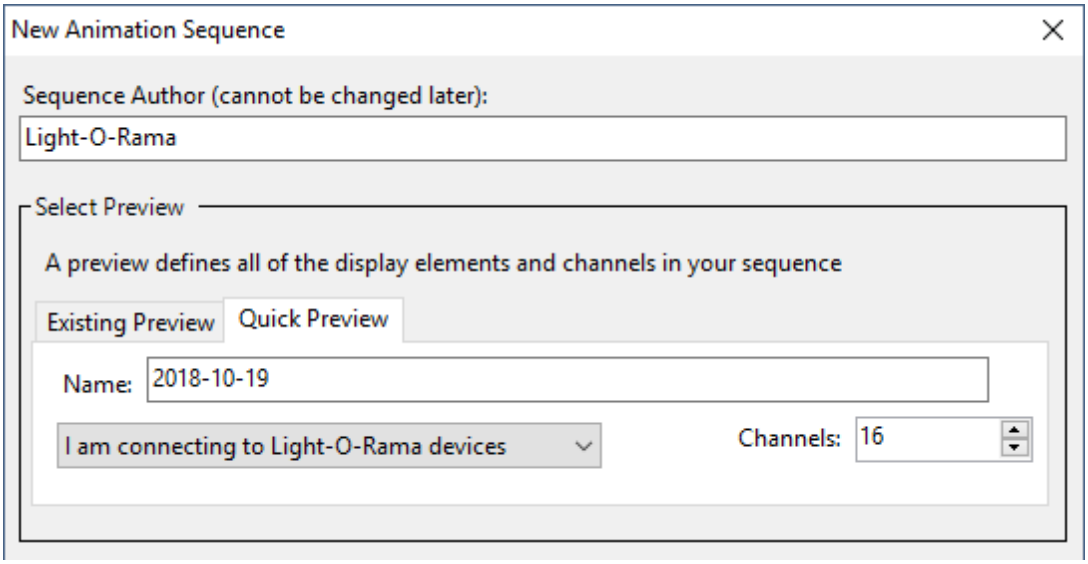
1. Sequence Name. This defaults to today's date, but you can change it to whatever you want; however, it cannot be blank.
2. Tell it what kind of devices you are connecting to. This can be either be:
   - Light-O-Rama devices, or
   - DMX devices, or
   - "I do not know what I am connecting to yet". If you choose this option, the sequence you create will not control any lights; but allows you to defer your decision for later. When you come to a decision and are ready to control lights, you will need to open this preview in Preview Design and change the props to another Device Type.
3. The number of channels the sequence will control.



The Quick Preview tab

Using the choices shown above would result in the following sequence. The 16 channels are listed down the left side. The name of the preview is shown to the right of the green check mark.

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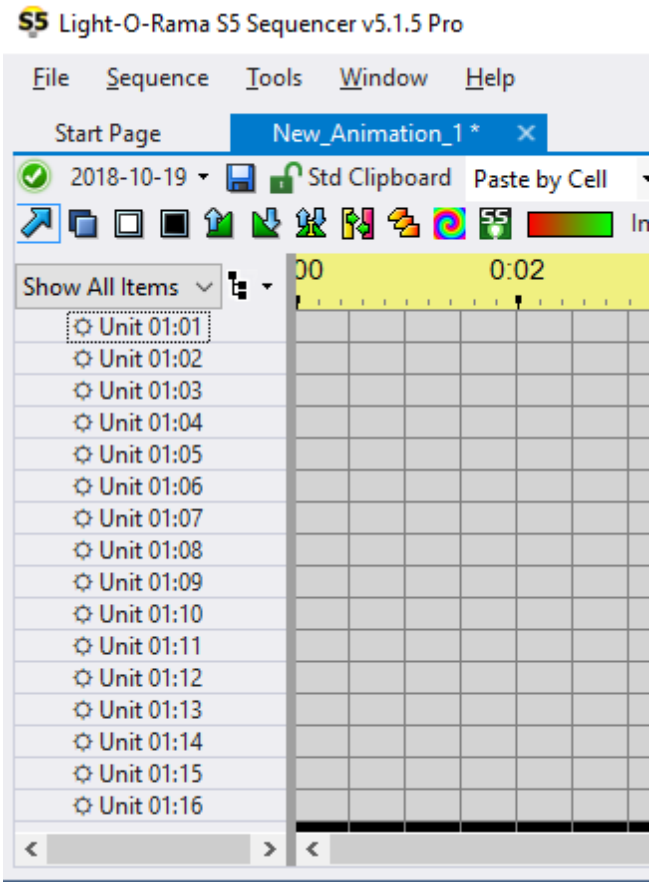

A sequence grid created using Quick Preview

Using the choices shown above would result in the preview shown below. The 16 stars represent the 16 channels. If the Playback Window is visible when the sequence is played in the Sequencer, then the stars will turn on and off according to the effects in your sequence. The preview will be listed on the Previews Window just like any other the preview.

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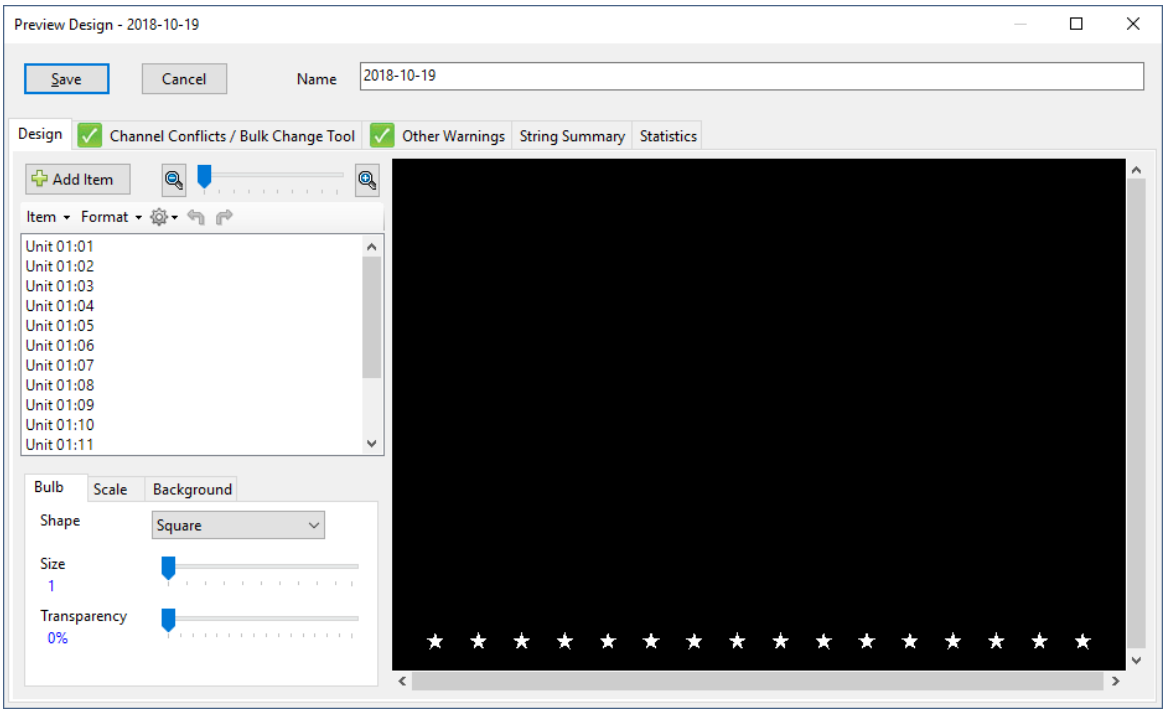

A preview created using Quick Preview

5.3.1.2 Sequence Menu

The Light-O-Rama Sequencer's Sequence Menu gives you access to a set of functions that operate on the currently selected sequence (the highlighted tab). If there is not any file open, then the Sequence Menu is disabled.

- Sequence Information
- File References
- View Sequence Folder
- Media File
- Convert Media to WAV file
- Convert to Animation
- Change Sequence Length
- Skew All
- Windows Command
- Preview Design
- Assign Different Preview
- Manage Archived Props
- Manage RGB Aggregates
- Manage Picture Effects
- Delete Grid Rows
- Add New
- Smooth To Fades Level
- Grid Configuration

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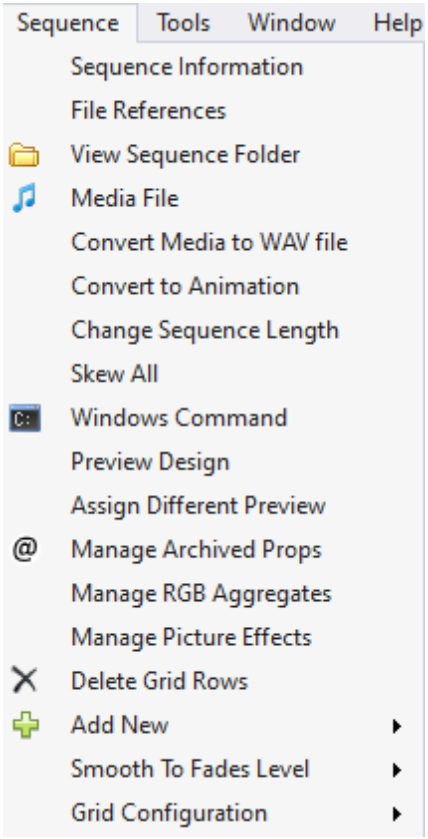

The Sequence Menu

Sequence Information

This menu item opens the Sequence Information dialog, giving you visibility to key information about the current sequence, This includes who created the sequence and when, as well as information about the music (artist, title, and album).

File References

This menu item opens the File References dialog, giving you visibility to all files referenced by the current sequence.

View Sequence Folder

This menu item will open a Windows Explorer window with the current folder set to the folder containing the current sequence.

This might be of use if you want to see the file size of the current sequence, or to make a copy the sequence file. If you are going to make a copy, make sure and save it first!

Media File

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This menu item allows you to specify the audio or video file that should be used with the current sequence. This may be useful, for example, if you have changed the directory that you store your media files in.

When used on an animation sequence, it will convert the animation sequence to a musical sequence.

Convert Media to WAV file

This menu item converts the media file associated with the sequence to the wave format (which has a WAV file extension).

Some media file formats do not position accurately when play back is started in the middle of the file. This can cause inaccuracies in sequencing - your lights would turn on at slightly different times depending on whether play back was started from the beginning of the sequence or the middle. MPG video files and variable bit rate MP3 files are most susceptible to this issue. Converting to a wave file can eliminate this problem.

Convert to Animation

This menu item will convert the current sequence from a musical sequence to an animation sequence.

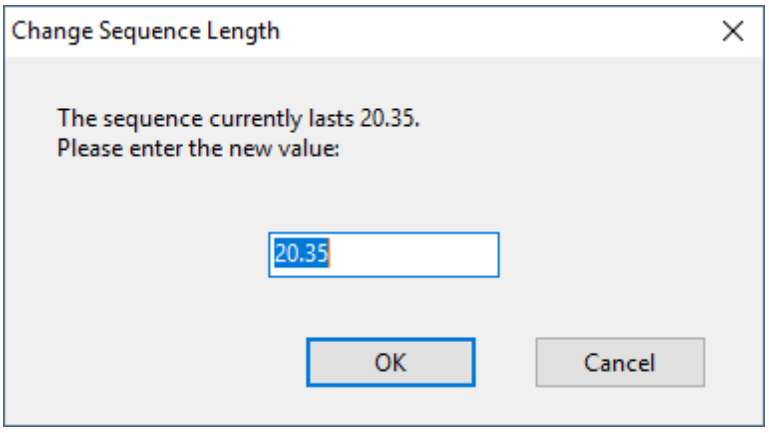
Perhaps someone has sent you a sequence, but you don't have the media file to go with it. By converting the sequence to an animation, you can still play it back and watch the preview.

To convert an animation sequence to a musical sequence, use the Media File menu item.

Change Sequence Length

This menu item allows you to change the duration of the current sequence.

For information on the format used to specify an amount of time, please see the Time Format topic.



The Change Sequence Length dialog

Skew All

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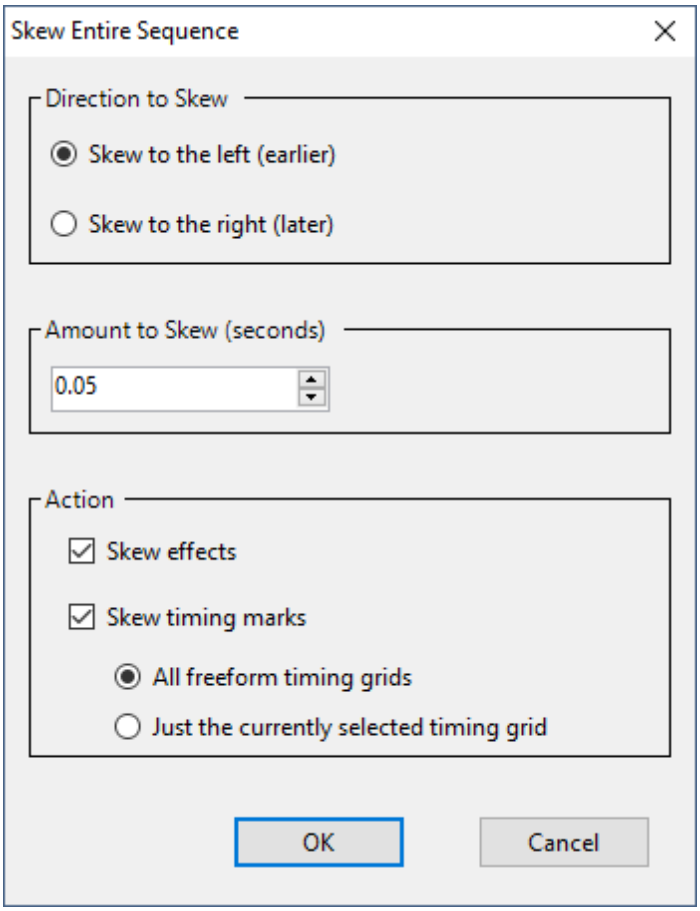
Skewing a sequence will move all of its events, timings, and loops by some specified amount of time. A sequence can be skewed either to the left - i.e. shifting its events (and such) earlier in time - or to the right - i.e. shifting them later in time.

After selecting "Skew All" from the Sequence menu, a window will open up, allowing you to choose the size and direction of the skewing:



The Skew All dialog

In most cases, you should leave the "Action" section with the default choices. However, if you have a special situation, you can turn off skewing of effects or timing marks as needed.

After completing this dialog, the sequence will be skewed by the amount, and in the direction, that you chose.

Here is an example of a simple sequence, before and after skewing to the right by one-quarter second:

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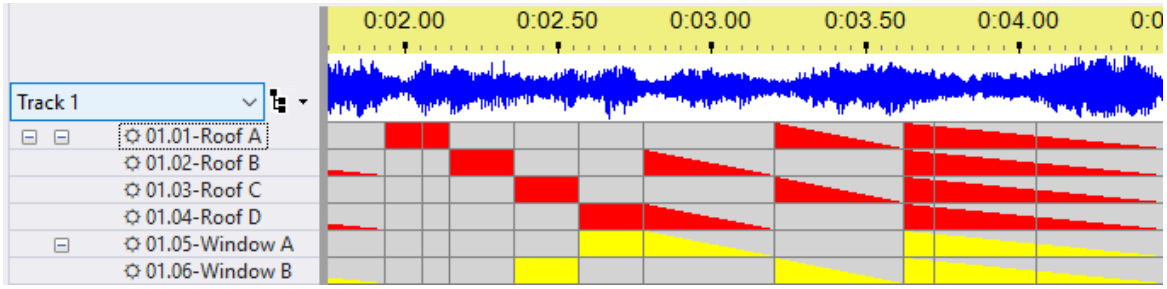
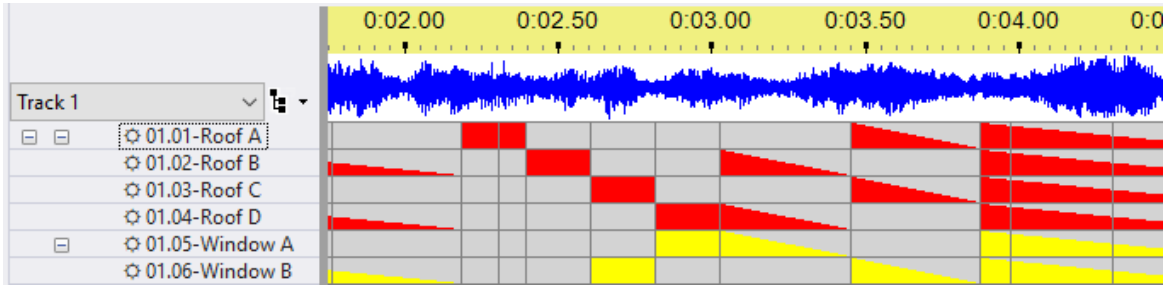


A simple sequence, before skewing



The same sequence, after skewing to the right by 1/4 second

Windows Command

This menu item will open the Windows Shell Command dialog which allows a command to be executed whenever the current sequence is run (whether by the Sequencer or by the Show Player).

Preview Design

This menu item opens the Preview Design window for the current sequence.

Assign Different Preview

This menu item allows you to associate a different preview to the current sequence. This function works best if the new preview started out as a copy of the original preview. However, the function will also look for matching prop names between the old preview and the new preview. Effects will be preserved for props and groups that match. Where there is no match, those items and their effects will be archived.

Manage Archived Props

This menu item will open the Manage Archived Props dialog which allows you to change archived props in the current sequence: delete them, turn them into preview props, or turn them into beat channels.

Manage RGB Aggregates

This menu item will open the Manage RGB Aggregates dialog which allows you to add, modify, and delete RGB aggregate channels. RGB aggregates allow you to combine any 3 existing channels (the

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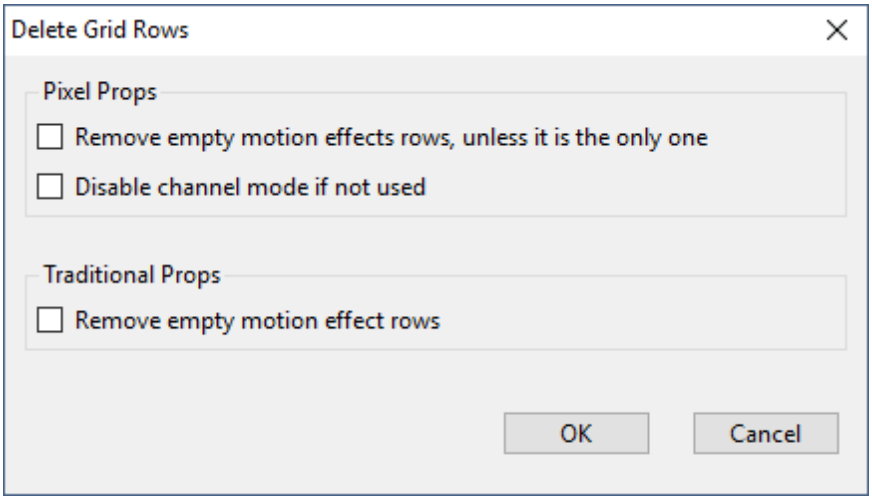
colors don't need to be red, green, and blue necessarily), and the combination of the 3 is treated as an RGB channel for sequencing purposes.

Manage Picture Effects

This menu item will open the Manage Picture Effects dialog, which allows you to control where the image files used in the sequence's Picture motion effects are stored. The images can be stored inside the sequence file (making it easier to move your sequence from one computer to another), or they can be stored separately from the sequence.

Delete Grid Rows

This menu item will open the Delete Grid Rows dialog which allows you to permanently remove certain types of unused grid rows from the sequence. This menu item is only available to users with a Pro license.



The Delete Grid Rows dialog

Add New

This menu item opens a sub-menu, allowing you to add a new loop level, beat channel, subsequence, or RGB aggregate. "Add New" is also available on the Grid View menu.

Smooth To Fades Level

The "Smooth To Fades Level" sub-menu allows you to control whether adjacent effects are merged with one another. Being more aggressive may reduce the number of commands sent to your controllers. On the other hand, if you are sequencing DMX fixtures that require specific DMX values to control their functions, then you should probably set this to "None". Changing this setting only applies to new effects, it does not change effects already in the sequence. So you can change the setting back and forth as needed over the course of creating a sequence.

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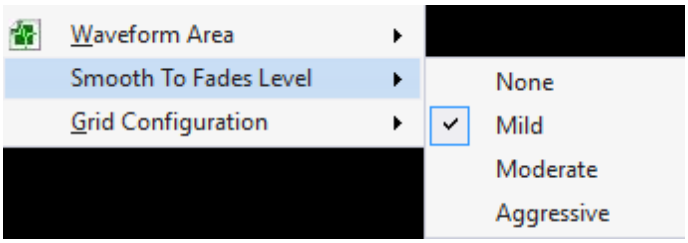
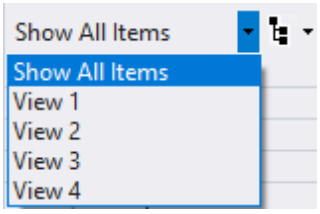


Grid Configuration

This item opens a sub-menu allowing you import or export the user-defined grid views in the sequence. The system-generated "Show All Items" grid view is not included in the export.



Grid Views in a sample sequence

So in the example shown above, "View 1", "View 2", "View 3", and "View 4" would be included in the export file.

For Pro users, the export file will also include the properties of each motion effect row. This is useful if you have created motion rows for subsections of a prop or group.

The "Grid Configuration" sub-menu is also accessible from on the Grid View menu.

5.3.1.2.1 Sequence Information Dialog

Selecting "Sequence Information" from the Sequencer's Sequence menu opens a dialog that displays key information about the sequence, allowing you to change some of it:

- Audio Information
- Created By
- Created At
- Modified By
- Music Artist
- Music Title
- Music Album

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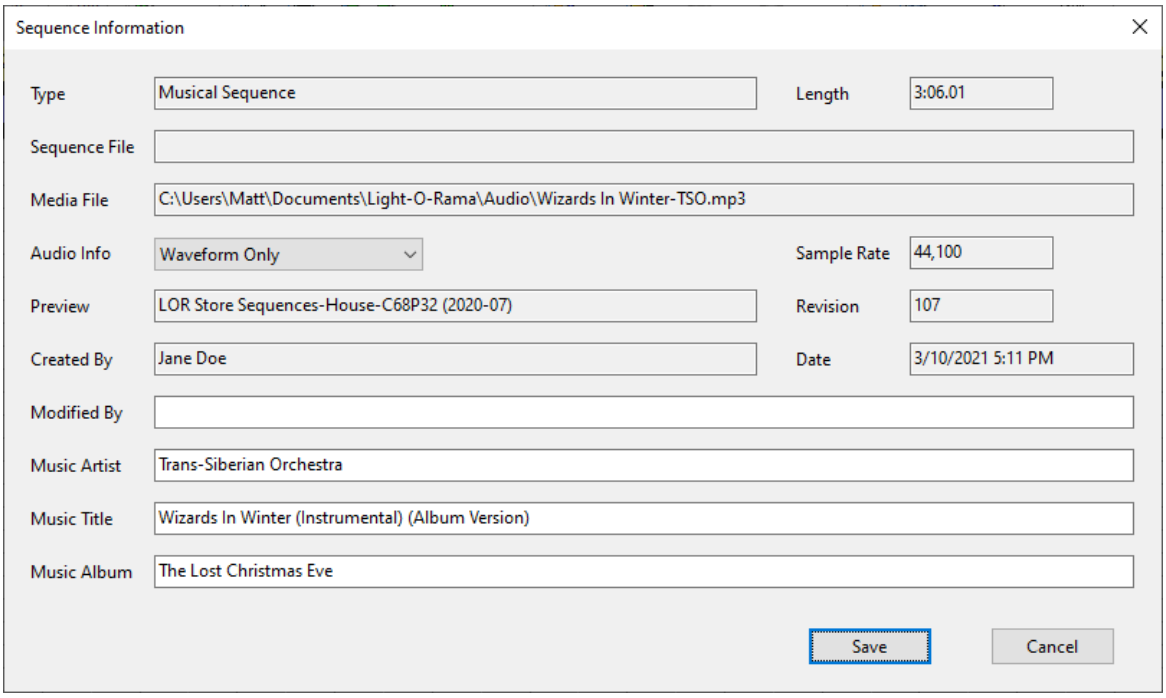
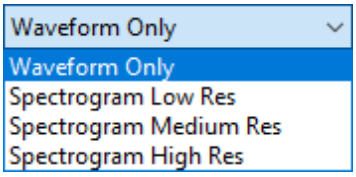


The Sequence Information dialog

Audio Information



If your license level is below Pro, then "Waveform Only" will be your only choice here. With any media file except MIDI, you will see a waveform displayed when the sequence is opened.

If you have a Pro license, you can also choose to see the audio as a spectrogram (see the Audio Settings topic for examples). The spectrogram takes some extra time to calculate, so sequences will take a little longer to load (the amount of time depends on the speed of your computer and the length of the media file). For a 3 minute song on a fast computer, it should only add a few seconds to the load time.

This setting also impacts the Audio motion effect. If you choose "Waveform Only", then many of the options in the Audio effect will not work.

Created By

The creator of the sequence as specified in the New Animation dialog or the New Musical Sequence dialog. This value cannot be edited.

Created At

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The date and time at which the sequence was created. This value cannot be edited.

Modified By

If you modify a file that was created by someone else, you can enter your name here, if you wish.

Music Artist

For musical sequences, the artist who performed the song.

Music Title

For musical sequences, the name of the song.

Music Album

For musical sequences, the name of the album that the song is from.

5.3.1.2.2 File References Dialog

Selecting "File References" from the Sequencer's Sequence menu opens a dialog that lists all files referenced by the sequence. This includes the media file, the background image for the preview, subsequences, and files used by motion effects (e.g. Movie and Picture effects).

Files that don't exist at the specified location are listed with a prefix of "*** missing ***". This is an indication that the file reference should be fixed.

You can resize this window, if needed, so you can more easily view the information.

The media file can be fixed using the Media File item on the Sequence menu. The Preview Background file can be fixed in Preview Design. Subsequence and motion effect references can be fixed using the Change Directory and Change File commands described below.

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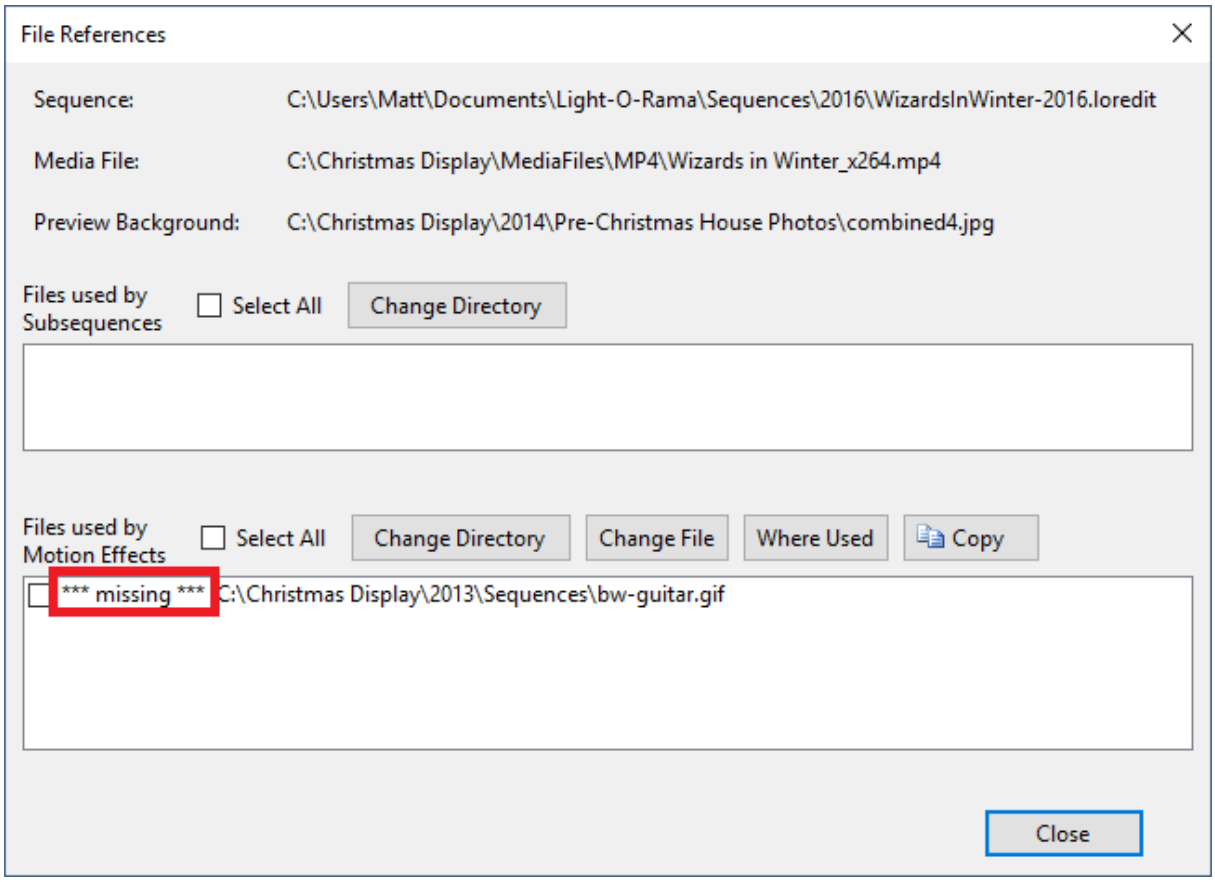

The File References dialog

Change Directory

To specify a new location for one or more files, click the check box next to the filename(s), then click the Change Directory button. You will be prompted for the new location. Note that this function does not actually move the file(s), rather it updates the effects that reference those file(s). This can be useful if you move your sequence directory, or open the sequence on a different computer.

Change File

In some cases, your file hasn't moved, but rather has changed names. In the screen shot above, perhaps you edited "bw-guitar.gif" and the new version is "bw-guitar-2.gif". In that case, you will want to select the check box select to the file name, then click the "Change File" button. This will prompt you for the new file location (folder and file name).

Where Used

If you want to know where a file is used in the sequence, click the check box next to the file name, then click the "Where Used" button. A pop up message will show where the file is first used (not *everywhere* it is used). In the example below, "Raindrops.gif" is first used on the prop "candy cane2", on motion effects row "Effects 01", starting at 42.30 seconds and continuing until 1 minute, 0.60 seconds.

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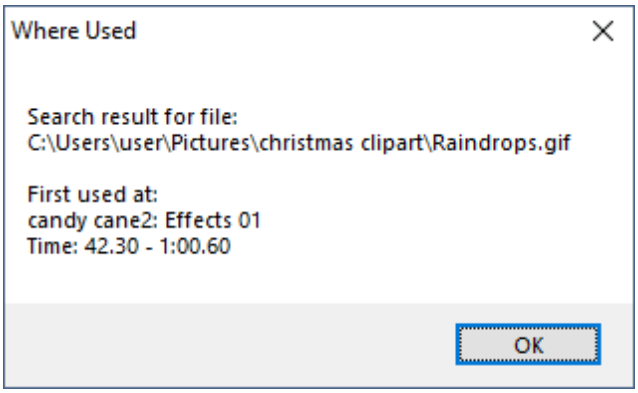

Copy

Clicking the "Copy" button will place a copy of the list of files used by motion effects onto the clipboard, so you can then paste the information into another document.

5.3.1.2.3 Windows Shell Command Dialog

When a sequence is started, Light-O-Rama can optionally also execute an arbitrary Windows command, running any program that you specify.

For example, some people broadcast the songs that play during their shows over radio, and would like the name of the song to be broadcast along with it, using the RDS ("Radio Data System") protocol, allowing people with RDS-enabled radios to see the name of the song that they are listening to. RDS is not *directly* supported by Light-O-Rama, but you could set up your musical sequences so that, whenever one of them is played, Light-O-Rama will tell Windows to tell your RDS program to broadcast the name of the song for that sequence.

To set up a sequence to execute a Windows command, select "Windows Command" from the Sequencer's Sequence menu. After that, whenever that sequence is played by the Show Player, the command will be executed. You can also choose whether the command is run when played in the Sequencer.

Important notes:

- the command will *not* be executed if the sequence it is associated with is used as a subsequence of another sequence.
- if the Show Player is running when you change the command associated with a sequence, you may have to stop and start the Show Player in order for this change to be picked up.
- This feature is available only at the Advanced feature level and higher.

Topics:

- Control Whether Commands Are Run When Played in the Sequencer
- Reuse Existing Command
- Create New Command
- Shell Command Variables
- Sharing Sequences between Computers, and Security
- Examples

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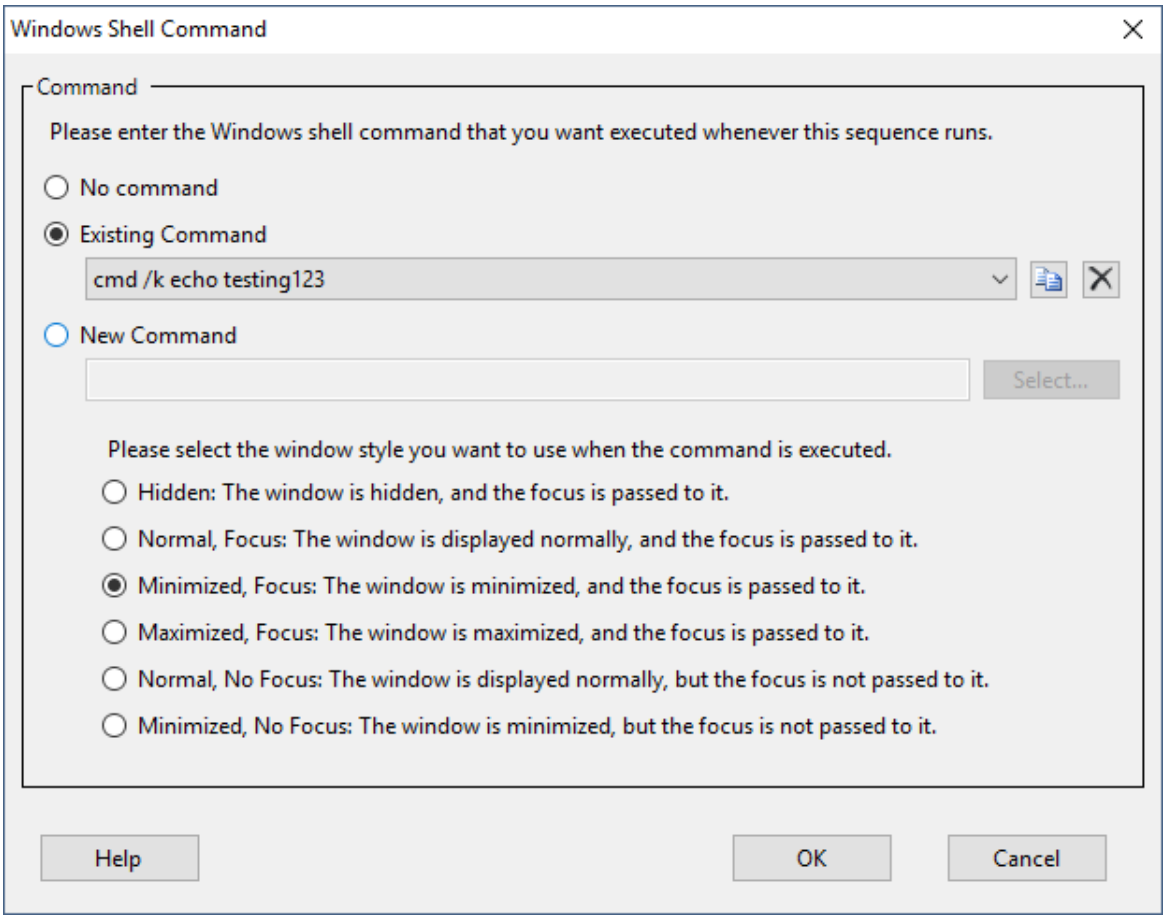

The Windows Shell Command dialog

Control Whether Commands Are Run When Played in the Sequencer

The commands you enter on this screen will be run when the sequence is played by the Show Player. Depending on your situation, you may or may not want these commands to run when they are played in the Sequencer. You can control this behavior on the Sequencer Preferences Playback tab.

Reuse Existing Command

Select the "Existing Command" radio button and choose a command from the drop-down list to use a command that was already set up for another sequence. Both sequences will run the same command when they start.

- The button copies the selected existing command to the "new command" box so you can use an existing command as the basis for a new one.
- The button deletes the selected command. This will affect all sequences that use the same command; so be very certain that the command is no longer needed before deleting it. If your intent is that the current sequence no longer run a command, use the "No command" radio button instead.

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Create New Command

Select the "New Command" radio button for creating an entirely new command, not used by any other sequence. If your command is an executable file or batch file (.EXE, .BAT, or .CMD extension), you can use the "Select" button to select the desired file and the full path to the file will be placed in the new command text box. Your command can also include special shell command variables as noted below.

Shell Command Variables

For the most part, a shell command will be executed exactly as you type it. You can, however, additionally use certain variables, which will be replaced at run-time with various information, such as the title of the song associated with the sequence. The following variables can be used (*note: the exact result of using any of the date/time "DT_" variables may depend upon your computer system, so try them out if you need to rely upon an exact format)*:

Variable	**Meaning**
%%	A single percent character ("%")
%DT_a%	Day of week, abbreviated ("Mon")
%DT_A%	Day of week ("Monday")
%DT_b%	Month name, abbreviated ("Aug")
%DT_B%	Month name ("August")
%DT_c%	Date and time ("Sunday, March 09, 2008 4:05:07 PM")
%DT_d%	Day of month (01 through 31)
%DT_H%	Hour, 24 hour clock (00 through 23)
%DT_I%	Hour, 12 hour clock (01 through 12)
%DT_j%	Day of year (001 through 366)
%DT_m%	Month number (01 through 12)
%DT_M%	Minute (00 through 59)
%DT_p%	AM or PM
%DT_S%	Second (00 through 61)
%DT_w%	Day of week, number (0 through 6, Sunday being 0)
%DT_x%	Date ("11/29/10")
%DT_X%	Time ("16:32:37")
%DT_y%	Year, two digit ("10")
%DT_Y%	Year, four digit ("2010")
%ENV_*something*%	The value of your computer's environment variable "*something*"; for example, use %ENV_PATH% to get the value of your computer's PATH environment variable

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%MEDIA_ALBUM%	The name of the album that this sequence's media file is from (if set in your sequence)
%MEDIA_ARTIST%	The name of the artist that this sequence's media file is by (if set in your sequence)
%MEDIA_FILENAME%	The name of the sequence's media file, without path information
%MEDIA_FILENAME_FULL%	The name of the sequence's media file, with path information
%MEDIA_FILENAME_NO_EXT%	The name of the sequence's media file, without path information and without the file extension (such as ".mp3")
%MEDIA_TITLE%	The name of the song that this sequence's media file is (if set in your sequence)
%SEQUENCE_AUTHOR%	The author of this sequence (if set in your sequence)
%SEQUENCE_CREATED_AT%	The date and time at which the sequence was created
%SEQUENCE_FILENAME%	The name of the sequence file, without path information
%SEQUENCE_FILENAME_FULL%	The name of the sequence file, with path information
%SEQUENCE_FILENAME_NO_EXT%	The name of the sequence file, without path information and without the file extension (such as ".lms")
%SEQUENCE_MODIFIED_BY%	The name of the person who has modified the sequence (if set in your sequence)

These variables were supported in prior versions, but are no longer supported in S5

Variable	**Meaning**
%DT_U%	Week of year, with the first Sunday of the year starting week 01 (00 through 53)
%DT_W%	Week of year, with the first Monday of the year starting week 01 (00 through 53)
%DT_Z%	Time zone ("EST")

Sharing Sequences between Computers, and Security

The ability to execute an arbitrary Windows command is very powerful, and even potentially harmful - for example, you could execute a command which will install spyware on your machine. Therefore, it would not be wise to execute whatever Windows command another person chose, unless you are absolutely sure that the command they chose is safe and harmless.

For this reason, Light-O-Rama imposes a security measure: The command to be executed is *not* stored directly in the sequence file itself. Instead, the sequence file contains a key for an entry in another file ("cmdmap.lcm", located in your Light-O-Rama sequences directory); that entry specifies the Windows command to be executed. If that file doesn't contain an entry for that key, Light-O-Rama simply does not execute any command when the sequence plays.

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So, you can use sequences created by other people without fear of spyware or other harmful programs, as long as you continue to use your own version of cmdmap.lcm, not a copy of the other person's cmdmap.lcm.

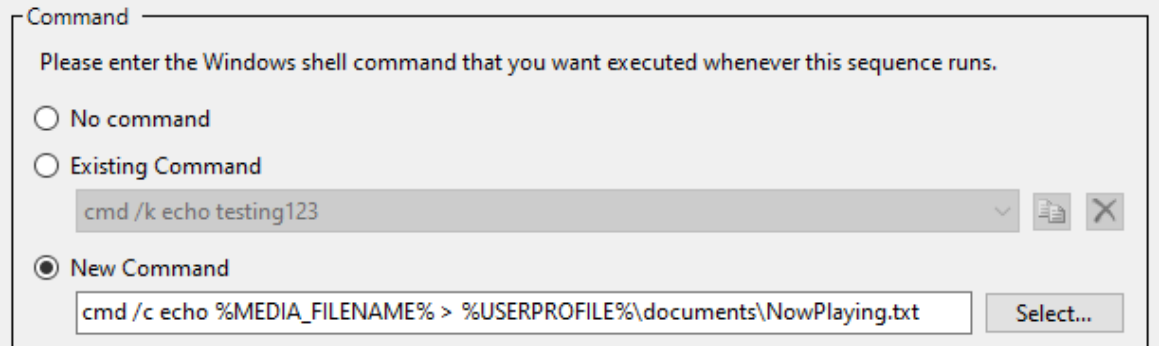
However, this means that if you yourself use Light-O-Rama on two separate machines - for example one to create your sequences on, and another to run your shows on - you will have to copy your "real" version of cmdmap.lcm from one machine to the other if you want your sequences to execute Windows shell commands. You would typically do this at the same time that you copy your sequences themselves over from one machine to the other.

Examples

Update a File

The following command will write the media file name to a file called "NowPlaying.txt" in the your Documents folder.

```
cmd /c echo %MEDIA_FILENAME% > %USERPROFILE%\documents\NowPlaying.txt
```



Let's break this command down:

- "cmd /c" starts a Windows shell command processor. The "/c" is an option that tells the command processor to run the command that follows it and then terminate.
- "echo" is a command that outputs the text that follows it.
- "%MEDIA_FILENAME%" is one of the Light-O-Rama command variables noted above.
- ">" redirects the output to a file.
- "%USERPROFILE%\documents\NowPlaying.txt" is the name of the file where the output gets written. "%USERPROFILE%" is a Windows environment variable that usually points to "C:\Users\Your-Account-Name".

Call a Batch File

In this example, we will pass the media title, artist, and album to a batch file for further processing. First, create a new batch file using Microsoft Notepad or a similar text editor. We suggest putting it in your Documents folder with the file name "NowPlaying.bat". Here is the contents, which you can copy/paste into your text editor. Feel free to modify it to suit your own needs.

```
rem Light-O-Rama batch file example
rem
```

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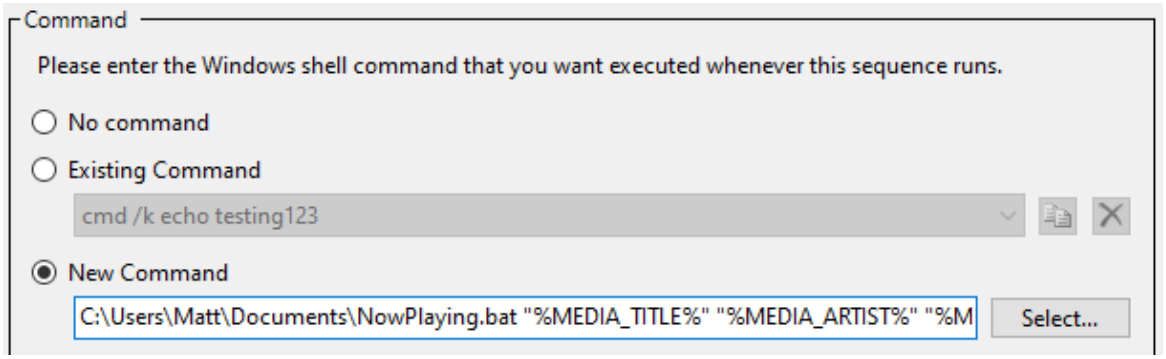
```
rem This batch file accepts the media title, artist, and album as parameters

rem Get the path to this file
set MyPath=%~dp0

rem Get the parameters that were passed in
rem The tilde removes the double-quotes surrounding the parameter
set title=%~1
set artist=%~2
set album=%~3

echo Now playing %title% by %artist% from the album %album% > "%MyPath%\NowP
```

This batch file accepts 3 parameters, formats the output nicely, and then saves it to a text file called "NowPlaying.txt" (located in the same folder as the batch file itself).

To create a command in the Sequencer that calls this batch file, follow these steps:

1. Click the "New Command" radio button
2. Click the "Select..." button
3. Once the Select File dialog opens, navigate to your batch file and select it, and then click the "Open" button.
4. The name of the batch file is now displayed in the text box. Append the following text to it (including the double-quotes):

```
"%MEDIA_TITLE%" "%MEDIA_ARTIST%" "%MEDIA_ALBUM%"
```



5.3.1.2.4 Manage Archived Props Dialog

Selecting "Manage Archived Props" from the Sequence menu opens a dialog where you can view all of the archived props in a sequence.

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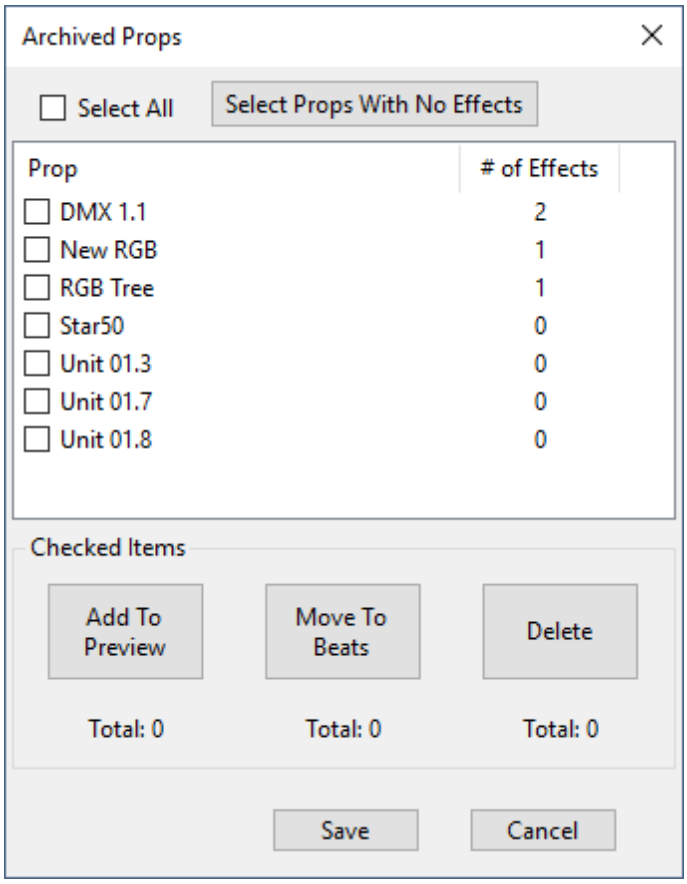

Check the boxes next to the archived props you want to take action on. You can use the "Select All" button to set or clear all of the boxes at once.

After you have selected the desired props, take action by clicking one of the 3 big buttons:

- "Move to preview" will convert the archived prop to a preview prop (i.e. it adds the prop to the preview). The prop is no longer archived and its sequencing will appear during preview playback and will control real lights.
- "Move to beats" will convert the archived prop to beat channels. While upgrading a sequence, a beat channel in the legacy sequence could get archived because it does not exist in the preview. This command will allow that issue to be corrected.
- "Delete" permanently removes the selected archive props from the sequence. A legacy sequence might contain channels that were no longer used and those channels would get archived because they don't exist in the preview. There is no reason to keep such channels in an S5 sequence, so this command gives you an efficient way to remove them.

After you are done, click "Save" to close the dialog and make the actions permanent, or click "Cancel" to revoke the changes.

5.3.1.2.5 Manage RGB Aggregates Dialog

Selecting "Manage RGB Aggregates" from the Sequencer's Sequence menu opens a dialog where you can view all of the RGB aggregates in a sequence. From this dialog you can:

- Add a new RGB aggregate

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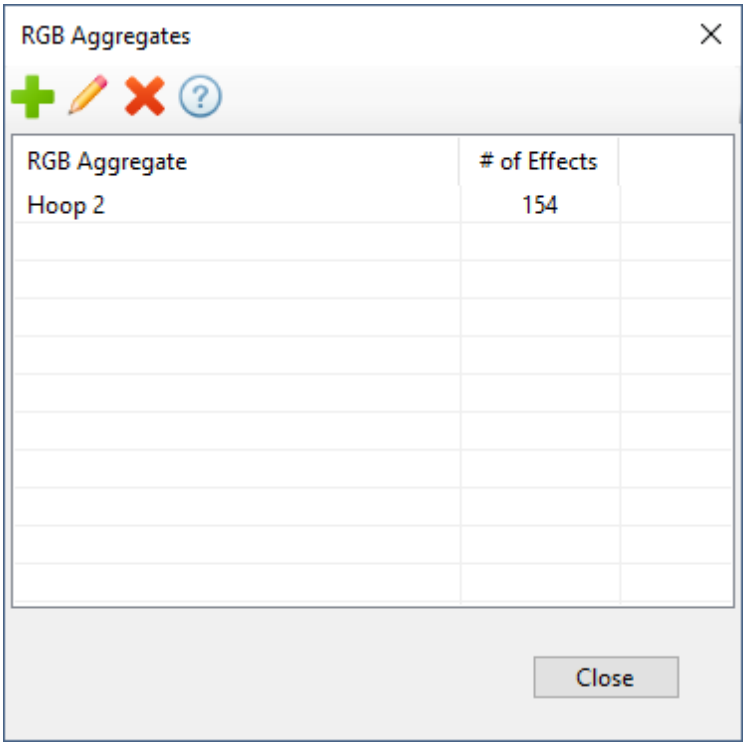
- Modify an existing RGB aggregate
- Delete an RGB aggregate



The Manage RGB Aggregates dialog

Add a new RGB aggregate

Clicking the "+" icon will open a dialog allowing you to create a new RGB aggregate.

- Enter the name for the new aggregate.
- Use the filter box to narrow done the list of channels to choose from.
- Click on a channel name that will occupy the red slot in the aggregate, then click the "Set Red" button. The name of the selected channel will appear below the button.
- Click on a channel name that will occupy the green slot in the aggregate, then click the "Set Green" button. The name of the selected channel will appear below the button.
- Click on a channel name that will occupy the blue slot in the aggregate, then click the "Set Blue" button. The name of the selected channel will appear below the button.
- Click the "Create" button to create the aggregate.

It is not required to set all 3 slots. Setting only 1 or 2 of the slots is fine.

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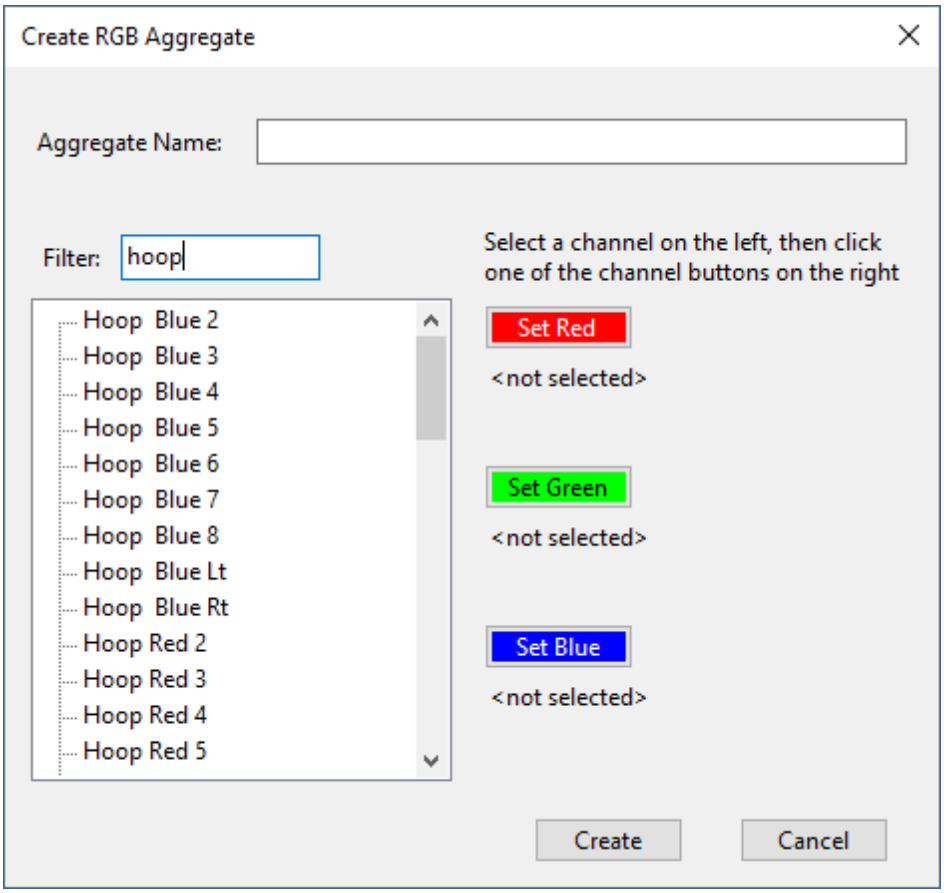

Creating a new RGB Aggregate

Modify an existing RGB aggregate

Double-clicking on an RGB aggregate name (or clicking a name to select it then clicking the pencil icon) will open a dialog allowing you modify the selected RGB aggregate. Here you can change the name, or change the channels assigned to any of the 3 slots. To change the channel assigned to a slot, use the same procedure described in creating an aggregate.

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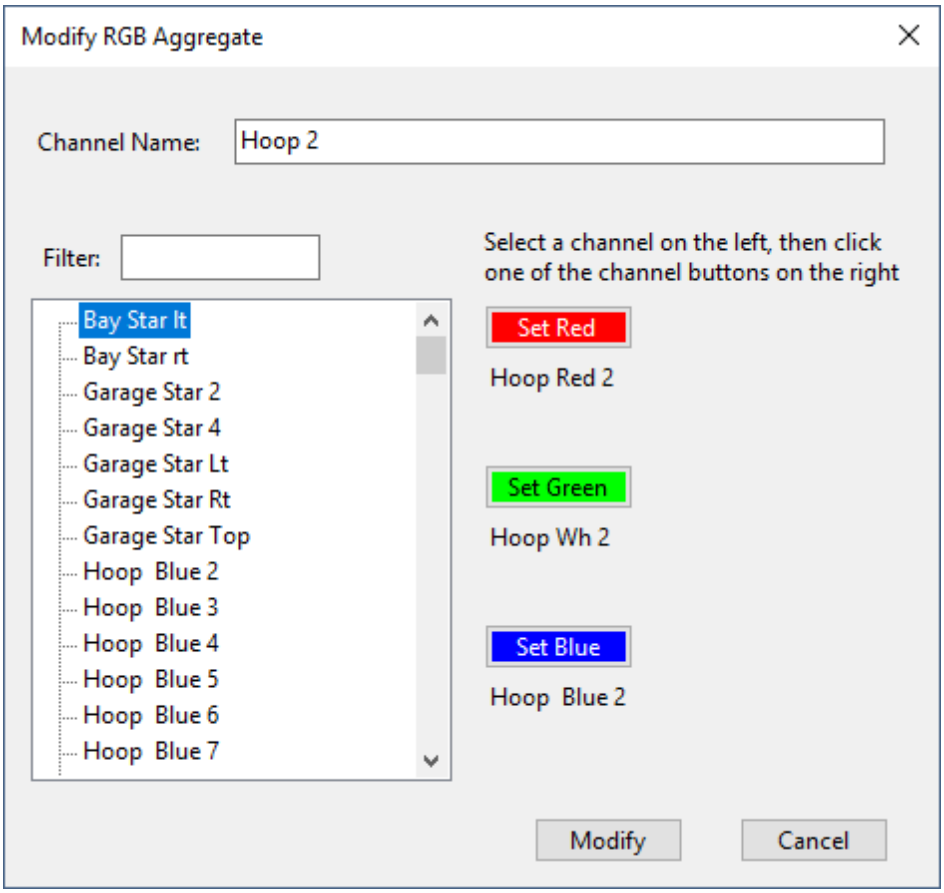

Modifying an RGB Aggregate

Delete an RGB aggregate

Click on an aggregate name to select it then click the red "X" icon to delete it. You can also use Shift-click and Ctrl-click to select multiple items before clicking the delete icon.

5.3.1.2.6 Manage Picture Effects Dialog

Picture motion effects display an image on your prop. You can use the Manage Picture Effects dialog to control where the image files used in the sequence's Picture motion effects are stored. Image files can either be stored within the sequence file (embedded), or stored on your computer's hard drive (external). From this dialog you can:

- Embed external files
- Extract embedded files

Embed External Files

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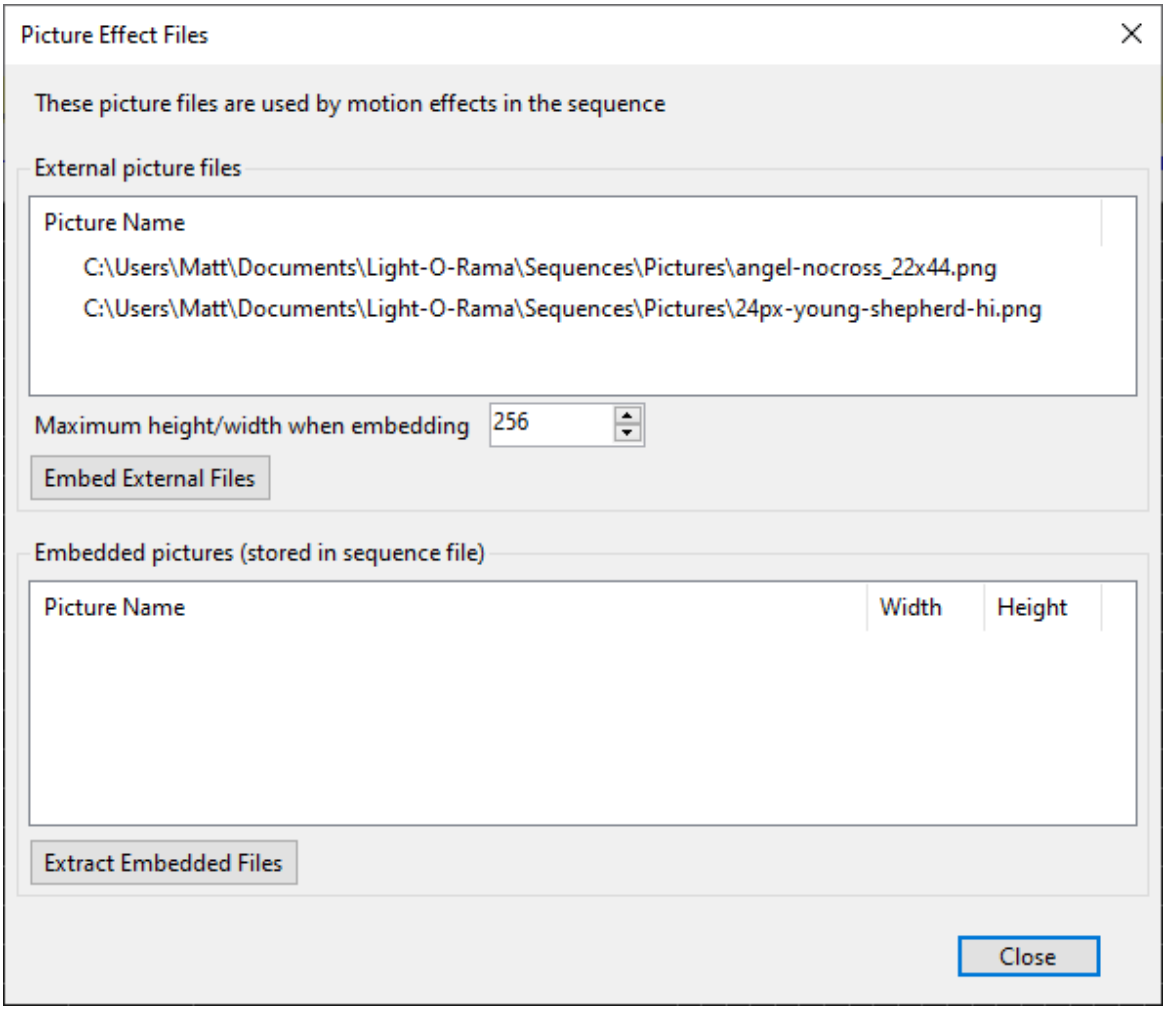
Pressing the "Embed external files" button will copy all files listed in the "External picture files" section into the sequence file itself. This can make it easier to move your sequence from one computer to another -- since the images are stored inside the sequence file (.LOREDIT extension), the image files no longer need to be copied separately.

As part of this operation, the Picture effects in the sequence are updated to point to the new embedded file location.

You can also specify a maximum height and width in order to reduce the size of the embedded image. This helps keep the total size of your sequence file down. When scaling down your image, the image's aspect ratio is maintained. So if the maximum height/width is set to 256 (the default) and you embed an image that is 1000 pixels tall by 2000 pixels wide, then the embedded image will be 128 pixels tall and 256 pixels wide (in this example the image is wider than it is tall, so the width controlled the amount of scaling).

Here is an example from a sequence with 2 Picture motion effects:



Prior to embedding

Pressing the "Embed external files" button will embed the files and then update the dialog to reflect the new file location:

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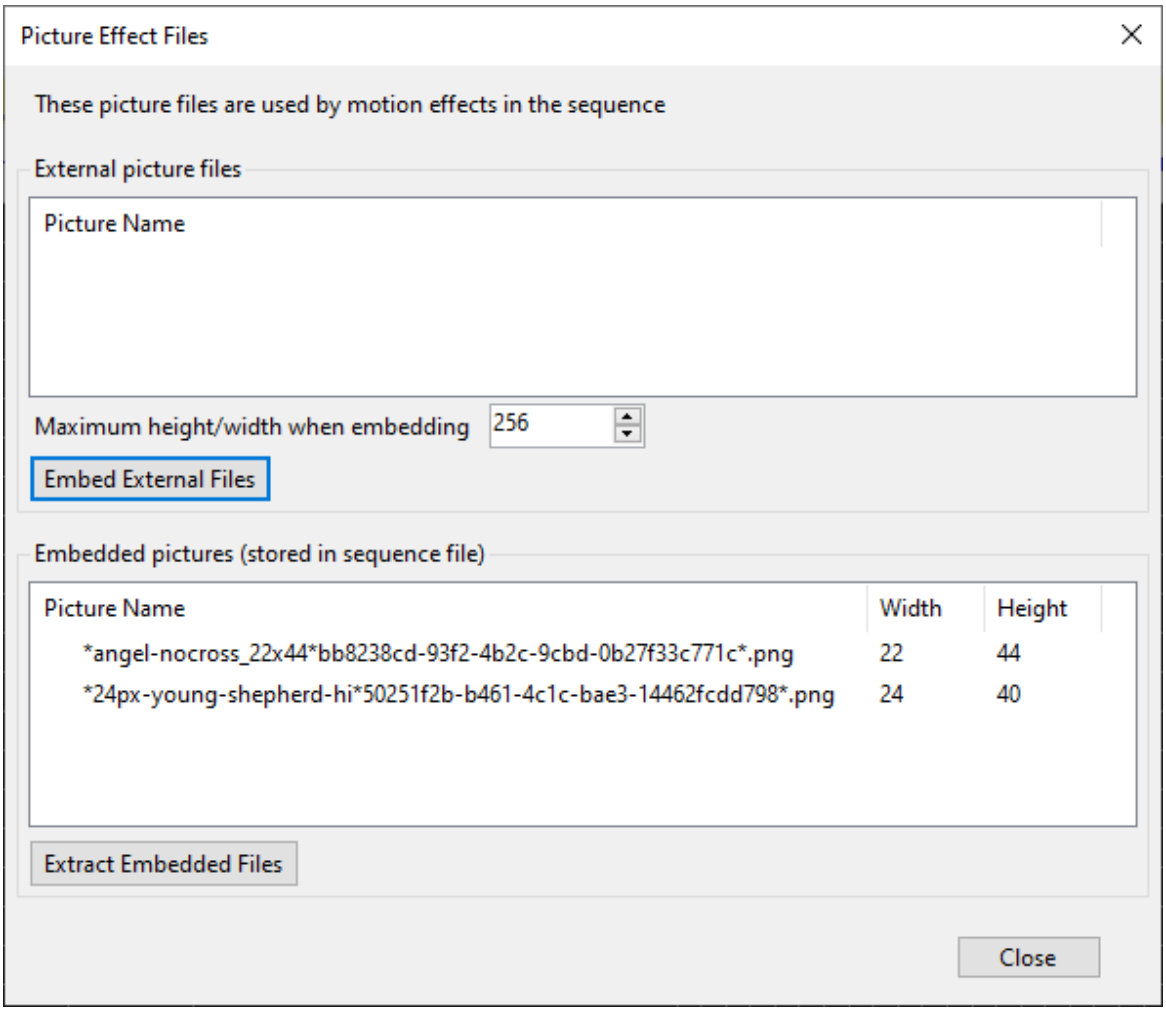

After embedding

The picture names are appended with a series of letters and numbers in order to ensure each name is unique.

Extract Embedded Files

Pressing the "Extract embedded files" button will move all files listed in the "Embedded pictures" section onto your computer's disk drive. This can allow you to use those files in other applications.

The files are placed in a new sub-folder, below the folder where the sequence is stored. For example, if your sequence file is "\Light-O-Rama\Sequences\MySequence.LOREDIT", then the image files will be placed in a folder called "\Light-O-Rama\Sequences\MySequence-Pictures".

As part of this operation, the Picture effects in the sequence are updated to point to the new file location.

Here is an example from a sequence with 2 Picture motion effects:

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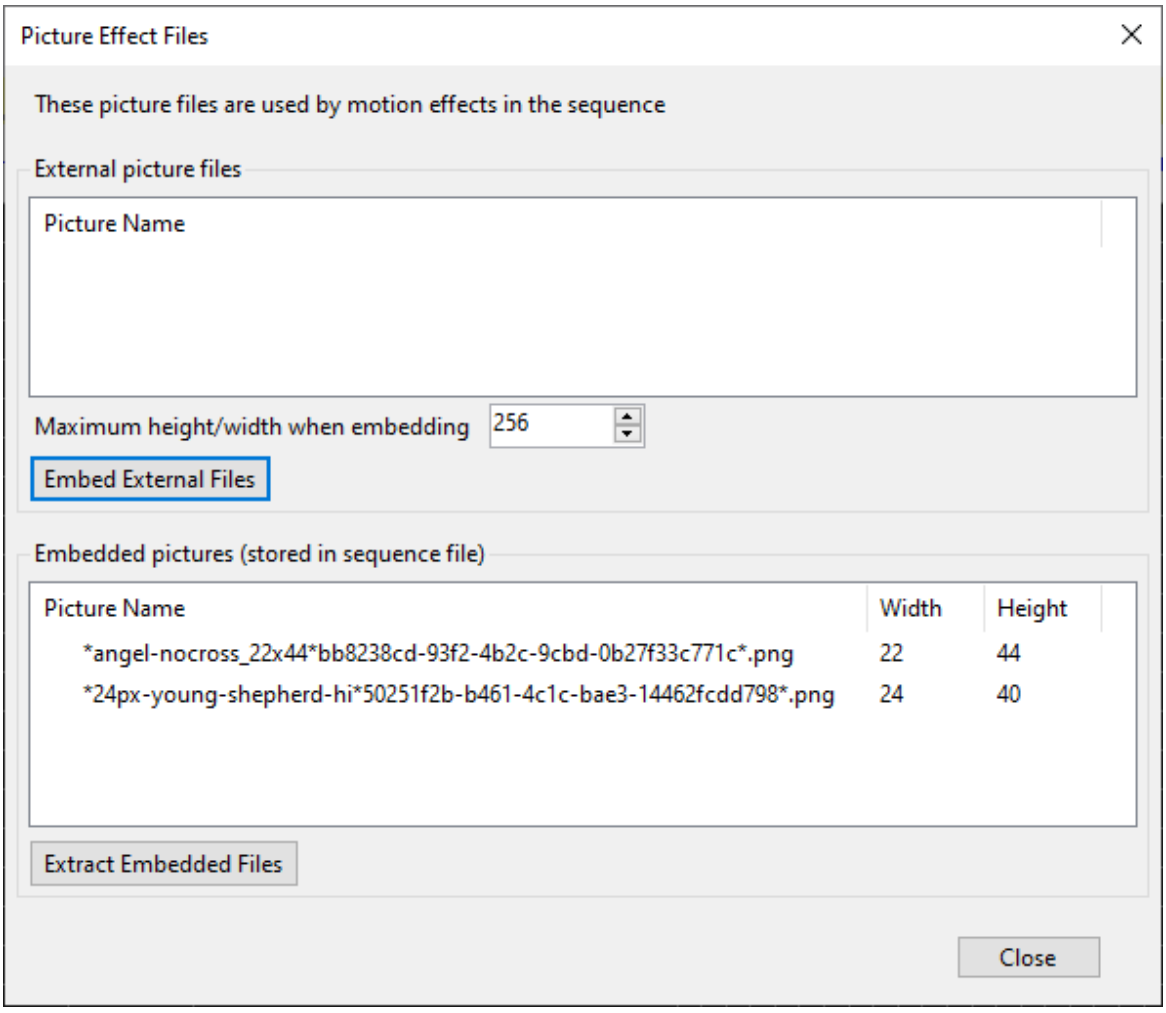
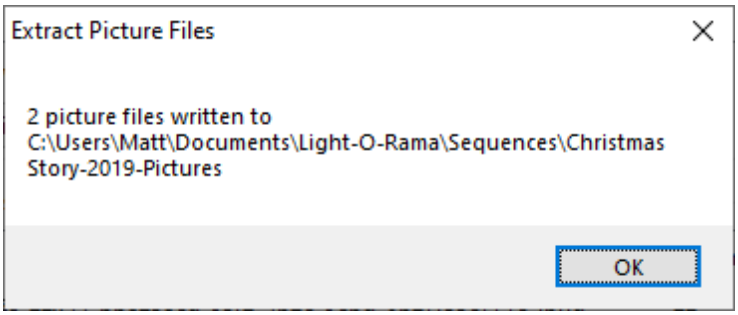


Before extracting

Pressing the "Extract embedded files" button will start the process. After the files are extracted, you will get a confirmation message. If a problem was encountered during the extraction, then this message will include some information about the error.



After clicking "OK" to close the message, the dialog will be updated to reflect the new location for the files.

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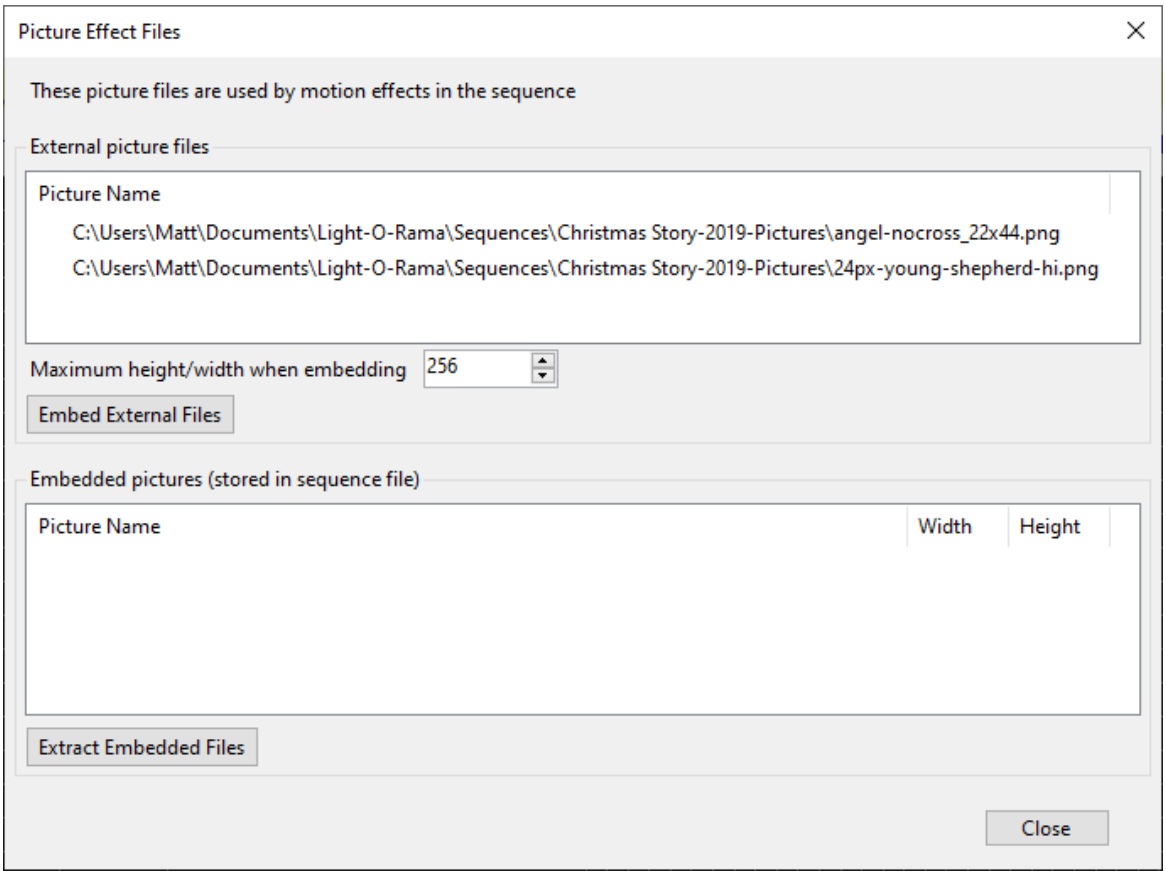

After Extracting

5.3.1.3 Tools Menu

The Light-O-Rama S5 Sequencer's Tools Menu gives you access to a set of functions that are unrelated to a specific sequence.

- Motion Effect Generator
- Beat Wizard
- MIDI File Wizard
- Tapper Wizard
- VU Wizard
- Sequencer Preferences
- Keyboard Preferences
- Change User Data Directory
- Theme
- Zoom Preferences

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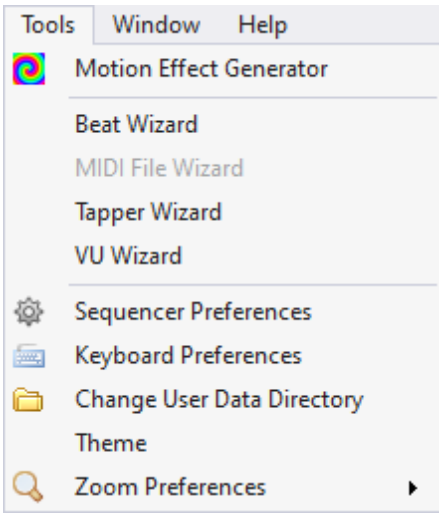

The Tools Menu

Motion Effect Generator

This option on the Tools menu opens the Motion Effect Generator window.

- When no sequences are open, this menu item can be used to create motion effects and optionally save the one's you like as favorites. In the Motion Effect Generator, you can freely switch the preview and prop down-down selections to see how your effect looks on any display element. You can do this at any license level.
- When a sequence is open, this menu item can be used to place a motion effect into the current grid selection See the Sequencing topic for more information on how to use the Motion Effect Generator when editing your sequences. Placing motion effects in a sequence requires the Pro license level.

Beat Wizard

This option on the Tools menu opens the beat-detecting audio wizard.

MIDI File Wizard

This option on the Tools menu opens the MIDI file audio wizard. This option is only enabled if the sequence's media file is a MIDI file (.MID file extension).

Tapper Wizard

This option on the Tools menu opens the Tapper audio wizard.

VU Wizard

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This option on the Tools menu opens the VU audio wizard.

Sequencer Preferences

This option on the Tools menu opens the Sequencer Preferences dialog, which allows you to customize some of the look and behavior of the S5 Sequencer..

Keyboard Preferences

This option on the Tools menu opens the Keyboard Preferences dialog, which allows you to customize which keys trigger which actions. For example, you assign the key that creates a new "on" effect.

Change User Data Directory

This option on the Tools menu allows you to change the default directory where your audio and sequence files are stored. You should back up your sequence files before initiating this action.

Theme

This option on the Tools menu allows you to choose among several themes (color schemes) for displaying the main window of the Light-O-Rama Sequencer

Zoom Preferences

This option on the Tools menu allows you to customize zoom preferences (default row height and time scale width) for new sequences.

5.3.1.3.1 Sequencer Preferences

The Sequencer Preferences menu item on the Light-O-Rama S5 Sequencer's Tools menu opens a dialog that allows you to customize the behavior of certain functions in the Sequencer. The dialog has several tabs:

- Tooltips
- Playback
- Motion Effects
- Channel Effects
- Previews
- Save Copy
- Video
- Cursors
- Start Up

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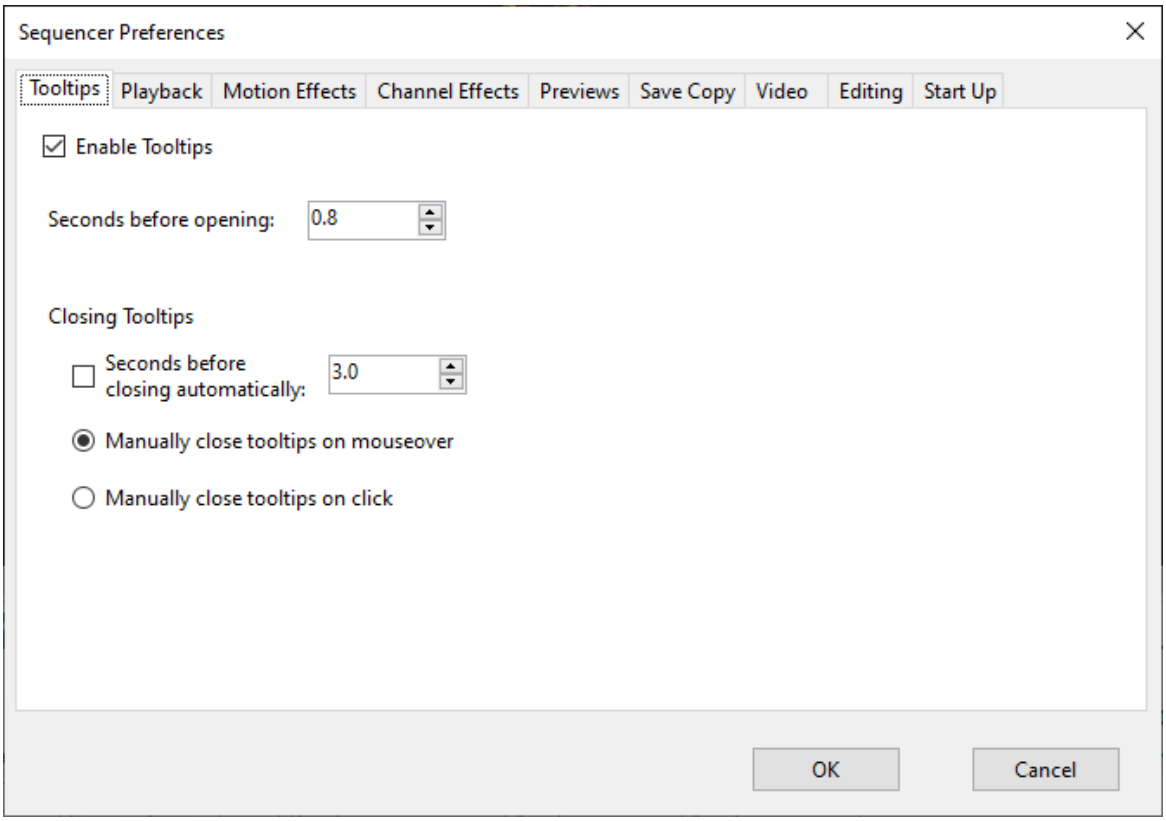

The Sequencer Preferences Dialog

5.3.1.3.1.1 Tooltip Preferences

The "Tooltips" tab is accessed by selecting Sequencer Preferences from the Sequencer's Tools menu. From here you can control how tool-tips are displayed on the sequence grid.

- Enable tooltips
- Seconds before opening
- Seconds before closing automatically
- Manually close tooltips on mouseover
- Manually close tooltips on click

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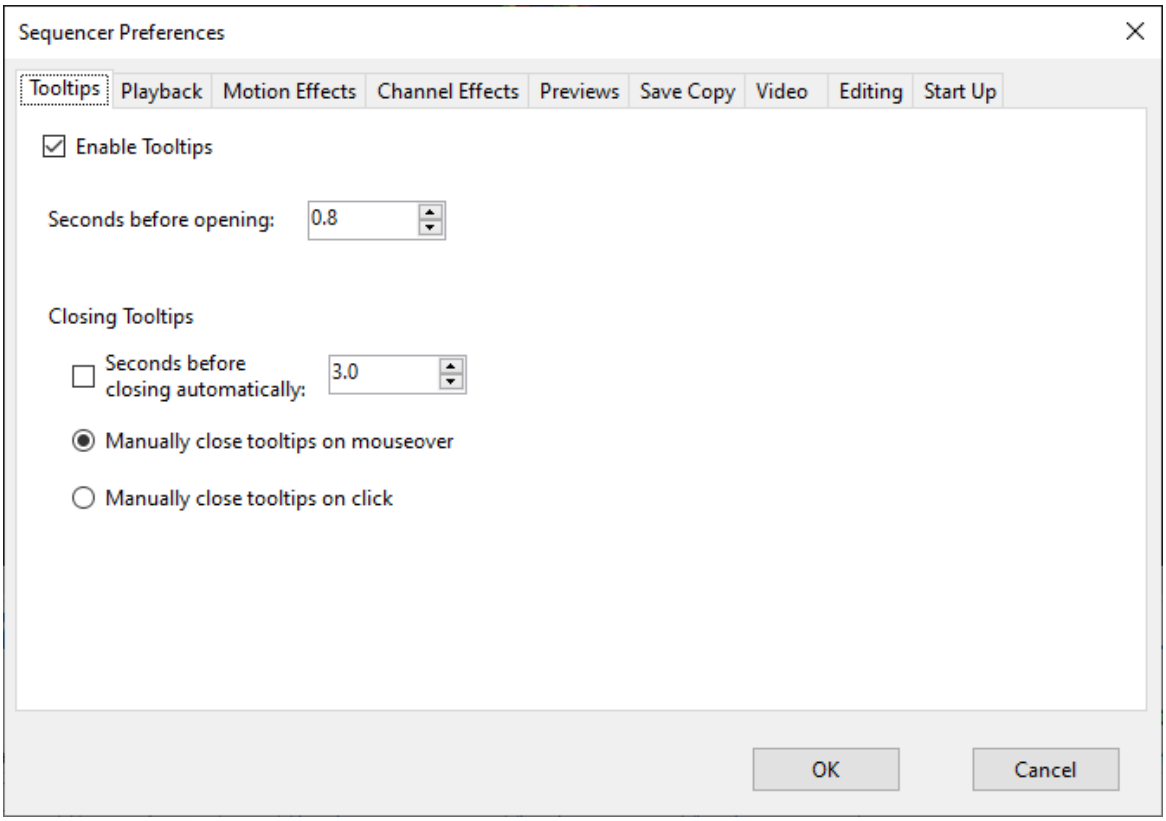

Sequencer Preferences - Tooltips Tab

Enable tooltips

If this box is checked, when the mouse is over a sequence grid, a tool-tip displaying information about the cell being pointed to can be displayed.

Seconds before opening

If tool-tips are enabled, this text box controls how many seconds it will take before the tool-tip pops up, when the mouse is kept still over a sequence grid.

You do not have to specify a whole number; for example, you can set it to six tenths of a second by entering "0.6".

Seconds before closing automatically

If tool-tips are enabled, this checkbox and text box control whether or not they will automatically close themselves a certain amount of time after being opened. If the checkbox is checked, they will automatically close after the number of seconds specified in the text box.

You do not have to specify a whole number; for example, you can set it to three-quarters of a second by entering "0.75".

Manually close tool-tips on mouseover

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If tool-tips are enabled, selecting this option will make them close when you roll your mouse over them. The other option is to make them close when you click on them.

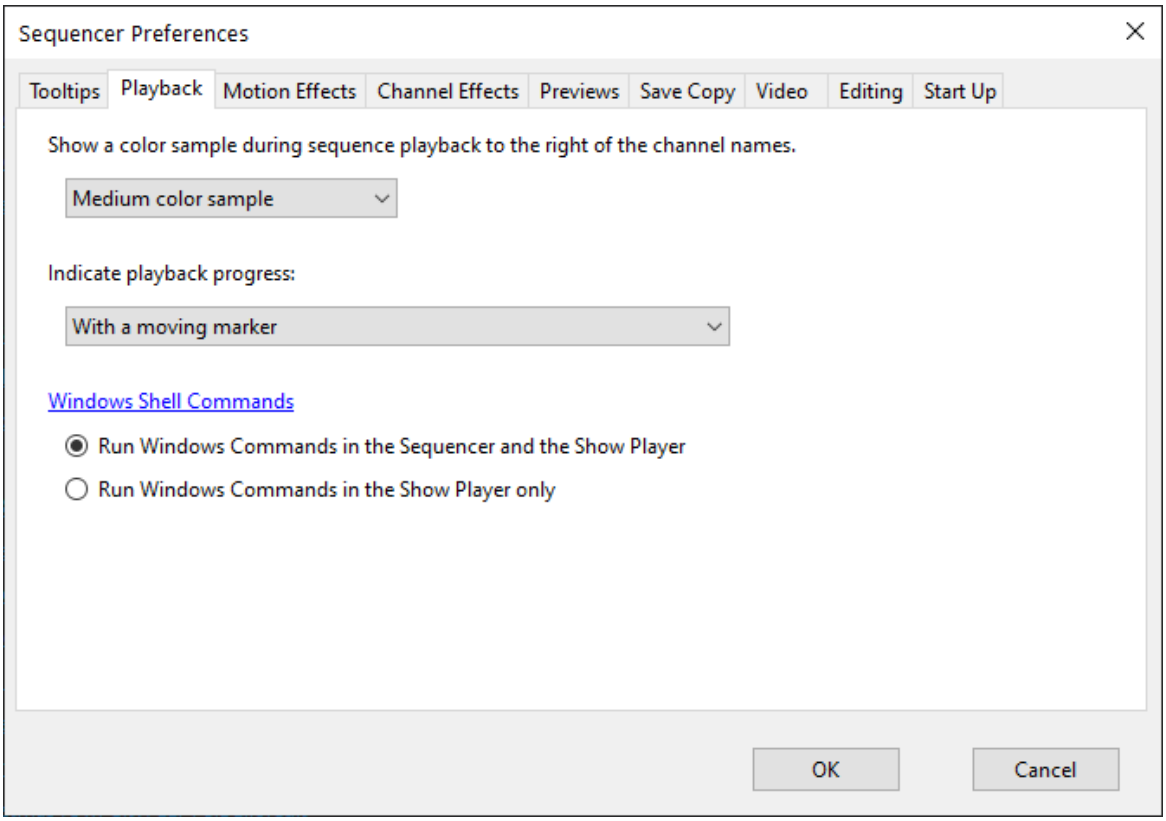
Manually close tool-tips on click

If tool-tips are enabled, selecting this option will make them close when you click on them. The other option is to make them close when you roll your mouse over them.

5.3.1.3.1.2 Playback Preferences

The "Playback" tab is accessed by selecting Sequencer Preferences from the Sequencer's Tools menu. From here you can control:

- How color samples are displayed during playback
- How progress is indicated during playback
- Whether Windows Shell Commands are run during playback in the Sequencer



Sequencer Preferences - Playback Tab

Color Sample Preferences

This option controls the width of the color sample area (just to the right of the channel names, as shown in the picture below). Choose "No color sample" to not display color samples at all.

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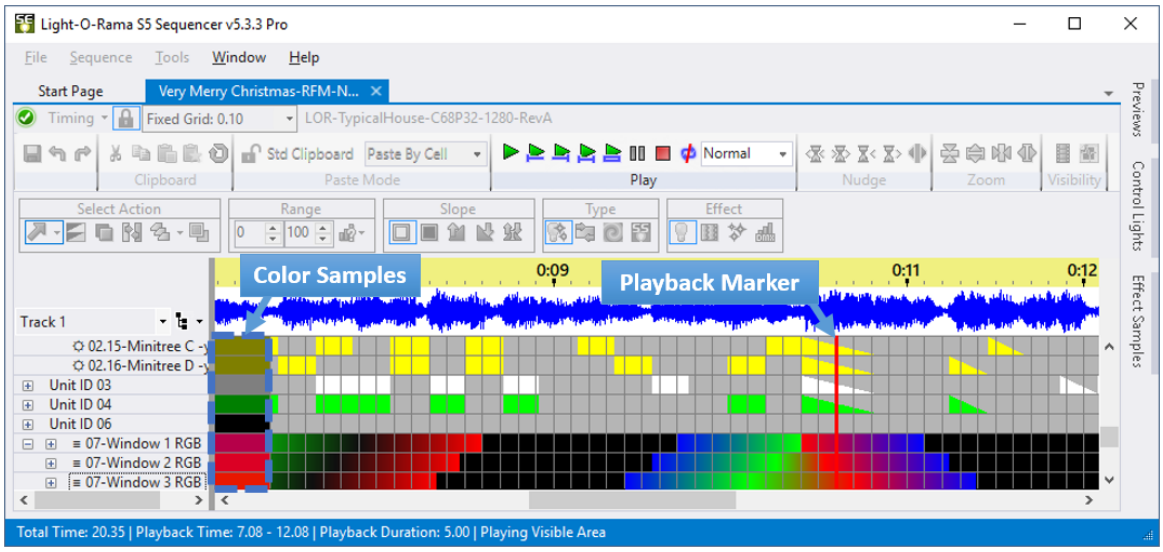
Playback Progress Preferences

This option controls how the playback marker is displayed. The options are:

- **Use a moving marker** - this mode displays a marker at the current playback location, regardless of timing marks.
- **Highlight the current column** - this mode highlights the timing marks immediately before and after the current playback location.
- **Highlight the current timing mark** - this mode highlights a timing mark as the current playback position reaches it. When the playback position is between timing marks, nothing is highlighted. This mode is useful for verifying that your timing marks match the music.
- **Use a moving marker and highlight the current timing mark** - this mode displays the moving marker until it reaches a timing mark, at which point the timing mark is highlighted.
- **Use a moving marker and highlight the current column** - this mode is a combination of the first 2 modes.



Playback in Progress

Windows Shell Command Preference

This option controls whether Windows shell commands are run in:

- the Sequencer and Show Player, or
- only in the Show Player.

5.3.1.3.1.3 Motion Effect Preferences

The "Motion Effects" tab is accessed by selecting Sequencer Preferences from the Light-O-Rama S5 Sequencer's Tools menu. From here you can control:

- How motion effects are displayed in the sequence grid

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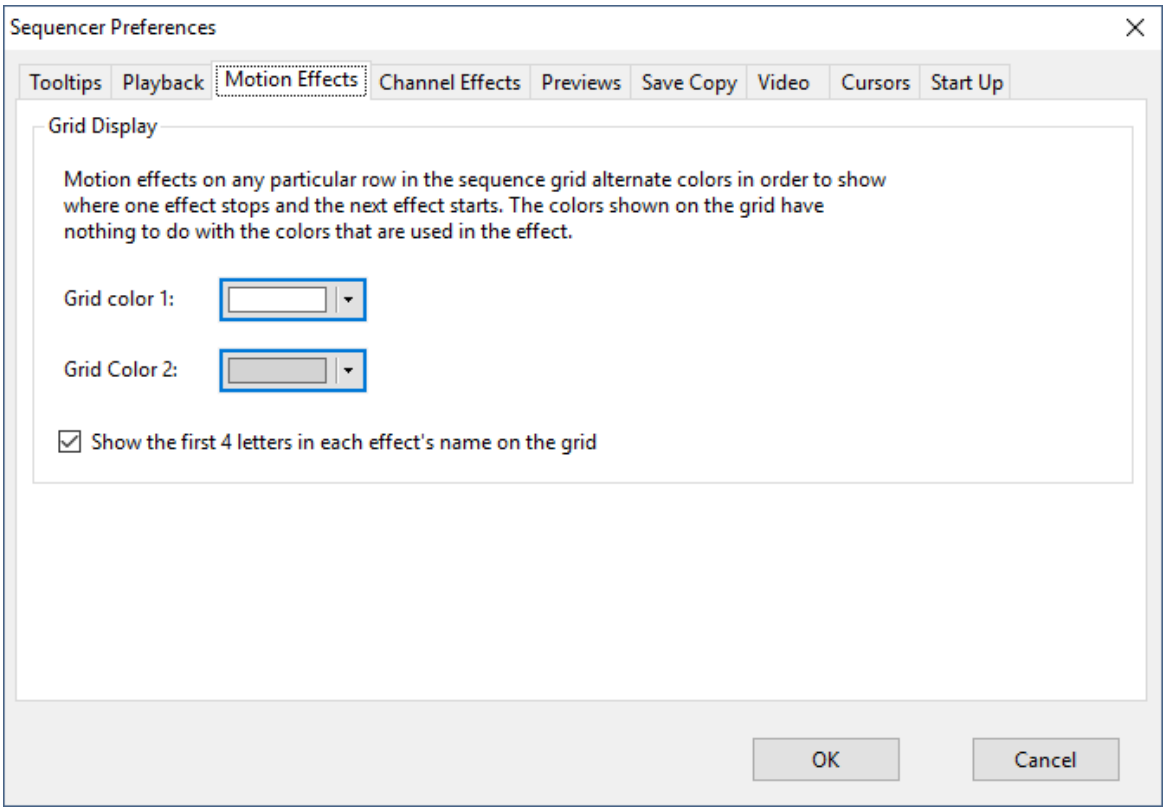

The Sequencer Preferences - Motion Effects Tab

How motion effects are displayed in the sequence grid

Motion Effect Row Colors

Motion effects on any particular row in the sequence grid alternate colors in order to show where one effect stops and the next effect starts. The colors shown on the grid have nothing to do with the colors that are used in the effect. Use "Grid color 1" and "Grid color 2" to set the 2 colors displayed on the sequence grid for motion effect rows.

The pictures in the next section demonstrate what this actually looks like in the sequence grid.

Motion Effect Names

The first 4 letters of the effect's name can be displayed on the sequencer grid. This can help identify the effect.

Here is an example with name display disabled. The only ways to identify an effect are to either 1) double-click on the effect to open it in the Motion Effects Generator, or 2) single-click on the effect and it will be displayed in the playback window (assuming the playback window is not hidden).

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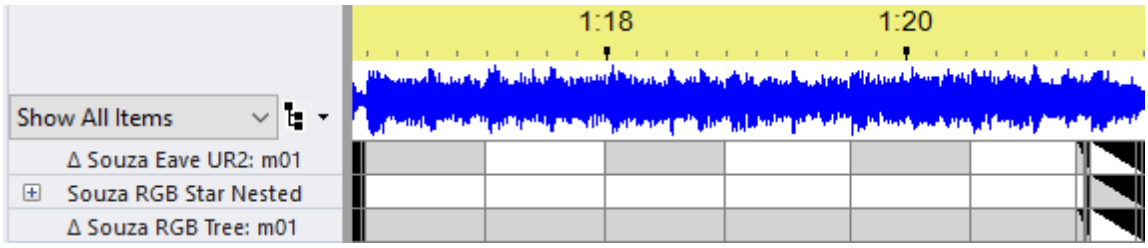
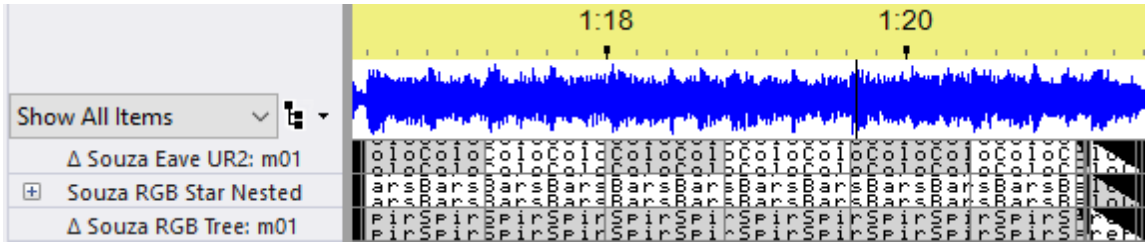


Motion effects with naming disabled

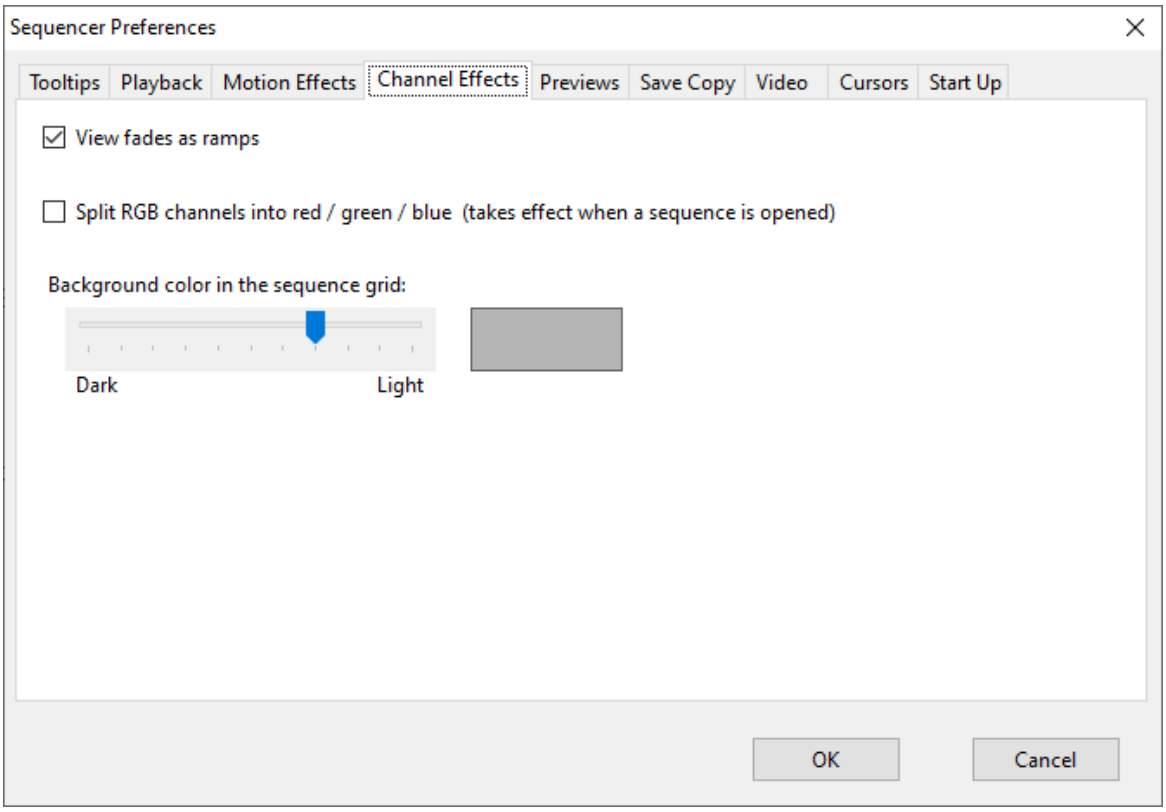
Here is the same example with name display enabled. You can see that the first row contains a series of Colorwash effects, the second contains Bars effects, and the third row contains Spiral effects.



Motion effects with naming enabled

5.3.1.3.1.4 Channel Effect Preferences

The "Channel Effects" tab is accessed by selecting Sequencer Preferences from the Sequencer's Tools menu. From here you can control how channel effects are displayed on the sequence grid.



The Sequencer Preferences - Channel Effects Tab

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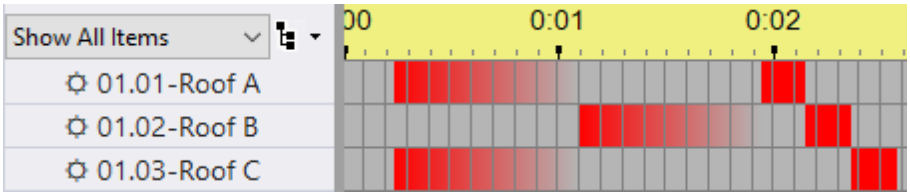
Fades

When fade or intensity lighting effects are displayed in the Sequencer, they are displayed in one of two ways: "as ramps" or "as colors". You can use the "View fades as ramps" check box to control which is used.

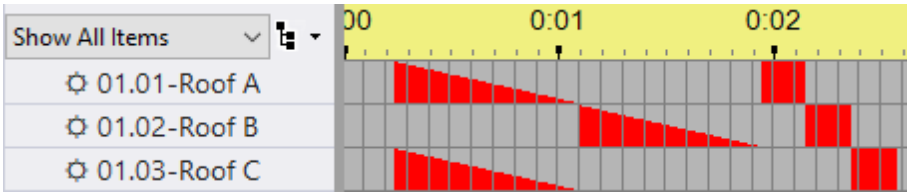
When viewed "as colors", fades and intensities will be displayed as gradually varying shades between light grey (which indicates that the channel is off, i.e. the intensity is zero) and the color assigned to the channel (which indicates an intensity of 100%, i.e. full brightness).

When viewed "as ramps", they are instead displayed as partially filling in their cells with the color of the channel, to a degree based upon the intensity.

Neither of these settings have any effect on the behavior of your actual lights; they only affect how the Sequencer displays these lighting effects in the sequence grid.



A sequence with fades viewed using colors



The same sequence, with fades viewed as ramps

Split RGB Channels

The "Split RGB Channels" check box controls whether RGB channels are displayed with their red / green / blue sub-channels or not. Turning this option off can save memory, allowing larger sequences to be loaded. Note that this option is applied when a sequence is opened. Changing the option with sequences already open will not change the way the open sequences are displayed. To view those sequences with the new setting, close the sequences and then reopen them.

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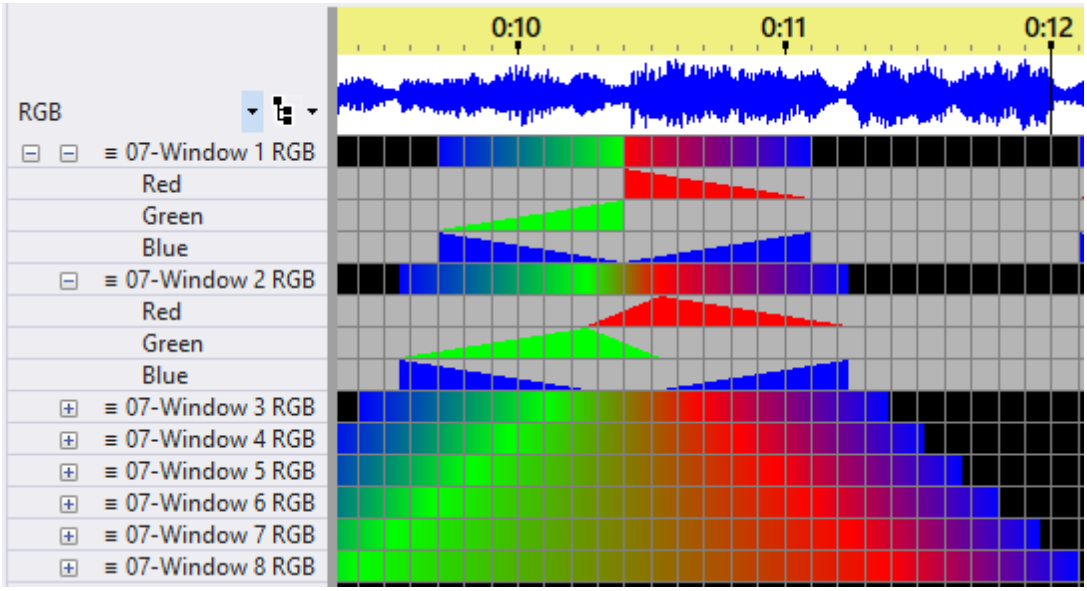
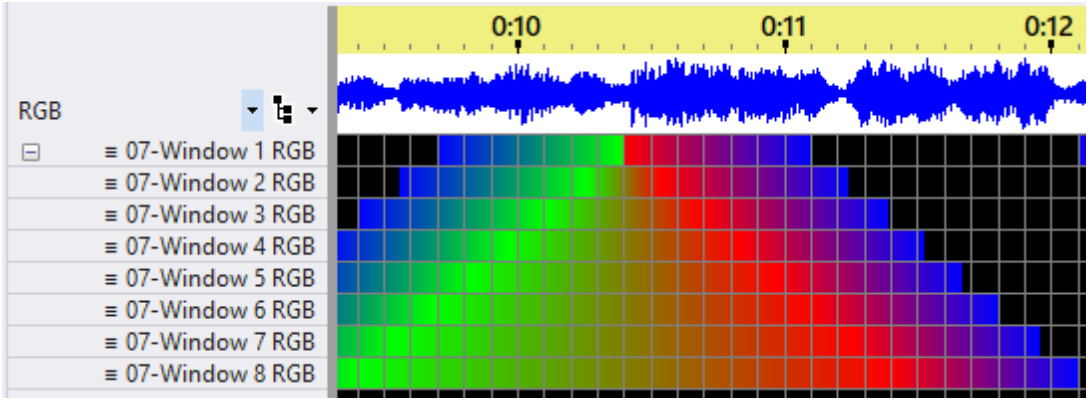


Split RGB Channels is enabled



Split RGB Channels is disabled

Channel Background Color

Regular channels and beat channels are displayed with a gray background on the sequence grid. However, you can control how light or dark you want the gray background to be. Use the slider to control the lightness. A sample is shown to the right of the slider.

5.3.1.3.1.5 Preview Preferences

The "Previews" tab is accessed by selecting Sequencer Preferences from the Light-O-Rama S5 Sequencer's Tools menu. From here you can control:

- How preview background images are handled
- The screen drawing quality

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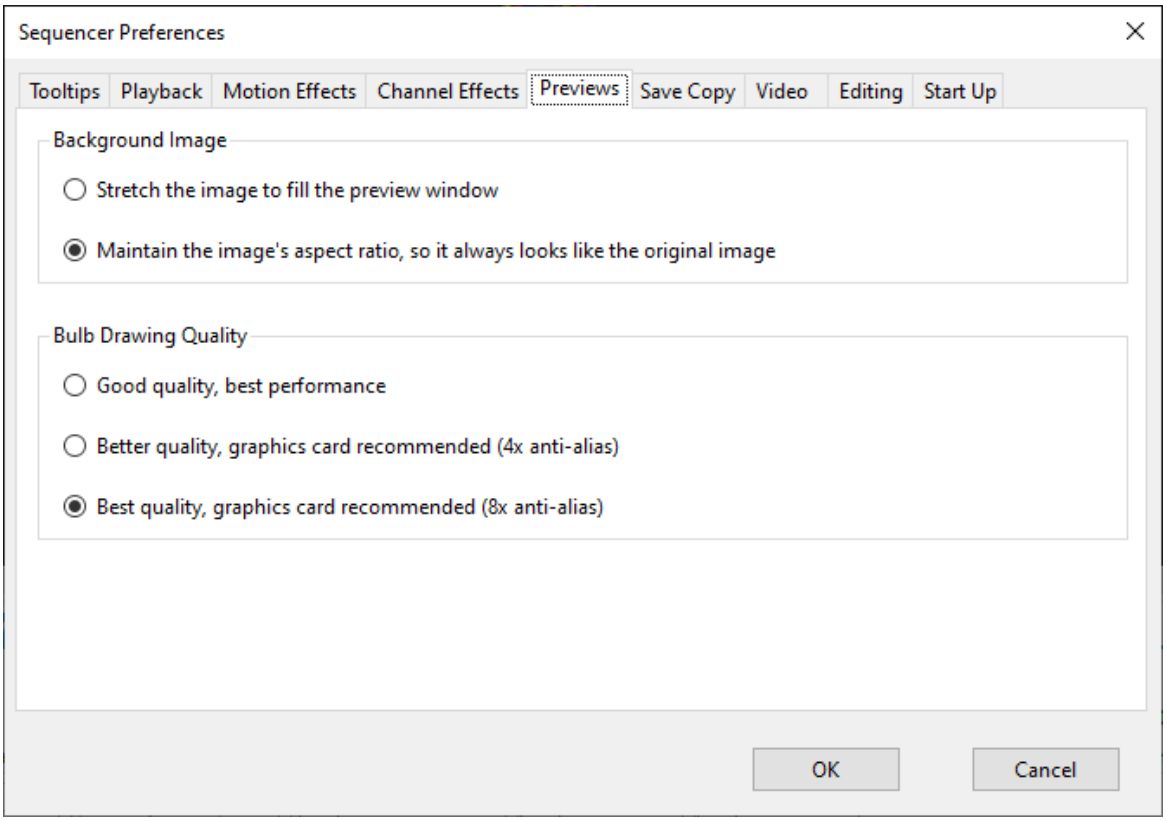

The Sequencer Preferences - Previews Tab

How preview background images are handled

This option determines whether the background image will be stretched to completely fill the playback window, or whether the image's aspect ratio (the ratio of the width to the height) will be maintained. Note that props are drawn in relation to the background image; so if you choose the option where the aspect ratio is maintained, then it will also be maintained for the all of the props in the preview. Maintaining the image's aspect ratio is highly recommended.

The screen drawing quality

If you are running the Sequencer on a game-rated computer (one that has a graphics card), then the Sequencer can take advantage of that hardware in Preview Design and while playing a sequence in the playback window. This is a performance versus display quality trade-off. If you choose a higher quality setting and then notice that playback lags, then you will want to return to this tab and choose a lower quality setting.

Changing the drawing quality will not take effect until the next time the Sequencer is started.

Hexagon-shaped bulbs at the lowest quality setting (enlarged to show detail):

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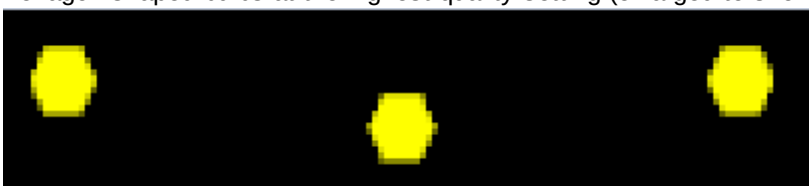
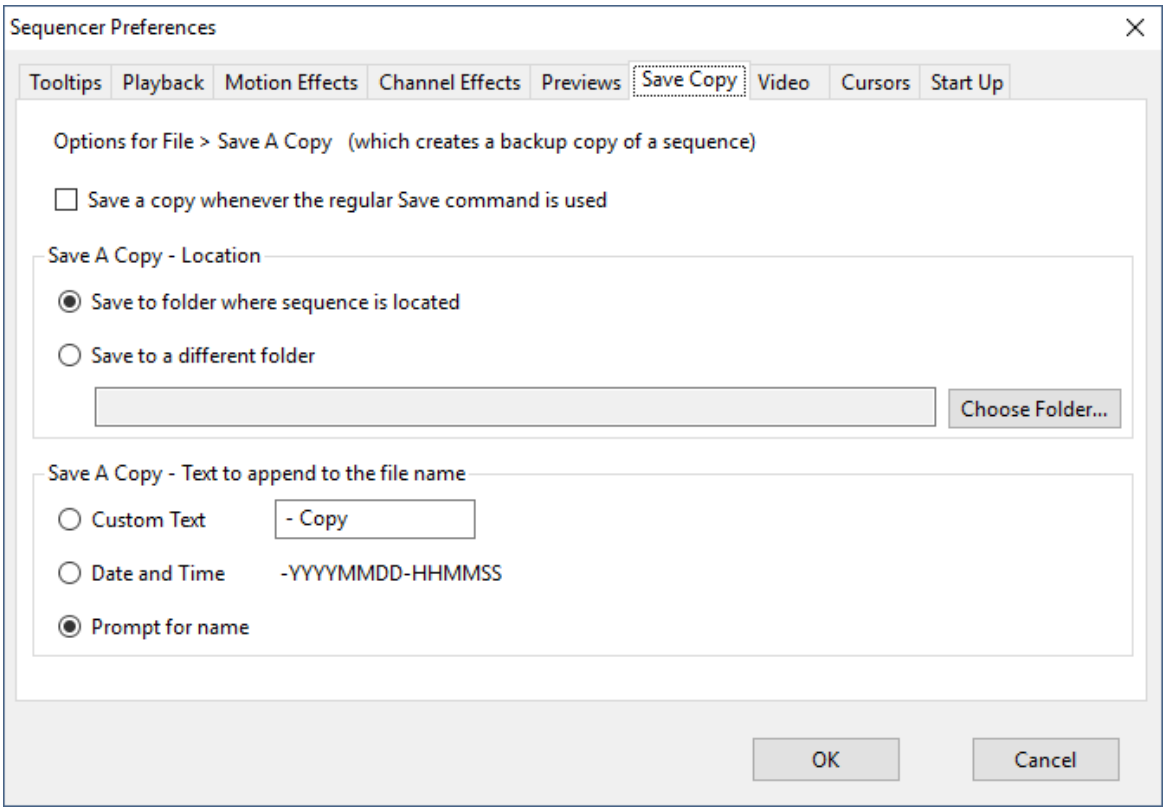
Hexagon-shaped bulbs at the highest quality setting (enlarged to show detail):



5.3.1.3.1.6 Save Copy Preferences

The "Save Copy" tab is accessed by selecting Sequencer Preferences from the Light-O-Rama S5 Sequencer's Tools menu. From here you can customize the behavior of the Save A Copy item on the File menu. The available options are:

- Save A Copy During Regular Save
- Save A Copy Location
- File Name Suffix



The Sequencer Preferences - Save Copy Tab

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Save A Copy During Regular Save

If this box is checked, then every time the user performs a regular Save operation it will be automatically followed by a Save A Copy operation. If unchecked, then Save A Copy will only be performed when the user selects it from the File menu.

Save A Copy Location

This option allows the user to specify the folder for Save A Copy operations.

File Name Suffix

This option allows you to customize the default suffix that is applied. Choosing the “Date and Time” option is particularly useful for making multiple backup copies of your sequence.

If you enter custom text, you can only use characters that are valid in Windows file names. These characters are forbidden: *** . " / \ [ ] : ; | = ,**

5.3.1.3.1.7 Video Preferences

Musical sequences are associated with a song or other sound effect, from either an audio file (such as an MP3) or a video file (such as an AVI, WMV, or MP4 file). If a musical sequence is associated with a video file, Light-O-Rama can display the video during play.

The "Video" tab is accessed by selecting Sequencer Preferences from the Sequencer's Tools menu and can be used to control whether and how video is displayed during playback.

There are 2 sets of video preferences. The left side controls how videos are displayed during sequencing (while using the Sequencer). The right side controls how videos are displayed in shows by the Show Player.

On either side you have the same 3 choices:

- Display Videos in a Window
- Display Videos in Full Screen Mode
- Use Audio Track Only When Sequencing With Video Media

Not all modes are supported at all license levels. See the Feature Comparison page for more information.

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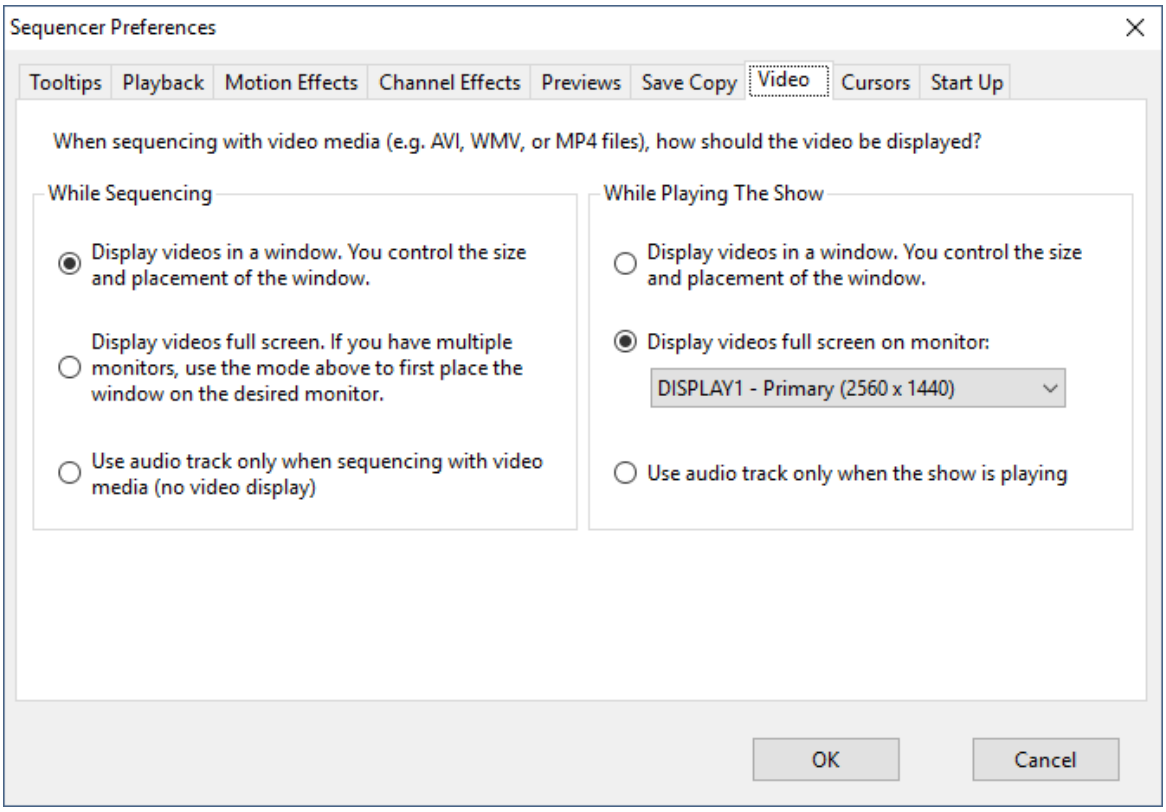

The Sequencer Preferences - Video Tab

Display Videos in a Window

In this mode, video will be displayed in a window. You can move the window and resize it as needed.

Display Videos in Full Screen Mode

In this mode, video will be displayed full screen. If you have multiple monitors, the method for choosing the monitor where the video will be display is different for sequencing and show playback:

- For sequencing, first select the Display Vidoes in a Window option. Play a sequence and position the video window on the desired monitor. Stop playback. Go back into Video Preferences and change the option to Full Screen Mode.
- For show playback, select the desired monitor from the drop-down list.

Use Audio Track Only When Sequencing With Video Media

In this mode, when a musical sequence with a video is played, only the audio track of the video will be played. There will be no video window.

5.3.1.3.1.8 Editing Preferences

The "Editing" tab is accessed by selecting Sequencer Preferences from the Light-O-Rama S5 Sequencer's Tools menu. From here you can control the:

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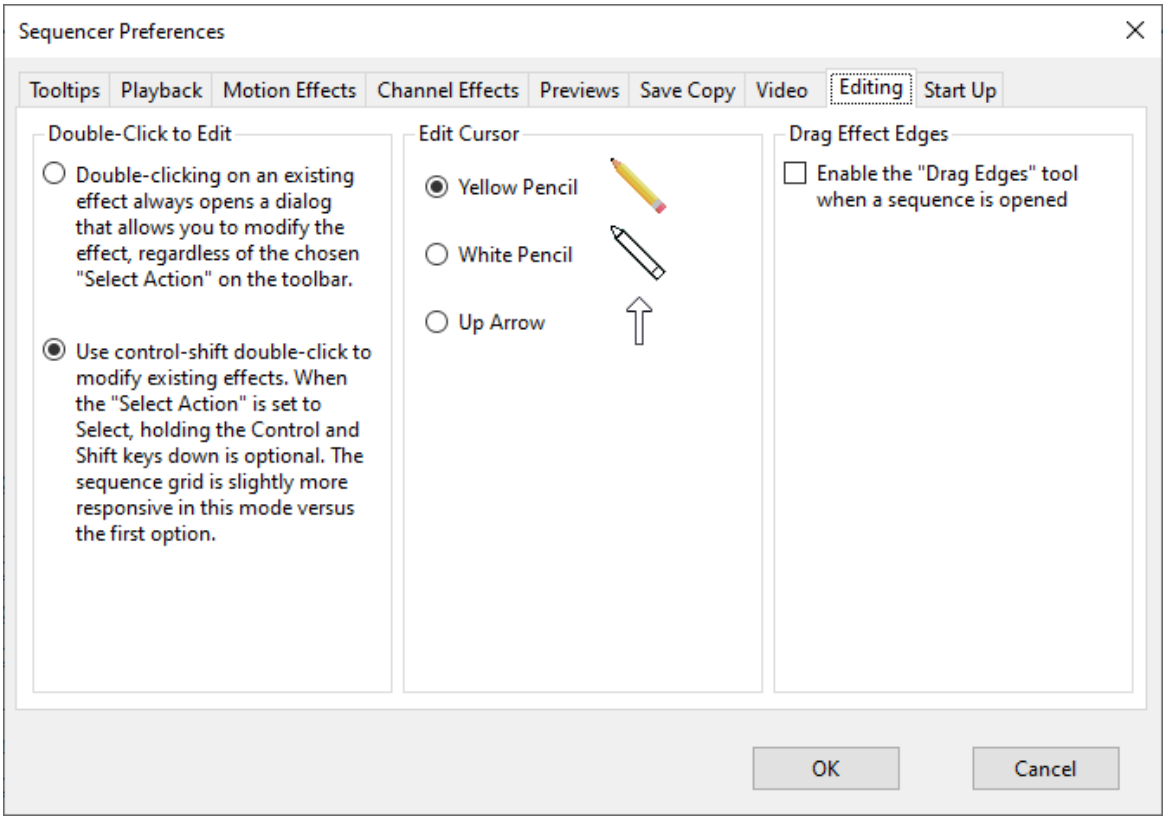
- Double-click method
- Cursor style when editing
- Drag effect edges default



Sequencer Preferences - Editing Tab

Double-Click Method

You can double-click on any effect on the sequence grid in order to modify it. There are 2 choices for making the double-click:

- Double-click with no extra keys. This is the easiest to use and the easiest to remember.
- Ctrl-Shift double-click. This requires holding the Ctrl and Shift keys down when you double-click. This is obviously a little more work, but the program is slightly more responsive in this mode. It should only be needed by users who do a lot of clicking very quickly.

When using the first option, make sure the "mouse double-click speed" value is set properly in Windows (you don't want it too slow). In Windows 10, open the Mouse Settings screen, then click on "Additional mouse options".

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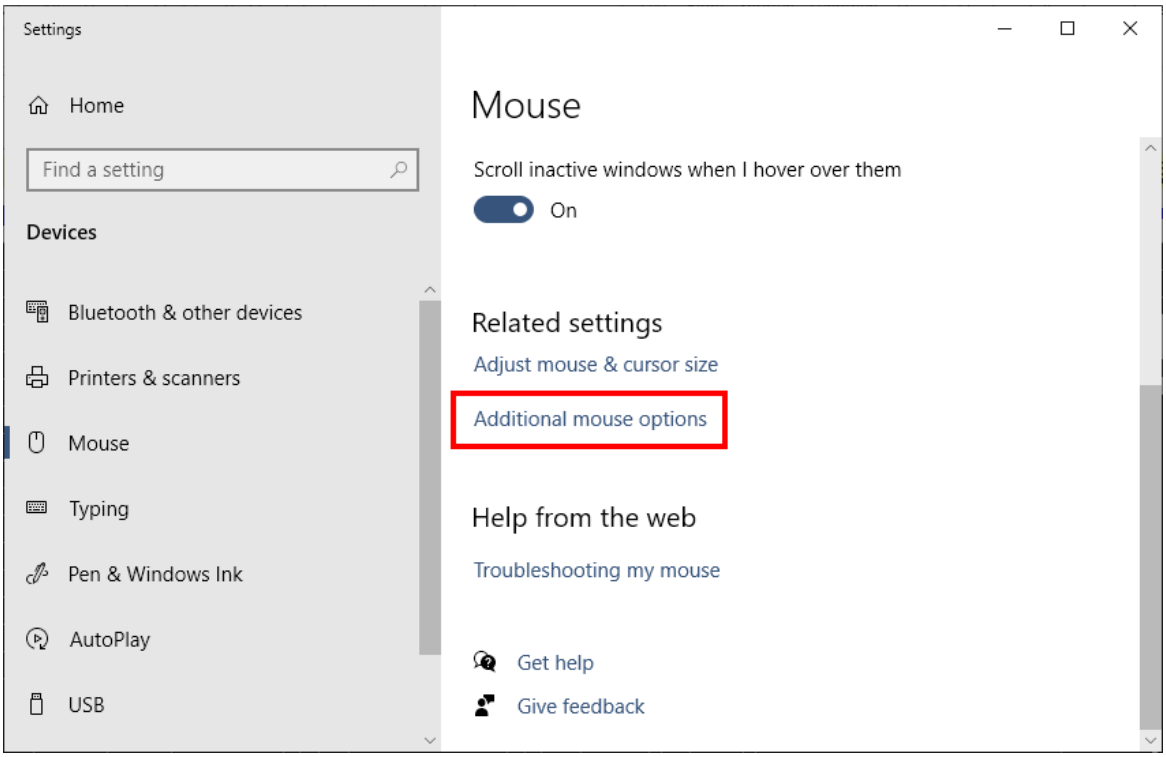

Windows 10 Mouse Settings

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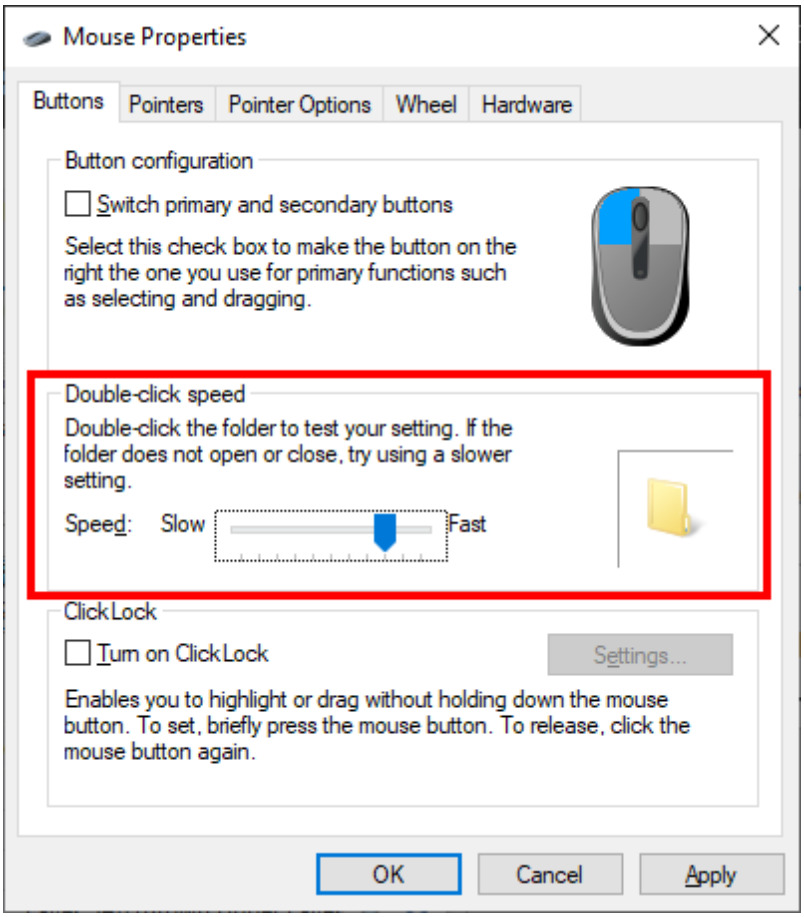

The double-click speed setting

Cursor Style When Editing

From here you can customize the cursor that is displayed when:

- drawing light strings in Preview Design
- creating effects in the sequence grid -- when the toolbar "Select Action" is anything other than Select.

You have your choice of:

- Yellow pencil (default). Some users say the black tip of the pencil makes the exact location of the cursor hard to determine. Therefore, you can also choose...
- White pencil, or
- Up Arrow. This cursor is built into Windows. So if you have custom cursors loaded onto your system, the arrow may look slightly different than what is shown in the dialog.

The intent is that the Sequencer uses the default Windows arrow cursor for selection and a different cursor when drawing.

Drag Effect Edges Default

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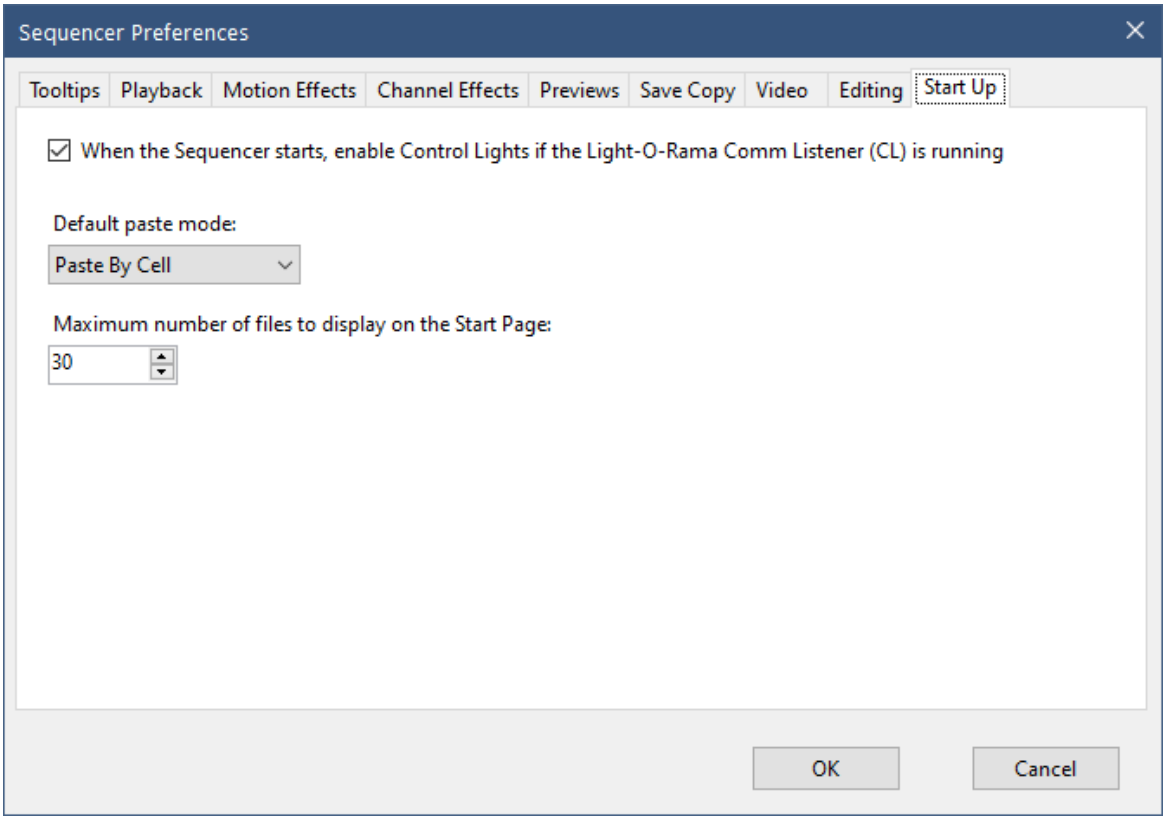
This option allows the Drag Effect Edges tool to be enabled by default when a sequence is opened.

5.3.1.3.1.9 Start Up Preferences

The "Start Up" tab is accessed by selecting Sequencer Preferences from the Light-O-Rama S5 Sequencer's Tools menu. From here you can control:

- Whether Control Lights is automatically enabled if the Comm Listener is already running when the Sequencer is started.
- The paste mode that is selected when a sequence is opened.
- The maximum number files to display on the Start Page.



The Sequencer Preferences - Start Up Tab

5.3.1.3.2 Keyboard Preferences

The Keyboard Preferences menu item on the Light-O-Rama S5 Sequencer's Tools menu opens a dialog that allows you to customize the actions that take place when you type a key on your keyboard. The built-in (default) mapping of keys to actions is listed in the Keyboard Shortcut Summary. Here are some examples where you might want to use this dialog to create a customized keyboard mapping:

- There might be some keys in the default mapping that don't seem intuitive to you.
- You frequently use a program that uses different keys to move and take action and you want the Sequencer to follow a similar behavior when those keys are struck.
- You want to make a single key perform multiple functions - for example, you could set up the "N" key to expand the selection to the right by three cells and down by two cells, and then turn the entire (newly expanded) selection on.

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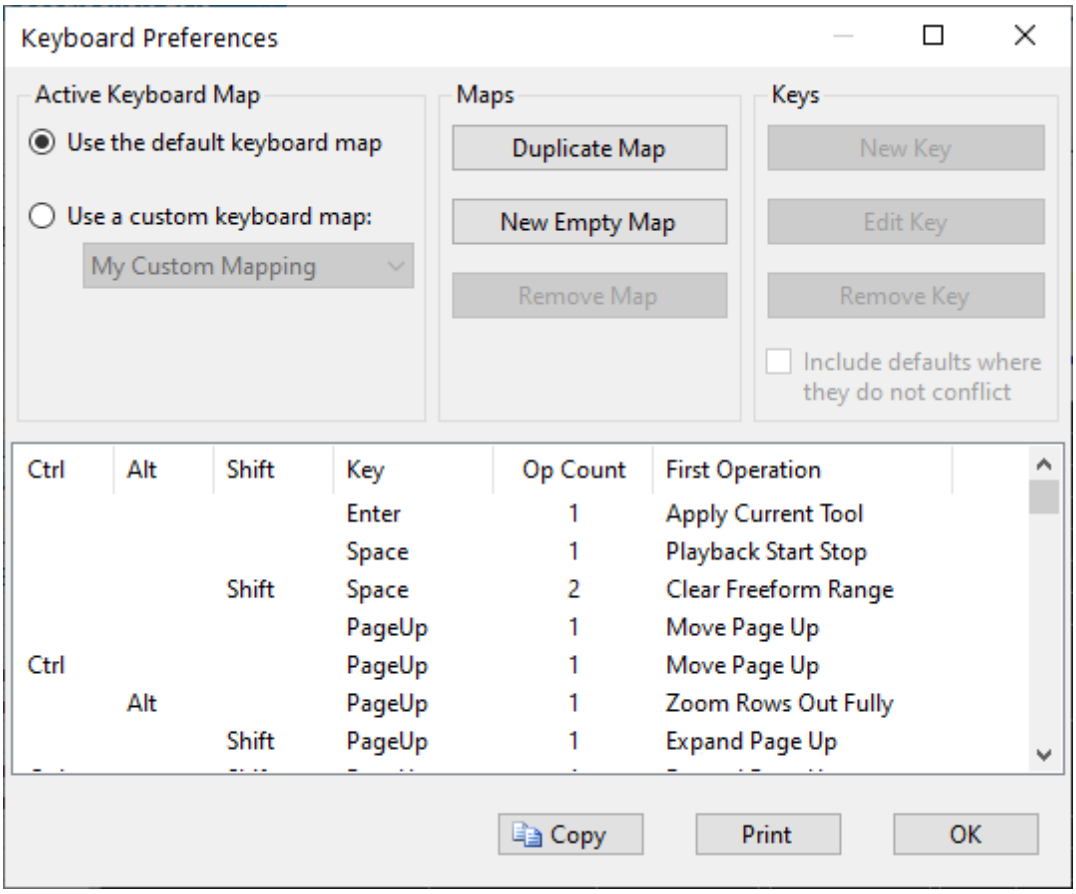

The Keyboard Preferences dialog

This dialog is resizable. In particular, you can make it taller so that you can see more key mappings at a time.

The Keyboard Preferences dialog has several sections:

- The "Active Keyboard Map" section allows you to choose what set of keyboard operations should be used.
- The "Maps" section allows you to define new sets of keyboard operations, or to delete existing sets.
- The "Keys" section allows you to define what keys should perform what operations in the currently active set of keyboard operations.
- Under that is displayed a list all keys in the current set of keyboard operations, and the operations that they perform. Click on a column heading to sort the list by that column. Double-click on a row to edit that entry. Only entries for custom maps are editable; however, you can double click on entries for the default mapping and see a read-only view of that map entry.
- Buttons at the bottom allow you to copy the list to the clipboard or to print the list.

Active Keyboard Map

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The "Active Keyboard Map" section allows you to choose which keyboard map should currently be used. You can choose to use the default keyboard map for the current version of software, or to use a custom keyboard map that you have defined.

Use the Default Keyboard Map

Choosing this option will cause the Sequencer to use its default keyboard map. Moreover, if you have this option selected, and later upgrade to a new version of software which has a different default keyboard map, the Sequencer will then use that new default keyboard map.

Use a Custom Keyboard Map

Choosing this option will cause the Sequencer to use a keyboard map that you yourself have defined. Moreover, if you have this option selected, and later upgrade to a new version of software which has a different default keyboard map, the Sequencer will then continue to use the custom map that you have selected.

Your custom keyboard maps are automatically saved to your Light-O-Rama data directory, in the "CommonData\CustomKeyMaps.xml" file. If you would like to share your custom maps with another user, you can simply give them a copy of your "CustomKeyMaps.xml" file. When they place it into their own "CommonData" directory, it will be available for them as a custom keyboard map.

Note that this option is not available until you have defined at least one custom keyboard map, which you can do through either "Duplicate Map" or "New Empty Map".

Maps

The "Maps" section allows you to create new custom keyboard maps (either duplicating the current map or else creating an empty map), or to remove maps that you have previously created.

Duplicate Map

Using this button, you can create a new custom keyboard map which uses the exact same key mappings as the currently selected map does. You can then modify the key mappings as you desire, using "New Key", "Edit Key", or "Remove Key".

The new map will show up in the drop-down list under "Use a Custom Keyboard Map", and in fact will automatically be selected when you create it.

New Empty Map

Using this button, you can create a new custom keyboard map which does not contain any key mappings at all - that is, no key will cause anything to happen when you press it. You can then add keys to it via "New Key", and later edit or remove them via "Edit Key" or "Remove Key".

The new map will show up in the drop-down list under "Use a Custom Keyboard Map", and in fact will automatically be selected when you create it.

Remove Map

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If you have currently selected a custom keyboard map (via "Use a Custom Keyboard Map"), pressing this key will delete the map.

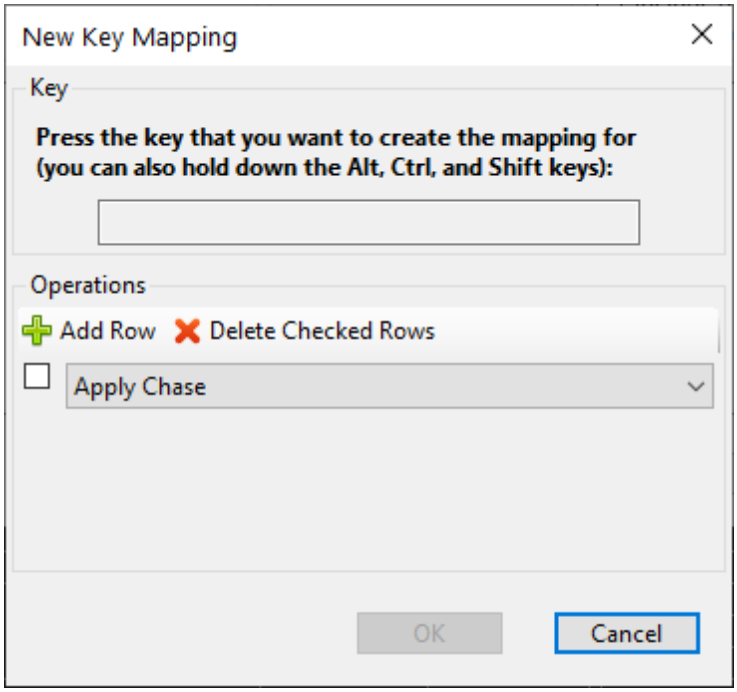
Note that if there is a chance that you will want to use the custom keyboard map again in the future, you should not remove it. Instead, simply switch to using a different custom map, or to a default map, leaving the map in the "Use a Custom Keyboard Map" list, thus enabling you to switch back to it when you desire. If you remove it, you will not be able to switch back to it in the future.

Keys

If you have specified that a custom keyboard map should be used (via "Use a Custom Keyboard Map"), then the "Keys" section allows you to add new keys to it, edit existing keys within it, and remove existing keys from it.

New Key

This button (which is available only when a custom keyboard map has been selected, via "Use a Custom Keyboard Map") opens up the New Key Mapping dialog, which allows you to choose a key and set its operation or operations:



The New Key Mapping dialog

To use the New Key Mapping dialog, press the key that you want to use (and, if you want, the Alt, Ctrl, and/or Shift keys), and then select the operation that you want it to perform from the dropdown list:

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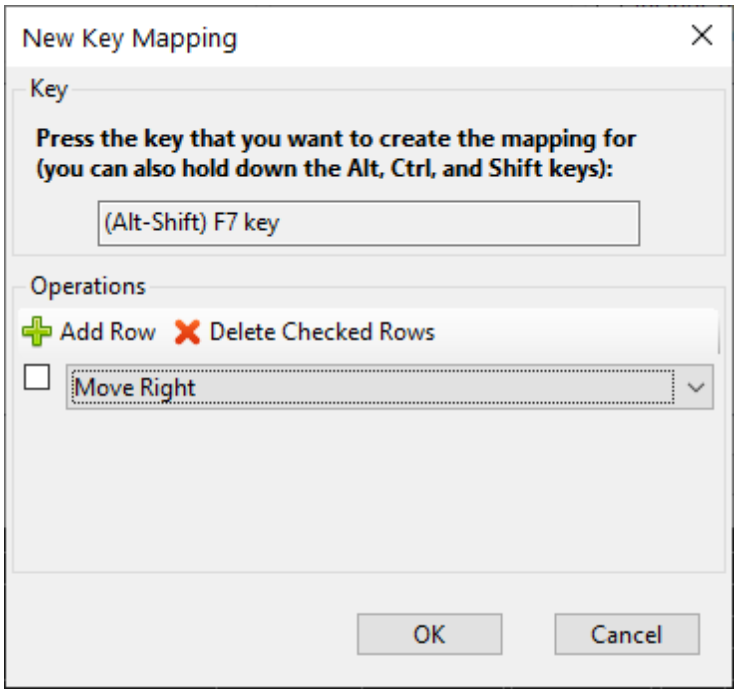

The New Key Mapping dialog, having selected a key and an operation

In the above example, Alt-Shift-F7 has been mapped to "Move Right" - that is, to move the selection to the right one cell.

You can use the "Add Row" button to assign multiple operations to a single key. They will be executed in the order that you list them. In the following example, Alt-Shift-F7 has been mapped to "Move Right, Move Down, Apply Shimmer". That is, the selection will be moved one square to the right, then one square down, and then the Shimmer effect will be applied to the new selection.

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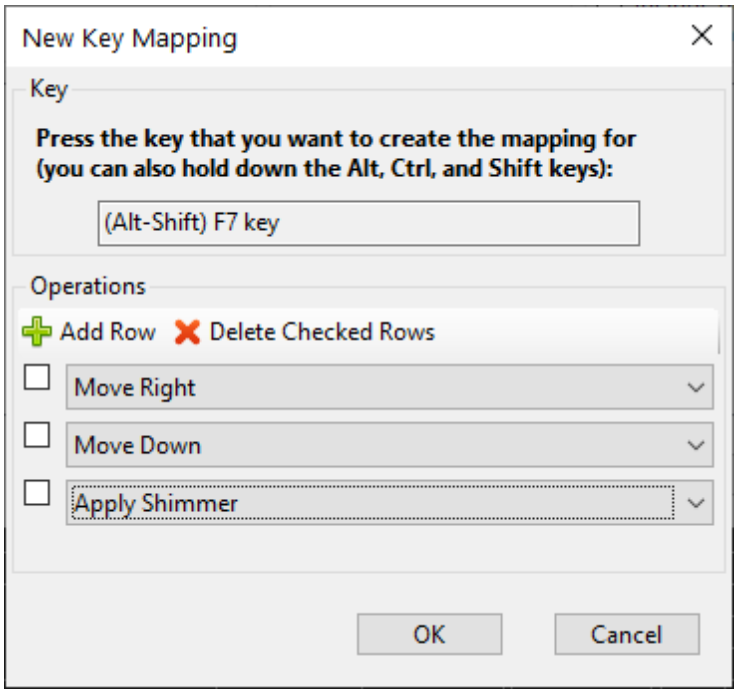

The New Key Mapping dialog, having selected a key and multiple operations

To remove operations, click the check box next to each operation you want to delete, then click the "Delete Checked Rows" button.

Edit Key

This button allows you to change the operation or operations that are in use for a certain key. It is available only when a custom keyboard map has been selected (via "Use a Custom Keyboard Map") and a particular key mapping from that map has been selected (by clicking on it in the list of key mappings at the bottom of the Keyboard Preferences dialog).

Pressing the button (or double-clicking on a row) brings up the Edit Key Mapping dialog:

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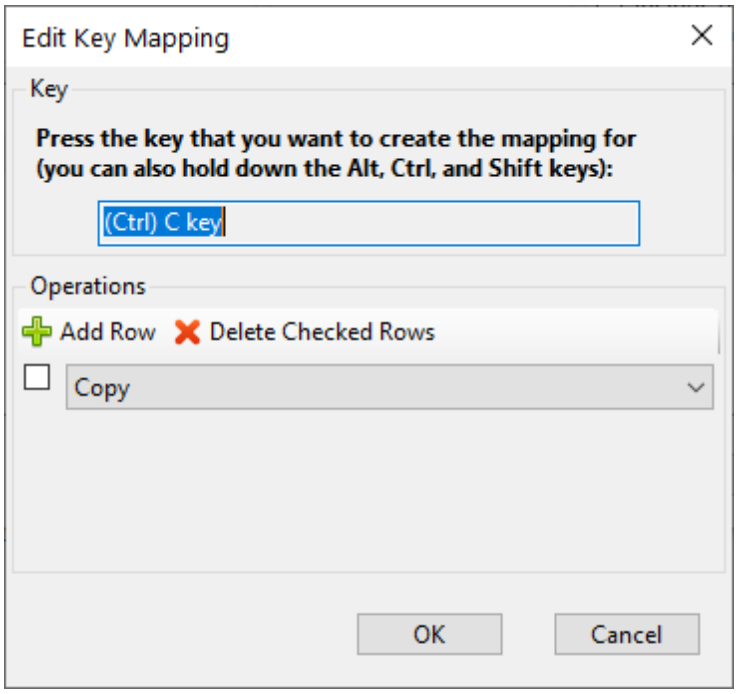

The Edit Key Mapping dialog

The Edit Key Mapping dialog can be used similarly to the New Key Mapping dialog.

Remove Key

This button allows you to remove a certain key from the current keyboard map. It is available only when a custom keyboard map has been selected (via "Use a Custom Keyboard Map") and a particular key mapping from that map has been selected (by clicking on it in the list of key mappings at the bottom of the Keyboard Preferences dialog).

Sorting the List

To sort the list of displayed key map entries, simply on a column heading. This sorting applies not only to the list as displayed on the screen, but also to the results of the Copy and Print buttons.

Copy

This button allows you to copy the list of keys and operations to your Windows text clipboard, so that you could (for example) paste it into a text document in Notepad. The list will be sorted as you specified in the "Sort By" section.

Print

This button allows you to print the list of keys and operations. The list will be sorted as you specified in the "Sort By" section.

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Operations

The following operations can be assigned to keys in a custom keyboard map:

Operation	Description
Apply Chase	Apply the Chase tool to the current selection
Apply Chase Custom	Prompt the user for custom options and then apply the Chase tool to the current selection
Apply Current Tool	Apply the current tool to the current selection
Apply Fade Down	Insert the current effect into the selection as a Fade Down.
Apply Fade Up	Insert the current effect into the selection as a Fade Up.
Apply Fill	Apply the Fill tool to the current selection
Apply Intelligent Fade	Create a fade up if the selection was created in a left to right direction; otherwise create a fade down. Effects are create using the current effect and intensity range shown on the tool bar.
Apply Maximum	Insert the current effect into the selection at maximum intensity
Apply Minimum	Insert the current effect into the selection at minimum intensity
Apply Off	Delete any effects in the current selection
Apply On	Turn the current selection on using the Intensity effect.
Apply Shimmer	Apply the Shimmer effect to the current selection
Apply Superstar	Apply the SuperStar tool to the current selection
Apply Toggle	Apply the Toggle tool to the current selection
Apply Twinkle	Apply the Twinkle effect to the current selection when not playing back. Insert a timing mark when playback is running.
Audio Beats Wizard	Opens the Beat Wizard
Audio MIDI Wizard	Opens the MIDI Wizard (only valid if the audio file is in MIDI format
Audio Tapper Wizard	Opens the Tapper Wizard
Audio VU Wizard	Opens the VU Wizard
Clear Freeform Range	Clear the freeform play range (if one exists)
Copy	Copy the effects from the current selection
Copy Timing	Copy the timings from the current selection
Cut	Cut the effects from the current selection
Expand All	Expands the selection to encompass the entire grid
Expand Column	Expands the selection to encompass the entire column
Expand Down	Expand the current selection down one channel

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Operation	Description
Expand Effect	Select the entire effect
Expand End	Expand the current selection to the last cell in the sequence.
Expand Left	Expand the current selection left one cell
Expand Page Down	Expand the current selection down one screen
Expand Page Left	Expand the current selection left one page
Expand Page Right	Expand the current selection right one page
Expand Page Up	Expand the current selection up one screen
Expand Right	Expand the current selection right one cell
Expand Row	Expands the selection to encompass the entire row
Expand Start	Expand the current selection to the first cell in the sequence.
Expand Up	Expand the current selection up one channel
File Close	Closes the current sequence
File Close All	Closes all open sequences
File Export Legacy	Exports the current sequence in legacy (LMS/LAS) format
File New Animation	Starts a new animation sequence
File New Musical	Starts a new musical sequence
File Open	Starts the file open dialog
File Save	Saves the current sequence
File Save As	Saves the current sequence under a new name
File Save Copy	Makes a backup copy of the current sequence
Help	Open the help file
Modify Effect	Apply the current effect to the current selection
Modify FadeDown	Applies a fade down intensity profile over the current selection
Modify FadeUp	Applies a fade up intensity profile over the current selection
Motion Effect Generator	Opens the Motion Effect Generator
Move Down	Move the current selection down one channel. During sequence playback, this will mark the current time as the start of a freeform play range.
Move End	Move the current selection to the last cell in the sequence.
Move Left	Move the current selection left one cell
Move Page Down	Move the current selection down one screen
Move Page Left	Move the current selection left one screen

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Operation	Description
Move Page Right	Move the current selection right one screen
Move Page Up	Move the current selection up one screen
Move Right	Move the current selection right one cell
Move Start	Move the current selection to the first cell in the sequence.
Move Up	Move the current selection up one channel. During sequence playback, this will mark the current time as the end of a freeform play range.
Paste	Paste from the current clipboard to the current selection
Paste Special	Paste clipboard contents using the Paste Special dialog
Paste Timing	Paste timings to the current selection
Playback Start Pause	Starts playback. If playback is already going, then playback is paused.
Playback Start Stop	Start/stop playback. Uses the freeform play range if one is defined.
Playback Stop	Stops playback
Prompt Effect FadeDown	Prompts for a new effect and inserts it into the current selection as a fade down
Prompt Effect FadeUp	Prompts for a new effect and inserts it into the current selection as a fade up
Prompt Effect Maximum	Prompts for a new effect and inserts it into the current selection at maximum intensity
Prompt Effect Minimum	Prompts for a new effect and inserts it into the current selection at minimum intensity
Prompt Effect Modify	Prompts for a new effect and applies it to existing effects in the current selection
Redo	Redo the last operation that was undone
Repeat	Apply the Repeat tool
Select Change Intensity	Make the Change Intensity tool be the current tool
Select Channel Effect	Make channel effects active
Select Chase	Make the Chase tool be the current tool
Select Color Fade	Make the Color Fade tool be the current tool
Select Create	Make the Create tool be the current tool
Select DMX Intensity	Make DMX Intensity the current effect
Select Fade Down	Make the Fade Down the current slope
Select Fade Up	Make the Fade Up the current slope
Select Fill	Make the Fill tool be the current tool
Select Intelligent Fade	Make the Intelligent Fade tool be the current tool

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Operation	Description
Select Intensity	Make Intensity the current effect
Select Maximum	Make the maximum the current slope
Select Minimum	Make the minimum the current slope
Select Motion Effect	Make Motion Effects effects active
Select Select	Make the Select tool be the current tool
Select Shimmer	Make shimmer the current effect
Select Superstar Effect	Make SuperStar effects active
Select Toggle	Make the Toggle tool be the current tool
Select Twinkle	Make twinkle the current effect
Sequencer Preferences	Opens the Sequencer Preferences dialog
Toggle Drag Edges	Toggles "drag edges" mode
Toggle Play Loops	Toggle looping playback
Toggle Playback Window	Toggles visibility of the playback window
Toggle View Fades As Ramps	Toggle viewing fades as ramps
Tooltip	Open up a tooltip appropriate to where the mouse cursor is currently pointing on the sequence grid
Undo	Undo the last operation
Zoom Rows In	Zoom in on rows (channels)
Zoom Rows In Fully	Zoom in on rows (channels) as far as possible
Zoom Rows Out	Zoom out on rows (channels)
Zoom Rows Out Fully	Zoom out on rows (channels) as far as possible
Zoom Time In	Zoom in on time (columns)
Zoom Time In Fully	Zoom in on time (columns) as far as possible
Zoom Time Out	Zoom out on time (columns)
Zoom Time Out Fully	Zoom out on time (columns) as far as possible

5.3.1.3.3 Themes

The Themes menu item on the Light-O-Rama S5 Sequencer's Tools menu opens a dialog that allows you to select a color scheme for the main Sequencer window.

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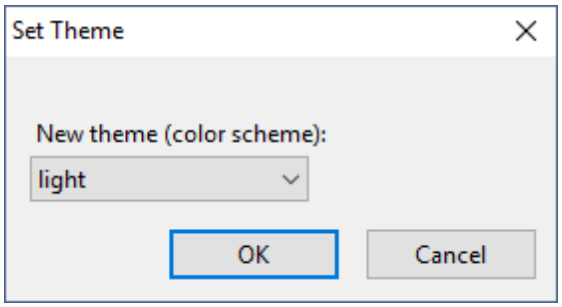


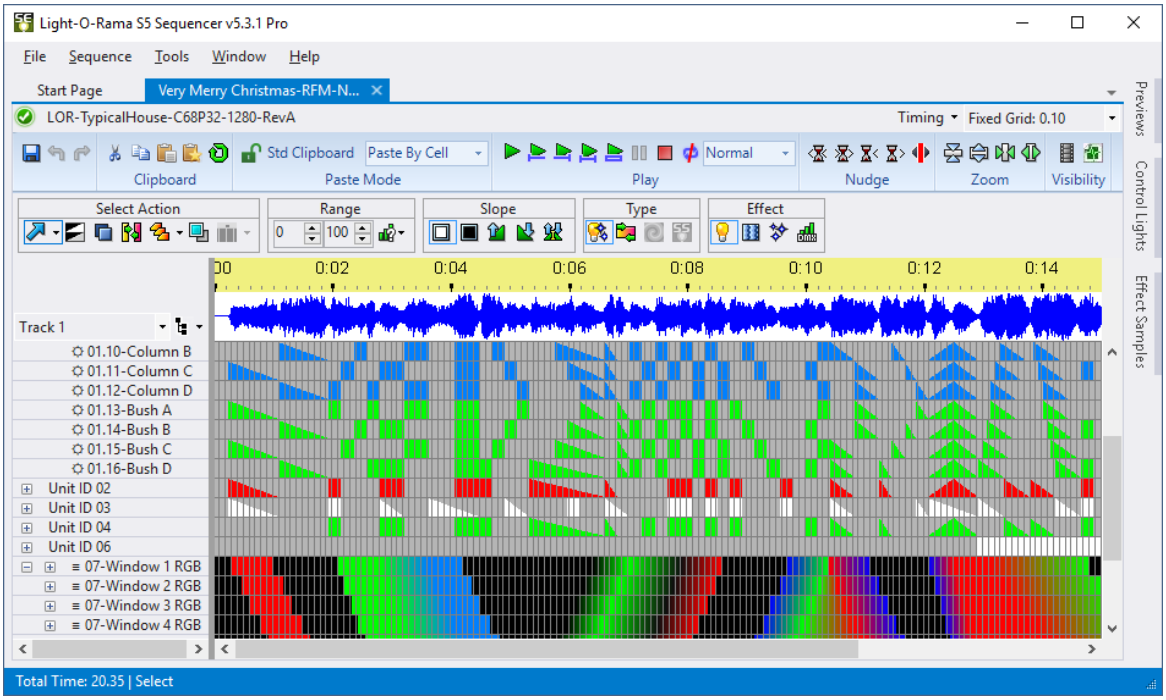
Theme Selection Dialog

There are 3 themes to choose from:

- Light
- Dark
- Blue

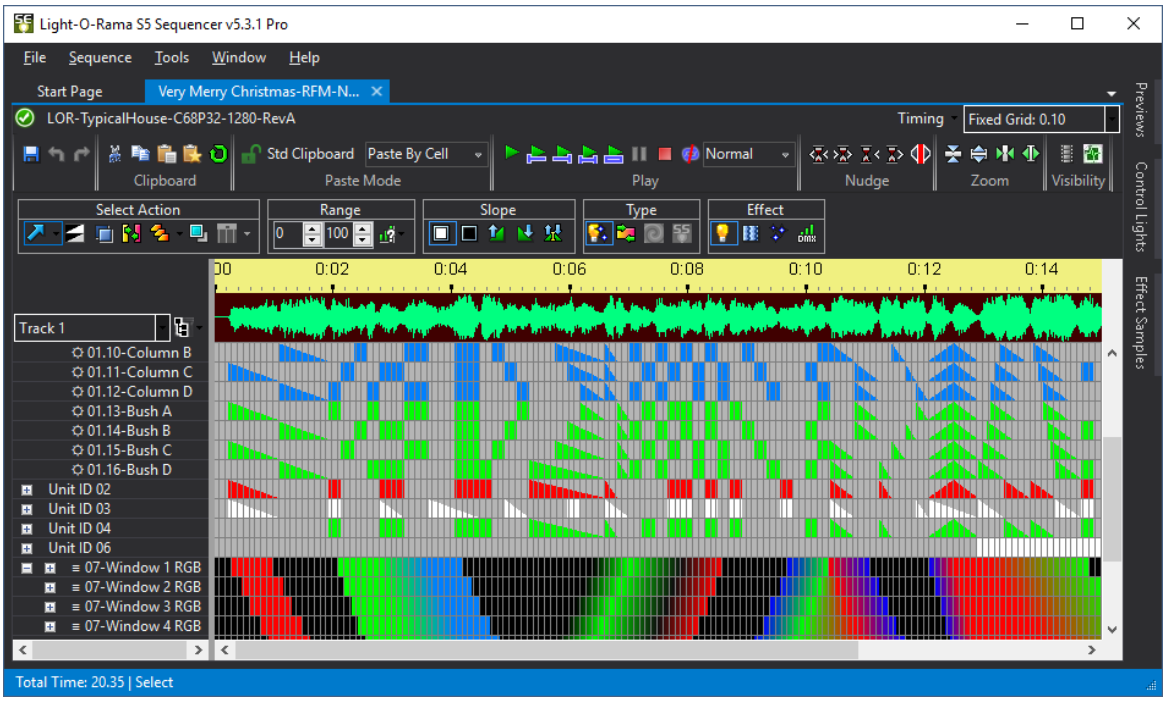
After selecting a theme, the Sequencer will need to be restarted in order for the new theme to take effect.

Light Theme



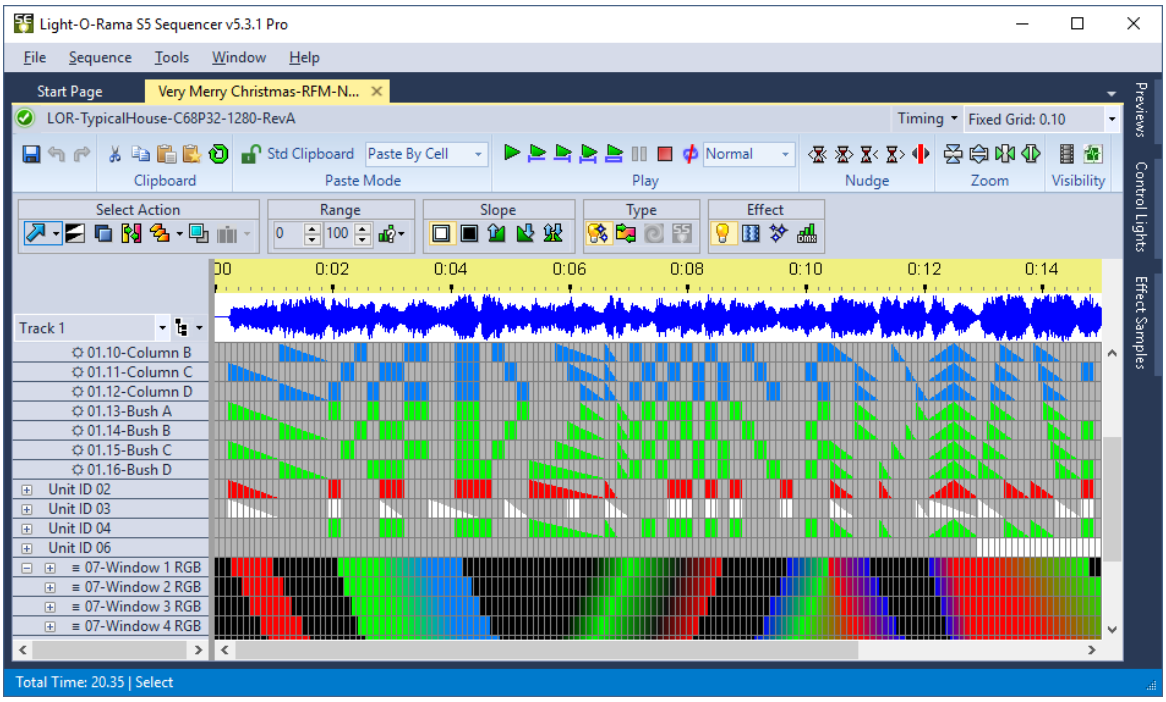
The Light Theme

Dark Theme



The Dark Theme (with waveform colors customized)

Blue Theme



The Blue Theme

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5.3.1.3.4 Zoom Preferences

When a sequence is displayed in the Sequencer, it is represented as a grid. You can zoom in or out of the grid in either the horizontal and vertical direction at any time. See the Scrolling and Zooming topic for more information.

Whenever save your sequence the zoom level is saved too. And when you re-open that sequence, the zoom level will be restored. However, whenever the Sequencer creates a new sequence, it will use some default zoom level settings. If you prefer some particular zoom level, you probably do not want to zoom in or out every time that you create a sequence. So, the Zoom Preferences sub-menu (of the Tools menu) allows you to save your current zoom level settings as defaults, by selecting "Save Zoom Preferences".

Later, when you create a new sequence, it will default to the zoom level settings that you had saved.

If you change the zoom level on a sequence and want to get back to your saved default zoom level settings, the Zoom Preferences sub-menu also provides a way to do this: by selecting "Apply Saved Preferences".

There is also a system default zoom level, and selecting "Apply System Defaults" will apply that to the active sequence.

Zoom Preferences Sub-menu

5.3.1.4 Window Menu

The Window menu of the Light-O-Rama Sequencer enables you to hide or show certain Sequencer windows on your screen. Most importantly, it allows you to reset the position of all windows to their default locations.

The following menu items are available:

- View Start Page
- View Playback Window
- View Previews Window
- View Control Lights Window
- View Effect Samples Window
- View Audio Settings Window
- Float Current Window
- Reset Window Layout

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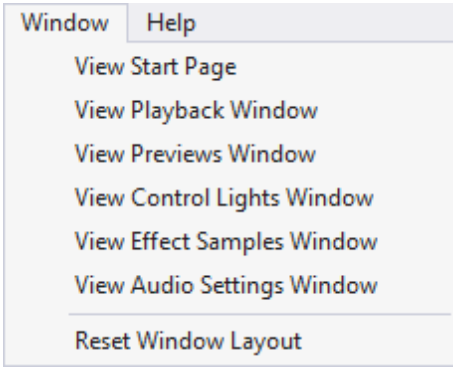

View Start Page

Selecting this option on the Window menu unhides the Start Page. This menu item is only shown if the Start Page is currently hidden.

View Playback Window

Selecting this option on the Window menu unhides the Playback window. This menu item is only shown if the Playback window is currently hidden.

View Previews Window

Selecting this option on the Window menu unhides the Preview Management window. This menu item is only shown if the Preview Management window is currently hidden.

View Control Lights Window

Selecting this option on the Window menu unhides the Control Lights window. This menu item is only shown if the Control Lights window is currently hidden.

View Effect Samples Window

Selecting this option on the Window menu unhides the Effect Samples window. This menu item is only shown if the Effect Samples window is currently hidden.

View Audio Settings Window

Selecting this option on the Window menu unhides the Audio Settings window. This menu item is only shown if the Audio Settings window is currently hidden.

Float Current Window

This option on the Window menu floats the current window so that it can be moved and sized independently of the main Sequencer window. If you have multiple display monitors, you can move a floating window to a separate monitor. Only the Start Page, Playback, Preview, Motion Effects, Control Lights, Effect Samples, and Audio Settings windows can float. Sequence windows cannot float.

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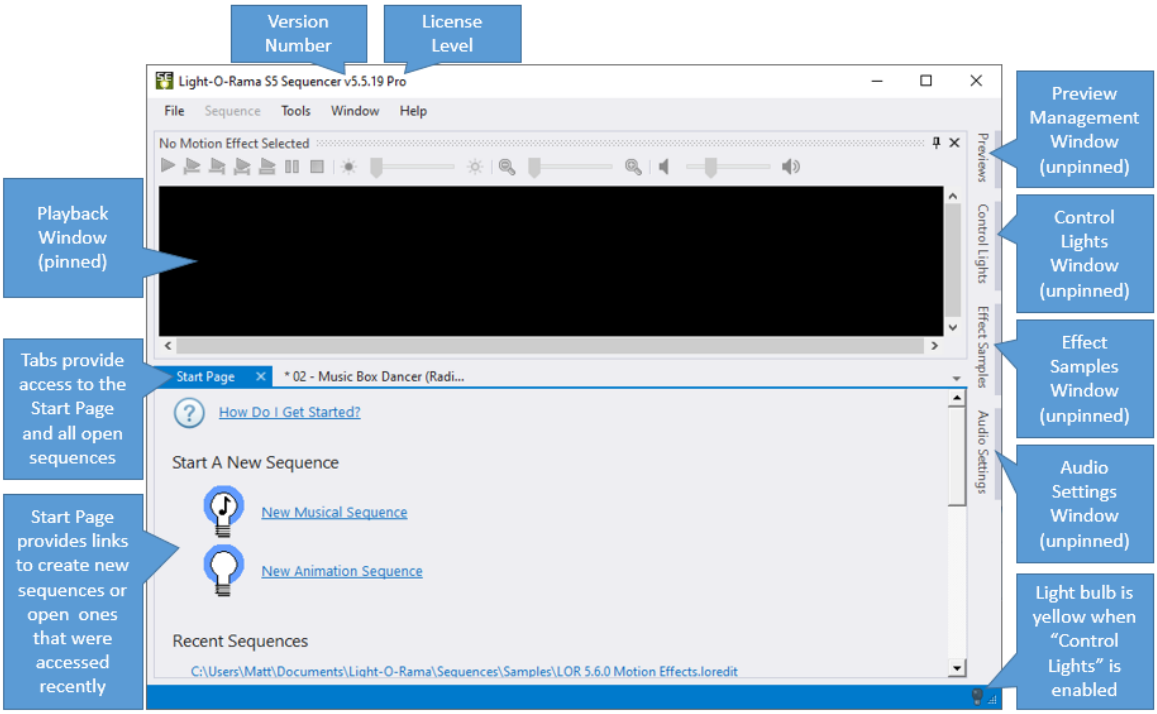
Reset Window Layout

This option on the Window menu resets the position of all windows to their default locations, as shown below.



5.3.1.5 Help Menu

The Help menu of the Light-O-Rama Sequencer brings up help and other information about Light-O-Rama.

The following options are available on the Help menu:

- Contents
- Index
- Search
- Shortcut Keys
- Visit Light-O-Rama on the Web
- About the Light-O-Rama Editor
- Register or Upgrade Light-O-Rama

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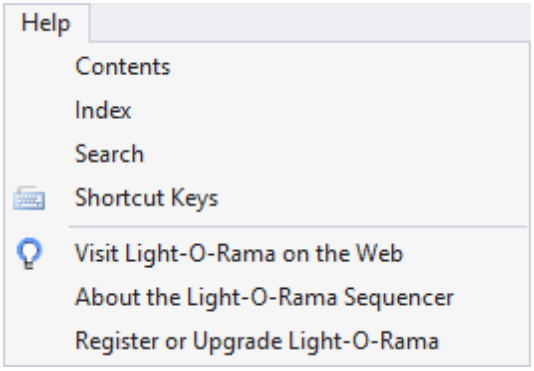

Contents

This option on the Help menu opens up the main Sequencer topic in the Light-O-Rama help file.

It has a keyboard hotkey: F1

Index

This option on the Help menu opens up the index of the Light-O-Rama help file.

Search

This option on the Help menu opens up the search menu of the Light-O-Rama help file.

Shortcut Keys

This option on the Help menu opens up the Keyboard Shortcut Summary in the Light-O-Rama help file.

Visit Light-O-Rama on the Web

This option on the Help menu opens the Light-O-Rama website in your web browser.

About the Light-O-Rama Editor

This option on the Help menu brings up the Sequencer's About box, which displays some information about the program and your computer.

Register or Upgrade Light-O-Rama

Use this item on the Help menu to register your Light-O-Rama software, or to upgrade to a higher level license, unlocking various features.

5.3.1.5.1 About

Selecting "About" from the Light-O-Rama Sequencer's Help menu displays the version of the Sequencer that you are running, your Light-O-Rama license information, and information about your computer. When

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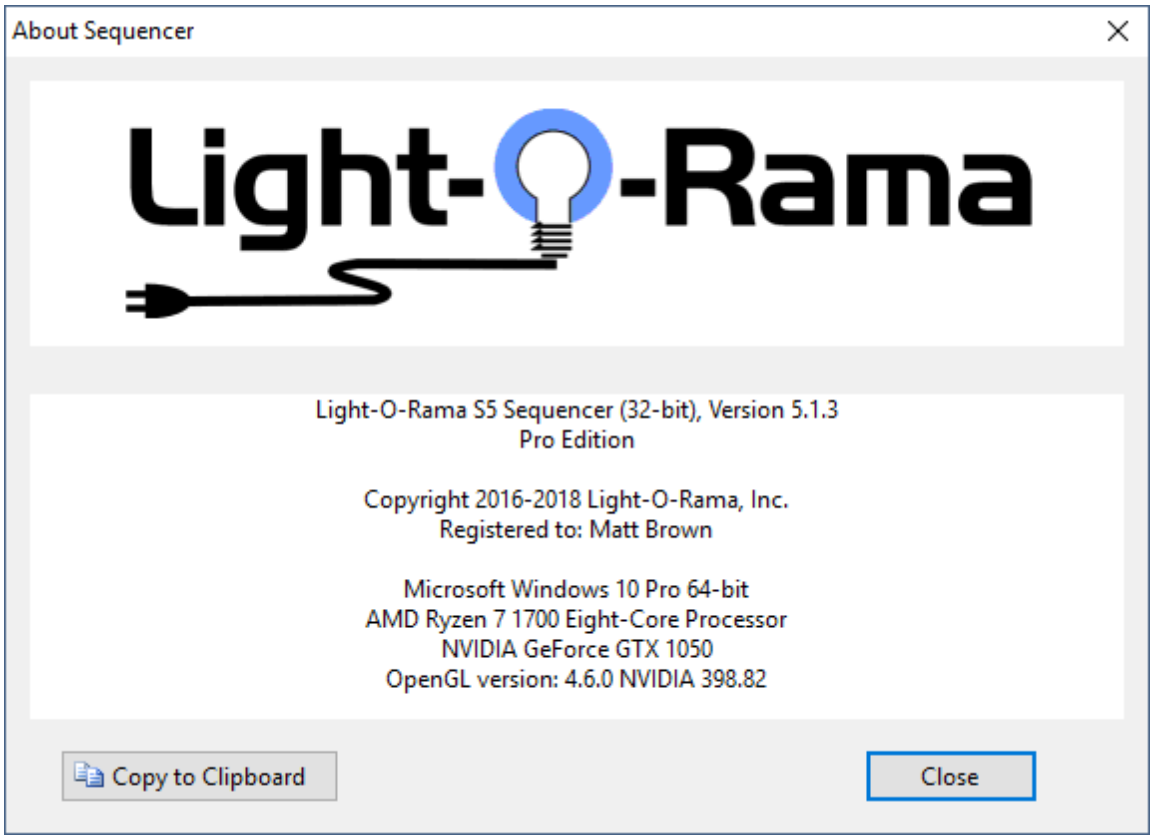
contacting Light-O-Rama for help with the Sequencer, being ready with the information displayed in the “About” window can assist in getting your problem resolved faster.

If you create a ticket with the Light-O-Rama Help Desk, you can use the "Copy to Clipboard" button to copy the information shown in the window so that your can paste it into your ticket. This will assist in getting your issue resolved faster.



The S5 Sequencer's About Box

5.3.2 Start Page

The Start Page provides you with some useful links to help you get started quickly. The Start Page can be docked in any location, floated, or hidden. If you don't see the Start Page, you can make it visible by selecting Window > View Start Page from the main menu.

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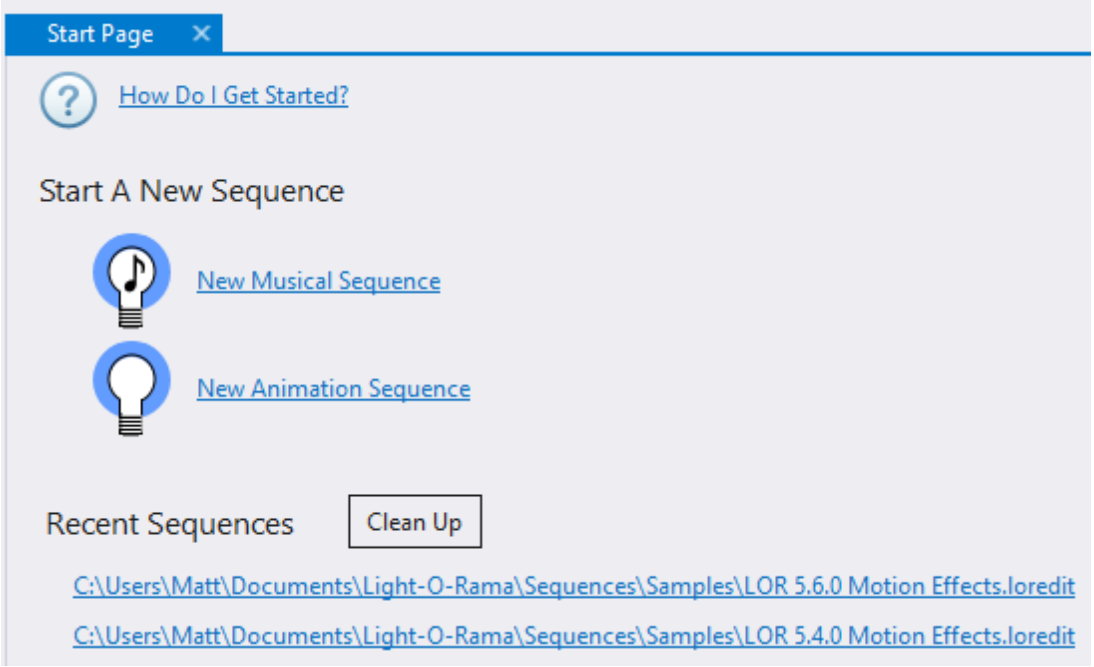

The Start Page

How Do I Get Started?

If you are new to the Light-O-Rama software, click the "How Do I Get Started?" link. It will open the help file where you can learn what a sequence is, and then start learning how to use the Sequencer.

Start A New Sequence

In the second section, you can click the links to quickly start a new animation or musical sequence.

Recent Sequences

At the bottom of the page is a list of sequences that have been recently viewed. Click on a link to open the sequence. The recent sequences shown on the Start Page are the same ones listed on the File > Recent Files sub-menu, plus more (if you work with a lot of sequences).

You can control the number of recent sequences shown on the Start Page by going to Startup tab of Sequencer Preferences.

Cleanup

Sometimes you have sequences on the Recent Sequences list that you no longer use. You can remove these entries by clicking the "Clean Up" button.

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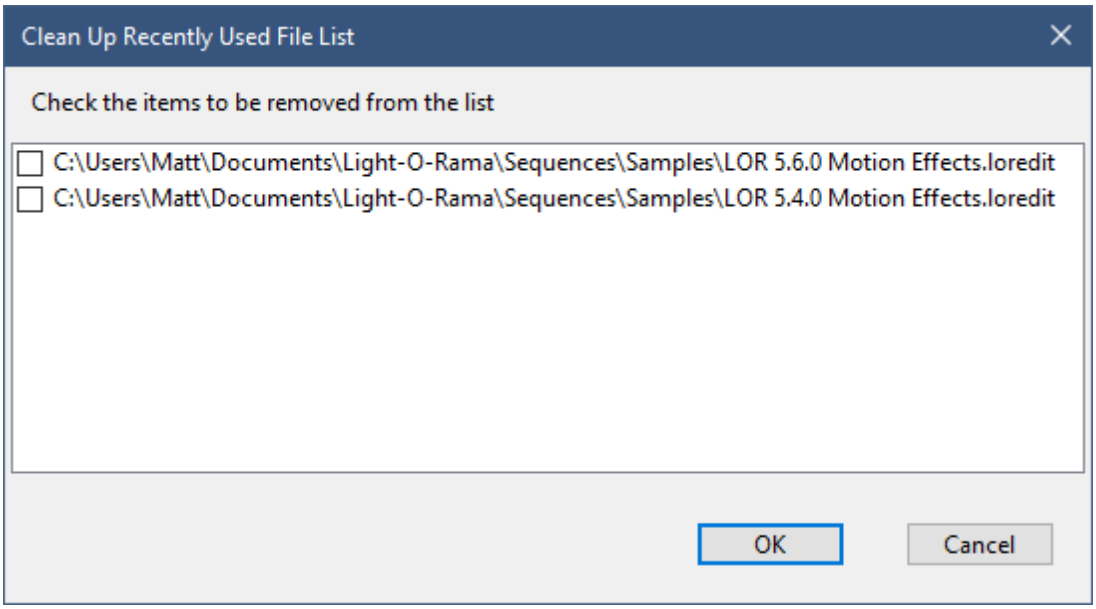

The Clean Up Dialog

The Clean Up dialog will list all of the files shown under Recent Sequences. Simply check the boxes next to the files you want removed from the list, then click OK.

5.3.3 Previews Window

A preview is a representation of your light display. It defines the lighting elements, how they are arranged, and what channels they use. From the "Previews" window you can create, modify, delete, and import/export previews. The "Previews" window is normally docked on the right side of the main Light-O-Rama S5 Sequencer. To keep the window open, click the pin icon in the upper right corner of the window.

- Add a New Preview
- Modify an Existing Preview
- Delete a Preview
- Copy a Preview
- Import or Export a Preview
- Right-Click on a Preview Name

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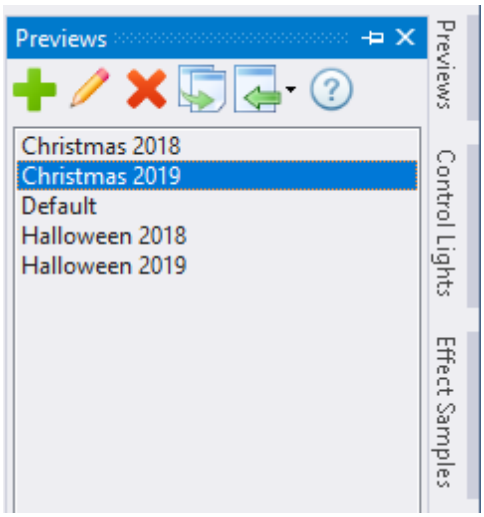

Add a New Preview

Click the "+" icon to start a new preview. This will open an empty Preview Design window ready for you to create a preview from scratch.

Modify an Existing Preview

Click on a preview name and then click the pencil icon. This will open a Preview Design window with the selected preview loaded.

Alternatively, you can double-click on a preview name to edit it.

Alternatively, you can right-click on a preview name and select "Modify" from the pop-up menu.

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Delete a Preview

Click on a preview name and then click the red “X” button. You will be prompted to confirm that you want to proceed with the deletion. Click “Yes” to delete or click “No” to cancel. If after deleting it you find that you want to get it back, assuming you have a sequence associated with that preview you can just open that sequence and the preview will be imported from it.

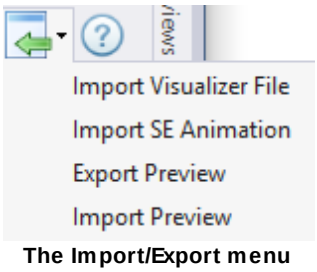
Alternatively, you can right-click on a preview name and select "Delete" from the pop-up menu.

Copy a Preview

Click on a preview name and then click the “Copy” button. You will be prompted for the name of the new preview. If you keep a copy of a preview for each year of your display (recommended), then this is the command you should use to copy one year's preview to the next (e.g. 2018 to 2019).

Alternatively, you can right-click on a preview name and select "Copy" from the pop-up menu.

Import or Export a Preview



The Import/Export menu

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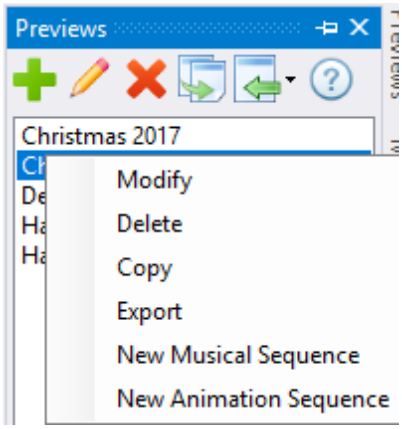
Click the Import icon to open a menu that allows you to:

- Import a Visualizer (LEE) file. You will prompted to select an LEE file and it will then be imported into a new preview. During the import process, Visualizer fixtures will be converted to props, and Visualizer props will be imported as preview groups.
- Import a Sequence Editor Animation. You will be prompted to select the LMS or LAS sequence file that contains the animation.
- Export an S5 preview. You will be prompted for the file name. This creates a file with an LORPREV extension. You can also perform this action by right-clicking on a preview name and selecting "Export" from the pop-up menu.
- Import an S5 preview. You will prompted to a select a file with an LORPREV extension.

Right-Click on a Preview Name



The right-click menu

Right-click on a preview name to open a menu that allows you to:

- Modify the selected preview in a Preview Design window.
- Delete the selected preview. You will be prompted to confirm that you want to proceed with the deletion.
- Copy the selected preview. You will be prompted for the name of the new preview.
- Export the selected preview. You will be prompted for the file name. This creates a file with an LORPREV extension.
- Create a new musical sequence using the selected preview.
- Create a new animation sequence using the selected preview.

5.3.4 Preview Design

Creating a preview is the first step in using the Light-O-Rama S5 Sequencer. No sequencing can be done without a preview. While it is possible to create a preview outside of the Preview Design window (via import, or using the Quick Preview feature when creating a new sequence), any editing of a preview must be done in Preview Design.

A preview defines the lighting elements in your display and how they are arranged. It allows your sequences to be simulated during playback. A preview can be a quick rough sketch, or a detailed, highly

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realistic depiction of your display. It is up to you to decide how much effort you want to put in to it. In any case, the preview must accurately define every channel that will be controlled by your sequences.

You can access the Preview Design window from the Previews Window or by clicking the preview name on the sequence toolbar.

Props and Groups

The display elements in a preview are referred to as 'props'. You must add a prop to the preview for every display element that you want to control. A prop can be as simple as a single channel string of traditional lights, or as complex as a big pixel tree or matrix. When you create a prop, you define the type and color of lights that it uses, its shape, and the channels assigned to it. If one of the built-in shapes doesn't meet your needs, then you can define a custom shape.

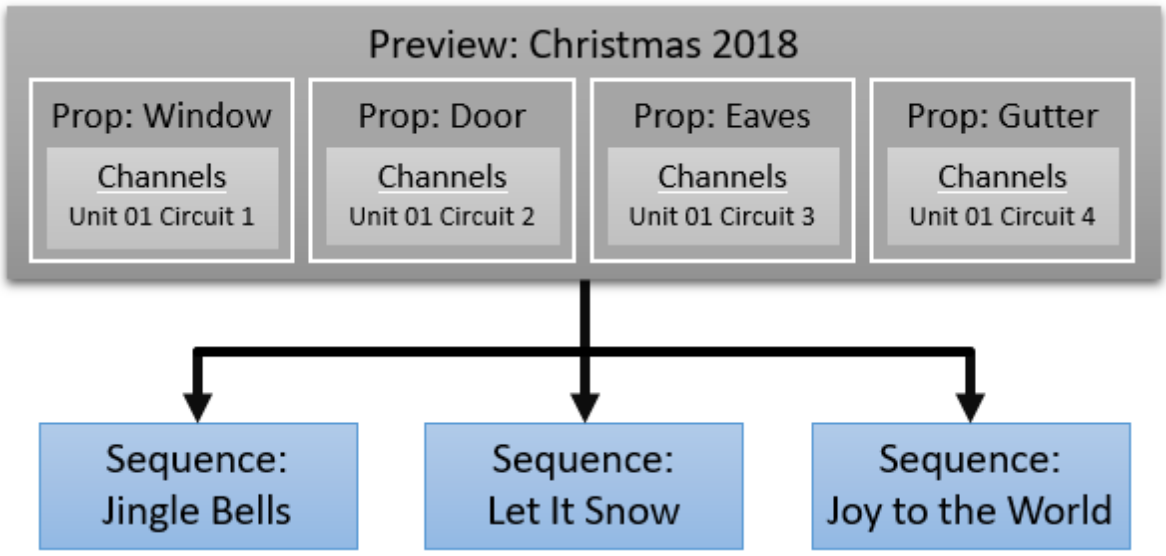
A sample of some of the shapes that come built-in to S5

Props can be grouped together.

- You might do this so that the props appear together in the sequence grid.
- You might also create a group so that you can apply an effect to the group instead of individual props. This enables things like sweeping a color across your entire display.

One Preview > Multiple Sequences

One preview can be associated with multiple sequences. Update the preview once, and the next time you open any sequence associated with that preview, the update will automatically be applied.



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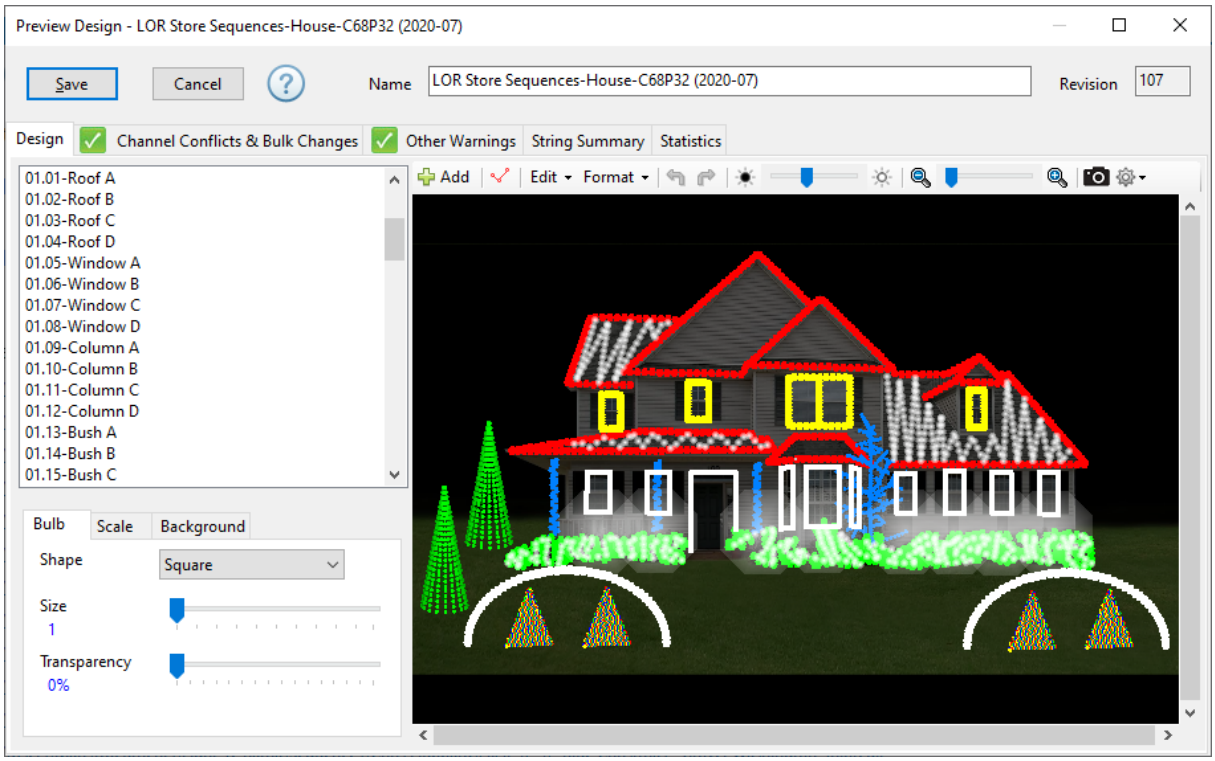
Using Preview Design



The Preview Design window showing a sample preview

At the top of the Preview Design window are:

- **Save** button - saves any changes to the preview and closes the window. This also increments the revision number by 1.
- **Cancel** button - closes the window without saving any changes.
- **Help** button - opens the help file to the Preview Design topic.
- The **Preview Name** field. The name must be unique -- having 2 previews with the same name is not allowed. If a preview is already associated with one or more sequences and you change the preview name, the association with sequences will be preserved. See the topic on Naming Strategies for a deeper discussion of how to name previews.
- The **Revision Number** field. The number is maintained by the system and incremented by 1 every time the preview is saved. You cannot change it manually.

Below this there are 5 tabs:

- Design - this is where you will do most of your work, creating props and arranging them so that they match your display.
- Channel Conflicts & Bulk Changes - this tab will show a green check mark if everything is OK, or a warning sign if there are problems with the channels you have assigned to your props. The tab allows you to quickly identify the issues and resolve them. It can also be used to make changes that affect multiple props, such as when you change a controller's unit id (e.g. 01 to 11) or network (e.g. Regular to Aux A).

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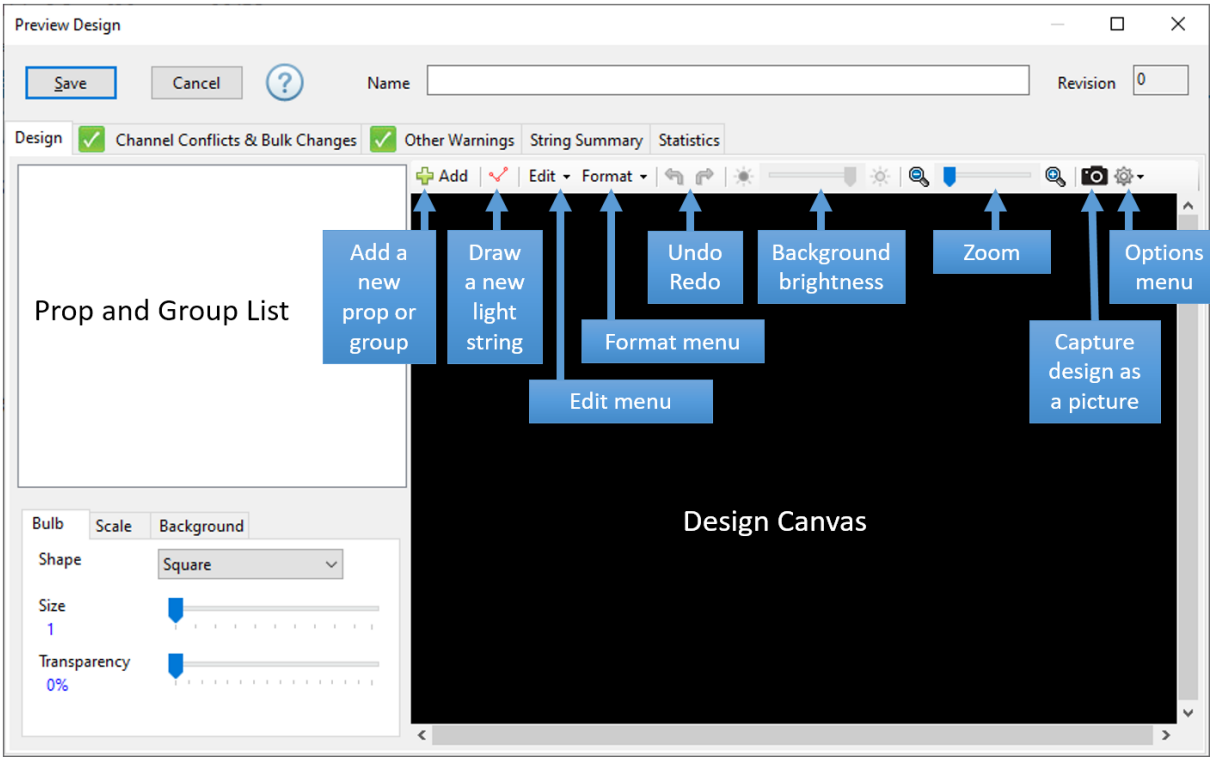
- Other Warnings - this tab will show a green check mark if everything is OK, or a warning sign if there are problems with prop definitions (e.g. a sub-prop is not assigned the same channels as its master prop).
- String Summary - this tab displays a table of all strings defined by every prop in the preview. If you want a print-out of your props and channel assignments to carry with you as you wire up your display, you can use this table, copy it to the clipboard, and paste it into any spreadsheet program. In the spreadsheet you can sort and filter the data, add and remove columns, and print it out.
- Statistics - this tab displays statistics about the preview: number of props, groups, pixels, channels, etc.

5.3.4.1 Design Tab

The Design tab of the Preview Design window is where you create props (display elements) and arrange them so that they match your display.

This is the first of 5 tabs on the Preview Design window. The others are:

- Channel Conflicts & Bulk Changes
- Other Warnings
- String Summary
- Statistics



The Design Tab

The Design Tab is divided into 2 main sections:

On the **left side:**

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- At the top is the list of props and groups that are in the preview.
- The bulb tab allows you to control the shape, size, and transparency of the bulbs that make up a prop.
- There are several ways to modify the size of a prop; the scale tab is one of those ways.
- The background tab allows you to choose a background image for your display.

On the **right side:**

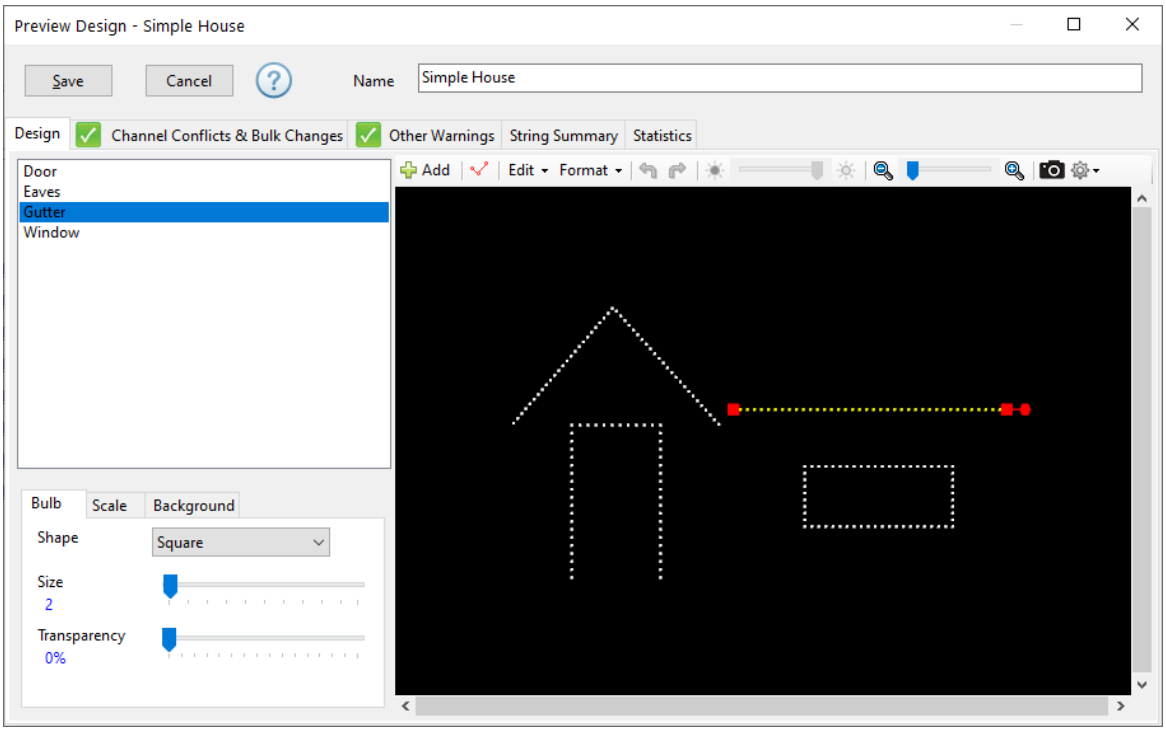
- At the top is a toolbar that allows you to add and modify elements of your display.
- Below the toolbar is the visual design canvas - a representation of your display that will be used to simulate your lights during sequence playback.

Selecting Items

Items in the Prop and Group List can be selected by clicking on them. The prop or group that is selected will then be displayed in yellow on the design canvas to the right. You can also do the reverse: you can click on a prop on the design canvas and its name will be highlighted in the Prop and Group List.

You can also select more than one item at a time. This is often useful for moving several props at the same time or for creating groups. In the Prop and Group List, Ctrl-click on an item to select it in addition to items already selected. Use Shift-click to select a range of items in the list. When selecting items using the mouse on the design canvas, hold the Shift button down on the keyboard while clicking the mouse and that prop will be added to the ones already selected.

In the picture below, the “Gutter” prop has been selected – it is highlighted in the Prop and Group List and displayed in yellow on the design canvas.



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Keyboard Shortcuts

The following keyboard shortcuts can be used on the design tab:

Shortcut	Action
Delete	Deletes the selected prop or group. If you delete a prop by mistake, just click the Undo button (or use the Ctrl-Z shortcut).
Ctrl A	Selects all props and groups
↑ ← ↓ →	Moves the selected props by a small amount
Ctrl ↑	Makes the selected items larger. Hold the keys down longer to engage the keyboard auto-repeat if needed.
Ctrl ↓	Makes the selected items smaller. Hold the keys down longer to engage the keyboard auto-repeat if needed.
Ctrl ←	Rotates the selected props counterclockwise
Ctrl →	Rotates the selected props clockwise
Ctrl 0	Control-zero resets prop rotation to its default value (fixed prop shapes only)
Ctrl Z	undo the last operation
Ctrl Y	redo the last operation

Prop and Group List

The Prop and Group List is displayed on the left side of the design tab. Every prop and group in your preview will be listed here in alphabetical order. To help distinguish groups from props, groups will be listed with blue text. In the picture below, "01.Group 1 (roof)", "01.Group 2 (windows)", "01.Group 3 (columns)", and "01.Group 4 (bushes)" are groups, and the others are props. Props "02-Minitree A" through "02-Minitree D" are selected.

To select an item in the list, just click on it with the left mouse button. You can use shift-click to extend the selection, and ctrl-click to select additional items. More information is available in the Selecting Items section.

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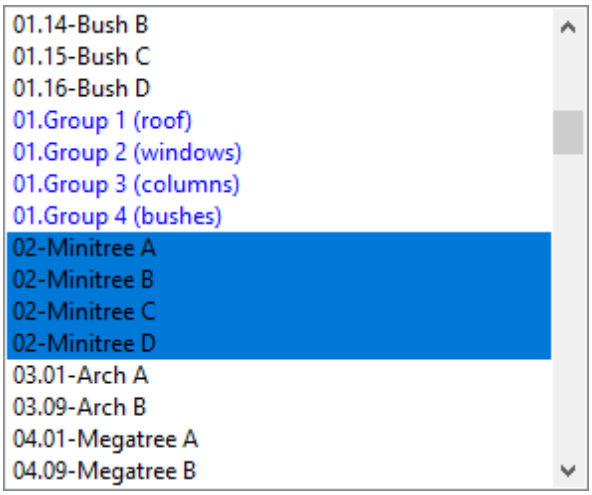
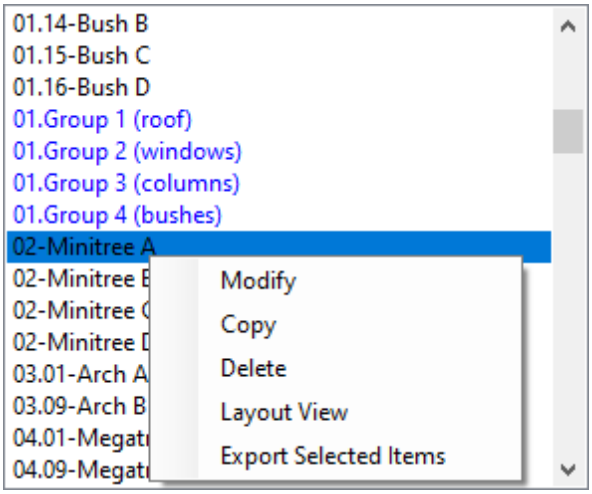


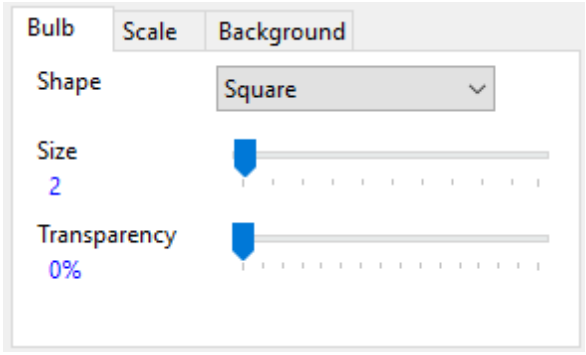
The Prop and Group List

After selecting 1 or more items in the list, you can use the toolbar to select actions to perform, or you can right-click on them to view a menu that has many of the same options as the Edit menu.



The Prop and Group List with right-click menu displayed

Bulb Tab



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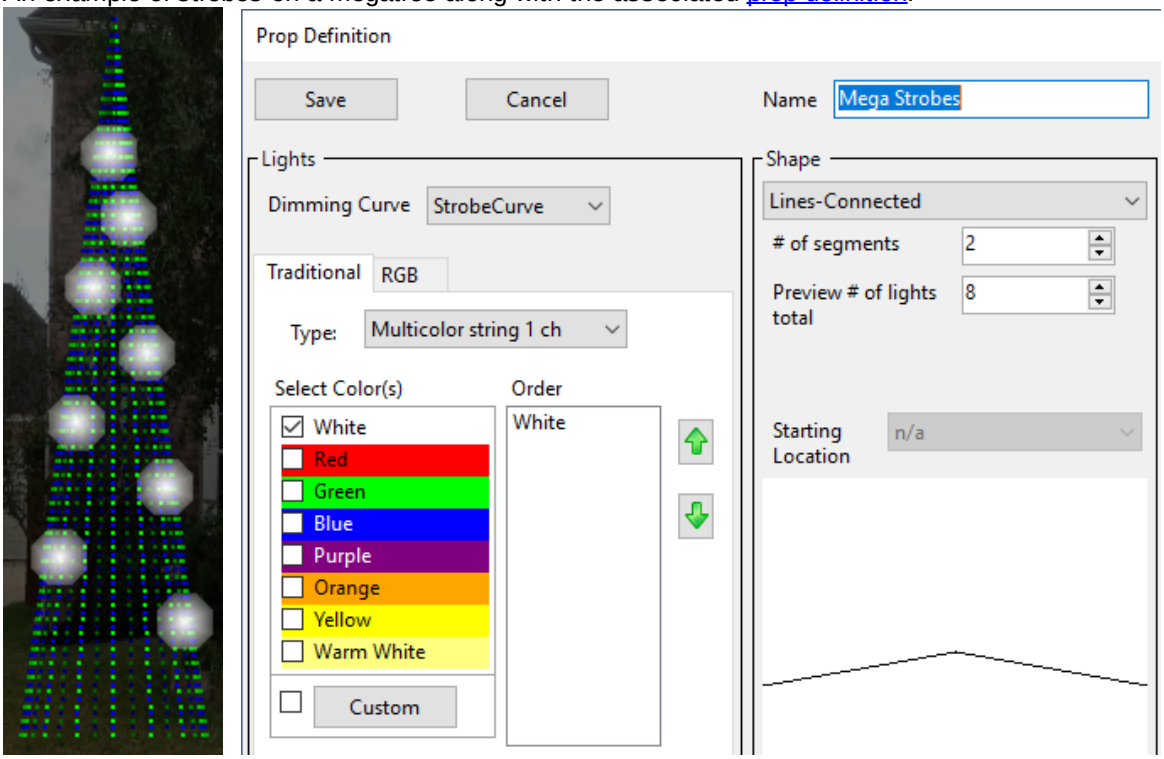
After selecting 1 or more props, you can change the bulb settings for the selected props. The default bulb shape is square, which uses the least amount of computer resources; however there are a variety of shapes available.

There are some specialized bulb shapes:
- Strobe 1 - a strobe that flashes about once per second
- Strobe 3 - a strobe that flashes about 3 times per second
- Snowfall Tube - simulates single color snowfall tubes (also known has drip tubes and meteor tubes).
- Flood - use for flood lights, single color or RGB.

Making the bulb size larger can make the prop easier to see on the computer screen. For strobes and floods you will almost always want to make the bulb size larger than the default in order to make them look realistic.

For most props, you will want to leave the bulb transparency setting at 0%. For floods, you may want something more transparent (> 0%). Adjust the transparency slider until you achieve the desired appearance.

An example of strobes on a megatree along with the associated prop definition:



Scale Tab

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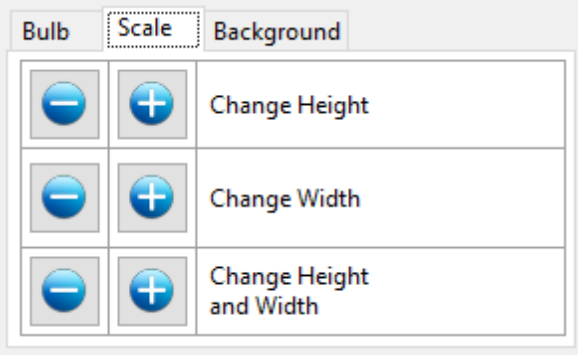


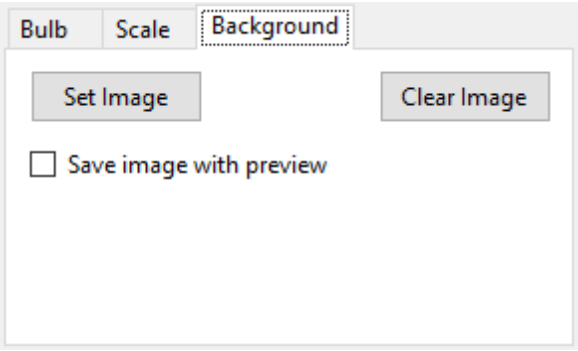
After selecting one or more props or groups, you can use the buttons on this tab to increase or decrease the size of the selected items. This can be useful for fine-tuning the size of an item. It also the best way to resize freeform prop shapes, as they do not display resize handles on the design canvas.

Click a button once to perform a small change, or hold the button down to continuously scale the selected items.

The "Change height and width" buttons have the following keyboard shortcuts:

Shortcut	Action
Ctrl ↑	Makes the selected items larger. Hold the keys down longer to engage the keyboard auto-repeat if needed.
Ctrl ↓	Makes the selected items smaller. Hold the keys down longer to engage the keyboard auto-repeat if needed.

Background Tab



Using a background image (such as a picture of your house) can be a great help in creating a realistic preview. Click the “Set Image” button to choose the image file. Clicking the “Clear Image” button will remove the image from the preview. You can adjust the brightness of the image from the toolbar.

Save Image with Preview

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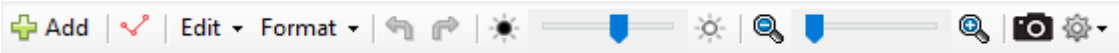
If this box is unchecked, then the image file will remain separate from your preview, and the sequences that use the preview.

If this box is checked, then the image file is stored with the preview. If you export such a preview and send the export file (LORPREV extension) to someone else, the background image will be included. The background image will also be included if you send a sequence to another user and the sequence uses such a preview.

When using this feature, we recommend selecting an image of a modest size - no more than 1920 x 1080 pixels.

Toolbar



The toolbar consists of (in order):

- Add button
- Draw string button
- Edit menu
- Format menu
- Undo and Redo buttons
- Background image brightness control (this will be disabled if a background image hasn't been assigned to the preview)
- Zoom control
- Capture the design canvas as a picture file button
- Options menu: icon

Toolbar - Add

Click the Add button to add Props and Groups to your preview. After saving the new prop or group, it will be added to the Prop and Group List and displayed on the design canvas on the right.

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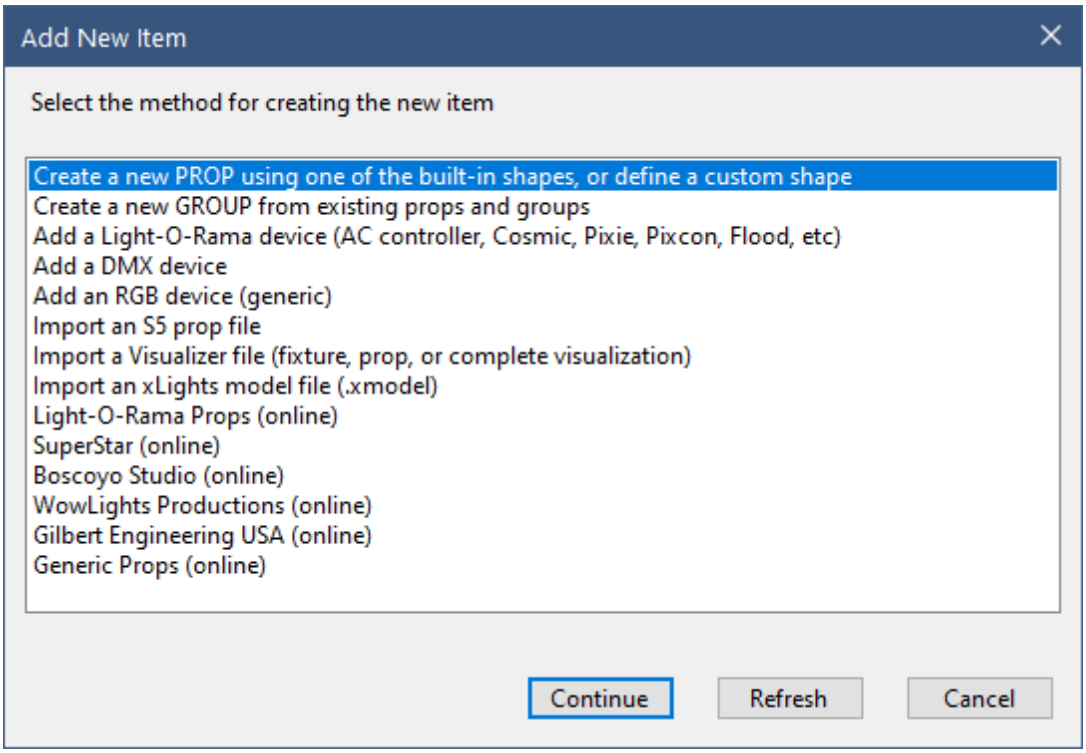

Create a new prop using one of the built-in shapes, or define a custom shape

This option opens the Prop Definition window, allowing you to create a prop from scratch. The wide variety of built-in shapes makes it easy to create many common display elements.

Some of the shapes that can be selected in the Prop Definition window

Create a new group from existing props and groups

This option opens the Group Definition window, allowing to create a new group. Any props and groups that are currently selected on the Design tab will be preselected on the Group Definition window as members of new group. Of course you can change the selections once you are in the Group Definition window.

Add a Light-O-Rama device (AC controller, Cosmic, Pixie, Pixcon, Flood, etc)

This option will create props according to the Light-O-Rama controller and unit id you specify. It is a good way to quickly create props that have accurate channel assignments. Flood lights created with this option will look realistic, but you may need to change the shape for props created for other controllers if you are going for realism in your preview.

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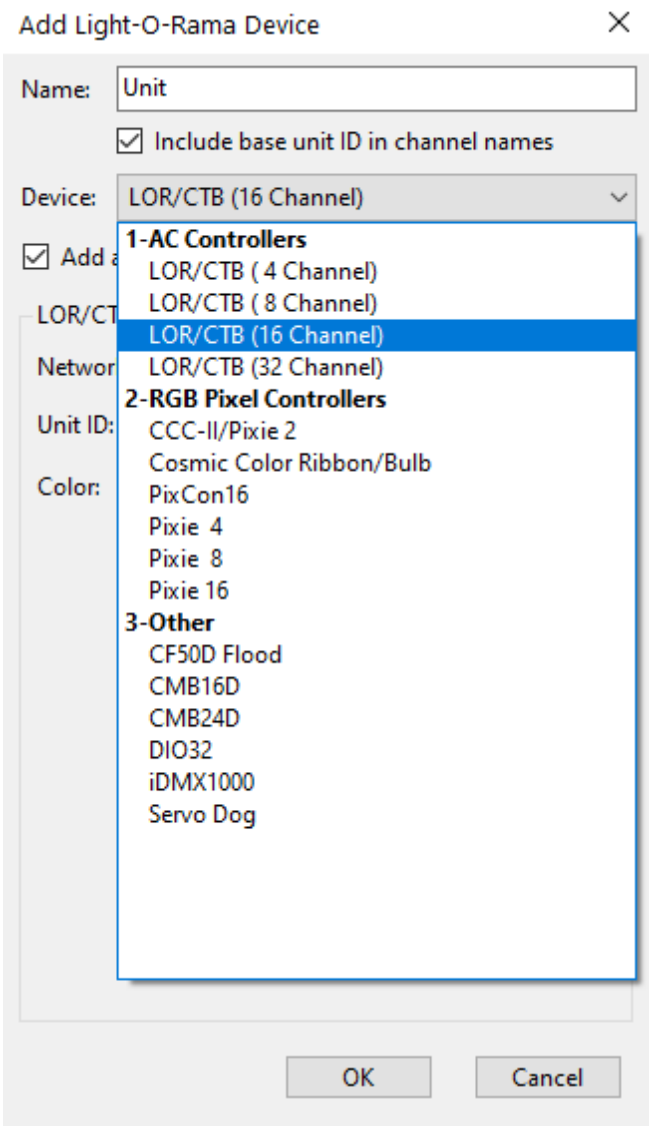

Add a DMX device

This option can be used to create a generic DMX device that uses regular (single) or RGB channels. It is a quick way to create props that have accurate channel assignments; but if you are going for realism, use "Create a new prop" or one of the "online" options instead.

Add an RGB device (generic)

This option can be used to create RGB floods and "dumb RGB" props attached to Light-O-Rama controllers. Each prop will be created as single RGB bulb with a star shape. It is a good way to quickly create RGB props that have accurate channel assignments; but if you are going for realism, use "Create a new prop" or one of the "online" options instead.

Import an S5 prop file

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This option loads props and groups into your preview from a file that had previously been exported. These files have an ".lpeprop" extension. You should review the channel assignments on any imported props to make sure they match your controllers – this can be done by double-clicking on the name of an imported prop to open the Prop Definition window. By default, an imported prop will be assigned the name that it had when it was exported. However, if that name is already being used in the preview, then a numeric suffix will be added to the name in order to make it unique.

Import a Visualizer file (fixture, prop, or complete visualization)

This option imports a file created with the S4 Visualizer. You will be prompted to select a Visualizer fixture file (.LFF extension), prop file (.LPF extension), or complete visualization file (.LEE extension). All of the fixtures and props defined in the selected file will then be loaded into the preview. Visualizer fixtures will become S5 props. Visualizer props will become S5 groups. You should review the channel assignments on any imported props to make sure they match your controllers.

Import an xLights model file (.xmodel)

This option allows you to import model files created by the xLights program. This feature only supports models that use the Custom and Star shapes. Most commercial props are modeled using the Custom shape.

Light-O-Rama props (online)

This option will open the Online Prop Import screen, allowing you to import props for items sold in the Light-O-Rama store, such as pixel trees and singing faces. It is recommended that you have internet access when using this option so that you see the latest available content (content will likely change over time). You should review the channel assignments on any imported props to make sure they match your controllers.

SuperStar (online)

This option will open the Online Prop Import screen, allowing you to import props that match sequences sold by SuperStar Lights. It is recommended that you have internet access when using this option so that you see the latest available content (content will likely change over time). You should review the channel assignments on any imported props to make sure they match your controllers.

Boscoyo Studio (online)

This option will open the Online Prop Import screen, allowing you to import props for items sold by Boscoyo Studio. You will need internet access when using this option so that you can retrieve the content. You should review the channel assignments on any imported props to make sure they match your controllers.

Prop definitions imported from this link were created by Boscoyo Studio. Light-O-Rama provides a connection to the data in order to make our software easier to use, but is not responsible for the content.

WowLights Productions (online)

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This option will open the Online Prop Import screen, allowing you to import props for items sold by WowLights Productions. You will need internet access when using this option so that you can retrieve the content. You should review the channel assignments on any imported props to make sure they match your controllers.

Prop definitions imported from this link were created by WowLights Productions. Light-O-Rama provides a connection to the data in order to make our software easier to use, but is not responsible for the content.

Generic Props (online)

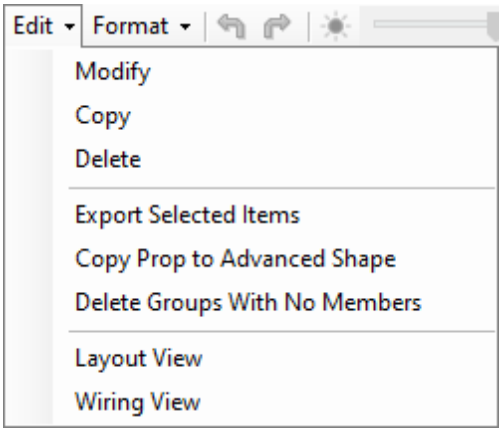
This option will open the Online Prop Import screen, allowing you to import props for some commonly used lights. It is recommended that you have internet access when using this option so that you see the latest available content (content will likely change over time). You should review the channel assignments on any imported props to make sure they match your controllers.

Toolbar - Draw String

clicking this icon allows you to draw a light string directly on the design canvas.

When you click the icon, the cursor will change to the edit cursor when moved over the design canvas. Click on the design canvas to start drawing your string. A single click of the left mouse button will insert a node (vertex) into the line and allow you to continue drawing the next segment. To stop drawing, double-click the left mouse button or use the ESC key. When you stop drawing, the Prop Definition window will open so you can adjust the number of bulbs in the string and also assign a channel.

Toolbar - Edit Menu



Most of the choices on the Edit menu are also available when you right-click on the Prop and Group List and also when you right-click on the design canvas.

Modify

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You can double-click on an item's name, or you can single-click on it and select "Modify" from the Edit Menu. Either method will open the Prop Definition window if a prop is selected, or the Group Definition window if a group is selected.

Copy

This command opens the Copy Prop Dialog, which is very helpful in creating a collection of props that all look the same, such as a series of arches or mini-trees.

Delete

Use this command to delete the selected props and groups. You will be asked to confirm before the delete actually takes place.

Export selected items

This command exports the selected props and groups to a file. You might do this so they can be imported into another preview or so they can be shared with other users. You will be prompted for a location to save the export file. Export files have the extension ".lpeprop". To import props, see the Add Item button.

Copy prop to advanced shape

This command is used to copy a pixel-based prop to a new prop with the same channel assignments and pixel locations but with the Advanced shape. This allows you to preserve the look of the prop, but rearrange each pixel's virtual location in the effect buffer (as shown in the Layout View).

Delete Groups With No Members

After making a lot of changes to your preview, you may end up with groups that no longer contain any members. This function will open a window listing all such groups and allow you to delete them with a single click. If you delete a group by mistake, you can always click the Undo button.

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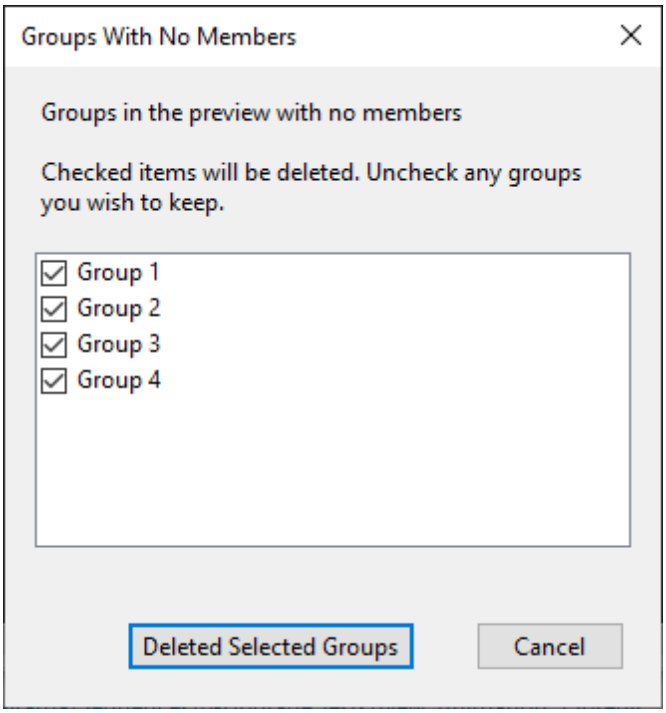


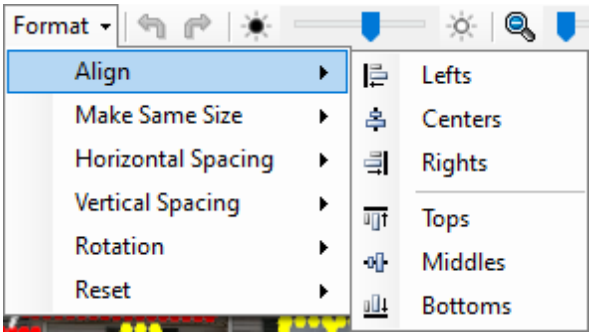
Layout View

Use this command open the Layout View window - a printable layout of the selected prop or group with channel information for every string or pixel. It is very useful for pixel-based props because it shows how the pixels are arranged when motion effects are applied. The layout view can be quite large depending on the number of channels/pixels involved.

Wiring View

This command opens the Wiring View window. It displays how pixel-based props are wired together - with every pixel labeled with its string and pixel number. This is particularly useful for props that have a "custom" shape.

Toolbar - Format Menu



All items on the Format menu are also available on the Design Canvas's right-click menu.

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Align

If multiple props are selected, the items on this sub-menu allow you to align those props in various ways.

Make same size

If multiple props are selected, the items on this sub-menu allow you to resize the selected items such that they all have the same width, height, or both.

Horizontal spacing

If multiple props are selected, the items on this sub-menu allow you to make the horizontal spacing between them equal, or to remove any space between them (so they abut one another).

Vertical spacing

If multiple props are selected, the items on this sub-menu allow you to make the vertical spacing between them equal, or to remove any space between them (so they abut one another).

Rotation

After selecting 1 or more props, the actions listed under the “Rotation” menu allow you to rotate the selected items back to their default orientation (0 degrees), to 90 degrees right, or 90 degrees left. Selected props and/or groups can be rotated to any angle by dragging the rotation handle that is displayed when they are selected or using the keyboard shortcuts Ctrl-LeftArrow and Ctrl-RightArrow. Ctrl-0 (control key + zero key) is a shortcut for resetting rotation back to the default orientation (0 degrees). Note that freeform prop shapes do not have a default orientation, so the Rotation > 0 command has no effect on them.

Reset

After selecting 1 or more props, the actions listed under the “Reset” sub-menu allow you to reset the selected items back to their default position (centered), or default size (half of the canvas size), or both. Resetting the position is particularly useful because it is possible to drag items off the edge of the design canvas. When this happens, select the prop from the Prop and Group List, then choose Format > Reset > Position from the menu to make it visible again.

Toolbar - Undo/Redo

Prop adds, deletes, movement, scaling, and rotation can be undone and redone. Undo/redo does not apply to modifying props or groups.

clicking this icon undoes the last operation, and has the keyboard shortcut Ctrl-Z.

clicking this icon reapplies an operation that was previously undone, and has the keyboard shortcut Ctrl-Y.

Toolbar - Background Image Brightness

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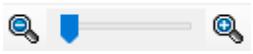
If you have assigned a background image to your preview, you can use this slider to adjust the brightness of the image. Move the Brightness slider to the left to dim the background image, simulating the view of your display during nighttime. The buttons on the left and right will modify brightness up or down one step at a time. Image brightness can also be changed from other areas of the program.

Toolbar - Zoom

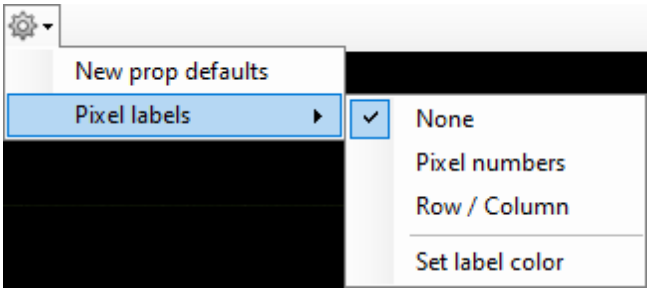


You can zoom in on your props to make fine adjustments. The buttons on the left and right will zoom in or out one step at a time. Or you can use the slider to quickly move to the desired zoom level. If you are zoomed in, clicking on a prop in the Prop and Group List will cause the canvas to scroll so the selected prop becomes visible.

Toolbar - Capture Design As A Picture File

clicking this icon captures a snapshot of the design canvas and prompts you for a file name where the image can be saved (PNG format).

Toolbar - Options Menu



New prop defaults

This option allows you to set some defaults when the Prop Definition screen is used to create new props.

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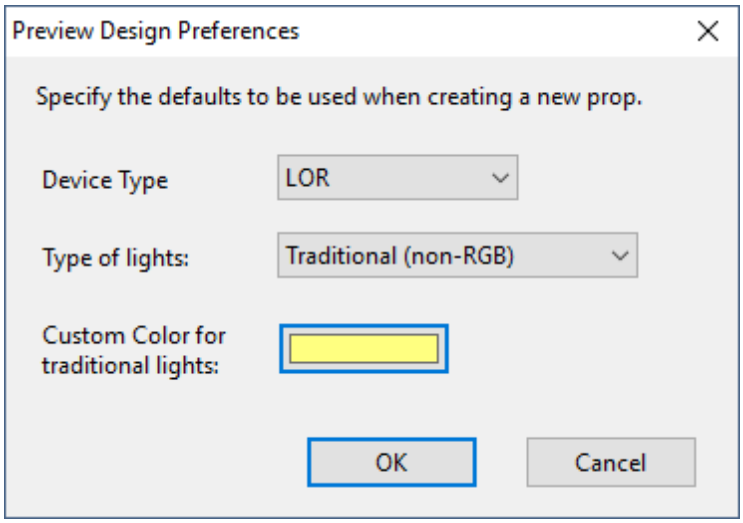


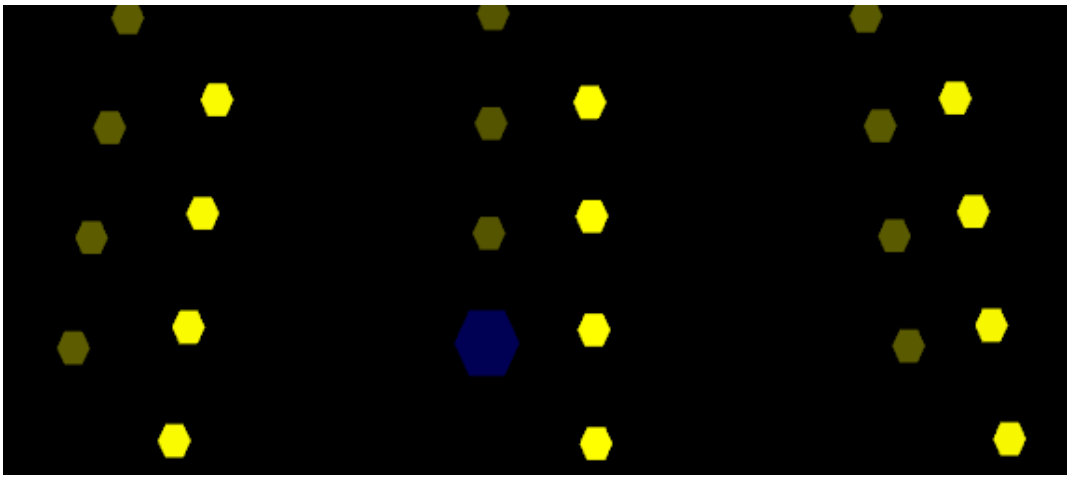
Preview Design Preferences

Pixel labels

This sub-menu controls how pixels are labeled on props that have a light type of "RGB Pixels." Labels are only displayed when a prop is selected. The labels are small, so you will need to zoom in to read them.

The sub-menu gives you 3 choices for pixel labels:

- **None** - don't display pixel labels.



Pixel labels set to: None

- **Pixel numbers** - displays a number which indicates the order in which the pixels are (or should be) wired; however, it does not indicate which string the pixel is on.

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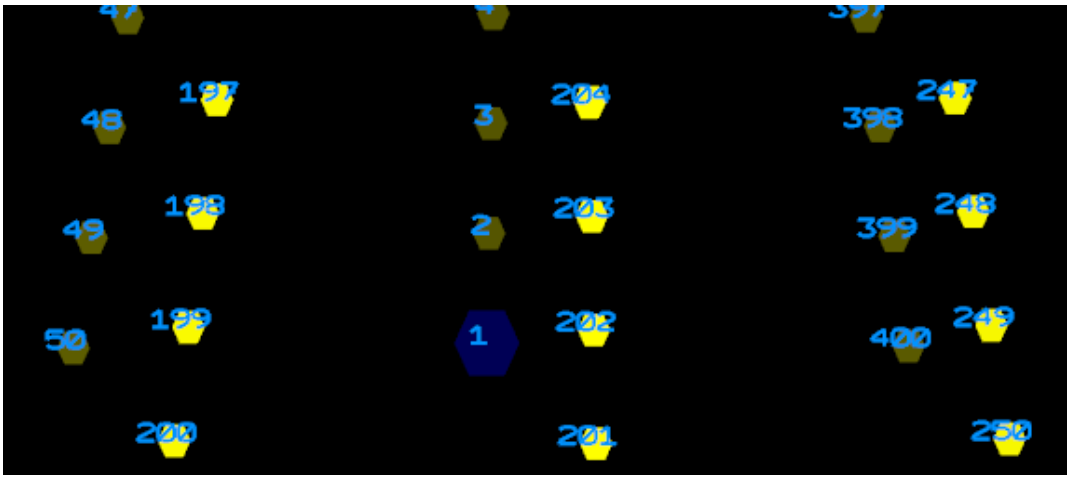
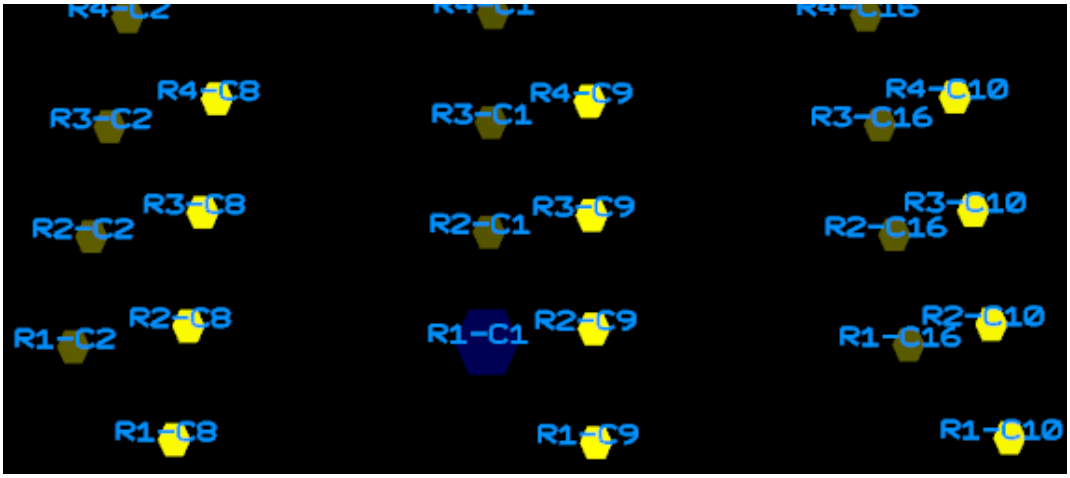


Pixel labels set to: Pixel Numbers

- **Row / Column** - pixels are labels using RC notation, where "R" precedes the row number, and "C" precedes the column number. These numbers match the row and column numbers displayed in RGB channel names for pixel-based props, and also on the Layout View.



Pixel labels set to: Row / Column

Set label color

This option allows you to change the color used to display pixel labels.

Design Canvas

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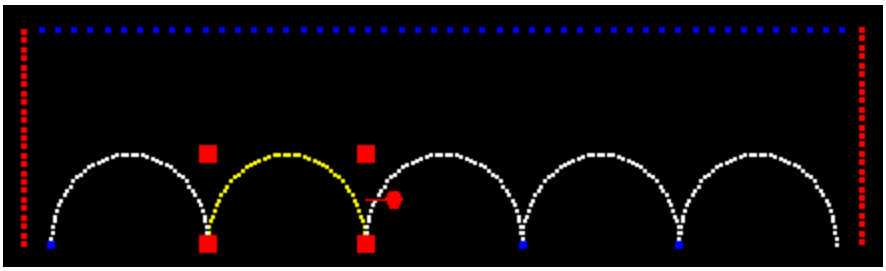

In the picture above, there is 1 blue string, 2 red strings, and 5 RGB arches. The second arch is selected.

In the preview design window, traditional strings (incandescents, LEDs, strobes) are displayed with the color of the string (e.g. a string of red LEDs will show as red). RGB pixels and dumb RGB strings are displayed in white. Any string that has been selected, traditional or RGB, is shown in yellow.

The selected item is always shown in yellow and has 4 red scaling “handles” at the corners (lines just have 2 handles) and a rotation handle to the right. You can select multiple props using Shift-click on the design canvas, or Ctrl-click or Shift-click in the Prop and Group List. The selected prop(s) can be dragged around the design canvas using the mouse. They can be resized by dragging any one of the 4 red handles in the corners, or by using the Ctrl-UpArrow and Ctrl-DownArrow keyboard shortcuts. You can rotate them by dragging the handle on the right side, by using the Format > Rotation menu, or by using the Ctrl-LeftArrow and Ctrl-RightArrow keyboard shortcuts. If you have multiple props selected, you can align them in many ways using the Format menu.

You can double-click on a prop to open its Prop Definition.

Any movement, scaling, or rotation action can be undone by clicking the undo button or using the Ctrl-Z keyboard shortcut.

Right-Click Menu

Right-clicking on the design canvas opens the following menu:

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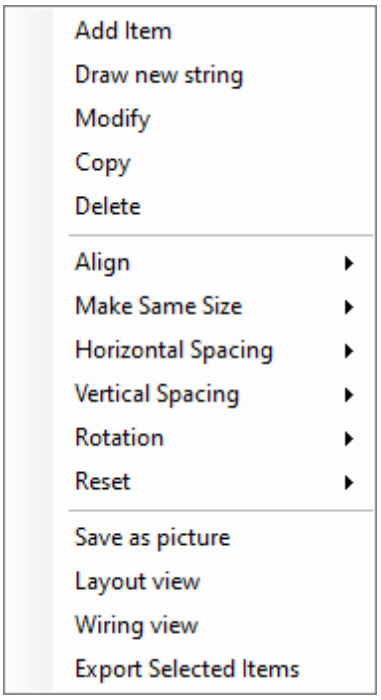

Items in the **top** section of the menu allow you to:

- Add an item - this has the same effect as clicking the toolbar's Add Item button.
- Draw a new string - this has the same effect as clicking on the toolbar's Draw String button.
- Modify the selected prop (hidden if no prop is selected)
- Copy the selected prop (hidden if no prop is selected)
- Delete the selected props (hidden if no prop is selected)

Items in the **middle** section of the menu allow you to perform any of the operations available on the toolbar's Format menu.

Items in the **bottom** section of the menu allow you to:

- Capture a snapshot of the design canvas and save it as a picture file - same as clicking on the toolbar's icon
- Display the Layout View for the selected prop
- Display the Wiring View for the selected prop
- Export the selected props

Right-Click on Lines-Connected Vertex

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With these menu options, you can add and remove line segments without opening the Prop Definition window.

5.3.4.2 Channel Conflicts & Bulk Changes Tab

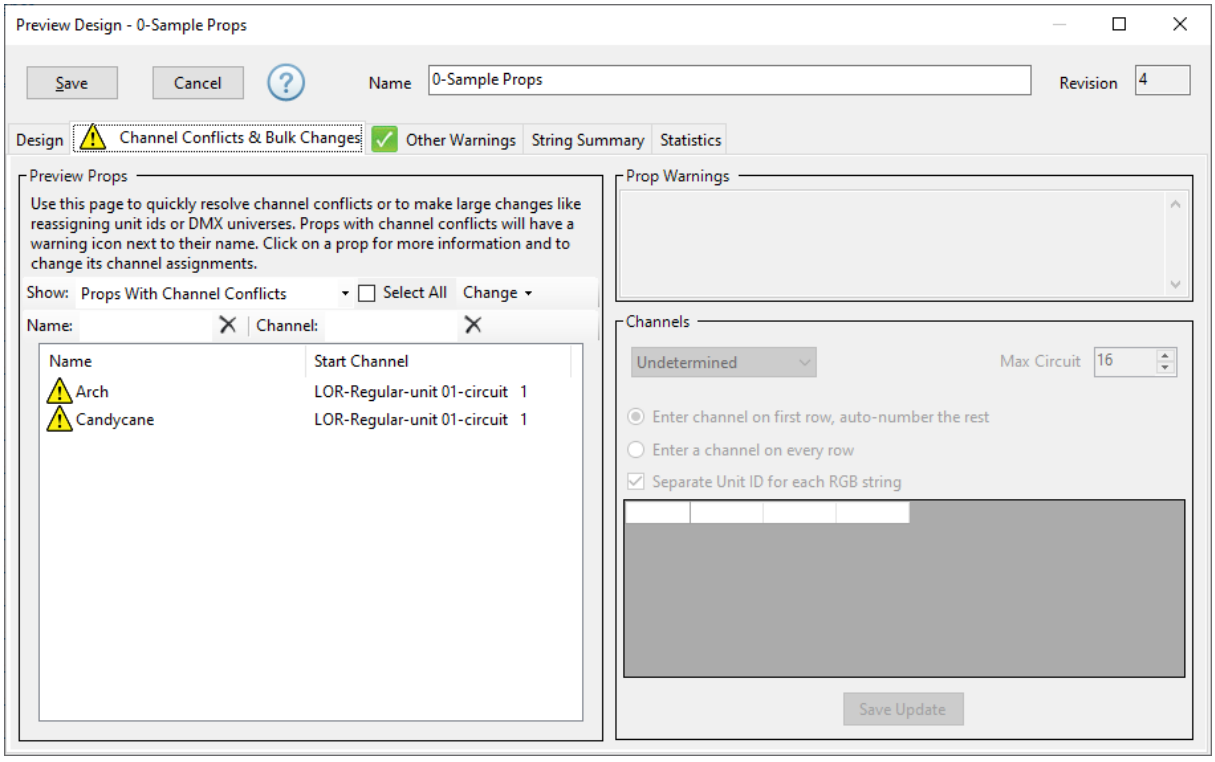
The Channel Conflicts & Bulk Changes tab of the Preview Design window has 2 functions:

1. It can be used to quickly identify and resolve props with conflicting channel assignments
2. It can be used change the channel assignments for multiple props at once (i.e. bulk change); for example, moving multiple props from the Aux A network to the Aux B network, or from one DMX universe to another.

The tab will show a green check mark if everything is OK, and a warning sign if there are channels conflicts. A filtered list of props is displayed down the left side. Clicking on a prop will list its channel assignments in the "Channels" area, where they can be changed. When clicking on a prop with a channel conflict, the list of conflicts will be shown in the "Prop Warnings" area.

This is the second of 5 tabs on the Preview Design window. The others are:

- Design
- Other Warnings
- String Summary
- Statistics



The Channel Conflicts & Bulk Changes tab

Sorting The List

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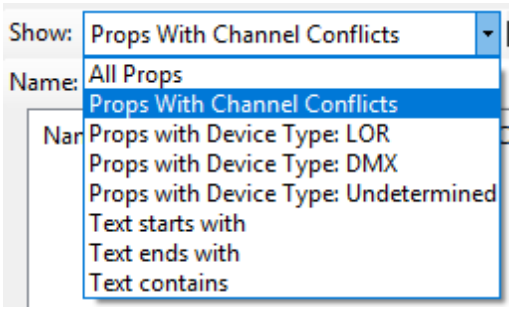
The list of props can be sorted by Name or Start Channel by clicking the column heading. Clicking the column heading a second time will reverse the direction of the sort.

Filtering The List

There are 3 filters that can be applied to the list of props. By default, the list is filtered to show only channel conflicts.

The "Show" Filter



From this drop-down box you can choose to display:

- All props in the preview
- All props with channel conflicts
- All props with device type "LOR" (as shown in the channel section of the Prop Definition window)
- All props with device type "DMX"
- All props with device type "Undetermined"
- Text starts with -- when using the Prop Name or Channel filters, compare the entered text with the start of the name or channel
- Text ends with -- when using the Prop Name or Channel filters, compare the entered text with the end of the name or channel
- Text contains -- when using the Prop Name or Channel filters, select the prop if the entered text appears anywhere within the name or channel. This is also the text comparison method used when any of the first 5 drop-down options is selected.

Prop Name Filter

Type some text into the "Name" box to filter the list by prop name. In the example below, only props with the word "star" in their name are shown. If the "Show" filter is set to "Text starts with" or "Text ends with", then only that part of the prop name will be matched; otherwise any prop name that contains the text that was entered will be matched.

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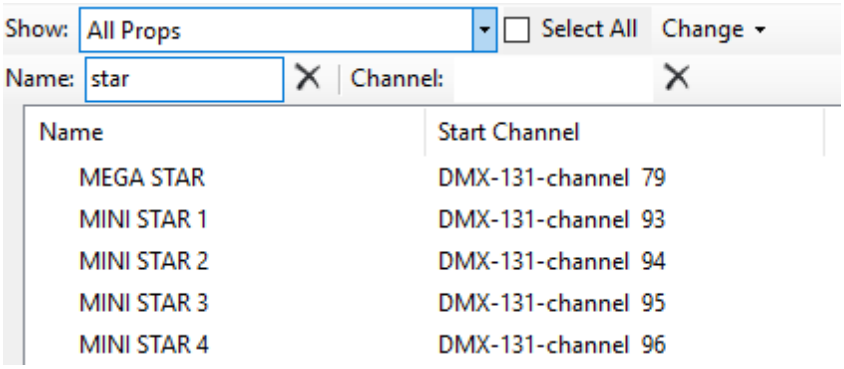
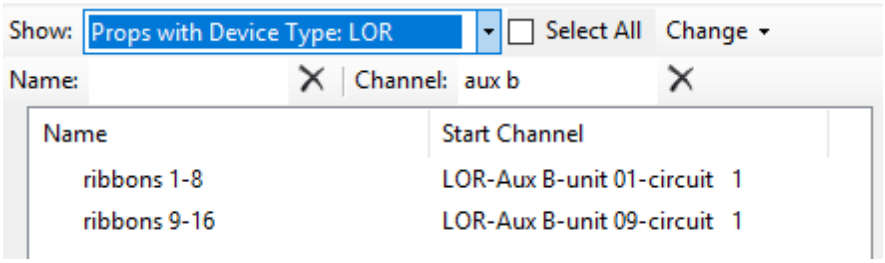


Channel Filter

Type some text into the "Channel" box to filter the list by start channel. In the example below, only LOR props with the word "aux b" in their channel name are shown. If the "Show" filter is set to "Text starts with" or "Text ends with", then only that part of the channel name will be matched; otherwise any channel name that contains the text that was entered will be matched.



Resolving Channel Conflicts

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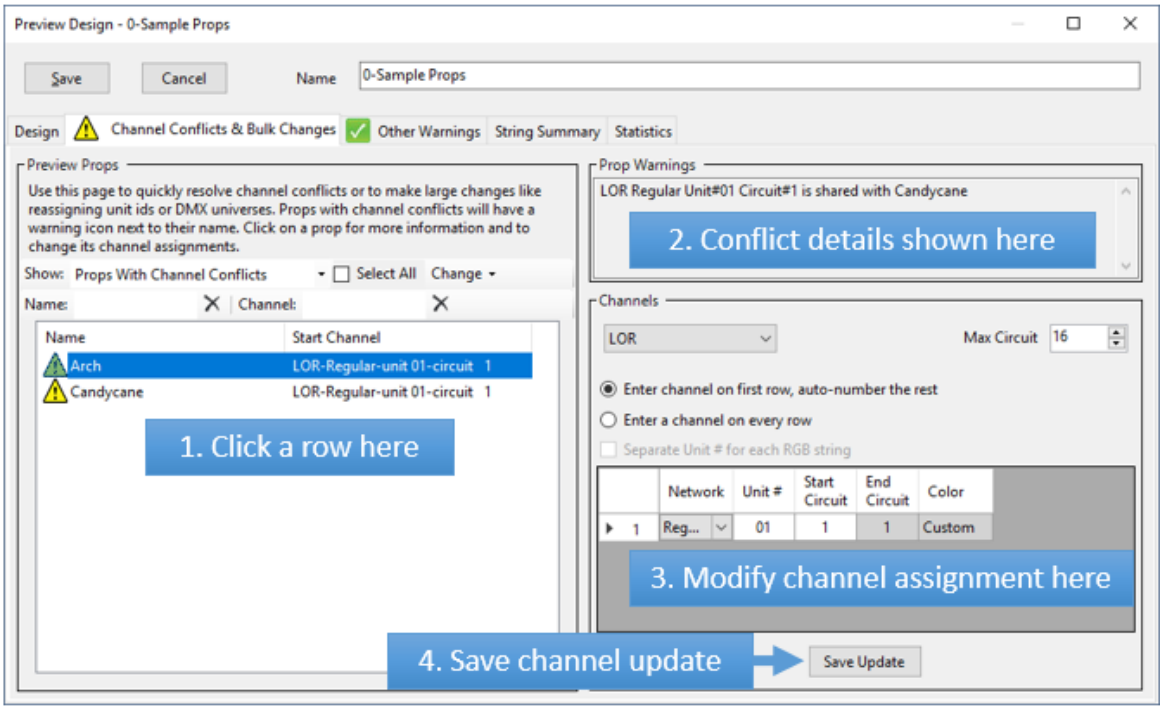

Steps for resolving a channel conflict

1. Click on a row with a ⚠ warning sign.

2. Note that conflict details shown in the "Prop Warnings" area. Multiple conflicts may be listed here if multiple props all have the same channel assigned, or the prop uses multiple channels and those channels conflict with other props.

3. Determine the new channel that should be assigned to this prop and make the changes in the "Channels" area. You might find a quick review of the information shown on the String Summary tab helpful in determining the correct channel. Alternatively, you could go back to the Design tab, double click on the prop name, and change the channel information in the Prop Definition screen (but that would take longer).

4. After changing the assigned channel, click the "Save Update" button to commit the change. If you go back to step 1 without performing this step, your changes will be lost.

Making Bulk Changes

"Bulk changes" means that you want to modify the channels assignments of many props at once. To do this, you first need to select all of the props that you are going to change. You could do this by clicking on the first prop, then Ctrl-Clicking on all of the other props that you want to change. However, it is often faster to use the Filter Tools to narrow the list of props to just those that need to change, then clicking the "Select All" check box to select them all.

After selecting the desired props, then you can select an action from the "Change" menu (these actions can also be accessed by right-clicking on the selected props). From the Change menu you can:

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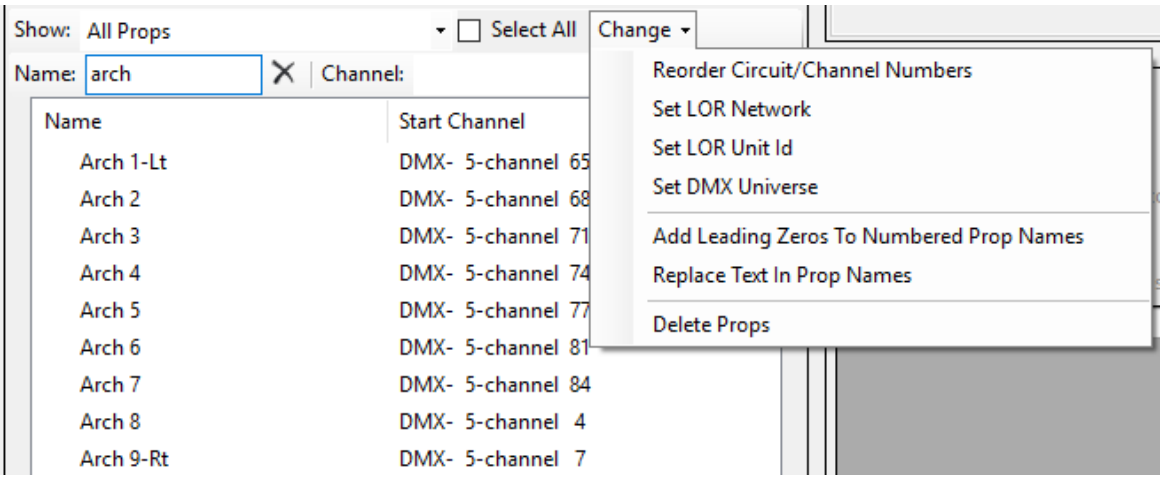
- Reorder Circuit/Channel Numbers
- Set the LOR Network
- Set the LOR Unit ID
- Set the DMX Universe
- Add Leading Zeros To Numbered Prop Names
- Replace Text In Prop Names
- Delete Props



The Change menu

Reorder Circuit/Channel Numbers

Selecting "Reorder Circuit/Channel Numbers" from the Change menu (or right-clicking on the prop list and selecting "Reorder Circuit/Channel Numbers") will open a dialog that will allow you to consecutively renumber the LOR circuits (or DMX channels) on the selected props. At the same time, you can change the selected props from LOR to DMX or vice versa.

When you renumber, the number of channels used by each prop is taken into account. For example, if you are renumbering 3 props and props 1 and 3 each require 1 channel, but the second prop requires 6 channels; then if you renumber starting at channel 9, the new channel numbers will be:

- First prop - channel 9
- Second prop - channels 10-15
- Third prop - channel 16

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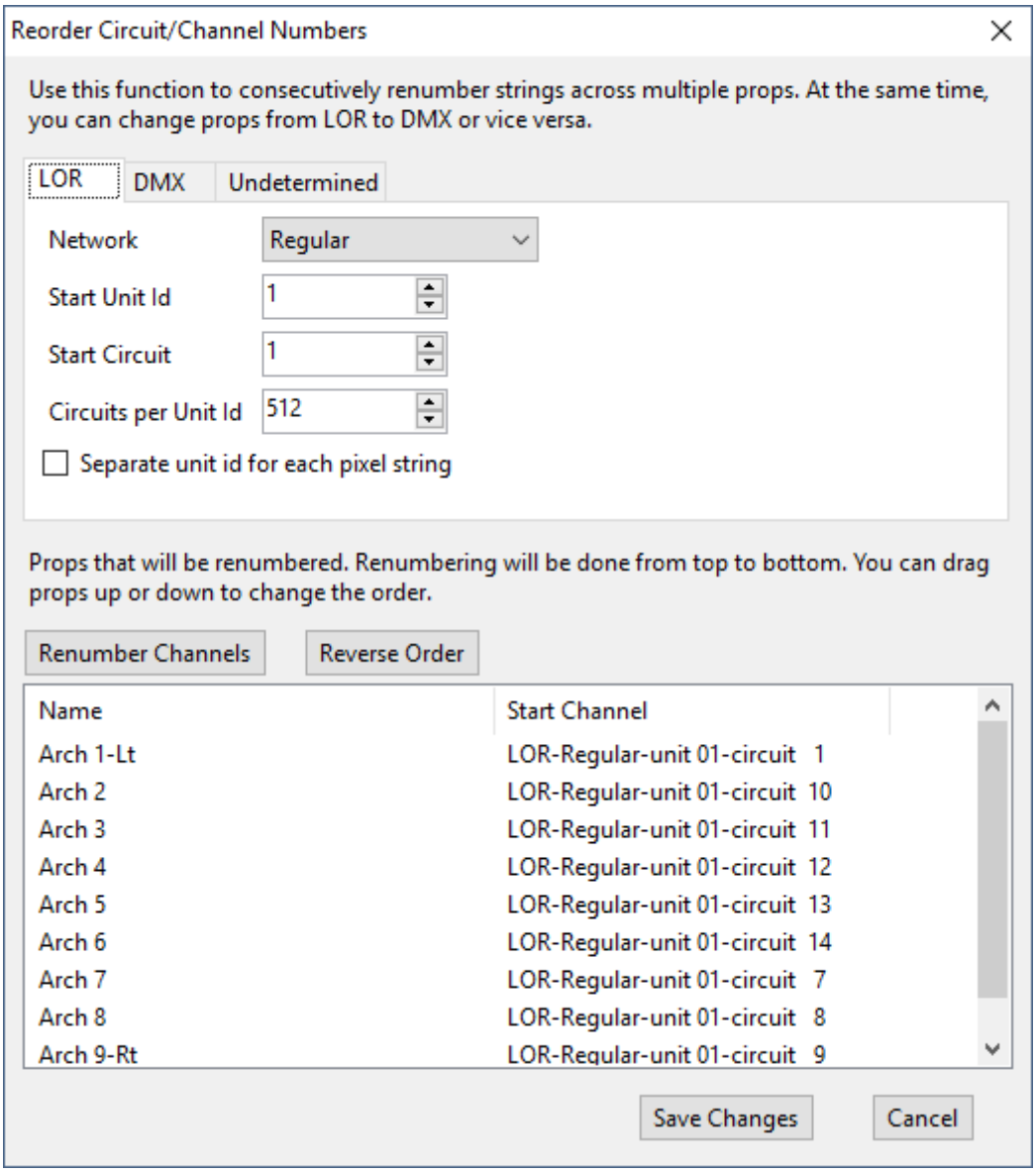

In this example, the wiring order of the arches is about to be made consecutive

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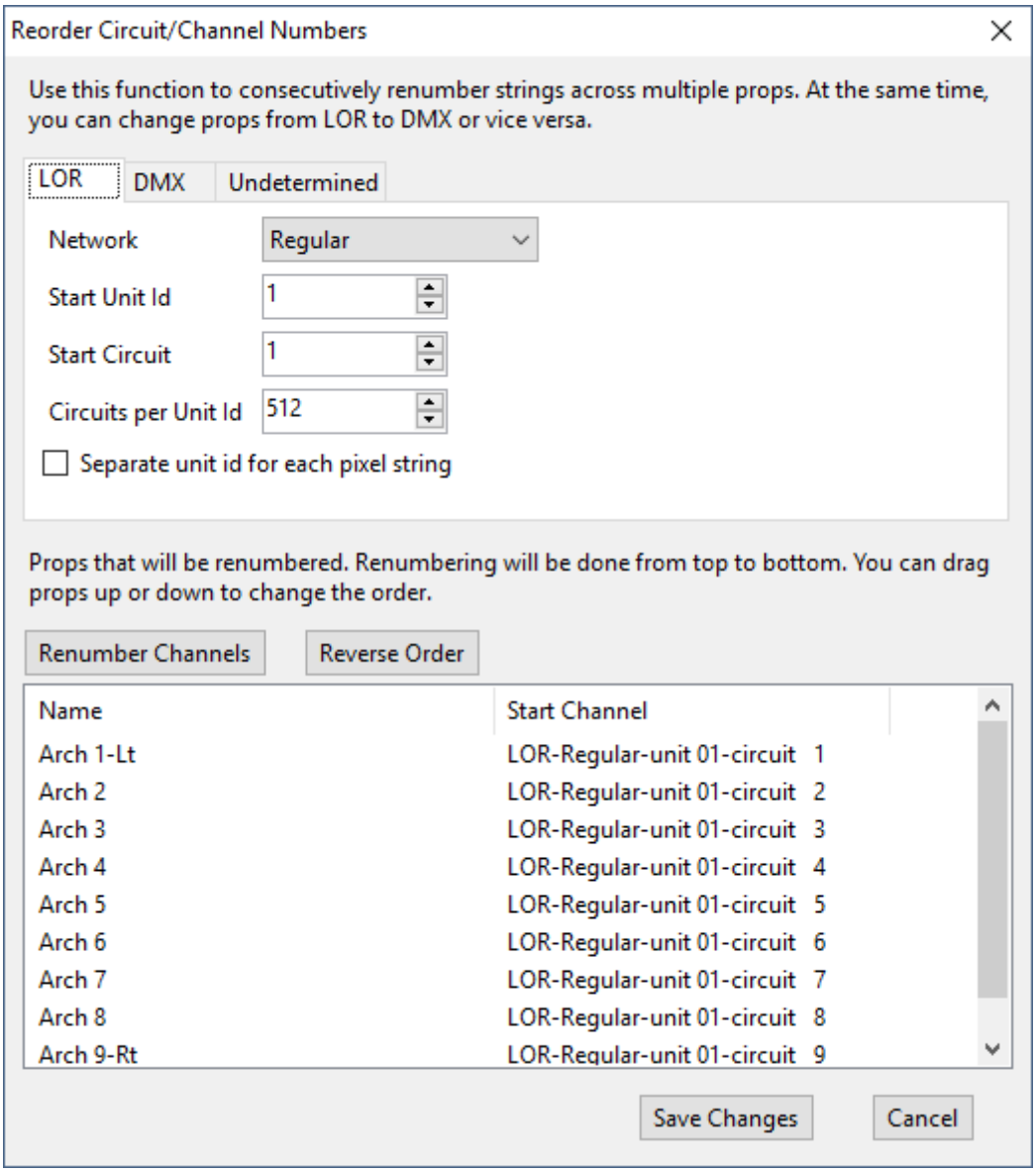
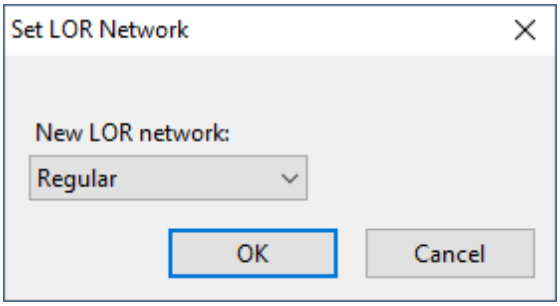


After pressing the Renumber Channels button

Set the LOR Network

The selected props will be moved to the LOR network you specify. For example, you could use this function to move props from the Regular network to Aux A.



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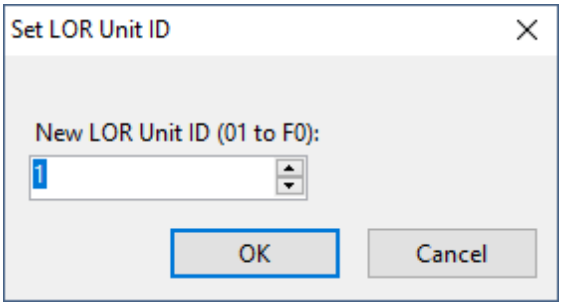
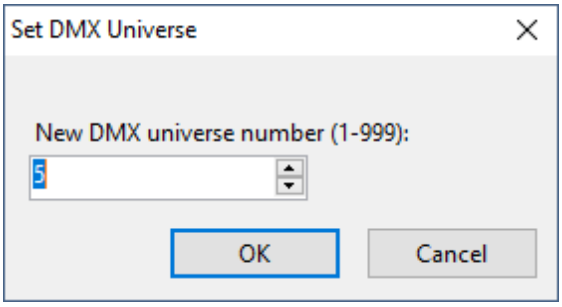
Set the LOR Unit ID

The selected props will be moved to the LOR unit id you specify. For example, you could use this function to move props from unit 10 to unit 11.



Set the DMX Universe

The selected props will be moved to the DMX universe you specify. For example, you could use this function to move props from Universe 2 to Universe 12.



Add Leading Zeros To Numbered Prop Names

Any selected props that have a number in their name will have leading zeros added to the number. This can aid in sorting the props in the desired order on the sequence grid. For example, here are 12 arches sorted alphabetically -- the same order they would be displayed by default in the sequence grid.

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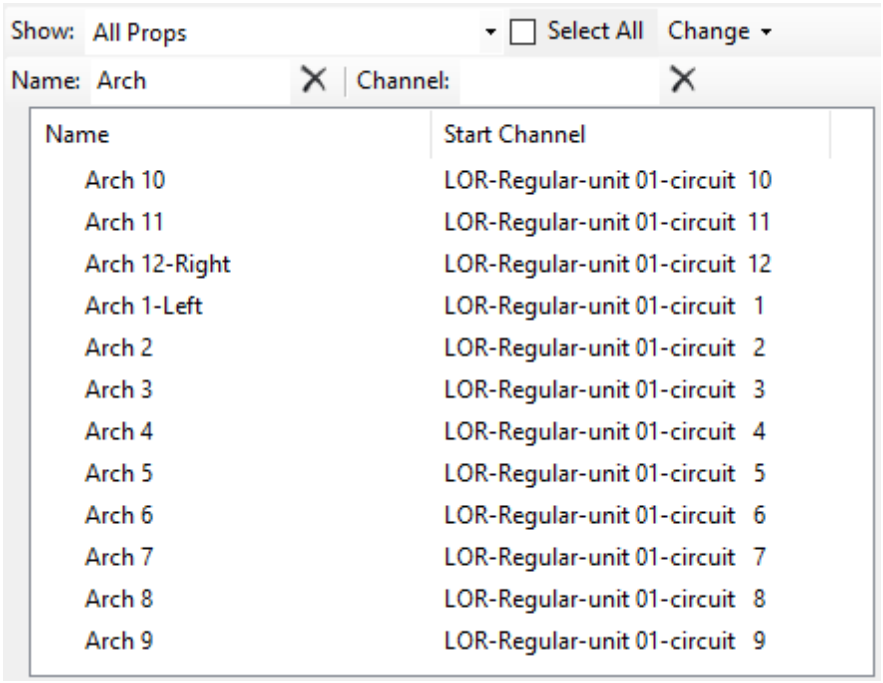
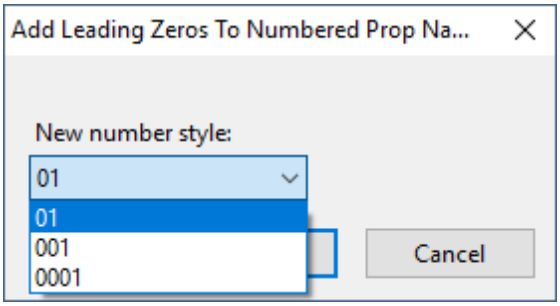


Props not listed in the desired order

Now click the "Select All" box, then select Change > Add Leading Zeros To Numbered Prop Names. You will be prompted for the number format to be used:



Choose number style

After clicking the OK button, the props now sort in the desired order:

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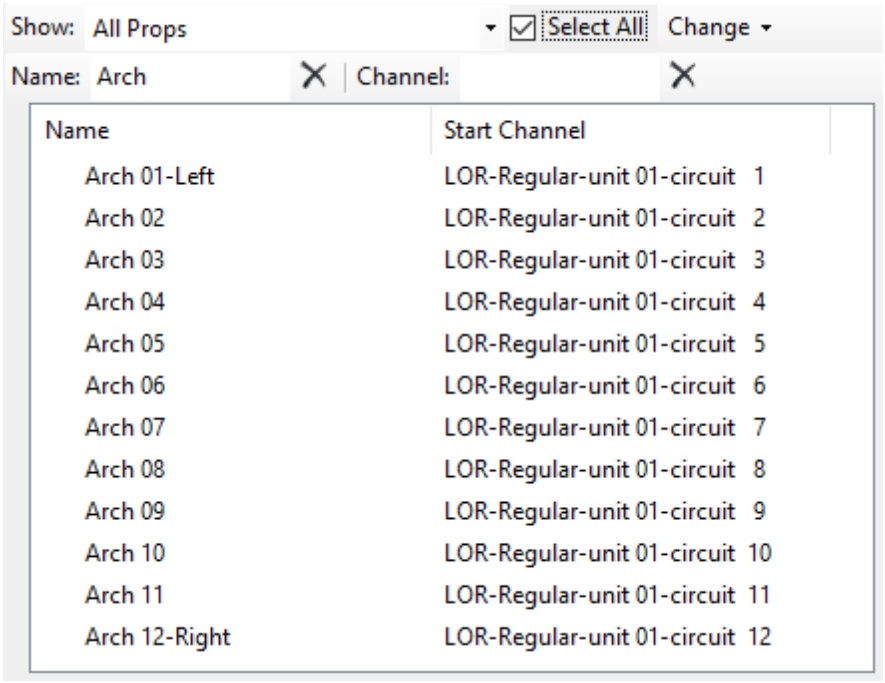
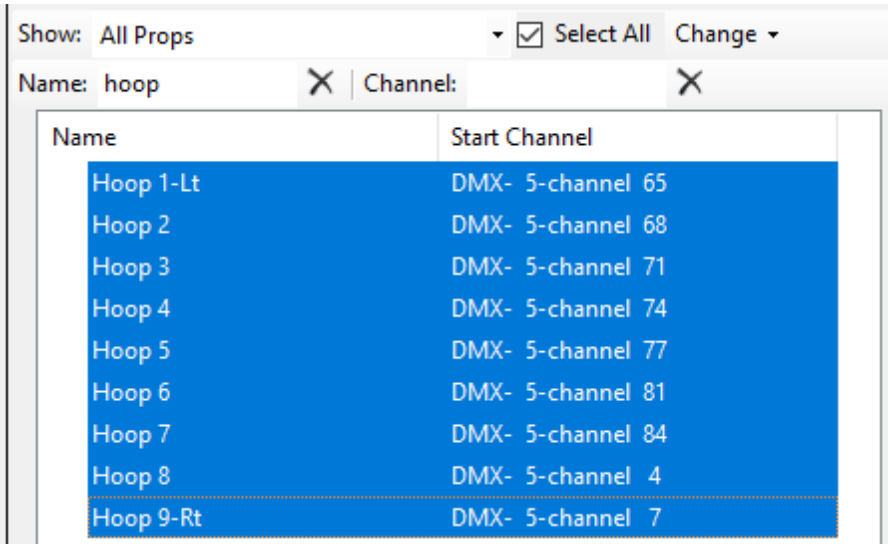


After adding leading zeros, the props are now listed in the desired order

Replace Text In Prop Names

This function gives you the ability to search for and replace text in prop names, just like you would in a word processor.

Here is an example of replacing the word "hoop" in the selected props with the word "arch". First we have filtered the list to show only props with the word "hoop" in their name, and then selected them all:



Before replacing text

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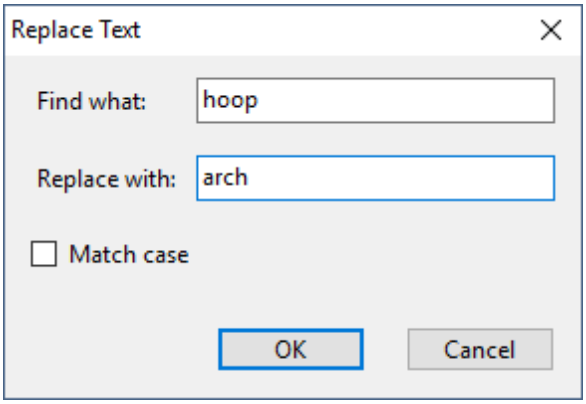
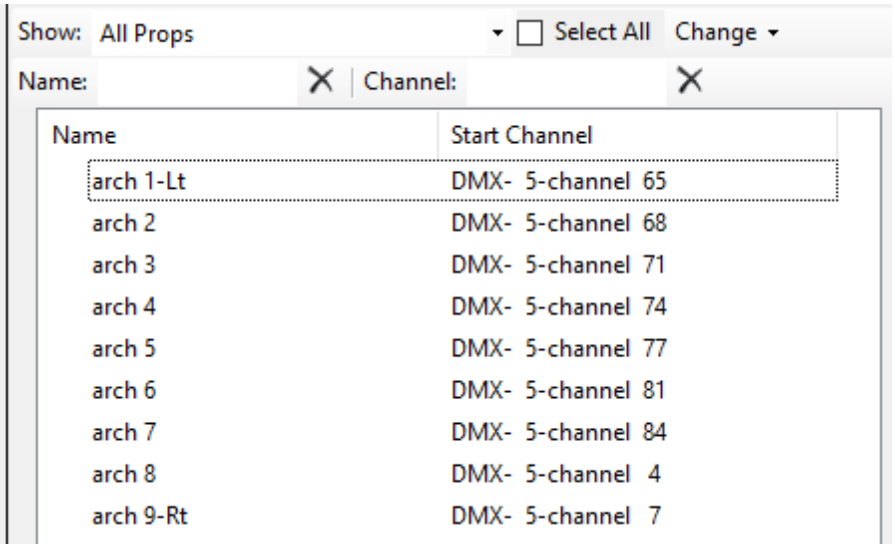
Next select Change > Replace Text In Prop Names from the menu (or right-click and choose it from the pop-up menu). A dialog window will open asking for the text to search for and the replacement text:



Replace "hoop" with "arch"

After clicking the OK button in the dialog window (and also clearing the name filter in this case), you will see the updated prop names:



After replacing text

Delete Props

The selected props will be permanently deleted from the preview. This can be useful if a preview contains items that are no longer needed and should be removed. Sometimes this situation can even be the source of channel conflicts.

5.3.4.3 Other Warnings Tab

The Other Warnings tab of the Preview Design window displays warnings that are not related to channel assignments. If there are warnings on this tab, any sequence that uses this preview cannot be played back while control lights is enabled. The tab will show a green check mark if everything is OK, and a warning sign if there are problems.

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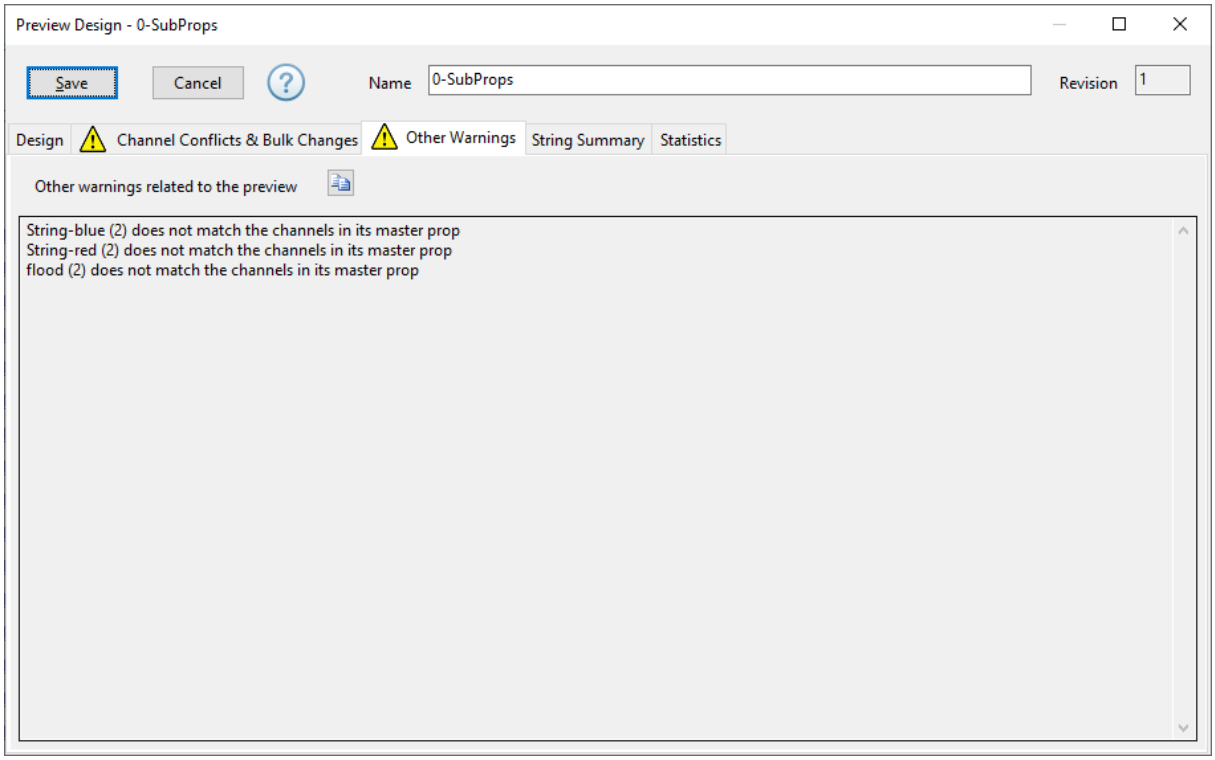
This is the third of 5 tabs on the Preview Design window. The others are:

- Design
- Channel Conflicts & Bulk Changes
- String Summary
- Statistics



The Other Warnings tab

Warning Messages

Possible warnings that can appear on this tab include:

- A sub-prop is not assigned the same channels as its master prop. If you change the channels assigned to a master prop, you will also need to update the channel assigned to its sub-props.
- A group has no members. Either add some members, or delete the group. On the Design tab, you can select Edit > Delete Groups With No Members to quickly accomplish this task.
- A group has a circular definition (it includes itself as a member).
- Two or more groups share the same name. Each group should have a unique name.
- Two or more props share the same name. Each prop should have a unique name.

5.3.4.4 String Summary Tab

The String Summary tab of the Preview Design window displays a table of all strings defined by every prop in the preview (props with device type "undetermined" are not included).

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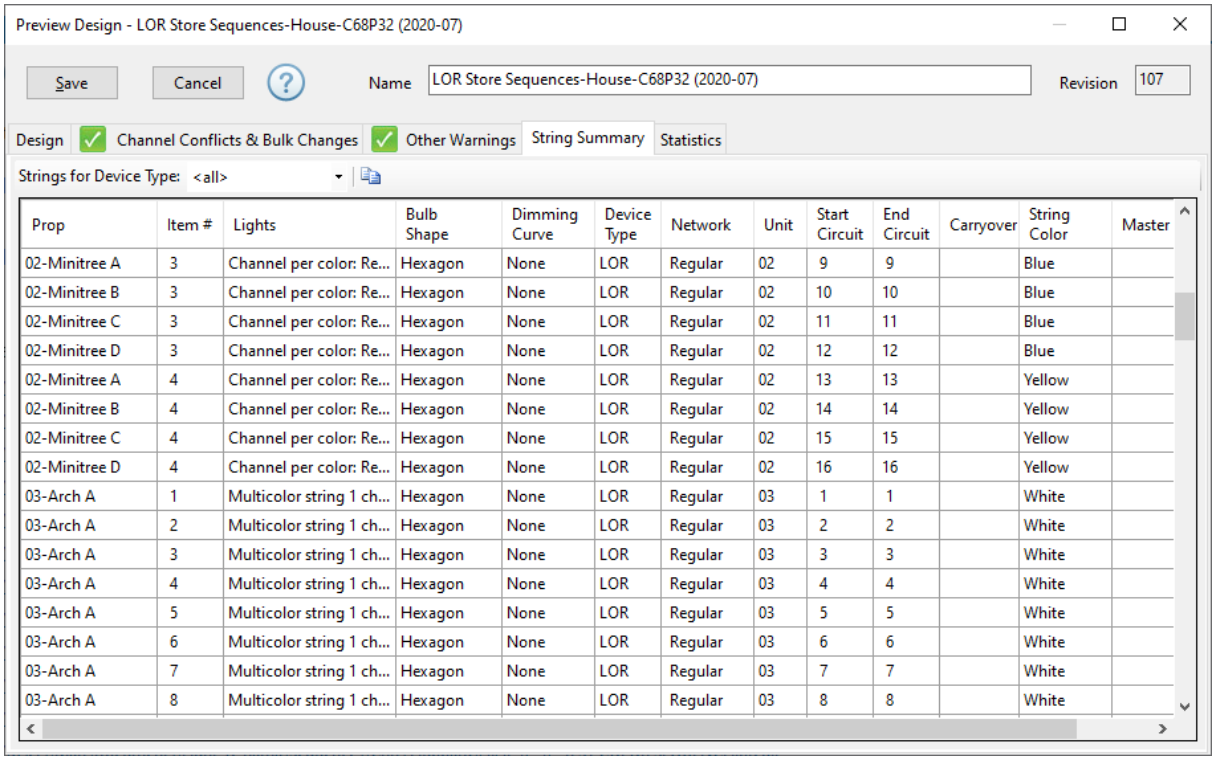
If you want a print-out of your props and channel assignments to carry with you as you wire up your display, you can use this table, copy it to the clipboard, and paste it into any spreadsheet program. In the spreadsheet you can sort and filter the data, add and remove columns, and print it out.

This is the fourth of 5 tabs on the Preview Design window. The others are:

- Design
- Channel Conflicts & Bulk Changes
- Other Warnings
- Statistics



Prop	Item #	Lights	Bulb Shape	Dimming Curve	Device Type	Network	Unit	Start Circuit	End Circuit	Carryover	String Color	Master
02-Minitree A	3	Channel per color: Re...	Hexagon	None	LOR	Regular	02	9	9		Blue	
02-Minitree B	3	Channel per color: Re...	Hexagon	None	LOR	Regular	02	10	10		Blue	
02-Minitree C	3	Channel per color: Re...	Hexagon	None	LOR	Regular	02	11	11		Blue	
02-Minitree D	3	Channel per color: Re...	Hexagon	None	LOR	Regular	02	12	12		Blue	
02-Minitree A	4	Channel per color: Re...	Hexagon	None	LOR	Regular	02	13	13		Yellow	
02-Minitree B	4	Channel per color: Re...	Hexagon	None	LOR	Regular	02	14	14		Yellow	
02-Minitree C	4	Channel per color: Re...	Hexagon	None	LOR	Regular	02	15	15		Yellow	
02-Minitree D	4	Channel per color: Re...	Hexagon	None	LOR	Regular	02	16	16		Yellow	
03-Arch A	1	Multicolor string 1 ch...	Hexagon	None	LOR	Regular	03	1	1		White	
03-Arch A	2	Multicolor string 1 ch...	Hexagon	None	LOR	Regular	03	2	2		White	
03-Arch A	3	Multicolor string 1 ch...	Hexagon	None	LOR	Regular	03	3	3		White	
03-Arch A	4	Multicolor string 1 ch...	Hexagon	None	LOR	Regular	03	4	4		White	
03-Arch A	5	Multicolor string 1 ch...	Hexagon	None	LOR	Regular	03	5	5		White	
03-Arch A	6	Multicolor string 1 ch...	Hexagon	None	LOR	Regular	03	6	6		White	
03-Arch A	7	Multicolor string 1 ch...	Hexagon	None	LOR	Regular	03	7	7		White	
03-Arch A	8	Multicolor string 1 ch...	Hexagon	None	LOR	Regular	03	8	8		White	

The String Summary tab

The Toolbar

Filter by Device Type

The drop-down box allows you to filter the list by Device Type, so you can view just the LOR devices or just the DMX devices.

Copy to Clipboard

You can use the copy button to copy the displayed information to the clipboard so that it can be pasted into a spreadsheet, where it can be sorted, filtered and printed. You can also do this by right-clicking on any cell in the grid and selecting "Copy grid to clipboard" from the pop-up menu.

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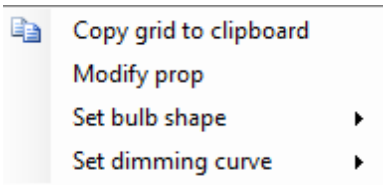
The Grid

You can sort the grid by any column by clicking on the heading for that column. Clicking on a column heading once will sort it in ascending order; clicking on it again will sort in the reverse order. Particularly useful is clicking on the Device Type column heading, as this will sort first by Device Type, then by Network, then by Unit, and then by Start Circuit giving you list ordered by physical connection (which makes a good reference).

Editing the Data



The right-click menu

You can make limited edits from this tab. First select some grid cells by:

- dragging the cursor across one or more cells, or
- click on one cell, then Shift-click on the last cell you want to selected

You do not need to select all columns, or a particular column.You are just designating which props will be altered. In other words, the rows you select are important, but the particular columns don't matter. Next, right-click on the selection and choose the action from the pop-up menu. This menu allows you to change the bulb shape or dimming curve for multiple props at once. Note that there is no "undo" function for these changes.

Select "Modify Prop" from the pop-up menu to open the item's Prop Definition screen. You can also do this by double-clicking on a cell .

5.3.4.5 Statistics Tab

The Statistics tab of the Preview Design window gives you statistics about the preview: number of props, groups, pixels, channels, etc.

This is the fifth of 5 tabs on the Preview Design window. The others are:

- Design
- Channel Conflicts & Bulk Changes
- Other Warnings
- String Summary

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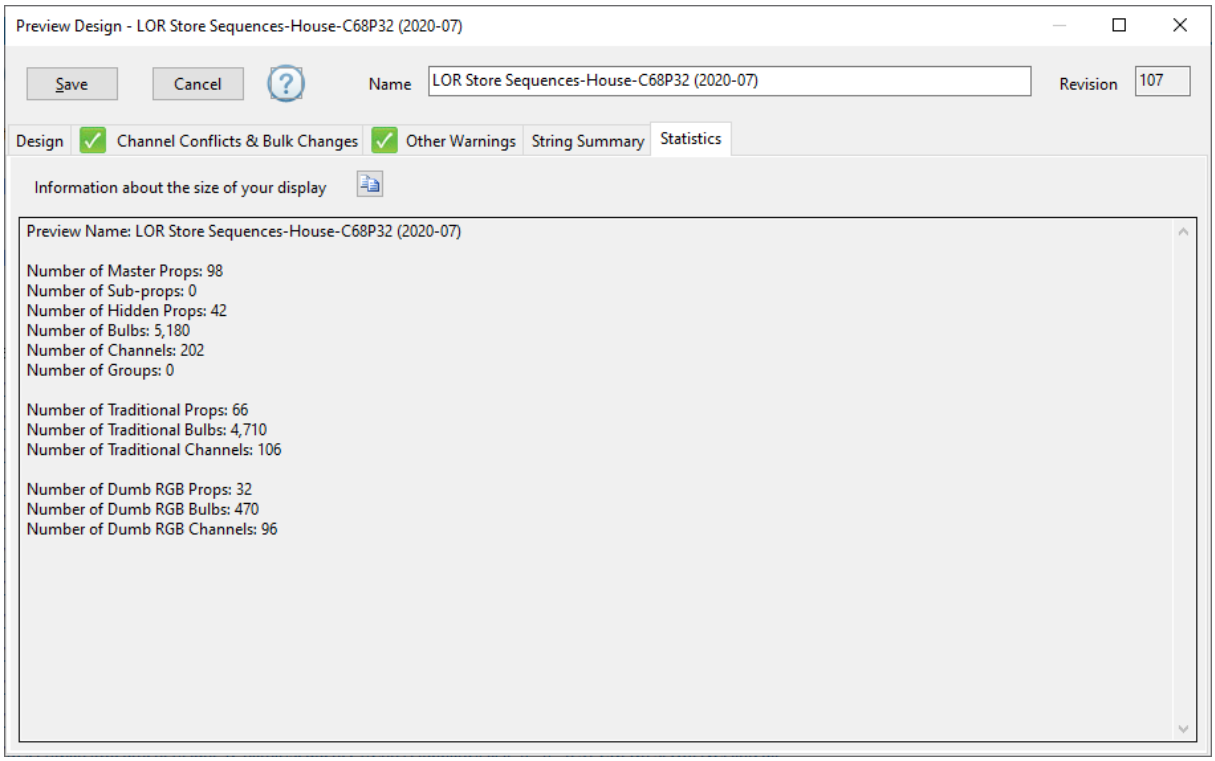

The Statistics tab

You can use the copy button to copy the displayed information to the clipboard so that it can be pasted into other applications.

5.3.4.6 Prop Definition

A prop in the Sequencer allows you to define a single item that is in your display. This item could be simple, like a string of lights, or a wreath; or it could be complex, like a pixel tree or matrix. For every prop, you assign it a name and then define the type of lights that it uses, its shape, and its assigned channel(s).

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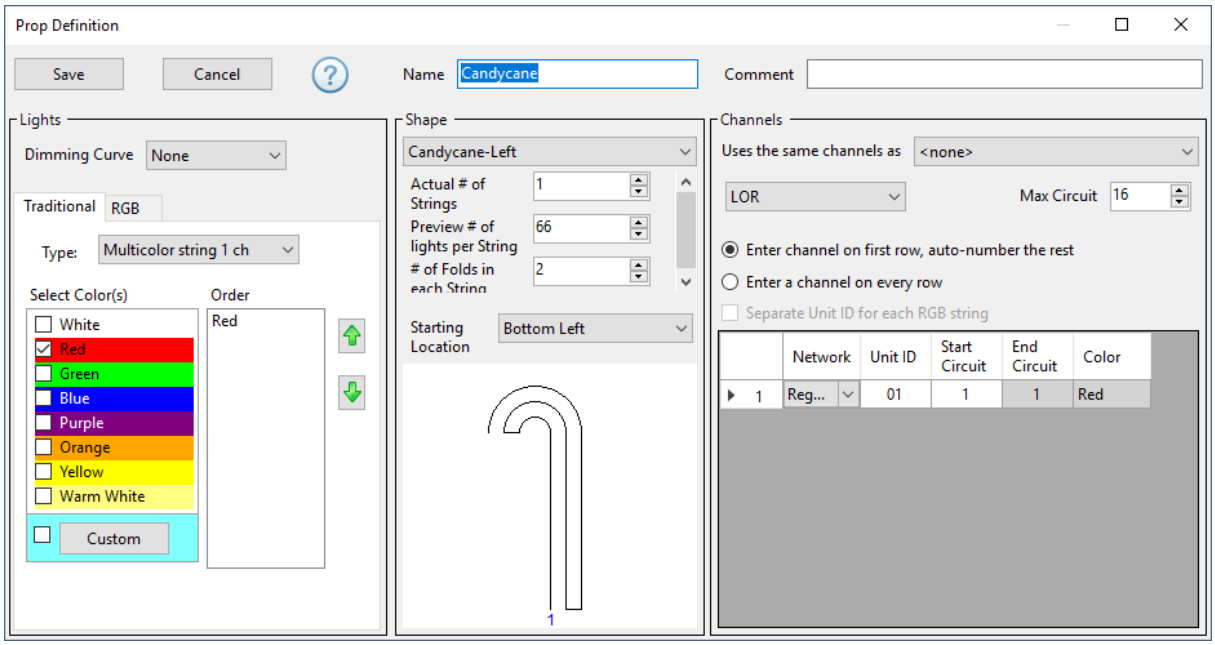

Name

Each prop must have a name. The name must be unique within the preview.

Comment

This is an optional field for you to make notes about this prop.

Lights Section

Use this section to define the types of lights your prop consists of.

Dimming Curve

Some controllers have the ability to apply dimming curves in the hardware. This setting allows you to apply a dimming curve in software, for controllers that do not have the capability or where that capability is disabled. You do not want to have dimming curves enabled in both software and in the controller.

- Use the Linear Curves for traditional lights. The percentage at the end of the curve name indicates the maximum brightness.
- Use the Pixel Curves for RGB pixels. The percentage at the end of the curve name indicates the maximum brightness.
- Use the Strobe Curve for strobes. It will prevent intermediate values (e.g. 50%) from reaching the string.

Traditional

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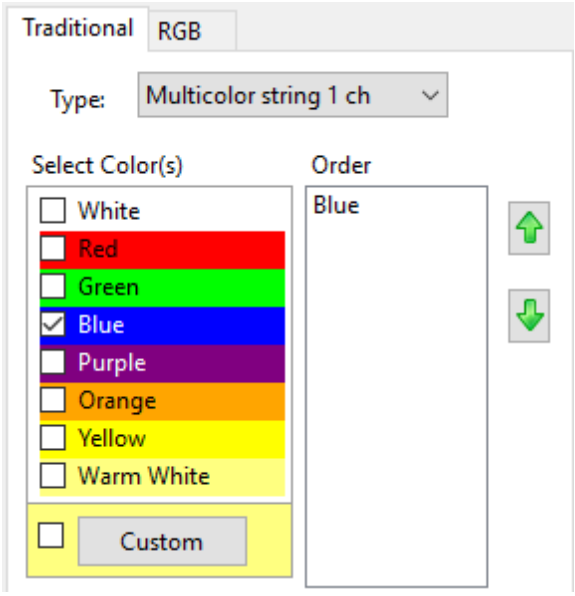
Choose the “Traditional” tab of the Lights section of the Prop Definition window to model:

- strings of LEDs or incandescent lights (single color or multicolor)
- strobe lights
- wire frames
- rope lights
- net lights
- single-color flood lights

Colors for your string are defined on the left. Click the “Custom” button to choose a custom color. By default, the custom color is close to an incandescent warm white bulb; however, you can change the default custom color by selecting "New prop defaults" from the Design Tab's Options Menu.



Set the “Type” drop-down as follows:

- Select “Multicolor string 1 ch” for single color strings or single color flood lights or a single string with various light colors. Choose the colors that make up the string.

- Choose “Channel per color” for bundles of single color strings (sometimes referred to as "superstrings"). Select color(s) for the strings on the left. For each color you choose, that color will show up in the “Order” list on the right. The Sequencer will assign one channel for each color that you choose. If the channels for these strings are numbered consecutively, it is recommended that you use the up and down arrows on the right-hand side to put the colors in the order that their channels are assigned (click on a color to select it, then use the arrow buttons to move it into the correct position). This way, the channels will be assigned correctly without any additional action.

RGB

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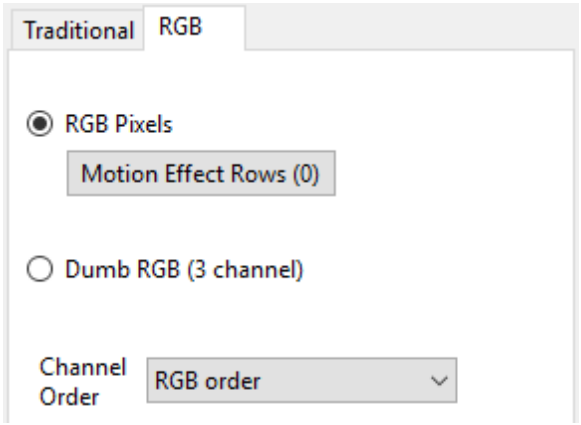

- Choose "RGB Pixels" for Light-O-Rama Cosmic Color Devices and any other pixel-based strips, nodes, bulbs, or panels.
- Use the "Motion Effects Rows" button to define default motion effect rows that will be incorporated into new sequences (this setting has no effect on existing sequences). The number in parentheses on the button reflects the number of default motion effect rows that have already been defined for the prop. The dialog for adding default motion rows to a prop works just the same way as the dialog for adding motion effect rows to an existing sequence. See the Motion Effect Rows Dialog topic for more information.
- Choose "Dumb RGB (3 channel)" for display elements that have a single red, green, and blue channel. This includes RGB floods and dumb RGB strips and nodes.
- The channel order should be set to reflect the way the red, green, and blue channels are physically wired. If you are unsure, this may take some experimentation. This setting applies to both RGB Pixels and Dumb RGB.

Shapes Section

Use this section to define how your prop looks on your computer screen during sequence playback. Defining the shape accurately is also very important for pixel-based props so that motion effects get displayed correctly.

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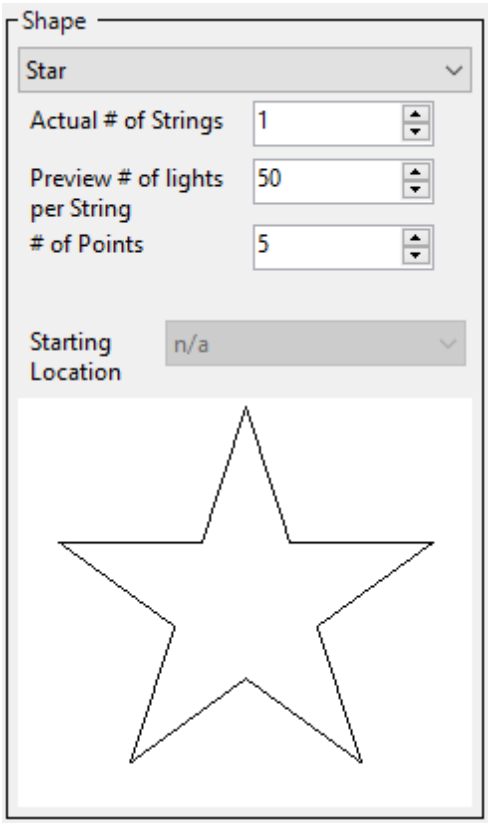

In the Prop Definition window, choose a shape that most closely matches your prop. Use "Lines-Connected", "Lines-Unconnected", "Lines-Closed Shape", or "Custom" to define a shape that isn't listed. Any shape can be resized and rotated, so you are not limited to the traditional orientation of the shape.

The description of the numerical entries in the middle of the shape section will change depending on the shape that is selected and type of lights (traditional, RGB pixels, or dumb RGB). Many shapes will require you to specify the number of lights in the prop (or in a section of the prop). For props with traditional or dumb RGB lights, this number can be an approximation -- set it to a value that looks good on your computer screen. For RGB pixels, the value must be the exact number of physical pixels.

At the bottom will be diagram of your shape primarily intended to show channel number orientation for props with multiple channels.

Channels Section

In the right-most section of the window you define the channels assigned to the prop. This section should be filled in last because the entries will change automatically based on the values you enter in the “Lights” and “Shape” sections. Take care to enter this information accurately, or your lights will not come on.

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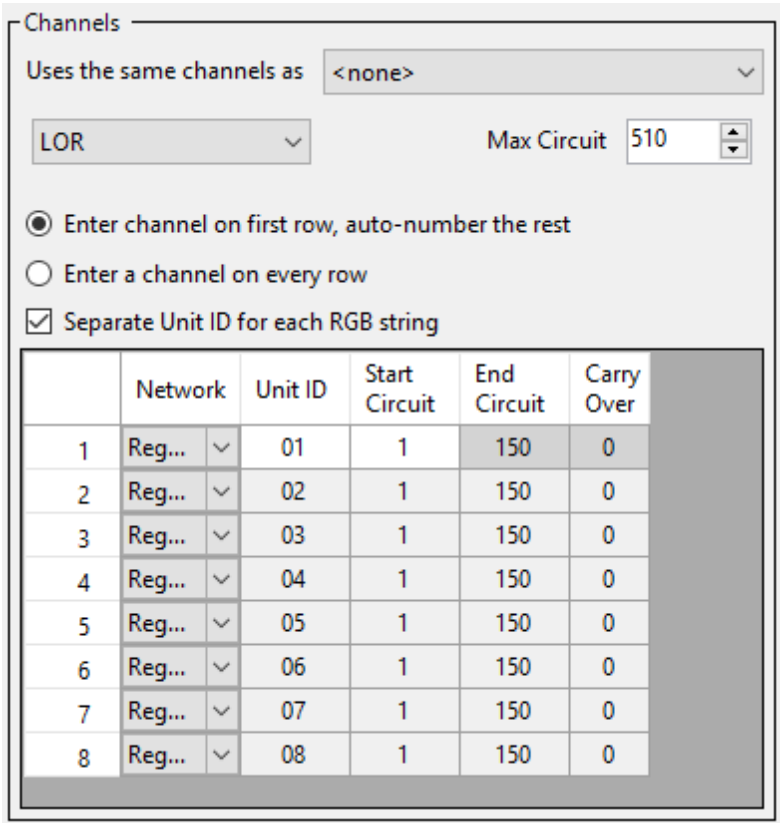

The Channels section (LOR device type)

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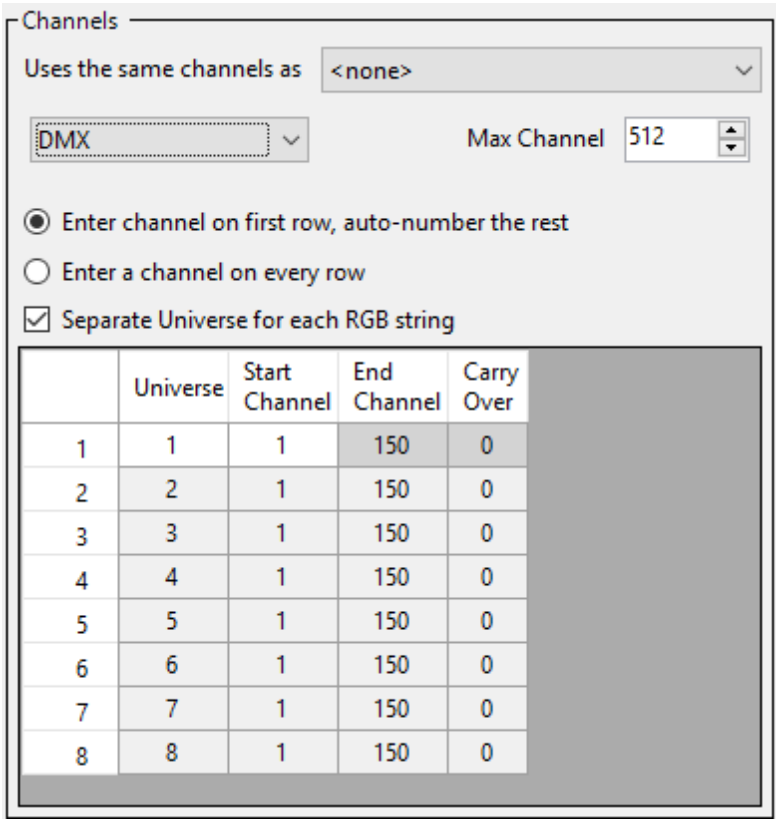

The Channels section (DMX device type)

Uses The Same Channels As

Normally, you can leave this field set to "<none>". However, if you connect more than one set of lights to the same channel, then you can create a "Master prop" and one or more "sub props" to model this configuration. For example, if you have several candy canes that are all connected to the same channel and turn on and off together, then you can create one candy cane as the Master Prop. The master candy cane will have the "Uses The Same Channels As" field set to "<none>" and it will appear in the sequence grid (as an example, assume this prop is named "Candy cane master"). The other candy canes will be "sub props" -- the "Uses The Same Channels As" field will be set to "Candy cane master" and the props will not appear in the sequence grid. In the Prop Definition for each of the sub-props, the channel section most specify one or more channels from the master prop.

Should you change the channel(s) assigned to the master prop, it is up to you to also update the related sub-props. If you fail to keep them synchronized, you will get a warning on the Other Warnings tab in Preview Design.

Device Type

Select the device type from the drop-down that matches your hardware.

- Use "LOR" for Light-O-Rama controllers using the Light-O-Rama protocol (or enhanced protocol). Note that the PixCon16 controller can use the Light-O-Rama protocol or E1.31 (DMX) protocol -- so your Device Type selection on the Prop Definition screen needs to match the way you have configured the controller..

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- Select "DMX" for controllers that connect via the E1.31 protocol over Ethernet or connect via a DMX USB adapter..
- A device type of "Undetermined" is available for situations where the device type is not known. With this device type, lighting effects will be displayed during playback on the computer screen, but the prop cannot control real lights.

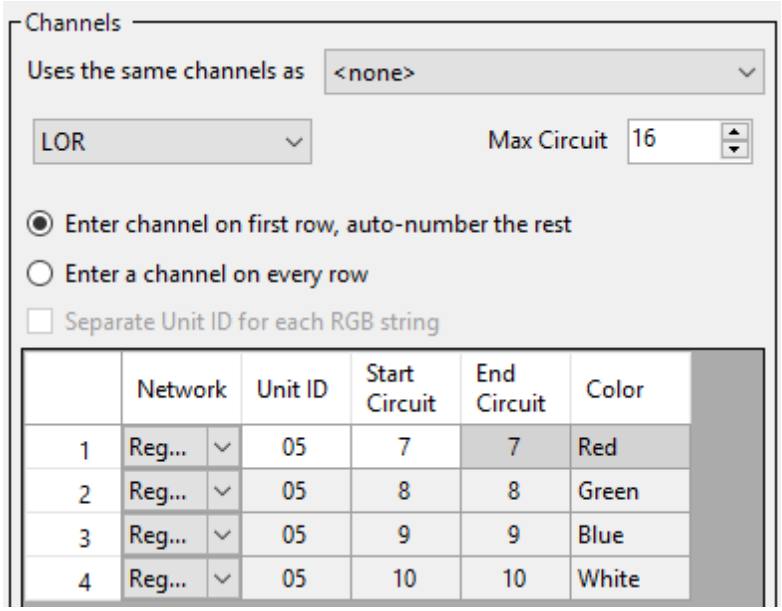
Max Circuit (or DMX Channel)

The number box at the top right defines how many channels are in each DMX universe or the maximum circuit number if LOR is selected. For DMX, you can leave this at the default value of 512, unless your pixel controller does not allow an RGB pixel to cross universe boundaries. In this case, set the DMX universe size to 510 (170 pixels per universe).

Channel Numbering

There are 2 options for channel numbering:

- **Enter channel on first row, auto-number the rest:** with this option, you must enter channel information for the first string only. Subsequent strings will be calculated automatically. This works well for many situations, but there are exceptions. For those exceptions you should use the second option.



This prop uses 4 consecutive channels

- **Enter a channel on every row**: with this option, you enter channel information for every string.

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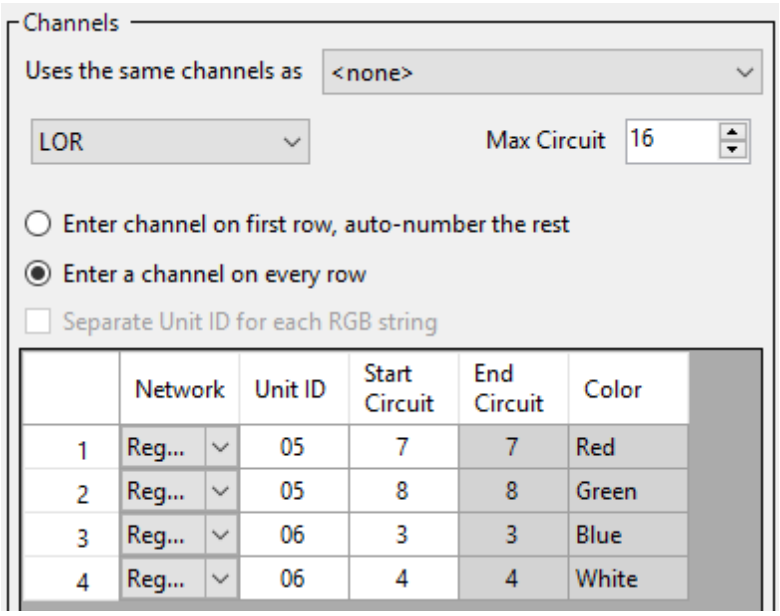

This prop uses 2 channels on controller 05 and 2 channels on controller 06

Separate Unit ID (or DMX Universe) for each RGB String

This check box will cause each string to start at circuit 1 of the subsequent Unit ID (or DMX Universe) from the previous row. If this box is unchecked, then each row starts from the last Unit ID and circuit from the previous row.

Channel Grid

It is very important that the values you enter in the channel grid match your controller settings. The values you enter depend on the device type that was selected:

- For LOR: enter the network (Regular, Aux A, etc), Unit ID as a hexadecimal value (01 to F0), and the circuit (between 1 and the Max Circuit)
- For DMX: enter the universe number (1 to 999) and channel (between 1 and the Max Circuit)
- For Undetermined: there is nothing to enter

Carryover Column

When defining pixel-based props, the last column in the channel grid will be labeled "Carry Over". In most cases, this column will contain a 0 in each row - meaning the channels required for that pixel string are less than or equal to the value in the Max Circuit/Channel field.

But let's say you have an E1.31-based pixel controller, such as the Light-O-Rama PixCon16, and you have 200 pixels connected to one port. 200 pixels requires 600 channels (200 * 3) which does not fit into a single DMX universe.

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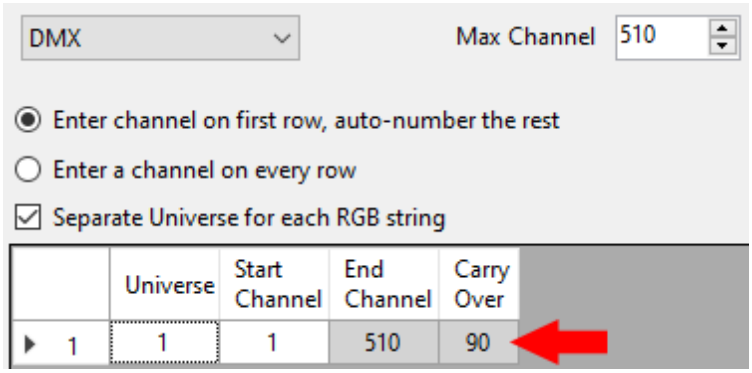
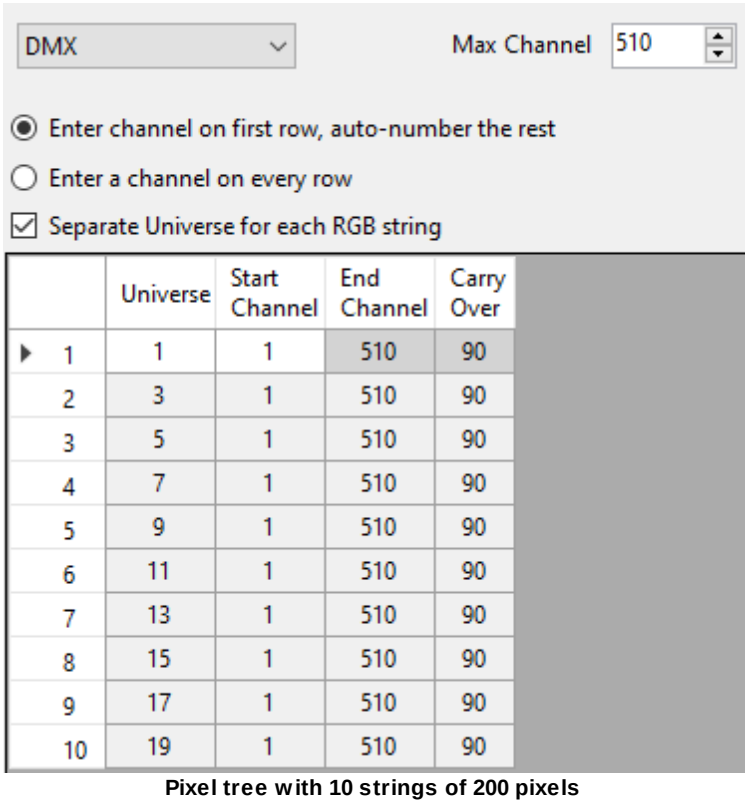


600 channels on a DMX pixel string

In this example, Max Channel is set to 510, so there are 90 channels that do not fit in universe 1 (600- 510 = 90). These 90 channels (the carryover) will be assigned to the next universe - 2 in this example.

Pixels	Universe	Channels
1 - 170	1	1 - 510
171 - 200	2	1 - 90

Now let's consider a more complex example. Let's say you have a pixel-based tree of 10 strings, with 200 pixels on each string. If you leave the box for "Separate Universe for each RGB string" checked, it is similar to the previous example:



Pixel tree with 10 strings of 200 pixels

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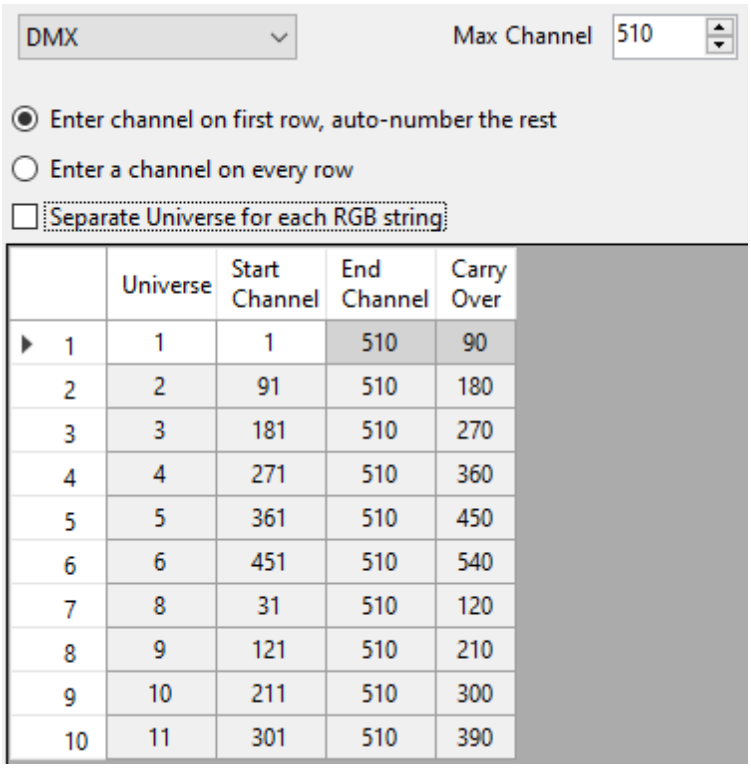
Notice how string #2 starts on universe 3. The Carryover column on row 1 tells us there 90 channels are already assigned to universe 2. Because we have "Separate Universe for each RGB string" checked, the next string must start on channel 1, and the next universe with channel 1 available is universe 3.

Pixels for String #2	Universe	Channels
1 - 170	3	1 - 510
171 - 200	4	1 - 90

What happens if we take the same example, but uncheck the "Separate Universe for each RGB string" box?



	Universe	Start Channel	End Channel	Carry Over
1	1	1	510	90
2	2	91	510	180
3	3	181	510	270
4	4	271	510	360
5	5	361	510	450
6	6	451	510	540
7	8	31	510	120
8	9	121	510	210
9	10	211	510	300
10	11	301	510	390

Pixel tree with 10 strings of 200 pixels

Now string #2 starts on the next available channel, which is universe 2 channel 91.

Pixels for String #2	Universe	Channels
1 - 140	2	91 - 510
141 - 200	3	1 - 180

What about the last string, string #10?

Pixels for String #10	Universe	Channels
1 - 70	11	301 - 510
71 - 200	12	1 - 390

The most important thing is that you configure the channels in this grid so that they match the settings in your controller!

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5.3.4.6.1 Prop Shapes

Prop shapes can be separated into 2 categories: freeform shapes which allow you to manipulate the shape directly; and scalable shapes, where the position of all of the individual light bulbs are fixed in relationship to one another.

For many shapes, you will specify a "starting location". This is the location of the first string or first pixel. The starting location may contain the abbreviations "CW" and "CCW".

- **CW** stands for "clockwise" and means the strings proceed in a clockwise direction when looking down from the top of the prop.
- **CCW** stands for "counter-clockwise" and means the strings proceed in a counter-clockwise direction when looking down from the top of the prop

These are the freeform shapes:

- Bulb Shape
- Icicle Shape
- Lines-Connected
- Lines-Unconnected
- Lines-Closed Shape
- Matrix-Horizontal-Quad
- Matrix-Vertical-Quad
- Advanced Shape

These are the fixed shapes:

- Arch
- Arch Opposing Strings
- Candycane-Left, Candycane-Right
- Circles Nested
- Custom
- Cylinder
- Cylinder spiral
- Fan
- Firestick
- Globe 8 Rows
- Hidden
- Matrix-Horizontal-Rectangle
- Matrix-Vertical-Rectangle
- Sphere
- Spokes
- Star
- Stars Nested
- Tree 90, 180, 270
- Tree 360 wedges
- Tree 360 tiers
- Tree 360 panels
- Tree 360 up&over
- Tree 360 spiral
- Window Frame
- Wreath

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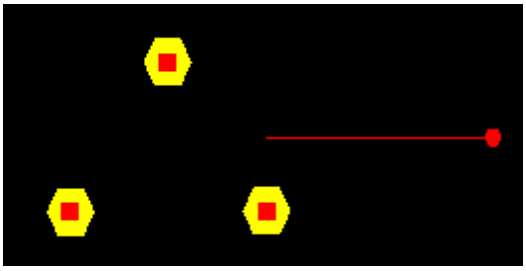
Freeform Shapes

Freeform shapes display handles that allow you to manipulate the shape directly. There are no scaling handles; if you wish to scale them you must use the Scale Tab or the Ctrl-UpArrow / Ctrl-DownArrow keyboard shortcuts. Also these shapes can be rotated, but they do not have a natural orientation so Format > Rotation > 0 has no effect.

Bulb Shape

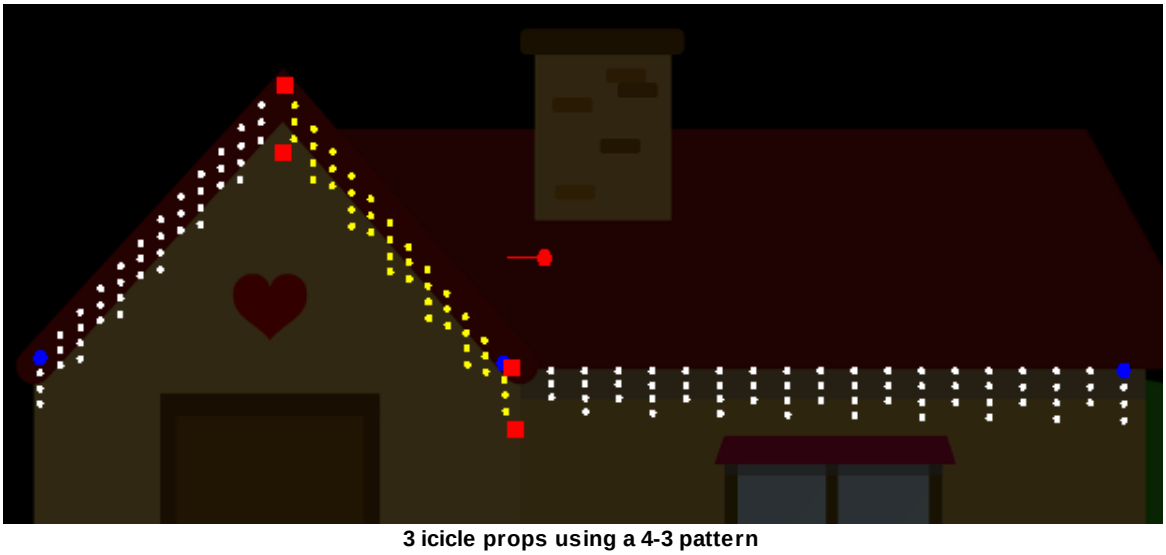
In a bulb shape, every light is displayed with a red handle, allowing each one to be moved independently of one another.



Bulb shape with 3 lights

Icicle Shape

The Icicle shape has 4 corners that can be dragged so that the icicles can follow a horizontal gutter or a sloped eave. This shape can be used to define icicle strings that use traditional lights (single color) or pixels (RGB). When defining the Icicle shape, you define the total number of drops on the string, and also the pattern of drops. For example, if the string has 15 drops, but the pattern is 3 pixels, then 4 pixels, then 5 pixels, you only need to define the 3-4-5 pattern once. The pattern will be repeated as many times as needed to fill the specified total number of drops. When defining the pattern, drops with a length of 0 are ignored.



3 icicle props using a 4-3 pattern

Lines-Connected

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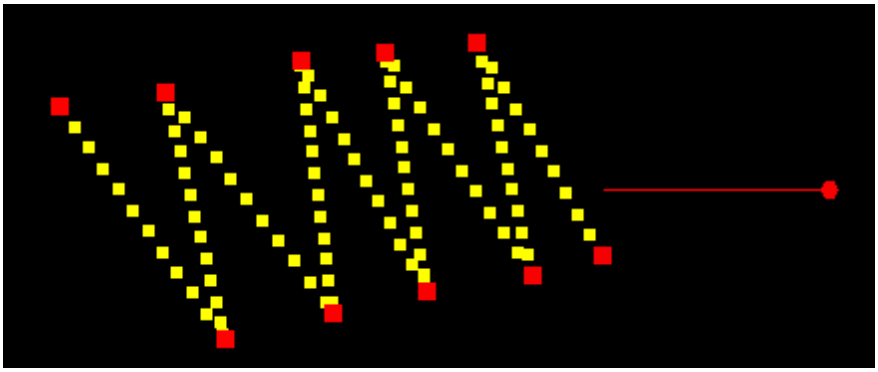
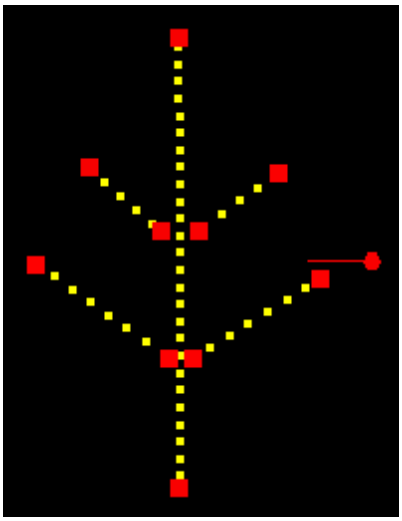
In a Lines-Connected shape, each vertex can be moved independently of one another. This makes it great for drawing regular strings of lights. You can draw a Lines-Connected shape interactively by right-clicking on the design canvas and selecting Draw New String from the pop-up menu.



Lines-Connected

Lines-Unconnected

In a Lines-Unconnected shape, the string is modeled as series of line segments, each of which can be moved independently of one another.



A Lines-Unconnected shape with 5 segments

Lines-Closed Shape

A Lines-Closed Shape is modeled as a polygon with each vertex movable.

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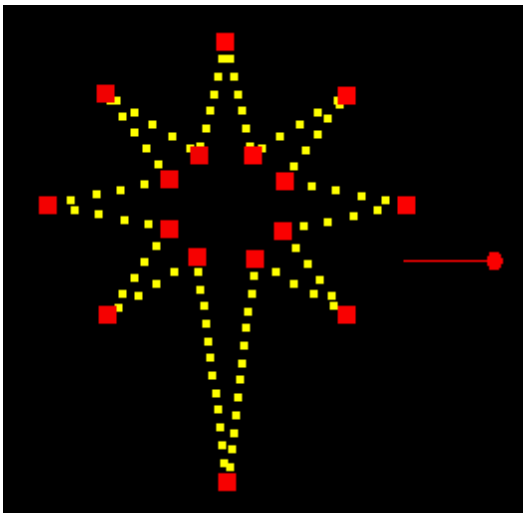
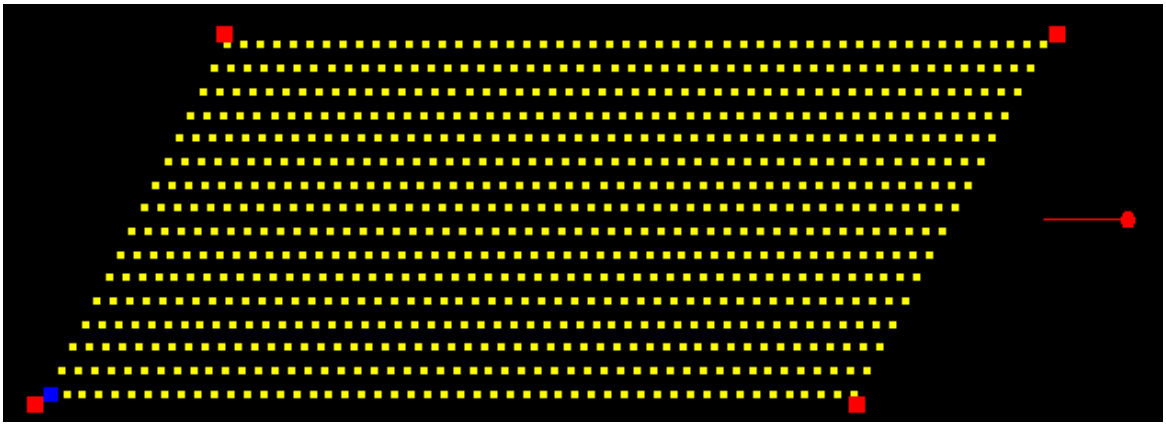


Lines-Closed Shape

Matrix-Horizontal-Quad

The Matrix-Horizontal-Quad shape is like the Matrix-Horizontal-Rectangle, except that the corners are movable.



Matrix-Horizontal-Quad shape

Matrix-Vertical-Quad

The Matrix-Vertical-Quad shape is like the Matrix-Vertical-Rectangle, except that the corners are movable. This shape is useful for creating "CCR Trees" like the one shown below. Two props, each with a Matrix-Vertical-Quad shape and 6 strings of 50 RGB pixels, are used to represent the ribbons.

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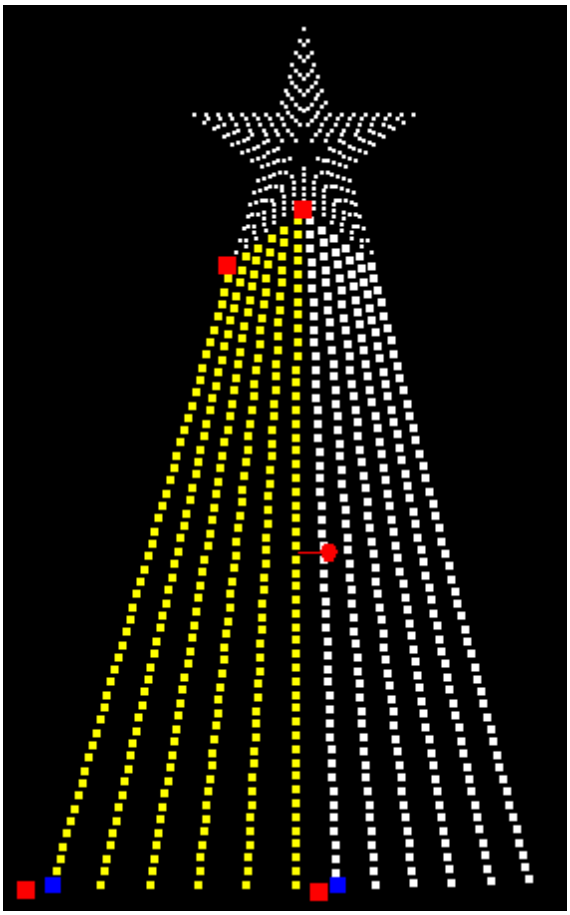

12 Ribbon CCR Tree

Advanced Shape

With an advanced shape you can move each individual pixel as needed by dragging them on the design canvas. When moving pixels you should enable the display of pixel numbers so you know which pixel you are moving.

You can also change how the pixels are arranged in the effects buffer by clicking the "Edit Advanced Buffer Layout" button. As the name implies, this is is an advanced function, but can be used to create pixel props that cannot be represented by other shapes.

In the next picture, a preview has been created with a background image of a snowflake. The pixels have been arranged (with pixel numbers showing) to match how the prop is wired.

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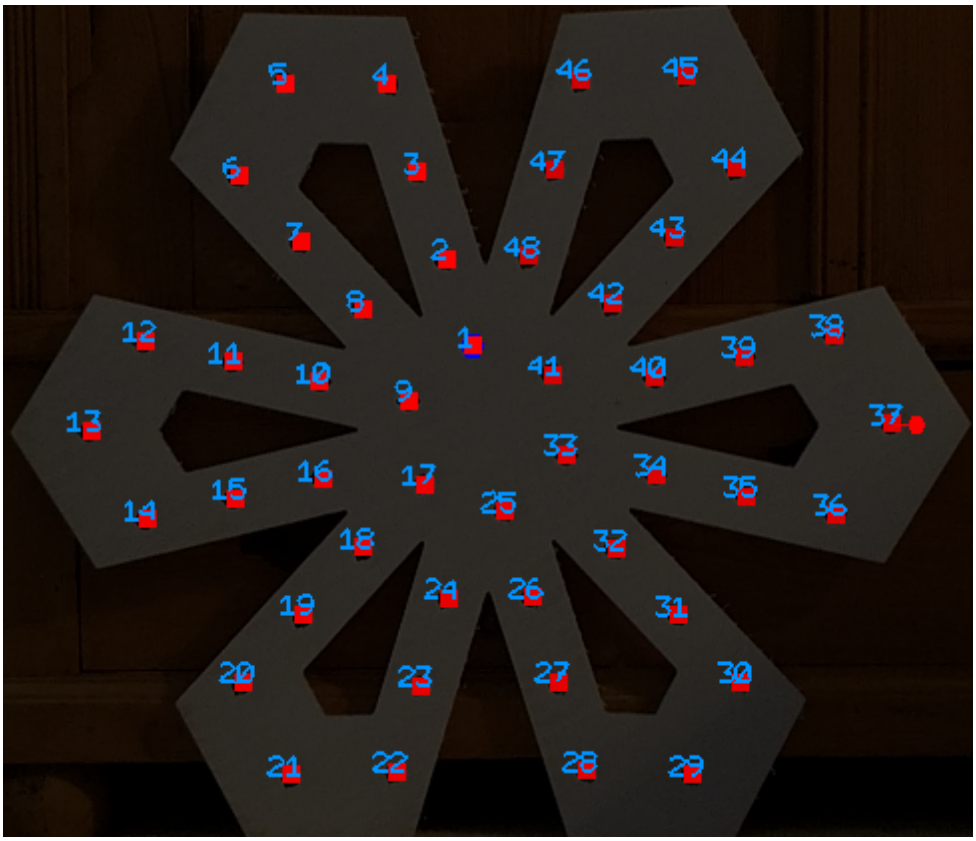

Snowflake prop with pixel numbers shown

Next, the buffer layout for the snowflake is defined such that each arm of the snowflake is 4 columns in the grid. Each number in the layout grid corresponds to the pixel number shown above. For help in using the buffer layout grid, see the Custom Shape Light Placement grid topic (it works the same way). With this buffer layout, motion effects that move left or right will go around the snowflake. Motion effects that move up will expand from the center, and effects the move down will go from the outside of the snowflake inward.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
▶ 1		45				37				29				21				13				5		
2	46		44		38		36		30		28		22		20		14		12		6		4	
3	47		43		39		35		31		27		23		19		15		11		7		3	
4	48		42		40		34		32		26		24		18		16		10		8		2	
5				41				33				25				17				9				1

The buffer layout for the snowflake

This preview contains just one prop; but this prop would be one of many in someone's display. So the final step would be to export this prop from this preview, and then import it into the preview containing the full display.

Fixed Shapes

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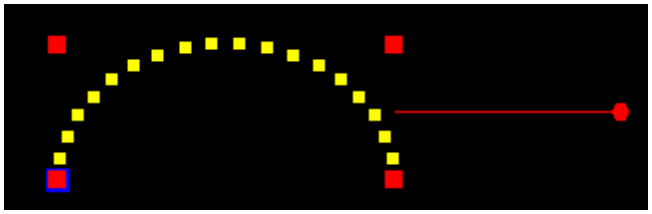
Every shape that is not a "freeform shape" is a "fixed shape" -- the position of all of the individual light bulbs within the shape are fixed in relationship to one another. Fixed shapes display scaling handles when selected -- you can drag any of the 4 red handles to make the prop bigger or smaller. These shapes also have a natural orientation, so you can use Format > Rotation > 0 to reset the prop to that orientation.



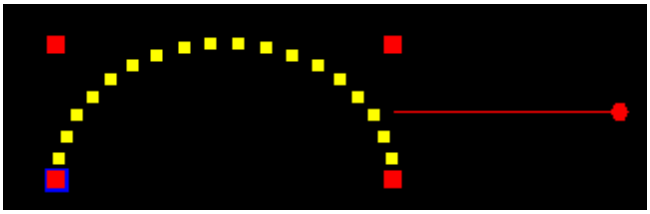
Selected prop showing 4 scaling handles and a rotation handle

Arch

The arch shape can be used for:

- an arch with traditional light strings
- a segmented arch with traditional light strings
- a pixel-based arch

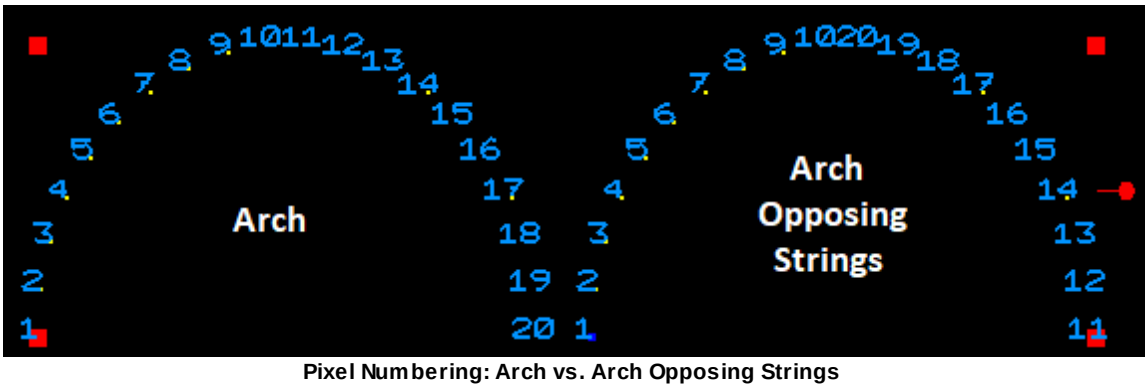
The arch shape prompts for the number of segments. This value should be set to 1, unless you are modeling a segmented arch with traditional light strings.



Arch shape

Arch Opposing Strings

The "Arch Opposing Strings" shape is intended for large, pixel-based arches that have controllers on both sides of the arch. The pixel strings run up both sides and meet at the top of the arch.



Pixel Numbering: Arch vs. Arch Opposing Strings

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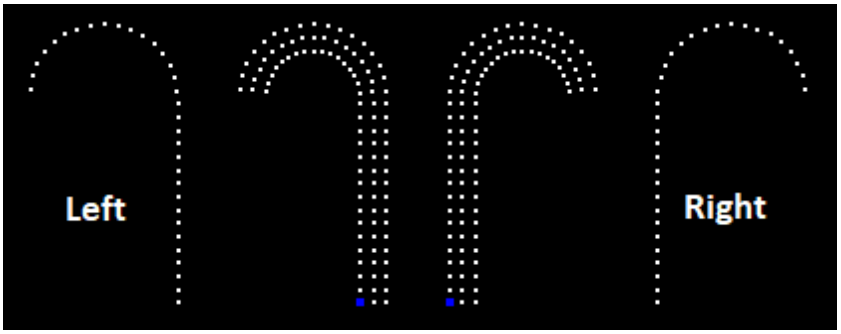
Candycane-Left, Candycane-Right

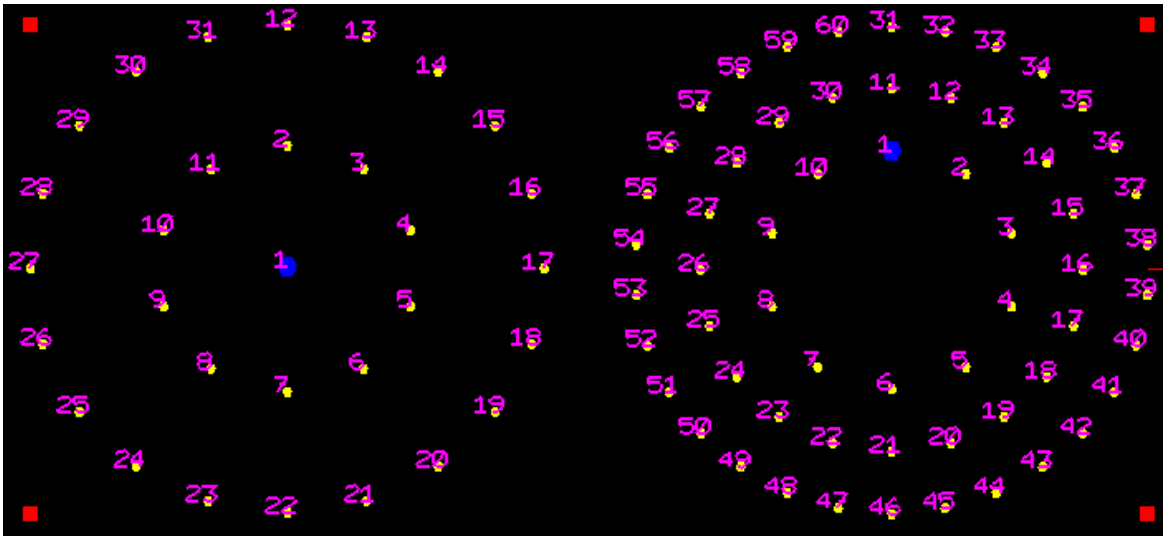
These shapes can be used to represent candy-canes of various sizes. When used with multiple columns of pixels, the pixel strings are assumed to be run vertically.



Candy-cane shapes

Circles Nested

The "Circles Nested" shape allows you to model concentric rings as might be used in a wreath. When creating the prop, you specify the number of lights in each ring - each ring can be different. The center ring can have a single light if desired, as shown in the example on the left. When used with pixels, the prop is assumed to be wired ring by ring - see the pixel numbers in the examples below. If your prop is wired in a zigzag pattern inside to outside or vice versa, then use the wreath shape instead.



Circles Nested shapes

Custom

A custom shape allows you to define where the lights are using a grid. If you are using traditional lights, you will have more flexibility defining your prop by using one of the freeform shapes. However, for pixel-based props, a custom shape can be an easy way to define the arrangement of those pixels. See the Custom Shape Light Placement topic for more information using the grid to define your custom prop.

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Here is an example of a candy cane defined using a custom shape with traditional strings.

- a "1" in a grid cell identifies lights on the first string
- a "2" in a grid cell would identify lights on the second string
- a "3" in a grid cell would identify lights on the third string, and so on

	A	B	C	D
1		1	1	
2	1			1
3				1
4				1
5				1
6				1
7				1
8				1
9				1
10				1

Custom Candy Cane-Traditional Lights

Next is an example of a candy cane defined using a custom shape with pixels.

- "1" in a grid cell identifies the first pixel of the first string
- "2" in a grid cell identifies the second pixel of the first string, and so on up to 999
- "1001" in a grid cell identifies the first pixel of the second string
- "1002" in a grid cell identifies the second pixel of the second string, and so on up to 1999
- "2001" in a grid cell identifies the first pixel of the third string
- "2002" in a grid cell identifies the second pixel of the third string, and so on up to 2999

The next example shows 1 string of 12 pixels.

	A	B	C	D
1		11	10	
2	12			9
3				8
4				7
5				6
6				5
7				4
8				3
9				2
10				1

Custom Candy Cane-Pixels

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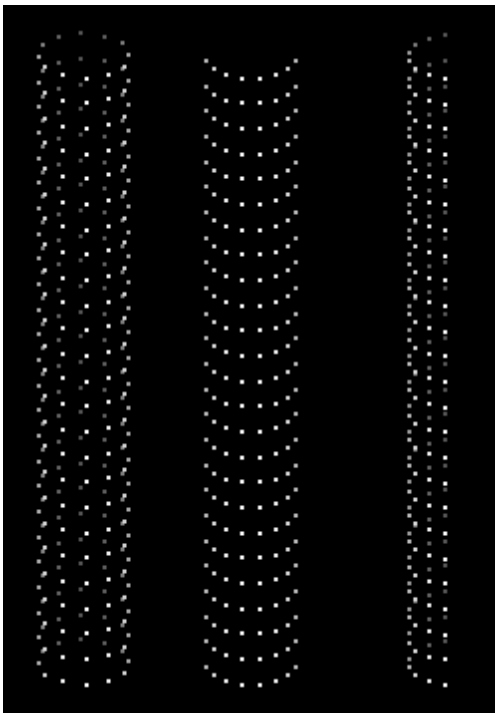
Cylinder

The cylinder shape allows you to model lights placed on a column. The lights can go completely around the column, or you can specify 1/4, 1/2, or 3/4 coverage. If you choose partial coverage, be sure choose the Starting Location entry carefully. When used with pixels, the pixel strings are assumed to run vertically. Lights facing away from the viewer are shown at a lower intensity in the preview; however, this does not affect the actual lights.



The column shape: 1 full coverage, and 2 half coverage examples

Cylinder spiral

The Cylinder Spiral shape models one or more strings wrapped around a column. Lights facing away from the viewer are shown at a lower intensity in the preview; however, this does not affect the actual lights.

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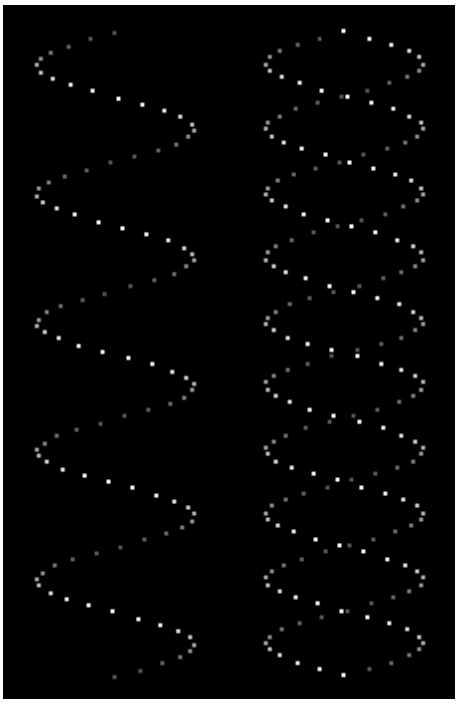
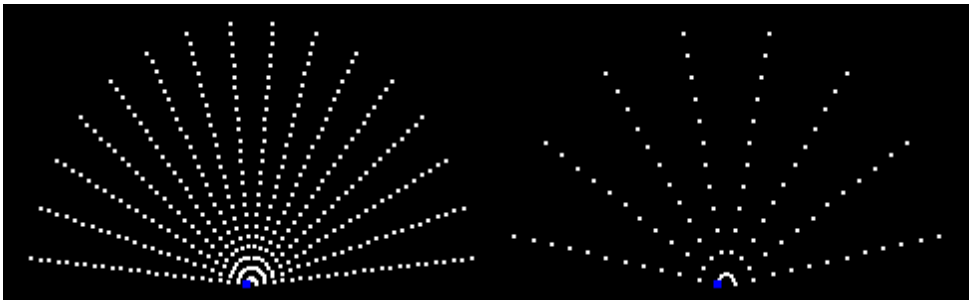


Cylinder Sprial Shapes with 1 and 2 strings

Fan

The fan shape models a 180 degree fan.



2 fan shapes with differing numbers of lights

Firestick

The firestick shape models a single vertical column of lights. When used with pixels, the "# of Sections" parameter should be set to 1.

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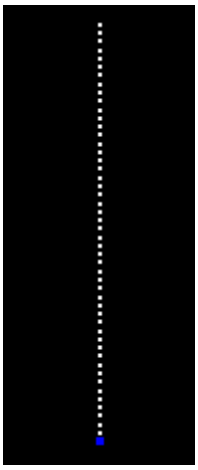
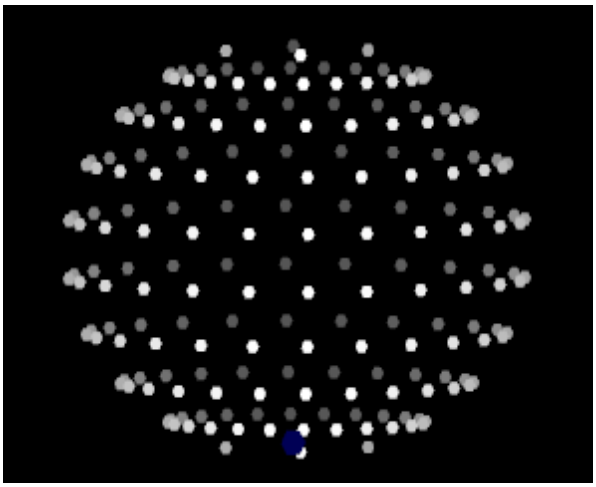


Firestick Shape

Globe 8 Rows

The Globe 8 Rows shape models the spherical tree-topper sold by SuperStar lights. However, you could also use the shape with traditional lights to model a single-color sphere. The number of lights on this shape is fixed at 200. Lights facing away from the viewer are shown at a lower intensity in the preview; however, this does not affect the actual lights.



The Globe 8 Rows shape

Hidden

Use the Hidden shape to model items that are assigned channels but don't have any lights. This could include macro channels on Light-O-Rama's Cosmic Color Ribbons, or control channels on a DMX fixture.

Matrix-Horizontal-Rectangle

The Matrix Horizontal Rectangle shape models a set of lights arranged in a rectangle, where the strings run horizontally. If the matrix needs to be skewed in some way, use the Matrix Horizontal Quad shape instead. When modeling a pixel string on a gutter or eave, use this shape with the number of strings set to 1.

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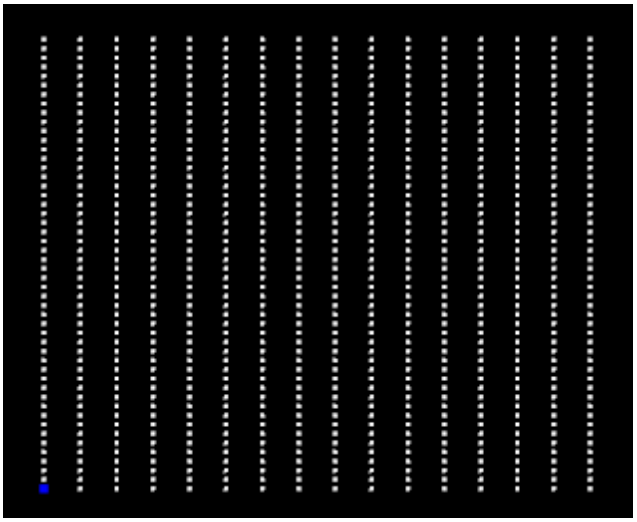
A Matrix Horizontal Rectangle shape with 16 strings

Matrix-Vertical-Rectangle

The Matrix Vertical Rectangle shape models a set of lights arranged in a rectangle, where the strings run vertically. If the matrix needs to be skewed in some way, use the Matrix Vertical Quad shape instead.



A Matrix Vertical Rectangle shape with 16 strings

Sphere

The cylinder shape allows you to model lights placed on a spherical object. The lights can go completely around the sphere, or you can specify 1/4, 1/2, or 3/4 coverage. If you choose partial coverage, be sure to choose the Starting Location entry carefully. When used with pixels, the pixel strings are assumed to run vertically. Lights facing away from the viewer are shown at a lower intensity in the preview; however, this does not affect the actual lights.

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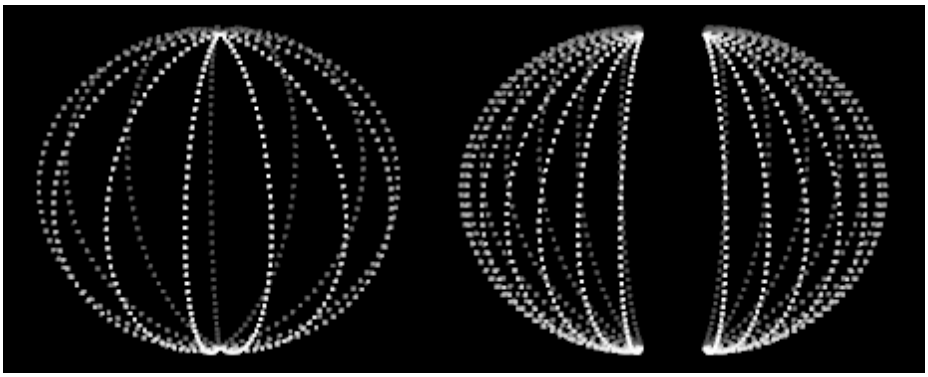
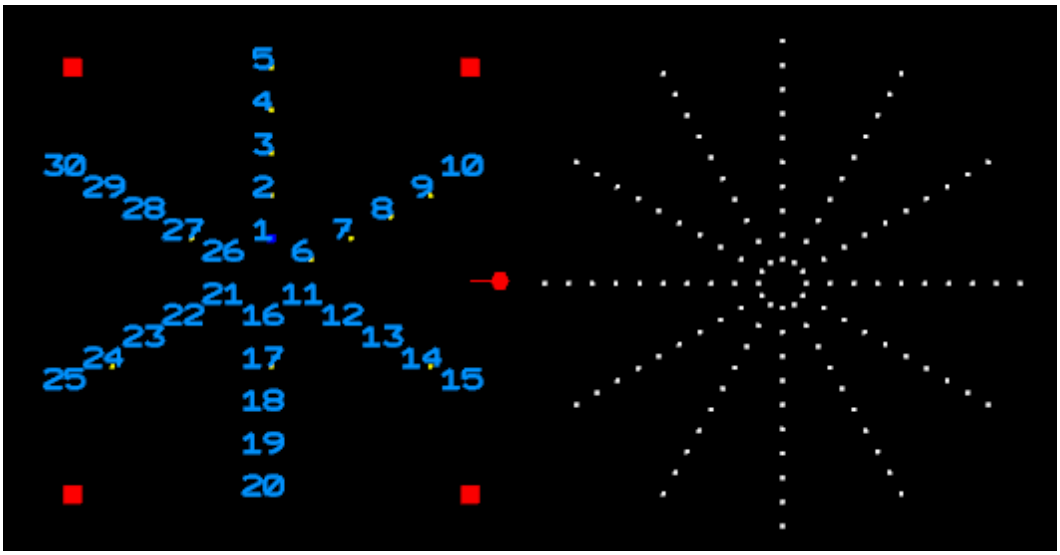


The sphere shape: 1 full coverage, and 2 half coverage examples

Spokes

The spokes shape models strings radiating from a central point. Wiring for all spokes is assumed to originate from the center, as illustrated by the pixel numbers in the picture below. If wiring for your pixel-based spokes alternates outside-in then inside-out, use the wreath shape instead.



The Spokes shape: 6 spokes with pixel numbers on the left, 12 spokes on the right

Star

The Star shape can model a single star with any number of points.

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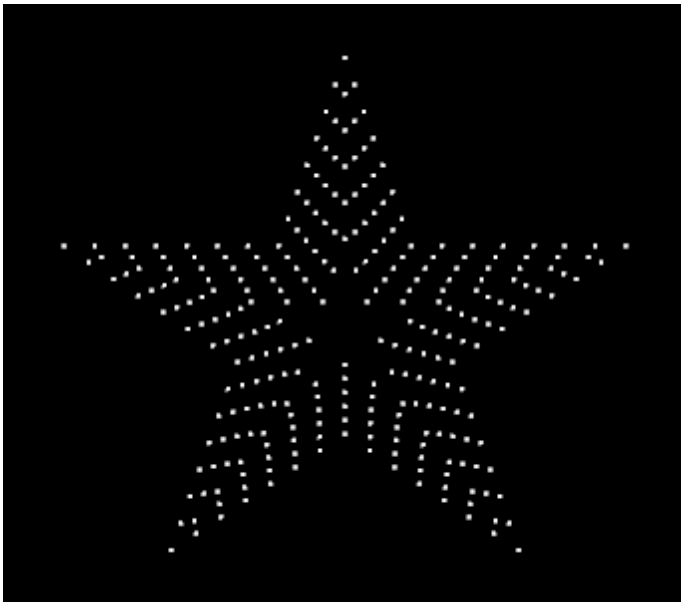
4, 5, and 6-pointed stars

Stars Nested

The Stars Nested shape models 5-pointed stars that are nested one within the other. Up to 10 nested stars are supported (versions prior to 5.5.0 were limited to 6 nested stars). It looks best when the number of lights in each star is divisible by 10.



The Stars Nested shape

Tree 90, 180, 270

These shapes model trees that are not a complete circle. Whether you choose 90 degrees, 180 degrees, or 270 degrees is a matter of preference - how it looks on the preview -- it does not change the effects on the actual lights. Strings are assumed to run vertically up and/or down the tree.

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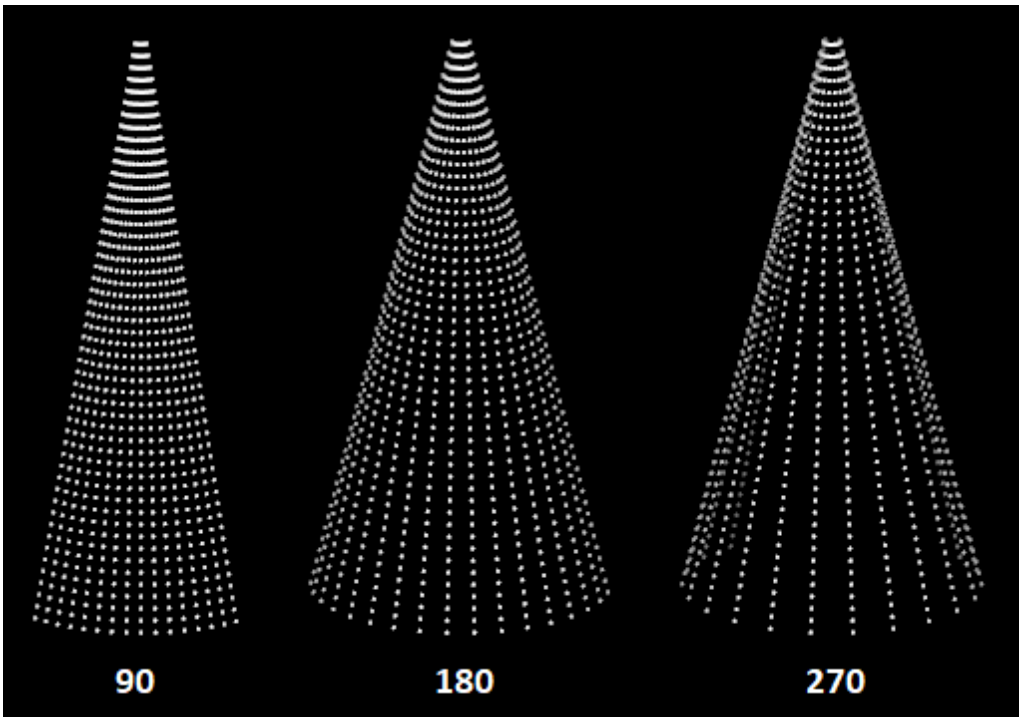

90, 180, and 270 degree trees

Tree 360 wedges

The Tree 360 Wedges shape models the most common type of lighted tree -- one where all sides of the tree are lit. Strings are assumed to run vertically up and/or down the tree. Lights facing away from the viewer are shown at a lower intensity in the preview; however, this does not affect the actual lights.

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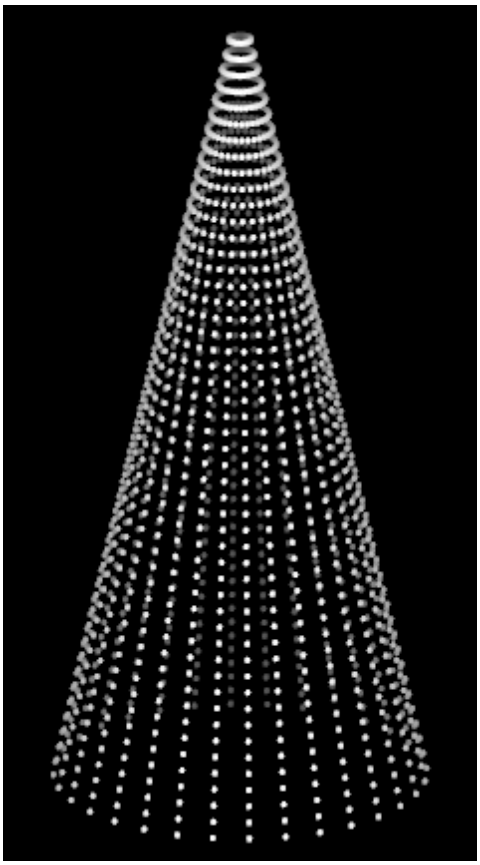

The Tree 360 shape

Tree 360 tiers

The Tree 360 Tiers shape divides the tree into layers and is sometimes referred to as a "z tree". Each layer is activated by a different channel. This shape does not support pixels.

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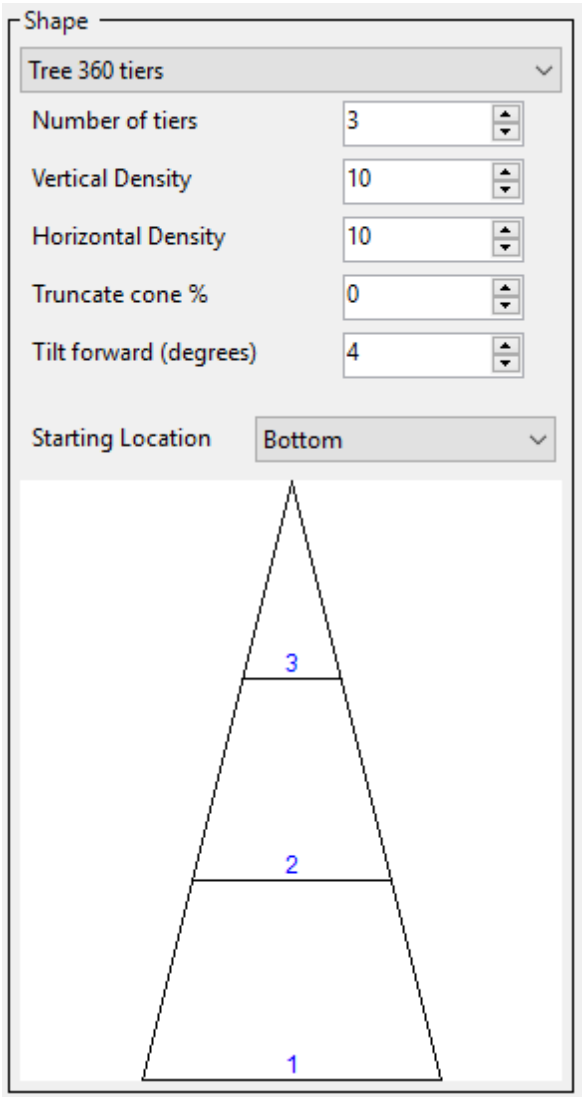

Tree 360 Tiers shape parameters and diagram

Tree 360 panels

Commercial trees are often built with panels or branches that are placed around each layer of the tree. When creating a panel tree you:

1. define the arrangement of lights on a single panel, and then
2. specify how many panels there are on each layer of the tree.

There is a limit of 999 lights per panel.

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Tree 360 up&over

In a Tree 360 Up & Over shape, a string of lights goes up one side of the tree and down the opposite side. Lights facing away from the viewer are shown at a lower intensity in the preview; however, this does not affect the actual lights.

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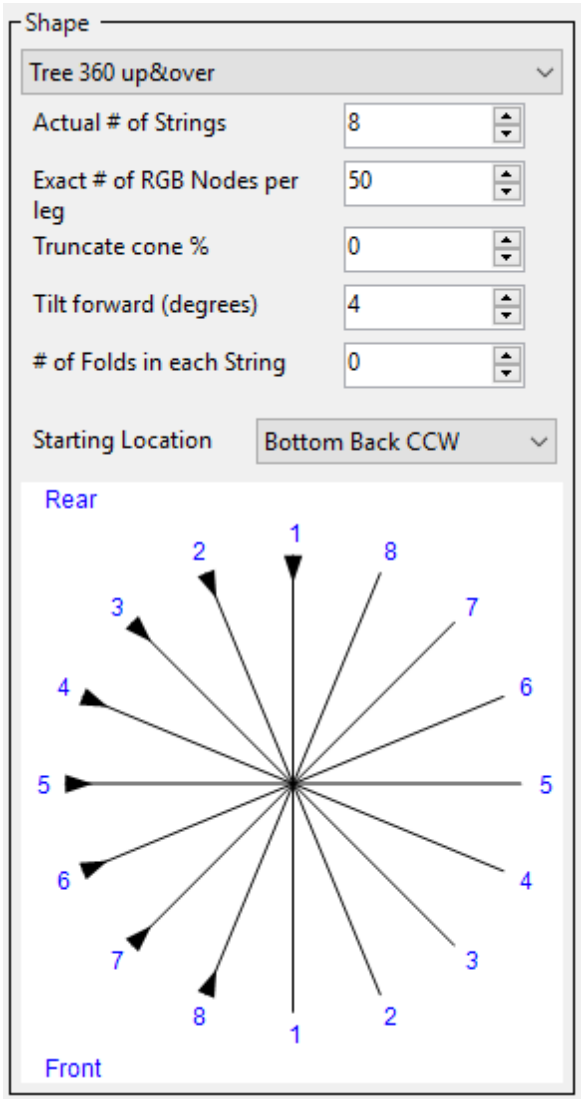

Tree 360 Up & Over shape parameters and diagram. The diagram is a view from the top.

Tree 360 spiral

Tree 360 Spiral shapes model a tree where the strings spiral up around the outside of the tree. The "revolutions" parameter can be positive or negative -- the sign controls the direction of the wrapping. Lights facing away from the viewer are shown at a lower intensity in the preview; however, this does not affect the actual lights.

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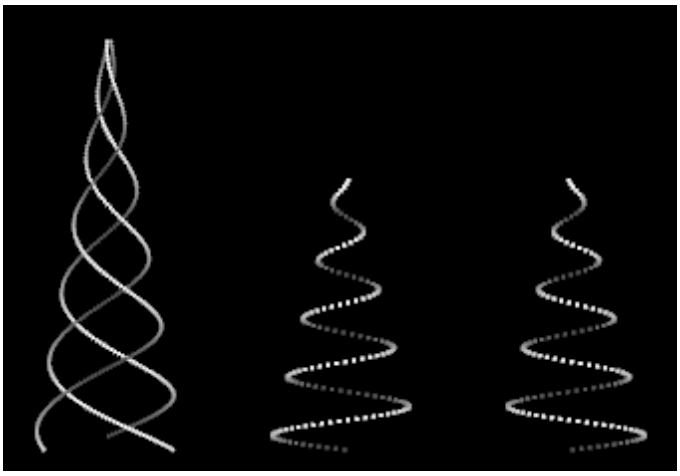
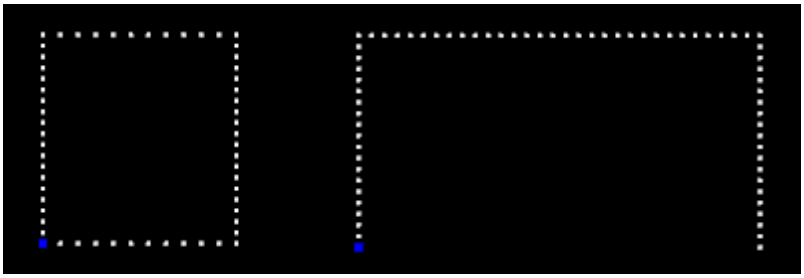


Spiral Trees: 1 with 3 strings, and 2 with 1 string

Window Frame

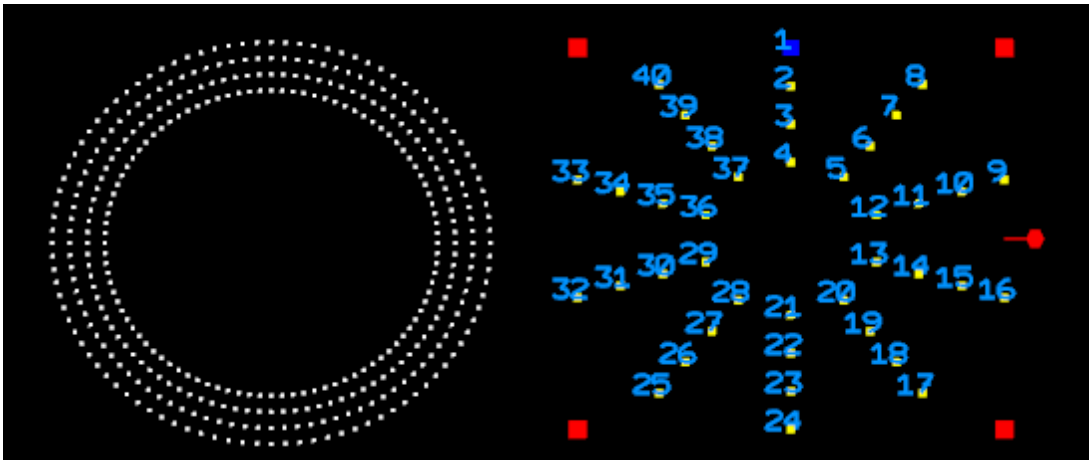
You can use the Window Frame shape to model windows and doors. When modeling a door, set the "# of lights at the bottom" to 0.



Using the Window Frame shape to model a window and a garage door

Wreath

Use the Wreath Shape to model any circular prop. When used with pixels, the pixels are assumed to be wired outside to inside, and then continuing back to the outside, then inside, etc. If your pixel prop is wired a ring by ring, then use the Circles Nested shape instead.



2 Wreaths, one with pixel numbers displayed

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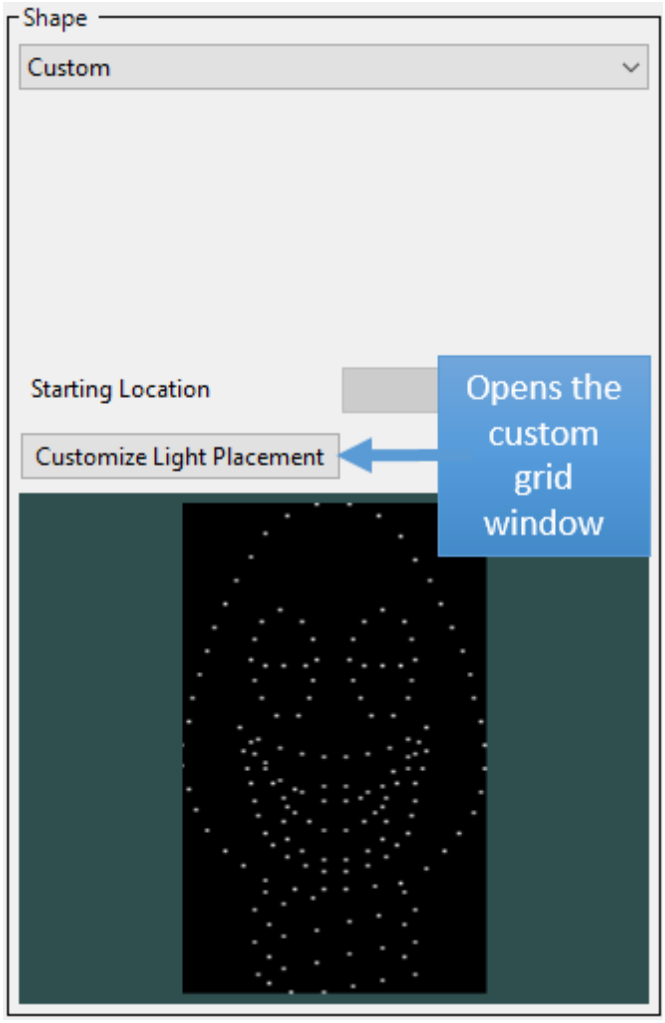
5.3.4.6.2 Custom Grid

When using a Custom shape, Advanced shape, or Tree 360 Panels shape on the Prop Definition window you will click a button to open the Custom Grid Window:

- For a Custom shape, you are using the grid to define the placement of your lights.
- For an Advanced shape, you are using the grid to define the placement of pixels in the effect buffer.
- For a Tree 360 Panels shape, you are defining the location of lights on a single panel.



Button that opens the Custom Grid Window

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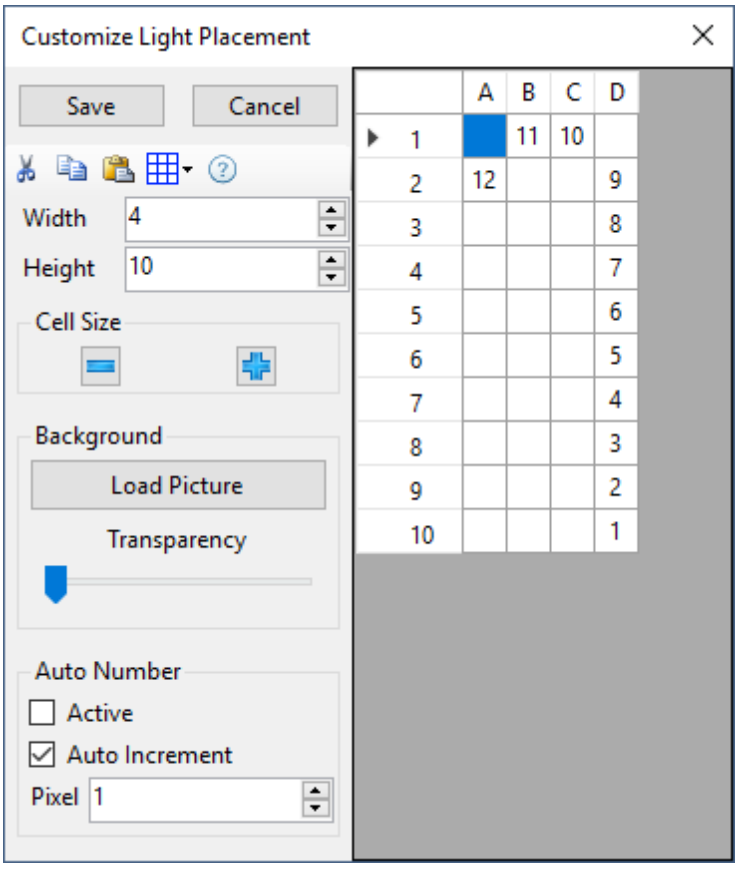

Custom Grid Window

Entering Grid Data

To define the shape, place a number in each cell where there is a light or pixel. A number can be entered into a cell by:

- Clicking on a cell and entering the number using the keyboard
- Using the cut, copy, and paste buttons
- Using the auto-numbering feature

Traditional & Dumb RGB Lights

For props that use traditional strings or dumb RGB lights, the number you enter in the custom grid is the string number. So if you were defining a candy cane made using a single incandescent string or a single dumb RGB string, then all of the numbers in the grid would be “1”, as in the picture below.

If this prop had a second string connected to another channel, you would use the number "2" to represent that string.

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	A	B	C	D
1		1	1	
2	1			1
3				1
4				1
5				1
6				1
7				1
8				1
9				1
10				1

Custom Candy Cane-Traditional Lights

RGB Pixels

The picture below shows a candy cane with 12 RGB pixels. For RGB pixels, the number you enter is the pixel number: 1 for the first pixel, 2 for the second pixel, etc.

	A	B	C	D
1		11	10	
2	12			9
3				8
4				7
5				6
6				5
7				4
8				3
9				2
10				1

Custom Candy Cane-Pixels

Multiple Pixel Strings

When you have multiple strings of RGB pixels: numbers 1-999 represent pixels on the first RGB string; 1001-1999 represent pixels on the second RGB string; 2001-2999 represent pixels on the third RGB string, etc. You cannot represent a string with more than 999 pixels when using a Custom shape, Advanced shape, or Tree 360 Panels shape.

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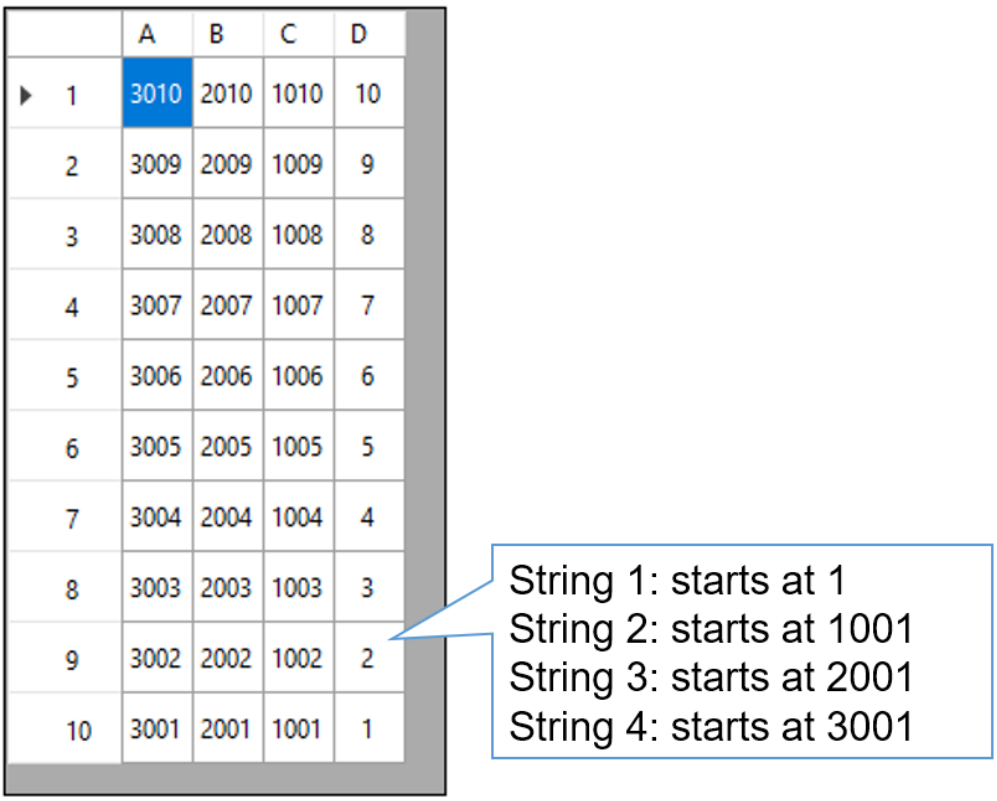


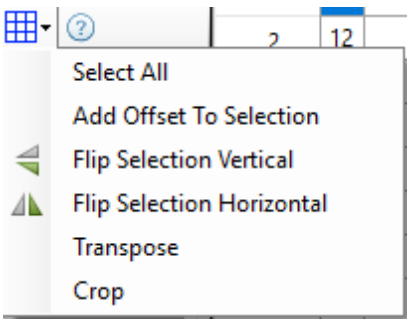
A pixel matrix with 4 strings of 10 pixels each

The Toolbar

Cut, Copy, Paste

Within the custom grid you can use the cut, copy and paste buttons (or their keyboard shortcuts) to move blocks of data around the grid. You can also use them to move data to and from an external spreadsheet (like Microsoft Excel).

Grid Menu



The Custom Grid Menu

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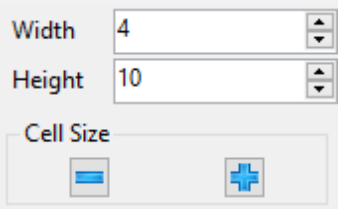
From this menu you can:

- Select All - selects all grid cells
- Add Offset To Selection - prompts for a number (can be positive or negative), and then adds that number to the selected cells. This can be used to change the string assigned to the selected cells.
- Flip Selection Vertical - flips the selected cells vertically. Using the example at the beginning of this topic: a right-side-up candy cane will become an upside-down candy cane.
- Flip Selection Horizontal - flips the selected cells horizontally. Using the example at the beginning of this topic: a candy cane facing left will become a candy cane facing right.
- Transpose - flips the entire grid so that the rows become columns and the columns become rows. Here is the original candy cane example transposed:

	A	B	C	D	E	F	G	H	I	J
1		12								
2	11									
3	10									
4		9	8	7	6	5	4	3	2	1

- Crop - deletes any blank rows at the top or bottom, and any blank columns on the left or right

Grid Size

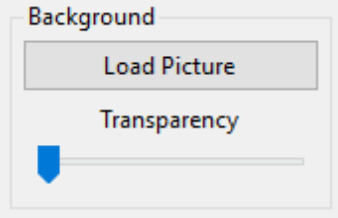


The grid size controls

Using these controls you can:

- Change the width of the grid - adds or removes columns
- Change the height of the grid - adds or removes rows
- Change the size of the grid cells - make them smaller or larger

Using a Background Image



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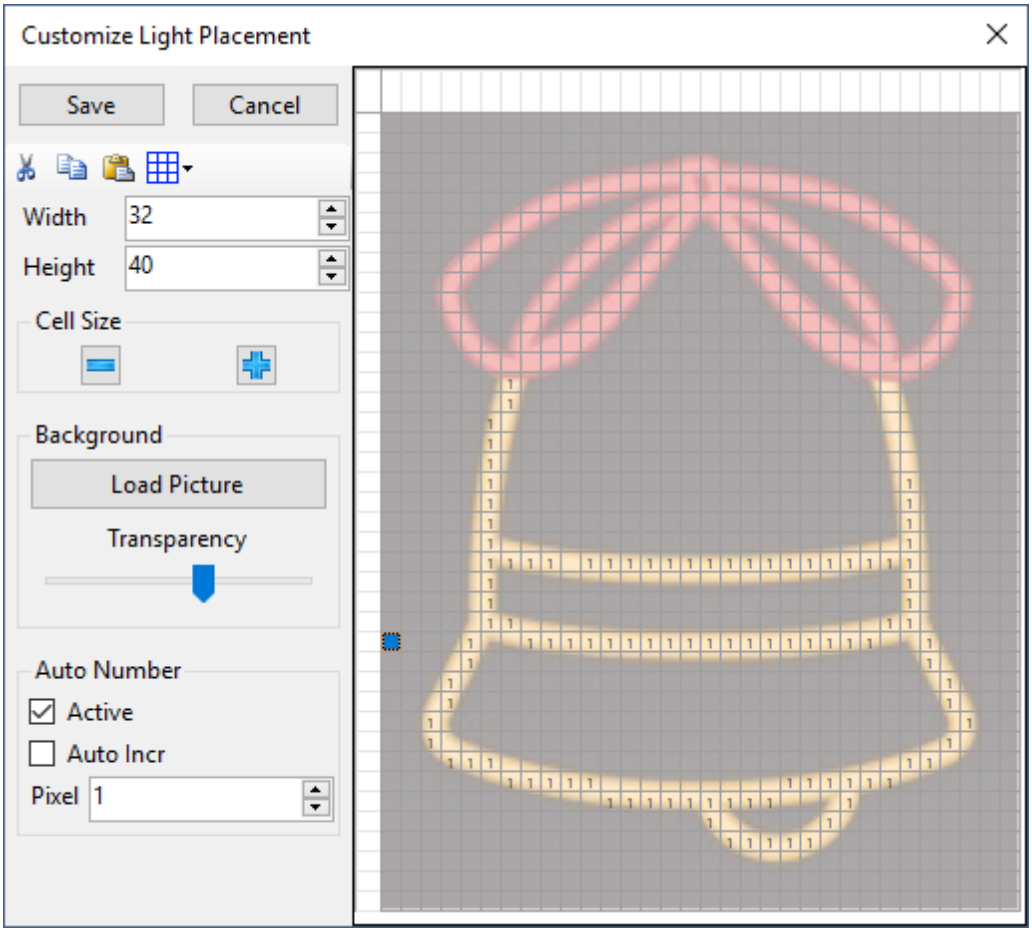
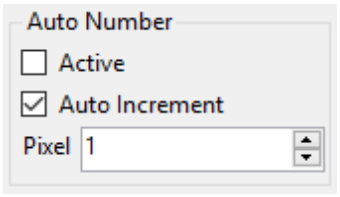
Using a background image can make placing the numbers in the grid much easier. Simply click the Load Picture button to load a picture of your prop. The selected picture will be used as the background of the grid. Acceptable file formats are JPG, PNG, and BMP. Then adjust the Transparency slider so that the background image and the numbers you type in can both be seen.



A background image made partially transparent, and numbers entered for part of the outline

Auto-numbering



When auto-numbering is active (i.e. the Active box is checked), you can just click on a cell with the left mouse button to insert a number. If Auto Increment is checked, then the pixel number will automatically increment after every mouse click. In general, Auto Increment should be unchecked when creating a custom grid for traditional lights, and checked when creating a custom grid for pixel-based props.

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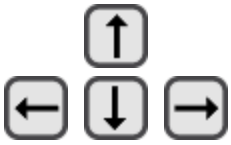
Keyboard Shortcuts

Use these shortcut keys to navigate and modify the grid.

Key	Action
	Use the arrow keys to move one cell in the direction of the arrow
	Move to the first cell in the current row
	Move to the last cell in the current row
	Move up 1 screen
	Move down 1 screen
	Expand the selection by holding down the shift key while using any of the keys listed above
	Deletes the contents of the selected cells
	Selects the entire grid
	Cut
	Copy
	Paste

5.3.4.7 Group Definition

In Preview Design, you can create groups of props. This enables you to apply effects to the entire group. For example, if you have 4 arches in row, you could put them in a group. A curtain effect applied to the group will be different than the same curtain effect applied to each prop individually.

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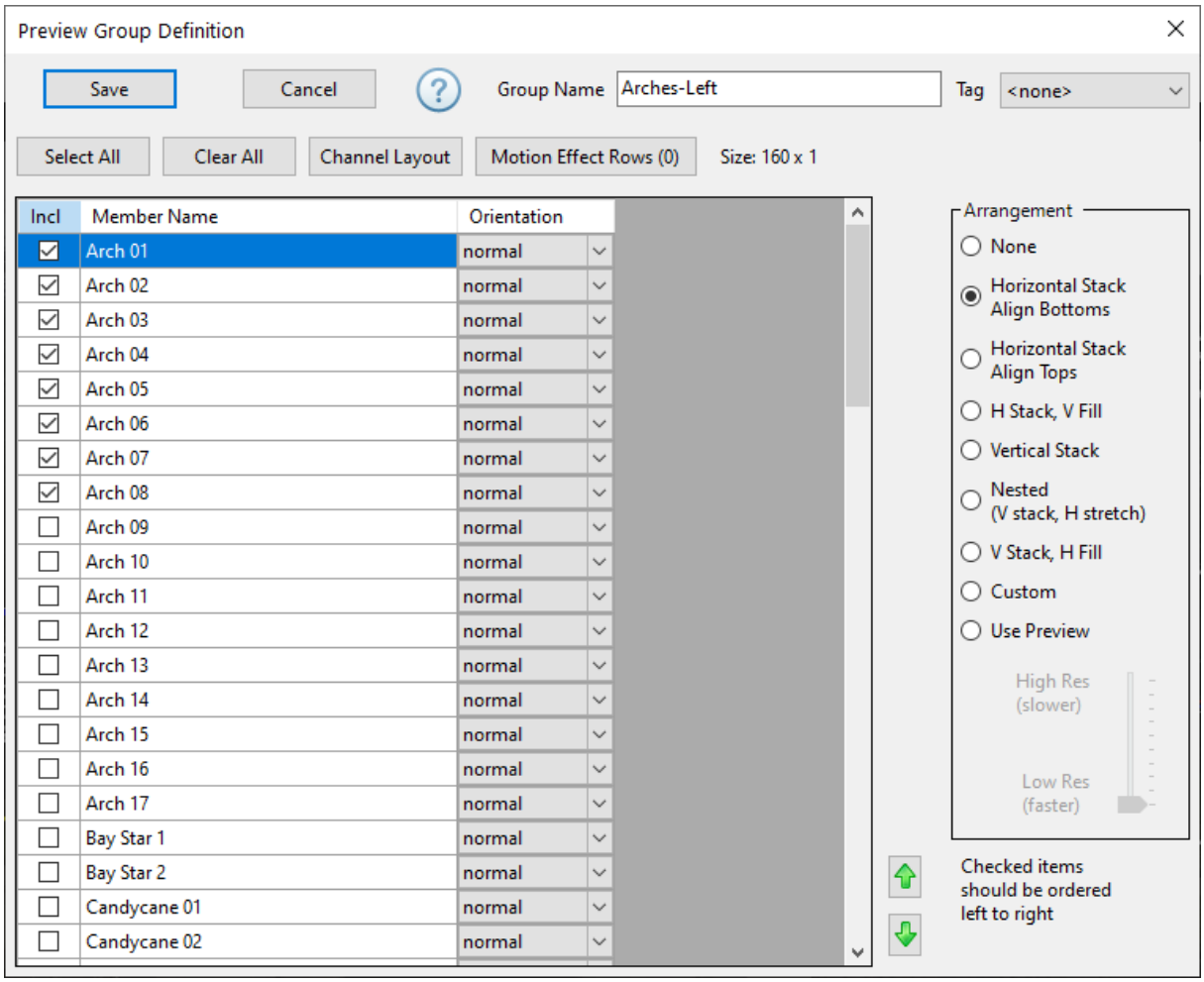

Preview Group Definition Window

Items In The Group

Place a check mark next to each prop that you want included in the group. You can use the Select All button to check all of the boxes, and the Clear All button to clear all of the boxes.

Arrangement

There are different ways to group props. In the arch example above, you would set the arrangement to “horizontal stack” because arches are usually arranged horizontally. There is also a “use preview” arrangement setting which applies effects according to the way the props are laid out in the preview. You can even put all of your RGB elements in a single preview group and then apply effects to that group and your entire display will appear to move together.

None

The group will only be used to keep items together in the sequence grid. You cannot create motion effect rows for groups with an arrangement of "none".

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Horizontal Stack Align Bottoms

Members of the group are arranged side-by-side. If there are members with varying heights, they will be arranged using the bottom as a reference.

Horizontal Stack Align Tops

Members of the group are arranged side-by-side. If there are members with varying heights, they will be arranged using the top as a reference.

H Stack, V Fill

Members of the group are arranged side-by-side. If there are members with varying heights, items with shorter heights are stretched to match the tallest item.

Vertical Stack

Members of the group are arranged bottom to top. If there are members with varying widths, they will be arranged using the left side as a reference.

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Nested

Members of the group are arranged bottom to top. If there are members with varying widths, items with shorter widths are stretched to match the widest item.

V Stack, H Fill

This is like the "nested" arrangement, except that when items are stretched, pixels are repeated in the buffer so that there are no gaps.

Custom

When you click the "Custom" button, 2 additional columns are added to the member grid: Top and Left. You can use these columns to specify where the effect buffer should be placed. Specifying 0, 0 will place the effect buffer for that group in the upper left corner. This arrangement can be useful for who users who want to sequence all of their props at the same time in SuperStar.

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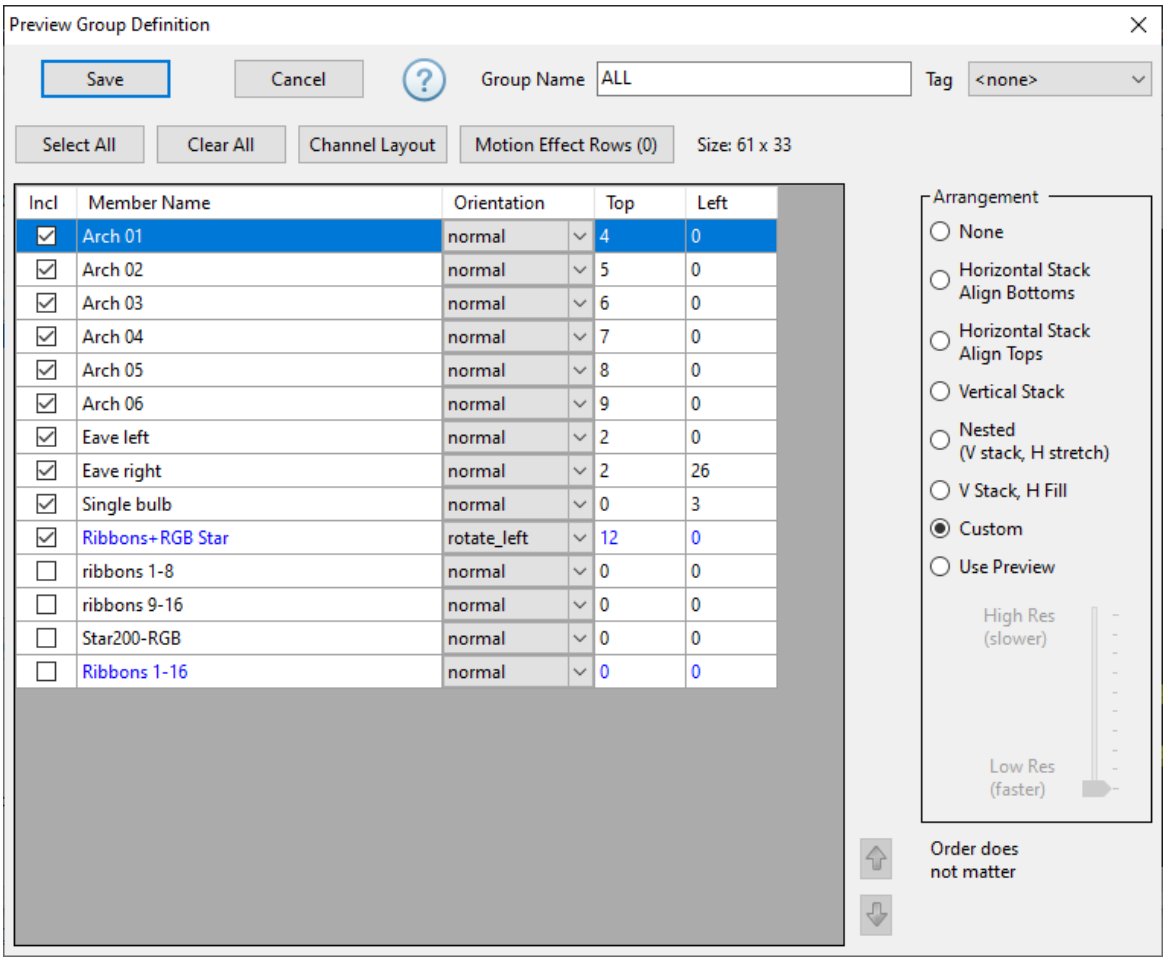

Custom Arrangement

Use the "Channel Layout" button to visualize how the props are arranged. Here is a portion of the layout for the custom arrangement shown above:

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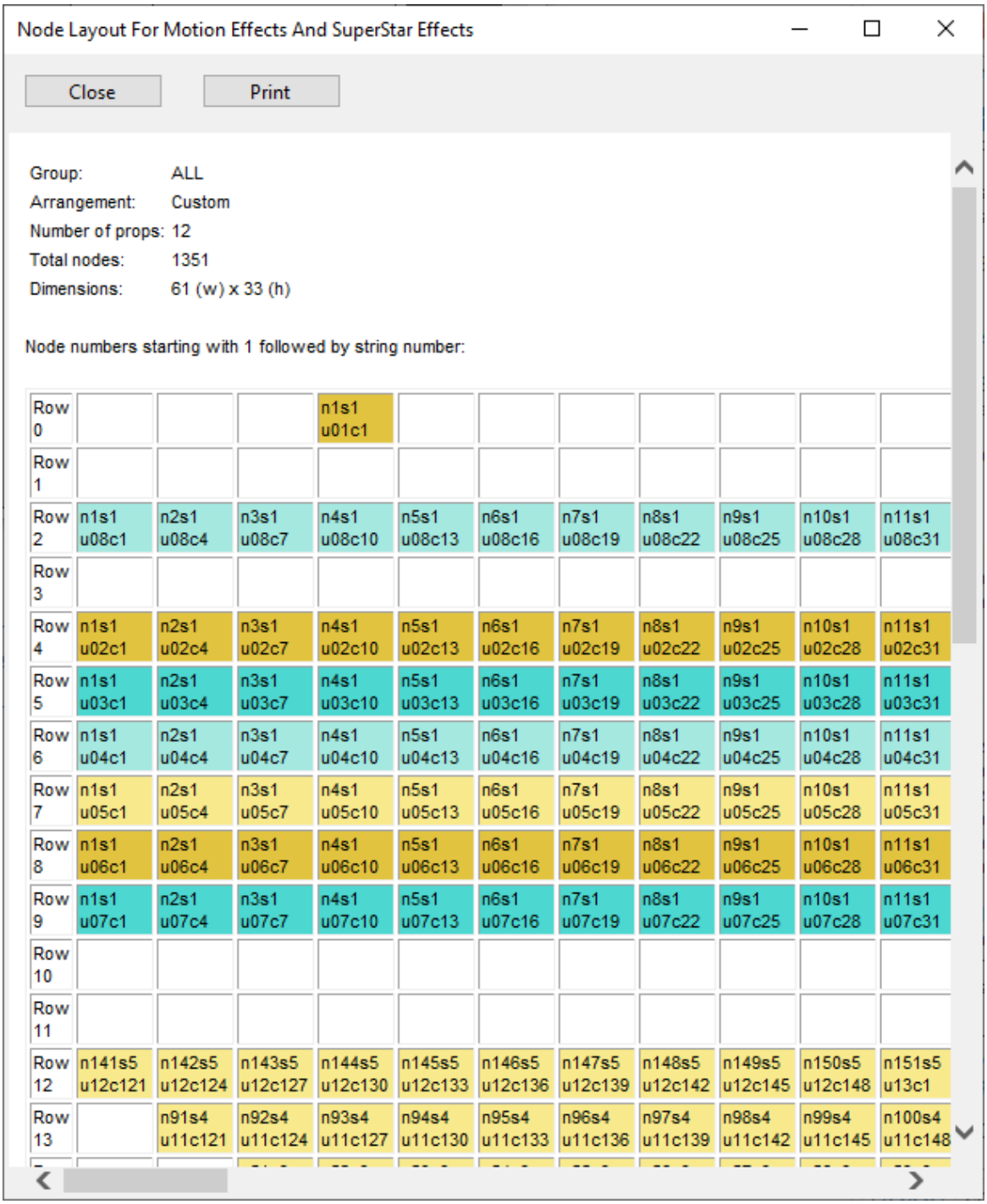

The Channel Layout

Use Preview

Pixels are arranged according to their placement in the preview. The slider associated this arrangement can be used to adjust the granularity of the placement. Coarser granularity results in faster performance, but might make your effects look "blocky" if you have many pixels. Finer granularity will eliminate the "blockiness" but takes more memory and takes longer to calculate the effects.

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Channel Layout

Use the channel layout to view the results of the arrangement setting. This is the pixel configuration that will be used when motion effects are applied.

Motion Effect Rows

You can define a set of motion effect rows that will be applied when the preview is used during the creation of a new sequence. Changes made to these motion effect rows do not affect existing sequences.

Tag

This field is used to identify groups that correspond to items in sequences purchased from the Light-O-Rama Sequence Store.

5.3.4.8 Copy Dialog

Preview Design's Design Tab has a “Copy” command which is very helpful in creating a collection of props that all look the same, such as a series of arches or mini-trees. You can access this command by:

- Right-clicking on a prop or group in the Prop and Group List and selecting Copy from the menu
- Selecting a prop or group and then selecting Copy from the Edit Menu
- Selecting a prop, then right-clicking on the Design Canvas and choosing Copy from the menu

Any of these actions will open a dialog window where you can specify how many copies should be made. If the source name has a numeric suffix, then that number will be automatically incremented for each copy. After the “Make Copies” button is pressed the new copies will be displayed.

While less common, you can also use the Copy command to make a copy of a group. Whether copying a prop or a group, the Copy Dialog works the same way.

Here is the process for copying a prop:

- Select the prop in the item list that will be the source of the copy. For props with a numeric suffix, this prop’s name should end with “1”, “01”, “001”, “(1)”, “(01)”, or “(001)”. If you have created 5 arches and then decide you need more, you can select the last one (e.g. “Arch 05”) and the Copy command will continue your number sequence from there.

- Select “Prop”, then “Copy” from the menu. This will open the Copy window. See the picture below for an example.

- The “Base Name” field should already be filled in for you. If you are creating a non-numeric sequence such as “Left”, “Center”, “Right”, then you might want to edit the base name to remove the suffix in the source prop’s name.

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- Select the number of copies to make. The New Names list on the right will automatically update as this value is changed.
- If the source prop's name has a numeric suffix, then the "Starting Number" field should be set automatically.
- The "Suffix" field should be set automatically, but can be changed if desired. For example, if your source prop does not have a numeric suffix, but you want the copies to be numbered, then change this field to the desired number format.
- You can change the automatically generated names by double-clicking any entry in the "New Names" list and making edits as desired.
- After making all of your edits, click the "Make Copies" button. This will close the Copy window and the new copies should appear in the preview design window.
- When copying a **prop**, the channel information in the copies will be set automatically -- incremented from the source prop. However, after the copy completes, you should double-click on the name of each copied prop in the list and when the Prop Definition window opens, verify that the channel information for that prop is correct.
- When copying a **group**, you will end up with copies of each prop that make up the group. The channel information in the new props will be the same as the original props -- resulting in channel conflicts. After the copy has completed, you should switch to the Channel Conflicts tab and resolve these -- giving the new props their own unique channel settings.

The picture below shows the Copy command being applied to a prop named "Arch 01". The numeric suffix is automatically detected and the fields set accordingly. The only action is to set the desired number of copies (4 in this example).

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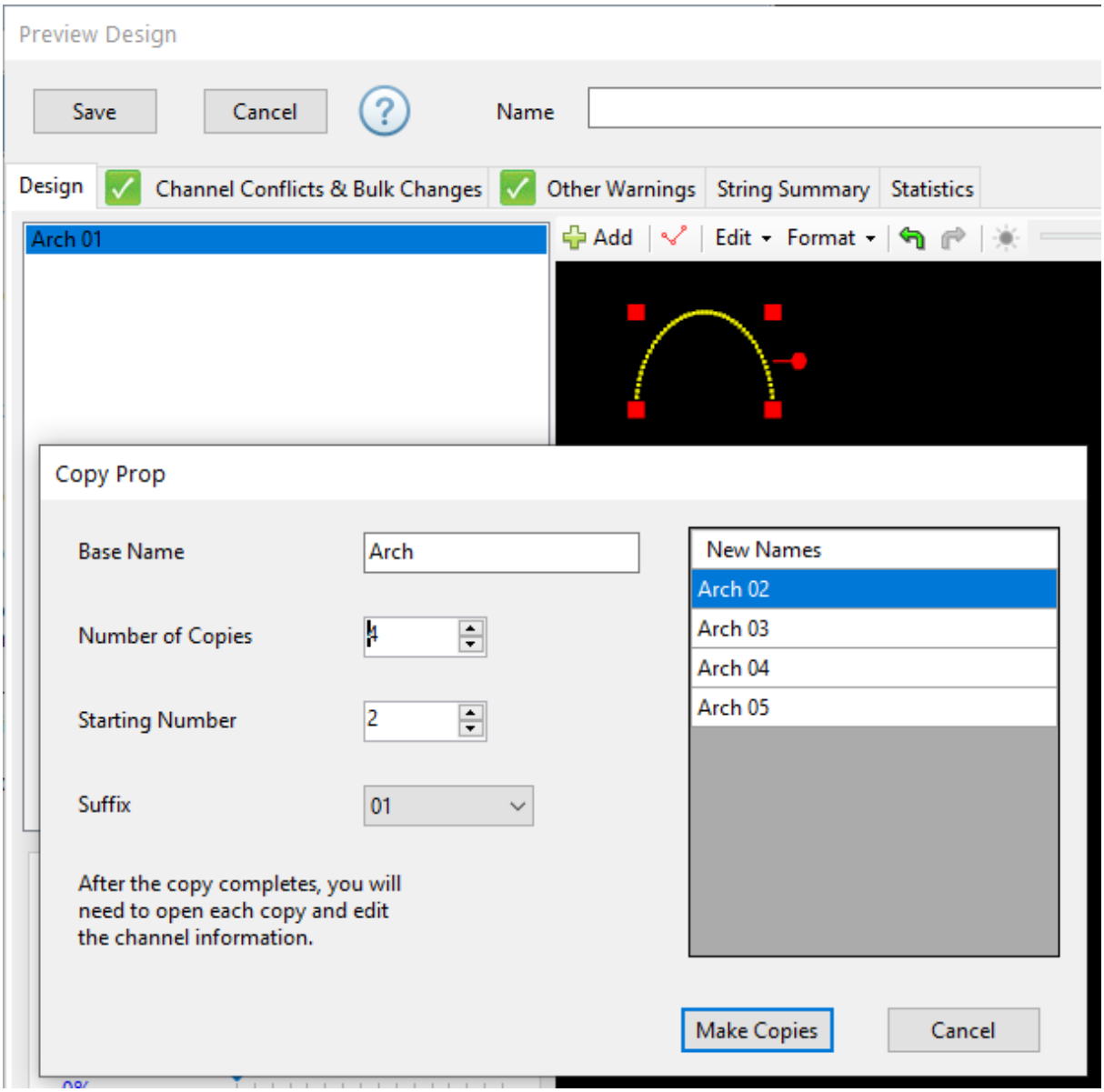

About to make 4 copies

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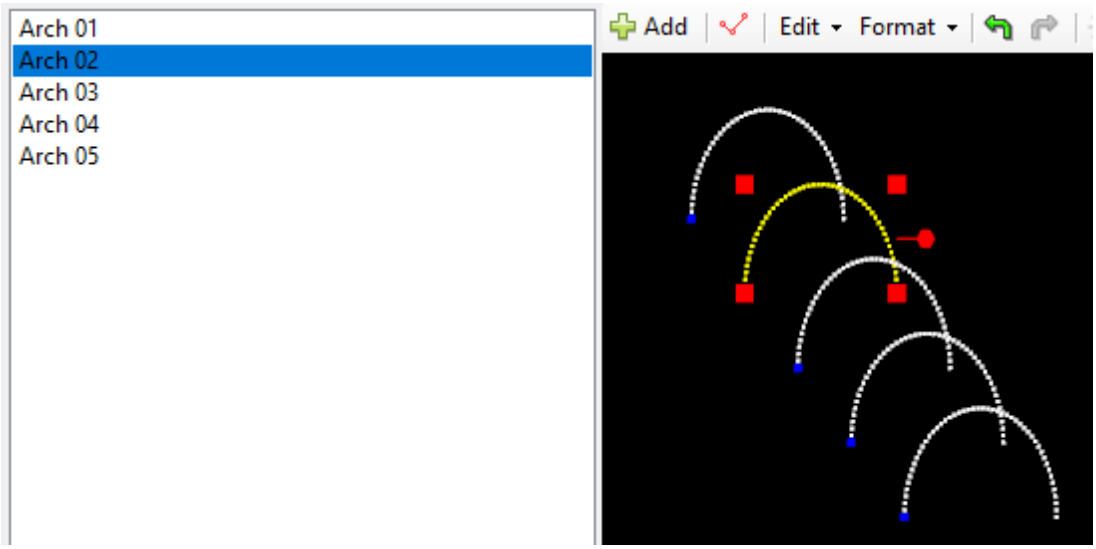
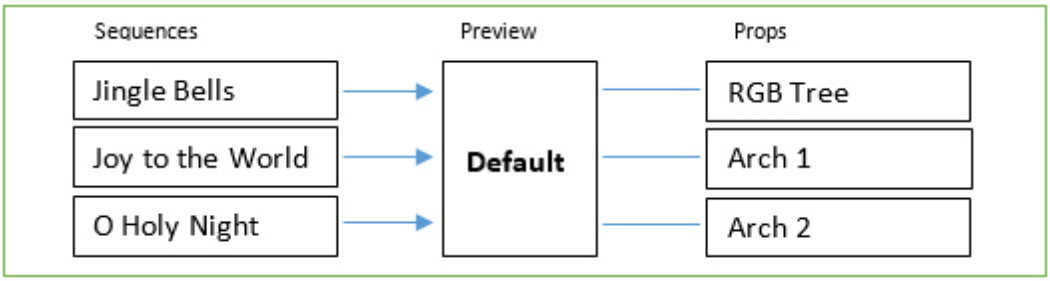


Result of making 4 copies

5.3.4.9 Naming Strategies

The Sequencer comes with an empty preview called “Default”. If you want to keep things simple, you can create all of your props in the Default preview and associate all of your sequences with Default:



Another approach is to create a preview for each holiday for which you have a light show. For example, you could have previews called “Valentines”, “Halloween”, and “Christmas”. If your display were to change from year to year, you would update the props in the preview for the relevant holiday.

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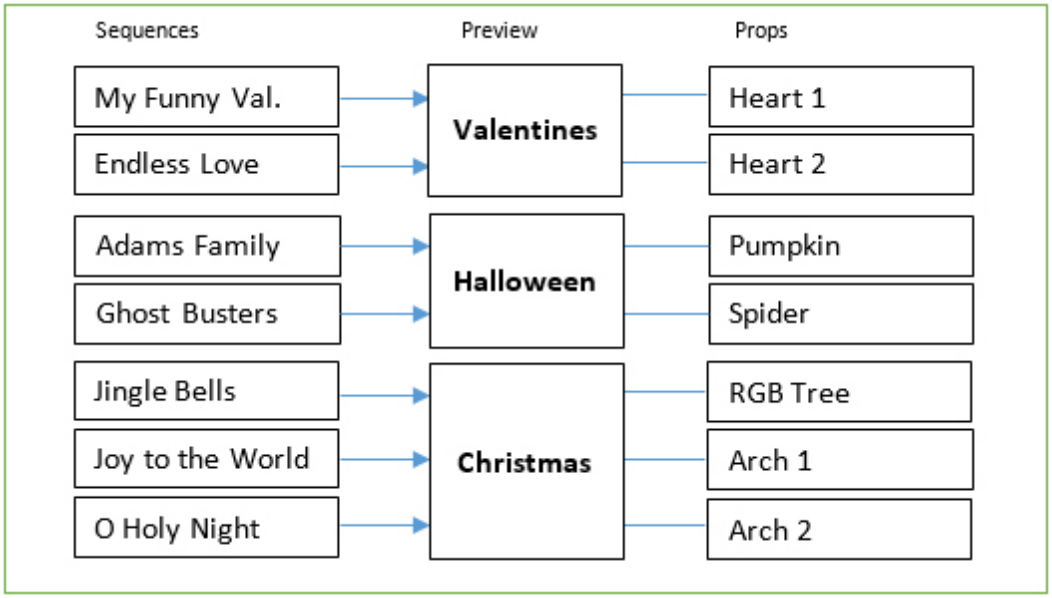
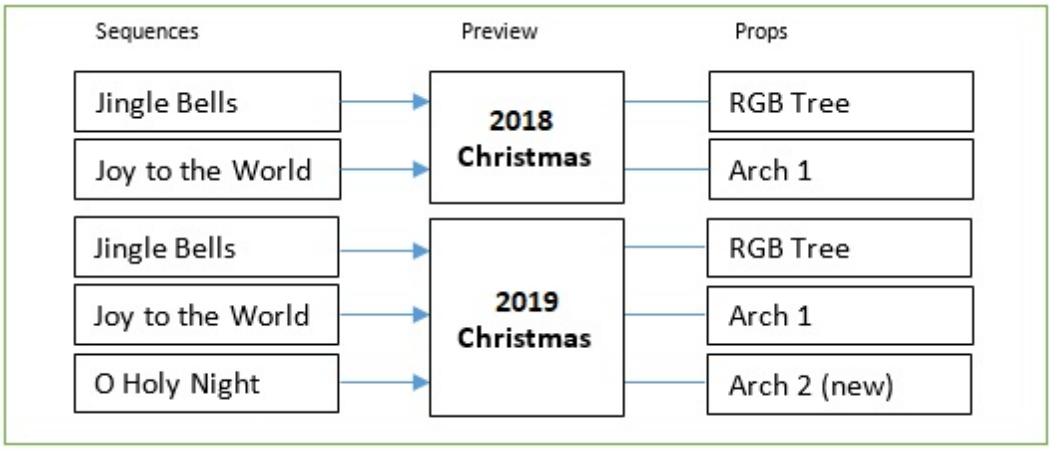


Finally, you can create a preview for each display, for each year. So you might start with a preview called "2018 Christmas" associated with all of your sequences for 2018. Then in 2019, you would archive your 2018 sequences for reference, and make copies that you would work with for your 2019 show. Something like this:

- Copy all of your 2018 sequences to a new folder for 2019.
- In the Sequencer, copy the "2018 Christmas" preview to "2019 Christmas". This would make a copy of the preview's visual layout as well as make a copy of every prop in the preview.
- Open each sequence in the 2019 folder and change the sequence's preview to "2019 Christmas" (with the sequence open, select Sequence > Assign Different Preview from the menu).
- With that complete, you could proceed with adding and removing props in the "2019 Christmas" preview and revising the 2019 sequences as desired

The Advantage of this approach is that it gives you a history of your old sequences and those sequences can be opened in the Sequencer and viewed using the preview in effect for that year.



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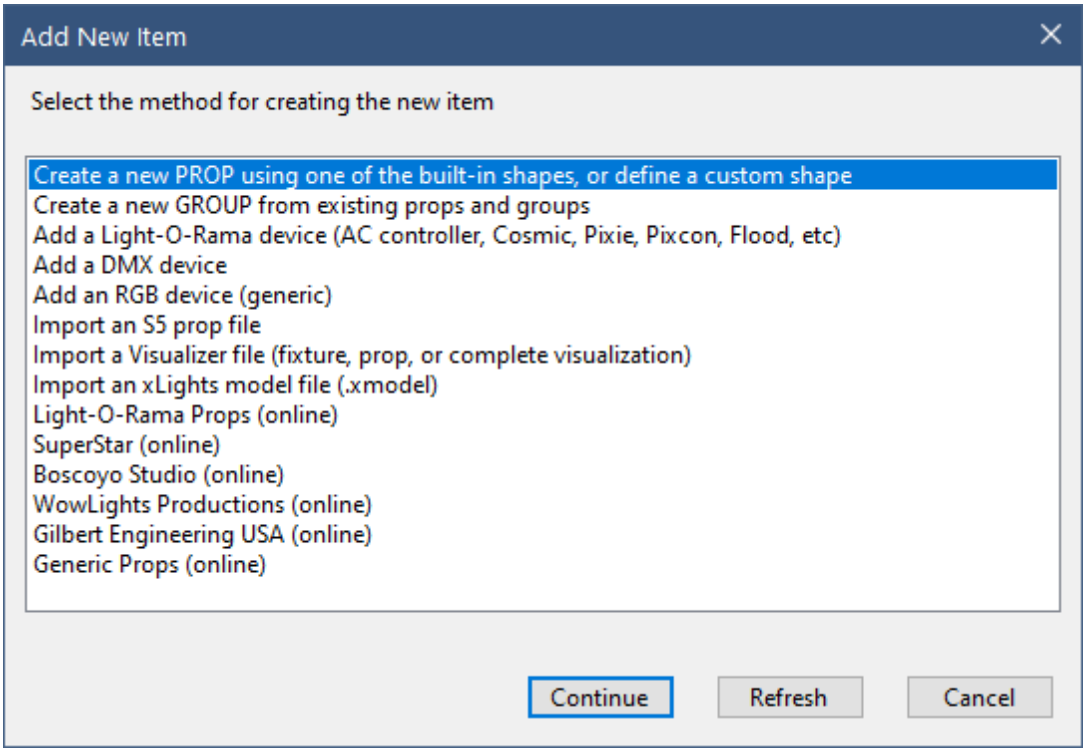
5.3.4.10 Online Prop Import

There are several online repositories of prop definitions that you can access from the Sequencer and import directly onto the Preview Design canvas. To start an online import, click the Add Item button on the Design Tab. This will open the following window:



Preview Design's Add New Item dialog

Notice that the last 6 items have "(online)" as a suffix. This means that their content resides online and requires an Internet connection to access them. If you select one of them and then click the "Continue" button (or just double-click on one), then you will see the following window (the content will vary depending on which item you clicked on).

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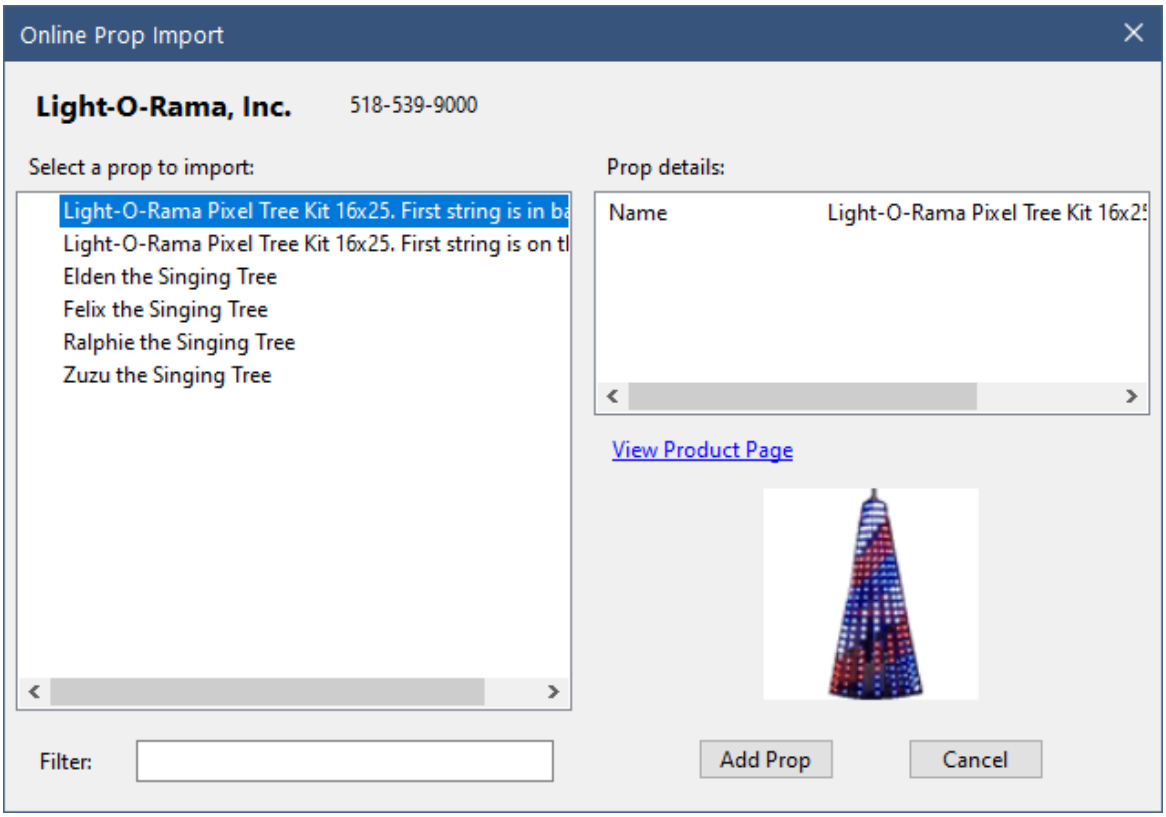

Online Prop Import

Importing A Prop

To import a prop, click on a prop's name on the left side. The details about that prop will be displayed on the right side. If the information looks good, then click the "Add Prop" button.

Depending on the source, the items on the left may be grouped into categories and sub-categories. Simply click the "+" icon to expand a category.

Filtering The List

You can filter the list by entering text into the box labeled "Filter". The list will change with each character you type. To see all items, remove all text from the filter box.

Find Out More About The Prop

Click on a prop's name on the left side. The details about that prop will be displayed on the right side. The number of lines in the Prop Details section will vary depending on which online source you are viewing. A "View Product Page" link may also be displayed. If it is, then you can click on the link and the product page for that item will open in your web browser.

All content displayed on this page is provided by the seller. Contact the seller if you encounter inaccurate information, missing product pictures, or links to product pages that don't work.

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5.3.4.11 Layout View

This window displays a printable layout of the selected prop or group with channel information for every string or pixel. It is very useful for pixel-based props because it shows how the pixels are arranged when motion effects are applied.

What is a "node"?

The Layout View displays an arrangement of nodes. A "node" is either:

- a single channel, or
- an RGB channel (for Dumb RGB or RGB pixels), or
- a group of single-colored strings (a bundle). These are often used for megatrees made of traditional lights.

Each node is labeled with 2 lines of text:

- "n1s1" means the node 1, string 1
- "u01c1" means unit id 01, circuit 1 for LOR devices. "u1c1" means universe 1 channel 1 for DMX devices.

If the node has multiple channels, only the first channel is listed. Refer back to the Prop Definition screen to determine the other channels in the node.

Prop - Single Channel

The shows a sample layout for a prop with a single channel. At the top are the name, shape, string type, and device type used by the prop. This example has single node representing a single channel. The bottom of the Layout View shows the arrangement of all of the nodes (in this case just 1).

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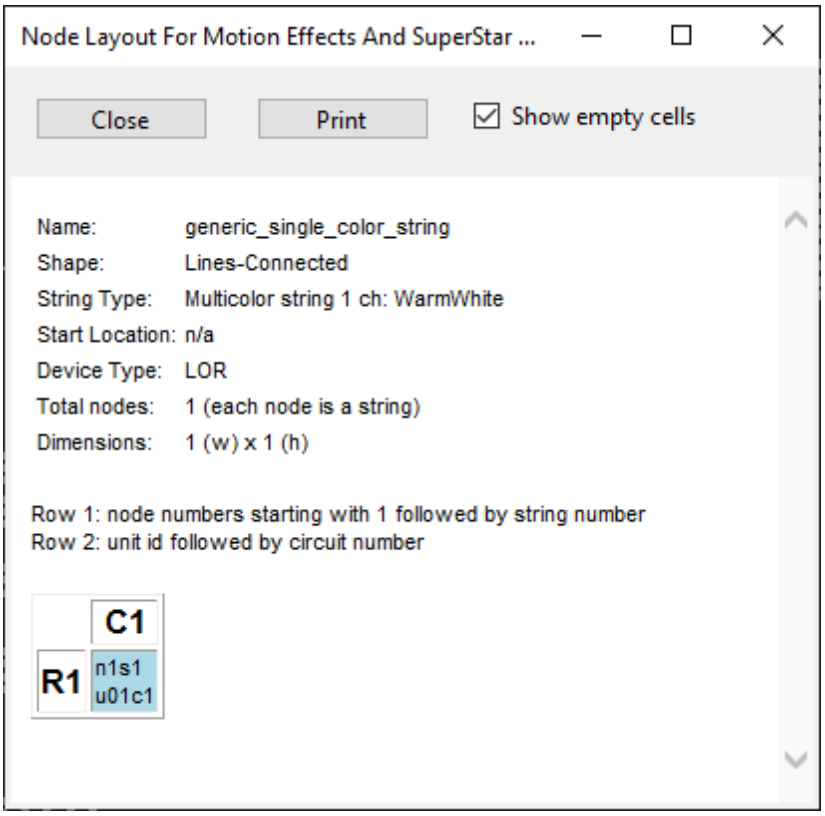

Prop - Dumb RGB

This example shows the layout for a dumb RGB floodlight. It looks very similar to the first example, except the String Type is different.

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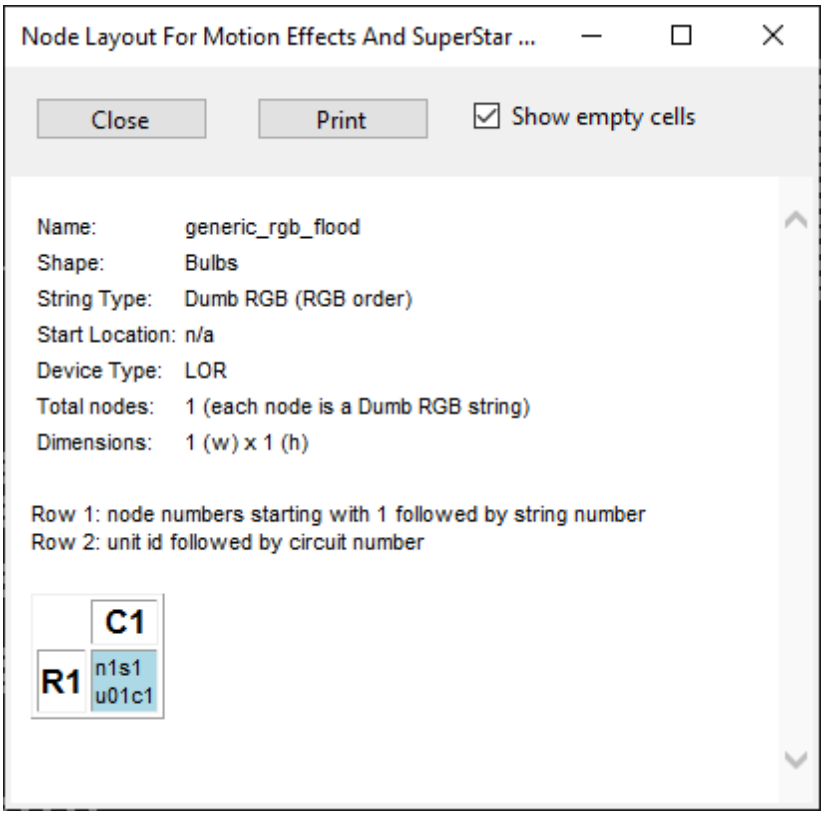

Prop - RGB Pixel Tree

This example shows the layout for the Light-O-Rama 16x25 pixel tree. In this tree, there are 8 pixel strings that are each folded in half. Nodes for odd-numbered strings are shown with a light blue background, and even-numbered strings are shown with a green background. This makes the strings easy to distinguish. You can follow the channel numbering for the first string up the first column and down the second column. The other strings follow the same pattern.

Columns and rows are identified with a number. These numbers match the row and column numbers displayed in RGB channel names for pixel-based props.

The "Show empty cells" option is useful when viewing a prop with a custom shape. It can make identifying the row and column numbers easier.

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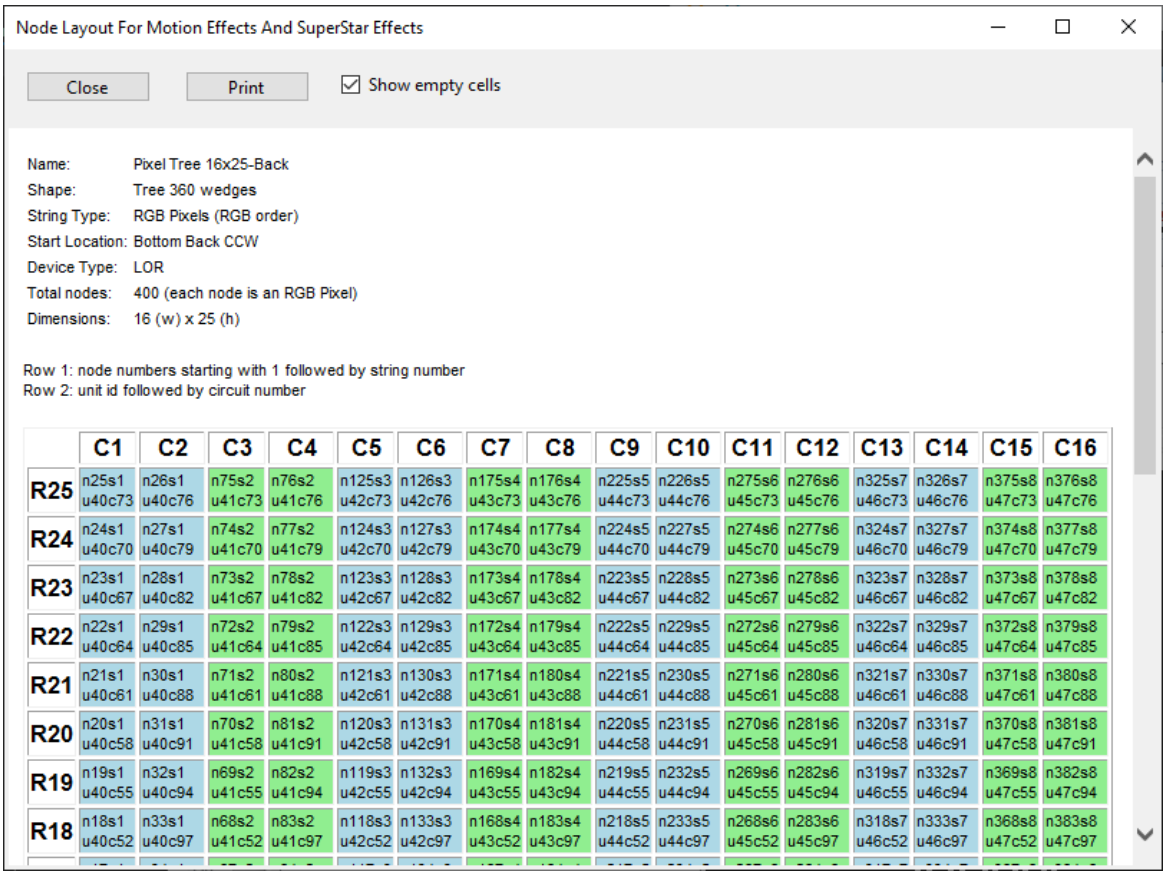

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16
R25	n25s1 u40c73	n26s1 u40c76	n75s2 u41c73	n76s2 u41c76	n125s3 u42c73	n126s3 u42c76	n175s4 u43c73	n176s4 u43c76	n225s5 u44c73	n226s5 u44c76	n275s6 u45c73	n276s6 u45c76	n325s7 u46c73	n326s7 u46c76	n375s8 u47c73	n376s8 u47c76
R24	n24s1 u40c70	n27s1 u40c79	n74s2 u41c70	n77s2 u41c79	n124s3 u42c70	n127s3 u42c79	n174s4 u43c70	n177s4 u43c79	n224s5 u44c70	n227s5 u44c79	n274s6 u45c70	n277s6 u45c79	n324s7 u46c70	n327s7 u46c79	n374s8 u47c70	n377s8 u47c79
R23	n23s1 u40c67	n28s1 u40c82	n73s2 u41c67	n78s2 u41c82	n123s3 u42c67	n128s3 u42c82	n173s4 u43c67	n178s4 u43c82	n223s5 u44c67	n228s5 u44c82	n273s6 u45c67	n278s6 u45c82	n323s7 u46c67	n328s7 u46c82	n373s8 u47c67	n378s8 u47c82
R22	n22s1 u40c64	n29s1 u40c85	n72s2 u41c64	n79s2 u41c85	n122s3 u42c64	n129s3 u42c85	n172s4 u43c64	n179s4 u43c85	n222s5 u44c64	n229s5 u44c85	n272s6 u45c64	n279s6 u45c85	n322s7 u46c64	n329s7 u46c85	n372s8 u47c64	n379s8 u47c85
R21	n21s1 u40c61	n30s1 u40c88	n71s2 u41c61	n80s2 u41c88	n121s3 u42c61	n130s3 u42c88	n171s4 u43c61	n180s4 u43c88	n221s5 u44c61	n230s5 u44c88	n271s6 u45c61	n280s6 u45c88	n321s7 u46c61	n330s7 u46c88	n371s8 u47c61	n380s8 u47c88
R20	n20s1 u40c58	n31s1 u40c91	n70s2 u41c58	n81s2 u41c91	n120s3 u42c58	n131s3 u42c91	n170s4 u43c58	n181s4 u43c91	n220s5 u44c58	n231s5 u44c91	n270s6 u45c58	n281s6 u45c91	n320s7 u46c58	n331s7 u46c91	n370s8 u47c58	n381s8 u47c91
R19	n19s1 u40c55	n32s1 u40c94	n69s2 u41c55	n82s2 u41c94	n119s3 u42c55	n132s3 u42c94	n169s4 u43c55	n182s4 u43c94	n219s5 u44c55	n232s5 u44c94	n269s6 u45c55	n282s6 u45c94	n319s7 u46c55	n332s7 u46c94	n369s8 u47c55	n382s8 u47c94
R18	n18s1 u40c52	n33s1 u40c97	n68s2 u41c52	n83s2 u41c97	n118s3 u42c52	n133s3 u42c97	n168s4 u43c52	n183s4 u43c97	n218s5 u44c52	n233s5 u44c97	n268s6 u45c52	n283s6 u45c97	n318s7 u46c52	n333s7 u46c97	n368s8 u47c52	n383s8 u47c97

5.3.4.12 Wiring View

This window displays a diagram showing how pixel-based props are wired together - with every pixel labeled with its string and pixel number. This can be useful for props with predefined shapes where the pixel order may not be clear - candy canes, spokes, and wreaths for example. But it is most useful for custom pixel props from companies like Boscoyo Studios, where determining which pixel to put into which hole can be confusing. The Wiring View clearly shows the path that the pixel string will take through any prop.

The first line of the dialog shows the prop's name - "cc2" for the example below. That is followed by the toolbar.

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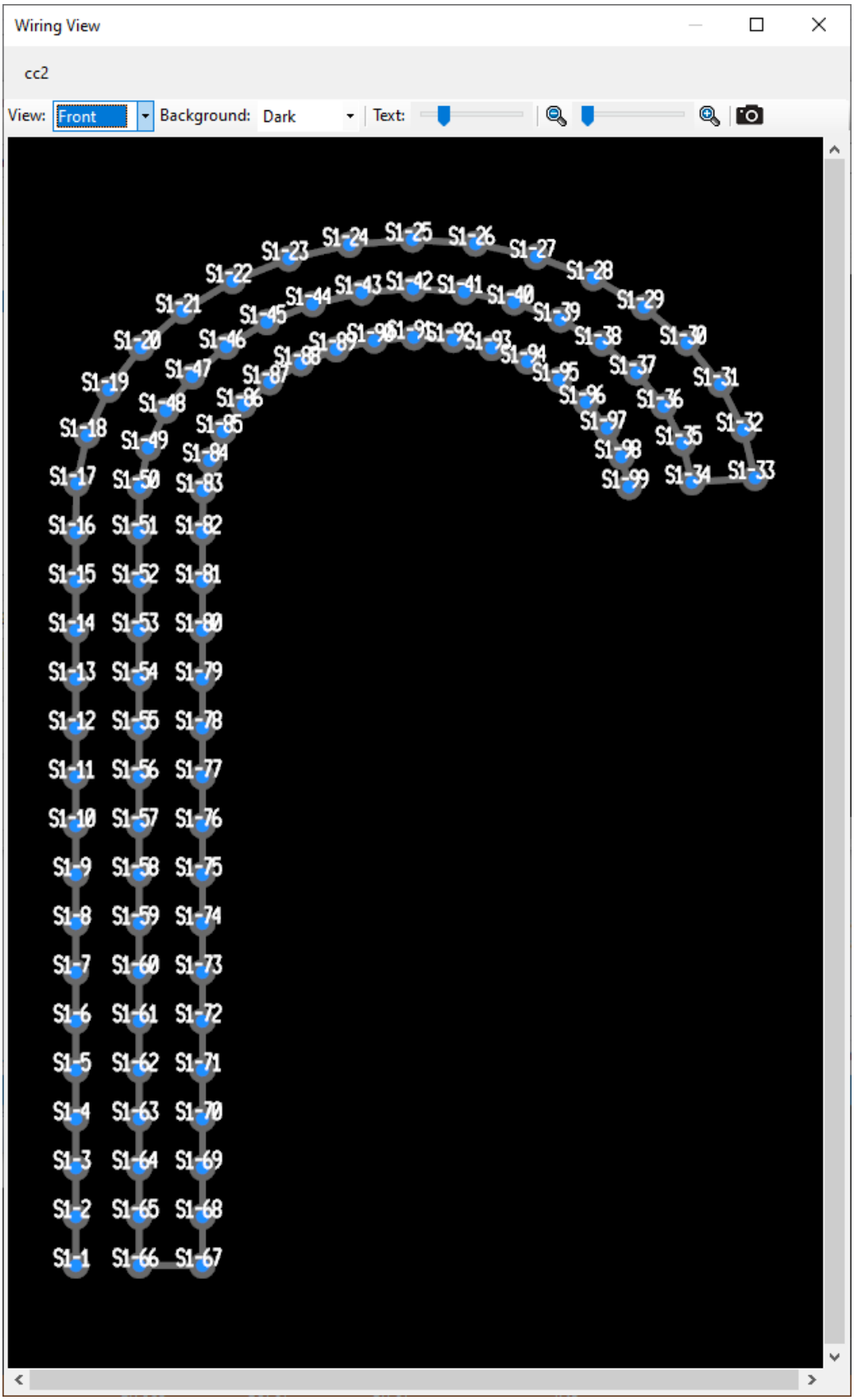

Front View of a Right-Facing Candy Cane Prop

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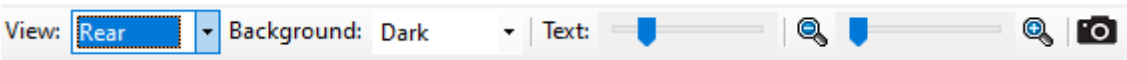
The Toolbar

You can customize the Wiring View using the toolbar controls.



View

You can view you prop from the front or the back. It is very important that you have this set correctly, or you might wire you prop in reverse! Normally when assembling a prop, you are pushing pixels in from the back. In that situation, the Rear view will be most helpful because you can just follow the diagram shown on the screen without having to do any translations in your head.

Background

You can set the background color to dark or light. If viewing the on the screen, you probably want the dark background. However, if you take a snapshot and intend to print it, you might want to set the background to "light" first; as snapshots with a white background will print using a lot less ink.

Text Size

You can vary the text size by dragging the slider in order to make the labels on each pixel more readable.

Zoom

Large props will be too big to view all at once. Use the Zoom slider to enlarge the wiring diagram, then use the scroll bars to move around to your area of interest.

Snapshot

clicking this icon captures a snapshot of the current wiring view and prompts you for a file name where the image can be saved (PNG format). You can then open that image with another program, such as a photo viewer, in order to print it.

Zoom Example

Here is an example where we have zoomed in to see the wiring detail on a complex prop from Boscoyo Studios. Without zooming in, it would be impossible to follow the pixel order.

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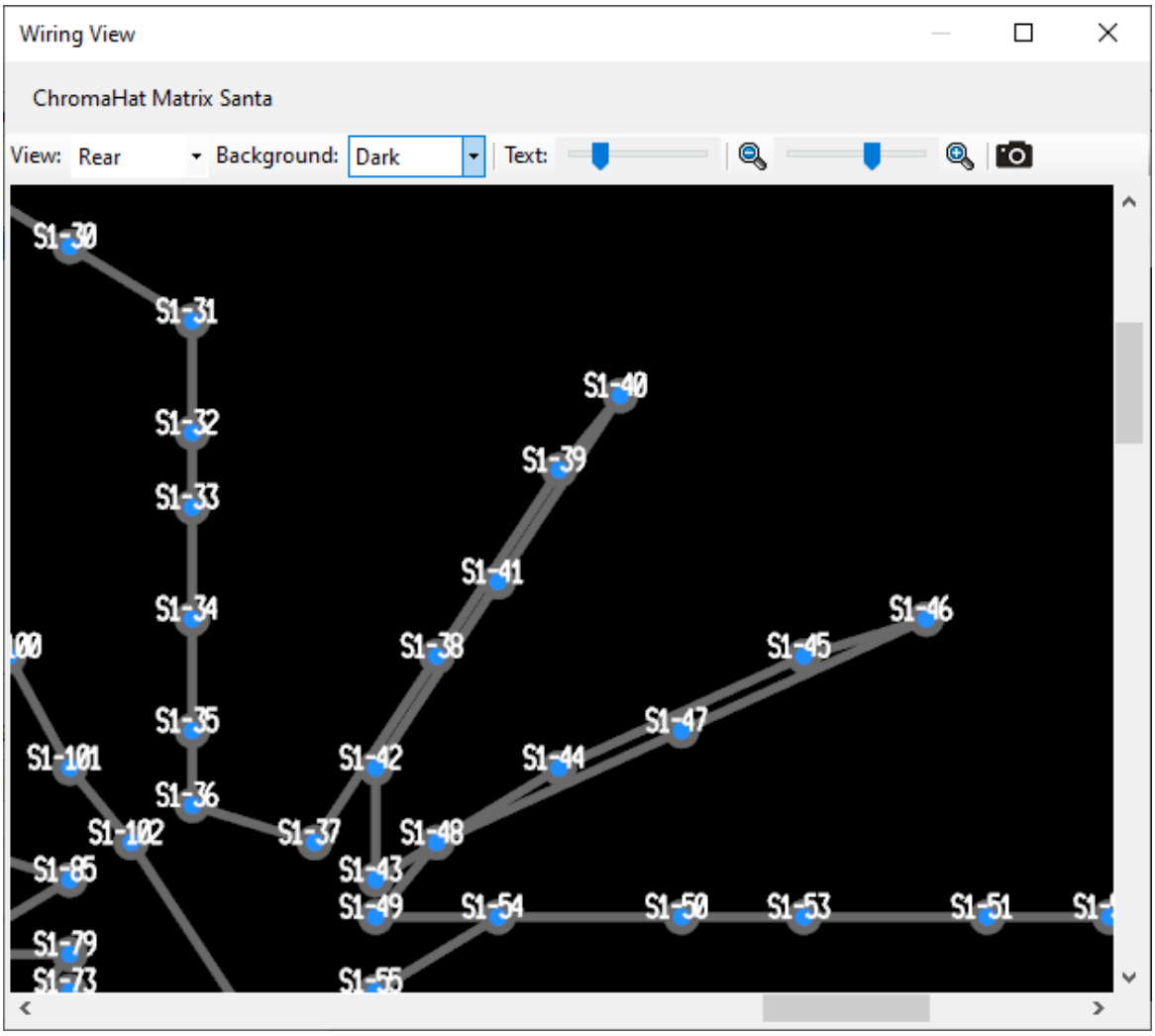

Zooming in to see the detail

5.3.5 Sequence Tab

This section will describe the various parts of an open sequence tab, and how you go about editing a sequence. Before proceeding, you should understand what a sequence is and the high-level description of the S5 Sequencer.

To start sequencing, open an existing sequence or start a new one.

- To open an existing sequence:
  - o select File > Open or File > Recent Files from the main menu, or
  - o click on one of the recent files listed on the Start Page.

- To start a new sequence:
  - o select File > New from the main menu, or
  - o click New Animation Sequence or New Musical Sequence on the Start Page, or

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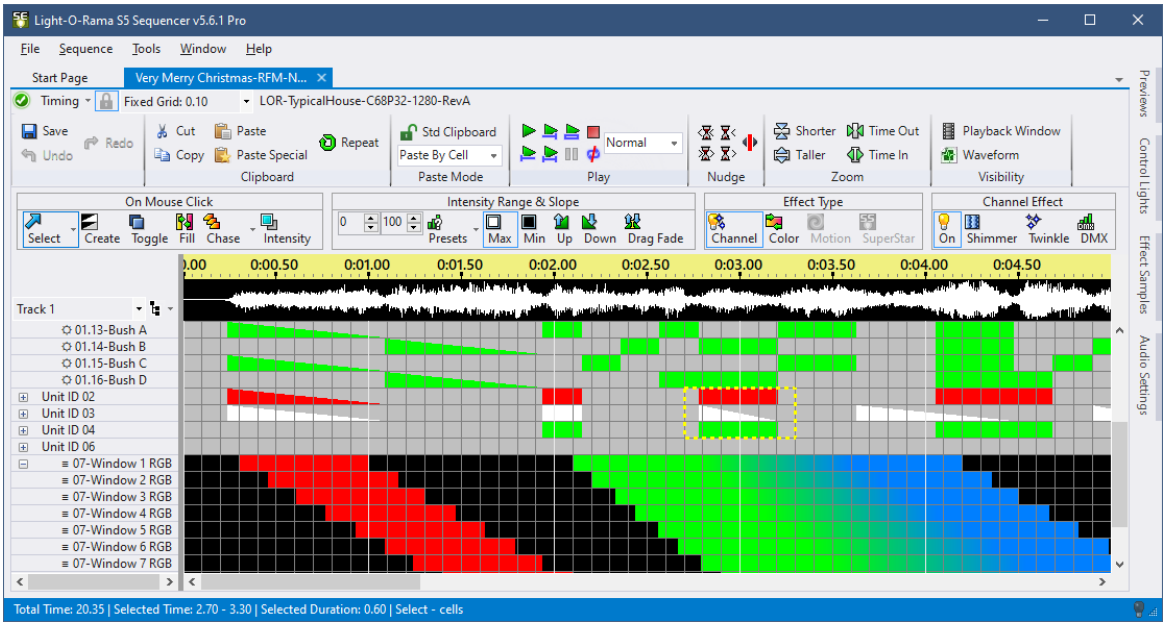
- right-click on a preview in the Previews Window and select New Animation Sequence or New Musical Sequence from the pop-up menu.

The sequence will be displayed in its own tab. Normally, you view only one sequence tab at a time; however, you can view sequences side-by-side as described in the Customizing Window Layouts topic.



The Sequencer with an open musical sequence

Each sequence tab has several sections:

- At the very top, the tab displays the sequence name. The name is preceded by an asterisk "*" if there are unsaved changes. Hovering your cursor over the tab will display a tool-tip showing the full path to the sequence file. After the name is an "X", which when clicked will close the sequence.
- The Toolbars - there are 3 toolbars which contain command buttons for saving, playing, and modifying the sequence.
- Grid Views and the Grid View Menu - which control the content of the item list
- The Timeline - displays the time dimension of the sequence. It shows where you are in your sequence time-wise.
- The Waveform - if this is a musical sequence, the audio waveform can be displayed to help place effects so that they are synchronized to the music.
- Item List - the list of preview props, preview groups, grid view groups, subsequences, archive props, RGB aggregates, beat channels (in musical sequences), and loops (in animation sequences) shown to the left of the sequence grid.
- Sequence Grid - there is a row in the sequence grid for every item in the item list. Cells in the grid display the lighting effects that will happen on an item at various points in time while the sequence is being played.
- The Status Bar displays the total length of the sequence, as well as information about the selected region of the grid.

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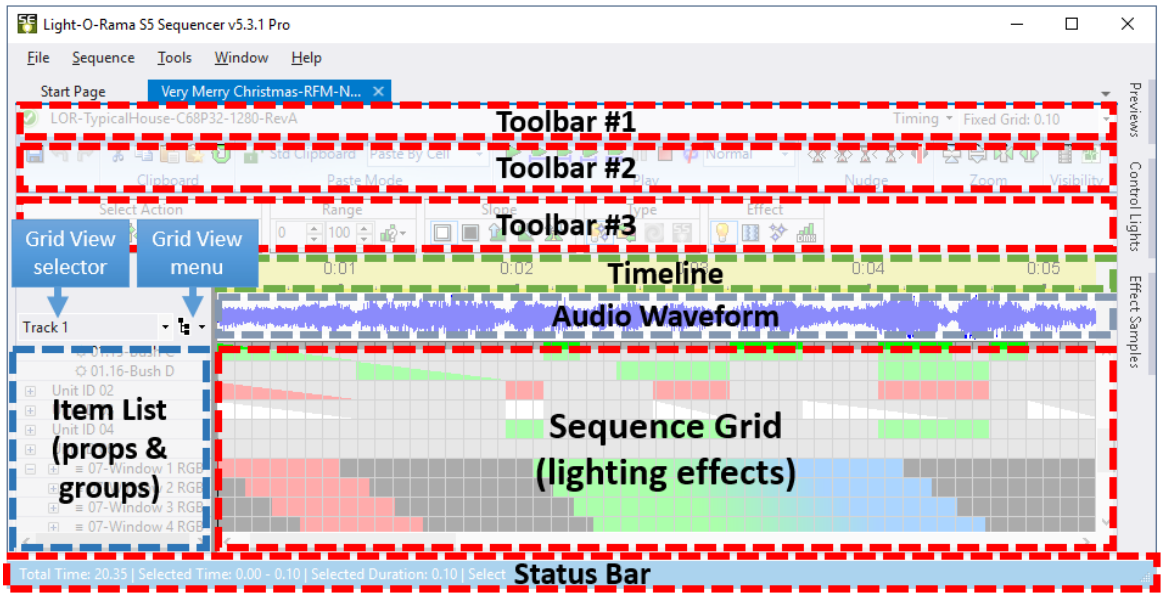

Areas within the Sequence Tab

For more information on using the Sequence Tab, please see the following topics:

- Scrolling & Zooming
- Item List
- Grid Rows
- Grid Views
- Grid View Menu
- Selecting Cells
- Intensity Range
- Adding Effects
- Modifying Effects
- Deleting Effects
- Cut/Copy/Paste/Repeat
- Toolbars
- Right-Click Context menu
- Freeform Play Range
- Playback
- Audio Waveform
- Audio Wizards
- Tooltips
- Loops in Animation Sequences

5.3.5.1 Scrolling & Zooming

Your sequence grid is often larger than your display. To access all parts of your sequence, you will need to be able to:

- Scroll the grid in any direction
- Zoom in and out of the grid both horizontally and vertically

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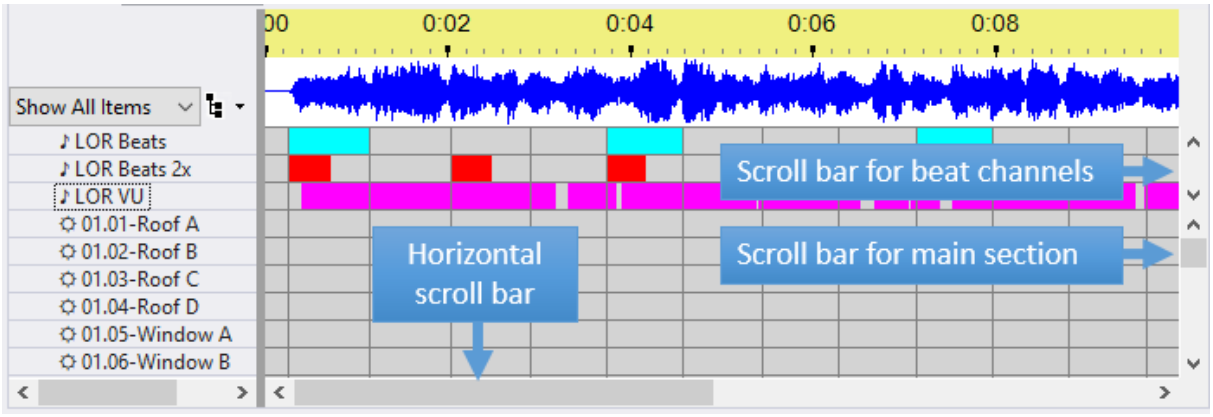
Scrolling

There are several was to scroll the grid.

Scroll Bars

You can click on the scroll bars to scroll the grid. There are 2 vertical scroll bars on the right edge: one scrolls the beat channels section and the other scrolls the main section. If there are no beat channels displayed, the beat channel scroll bar will be hidden. Also, the beat channel scroll bar will only need to be used if you have defined more beat channels than can be displayed at one time. The maximum number of beat channels displayed at one time defaults to 10, but you can change this value from the grid view menu.



Sequence Grid Scroll Bars

Mouse Wheel

You can scroll the grid vertically using the mouse wheel on your mouse.

Using a mouse wheel makes it easier to scroll

If you are using a laptop and only have the built-in touch pad available, you can use 2 fingers to scroll vertically; though this tends to not work as reliably as a mouse with a mouse wheel

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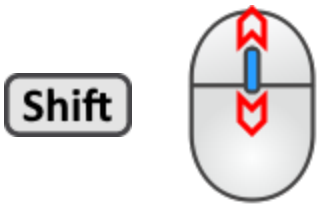
Using a touch pad to scroll



Hold the shift key down while using the mouse wheel to scroll horizontally.

Keyboard

As you move the selected area of the grid using the arrow keys, home, end, page up, or page down, the grid will scroll so the current cell is always visible.

Zooming

You can zoom in or out in the sequencing grid:

Zoom The Timescale (horizontal)

	Click the Zoom Time In button on the toolbar
	Click the Zoom Time Out button on the toolbar
	Zoom in using Ctrl +
	Zoom out using Ctrl -
	Zoom in fully
	Zoom out fully

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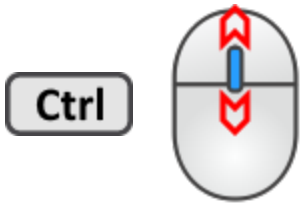
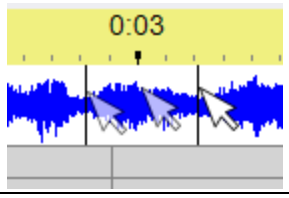
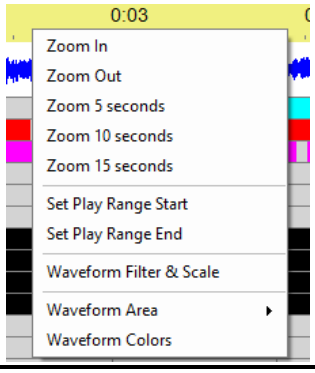
	Hold the Ctrl key down while using the mouse wheel to zoom in and out
	Zoom in by dragging the mouse pointer across the audio waveform
	Right click on the time scale or on the wave form. • The first 2 options on the menu allow you to zoom the time scale in and out. • The next 3 options zoom to a fixed time scale: 5, 10, or 15 seconds wide. These can quickly take you to a reasonable time scale if you have zoomed in too far.

Zoom The Row Height (vertical)

	Click this toolbar button to make the height of each grid row shorter
	Click this toolbar button to make the height of each grid row taller
	Make the height of each grid row shorter
	Make the height of each grid row taller
	Make the height of each grid row as short as possible
	Make the height of each grid row as tall as possible

Zoom Preferences

Zoom Preferences (under the Tools menu) allows you to set a preferred horizontal and vertical zoom level and to restore it when desired.

5.3.5.2 Item List

The "item list" is the list of preview props, preview groups, grid view groups, subsequences, archive props, RGB aggregates, beat channels (in musical sequences), and loops (in animation sequences)

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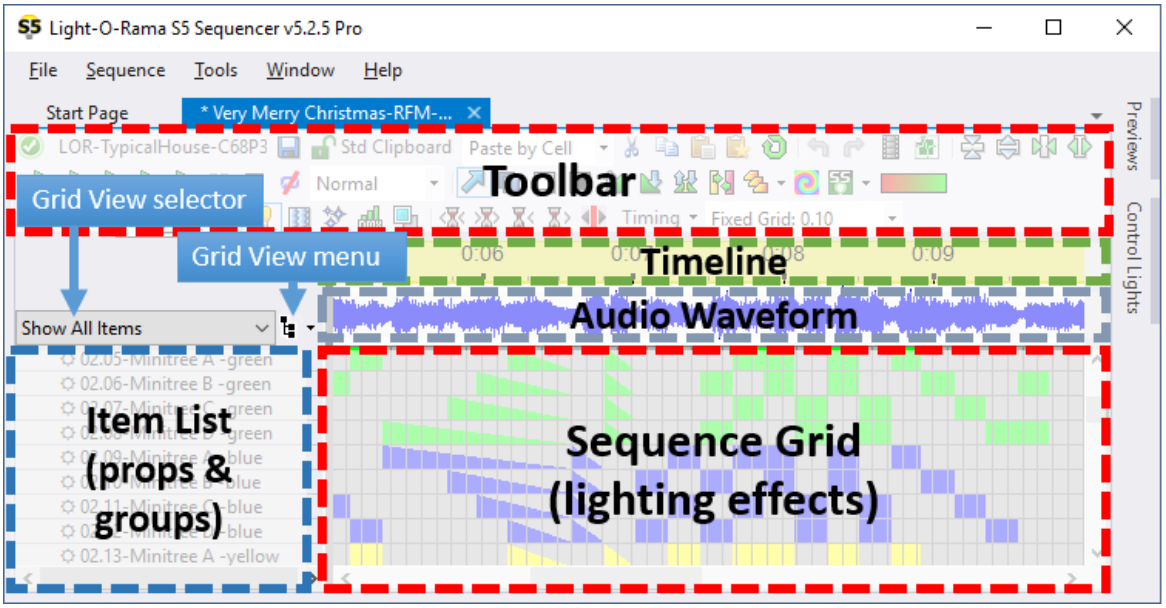
shown to the left of the sequence grid. For every item in the list, there is a corresponding row immediately to its right in the sequence grid.

Between the item list and the sequence grid is a thick gray vertical bar. Dragging the bar left or right changes the width of the item list.

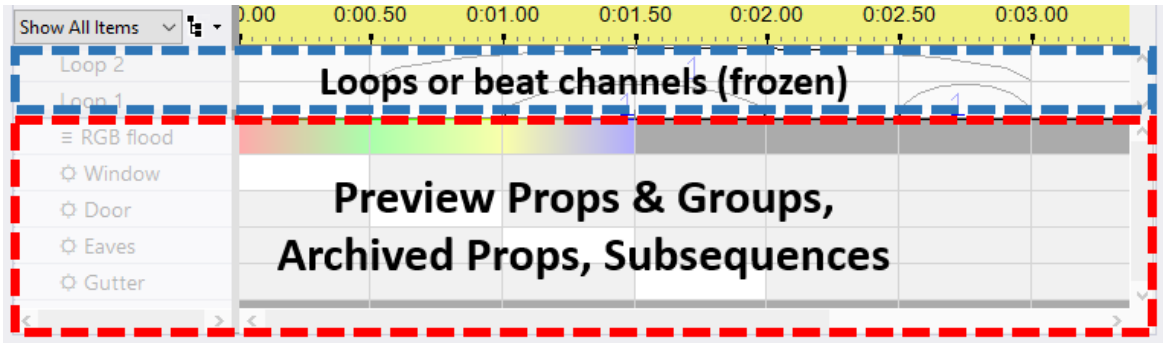


Areas within the Sequence Tab

The item list and sequence grid are divided into 2 sections:

- An upper part for beat channels (in musical sequences), and loops (in animation sequences). This part is fixed (frozen) at the top of the sequence grid so that loops and beat channels always remain visible.
- A lower part for all other items: preview props, preview groups, grid view groups, subsequences, archive props, RGB aggregates. You can create subsets of props and groups that you want to display in this section by using Grid Views.

If there are no beat or loop channels, then the upper part will be hidden. However, if both sections are shown then each will have its own vertical scroll bar on the far right.



In this section you can learn more about:

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- The various types of grid rows that are displayed in the sequence grid (regular channels, RGB channels, motion rows, subsequences, beat channels, and loop rows).
- How to use the item list
- Creating grid views
- Using the grid view menu
- Grid view groups
- Creating motion effect rows
- Adding props and groups to the current view

5.3.5.2.1 Grid Rows

When a sequence grid is displayed on your screen, each row in the grid will be of a certain type. Different row types can hold different kinds of effects.

- Regular channels
- RGB channels
- Motion Effect Rows
- Subsequences
- Beat channels
- Loop Rows

Some row types are displayed with a symbol as a prefix to help identify the type of grid row. Here is a summary of the symbols that are used:

Regular Channels (non-RGB)

A channel is assigned to a prop, which belongs to the preview associated with the sequence. A sequence can only control the channels defined in its associated preview. In order to add a channel to a sequence, you must edit the preview using the Preview Design screen. Channel names and colors are also derived from the preview, so changing the name or color requires a change to the preview.

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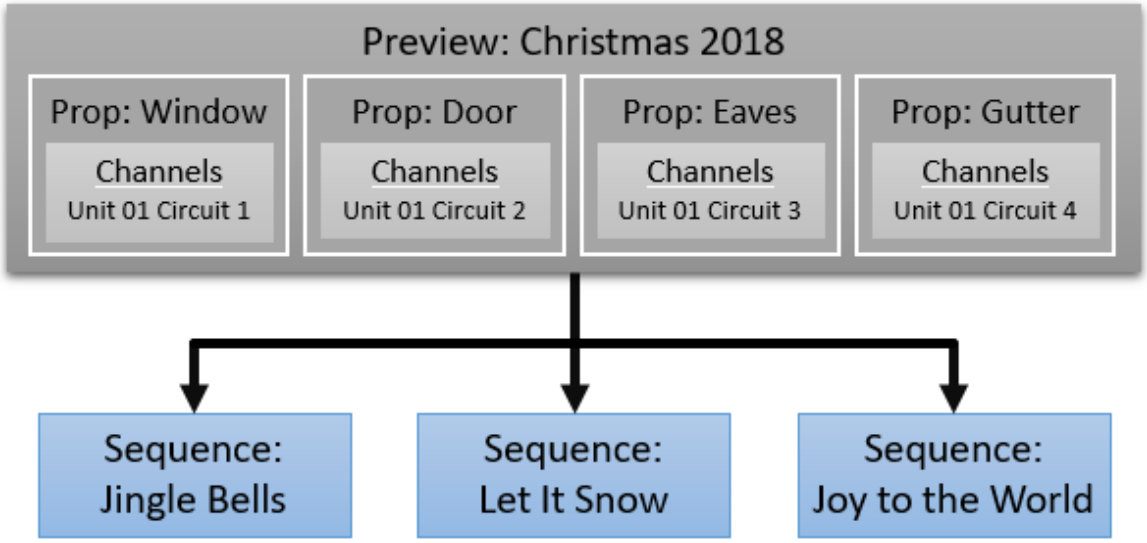
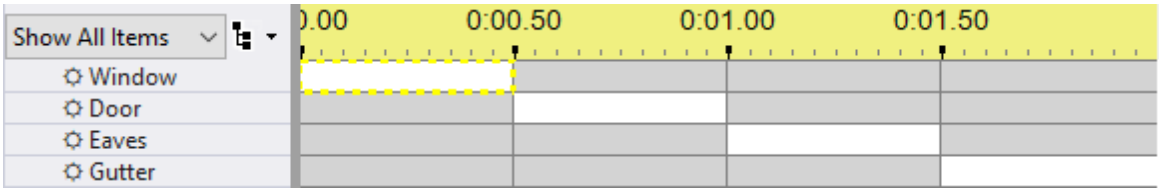


The Sequencer is used to assign effects to channels, to make the lights turn on and off, fade, shimmer, twinkle, and so forth.

In the Sequencer, channels are represented as horizontal rows. On the left side of a row is the channel name; on the right side is a grid showing what effects are assigned to the channel at what times. The grid for a regular channel is displayed with a gray background. For example, the following sequence has 4 channels, and they are named "Window", "Door", "Eaves", and "Gutter". Each one of them has an "on" effect that turns the respective channel on at 100% intensity for 1/2 of a second.



A sequence with 4 channels

See the Adding Effects topic for more details. To change an existing effect on a regular channel row, just double-click on the effect and a pop-up window will prompt for the new effect. For example, you can use this to change a twinkle to a shimmer.

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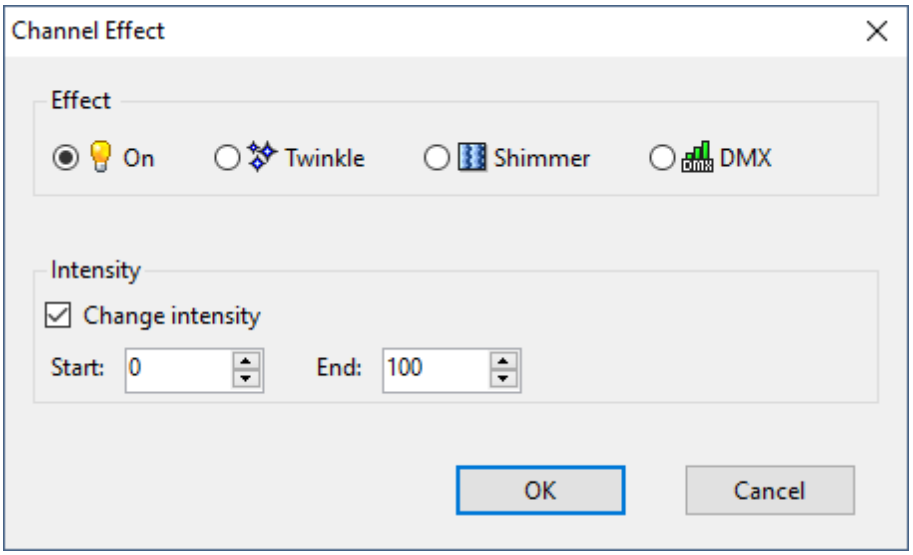
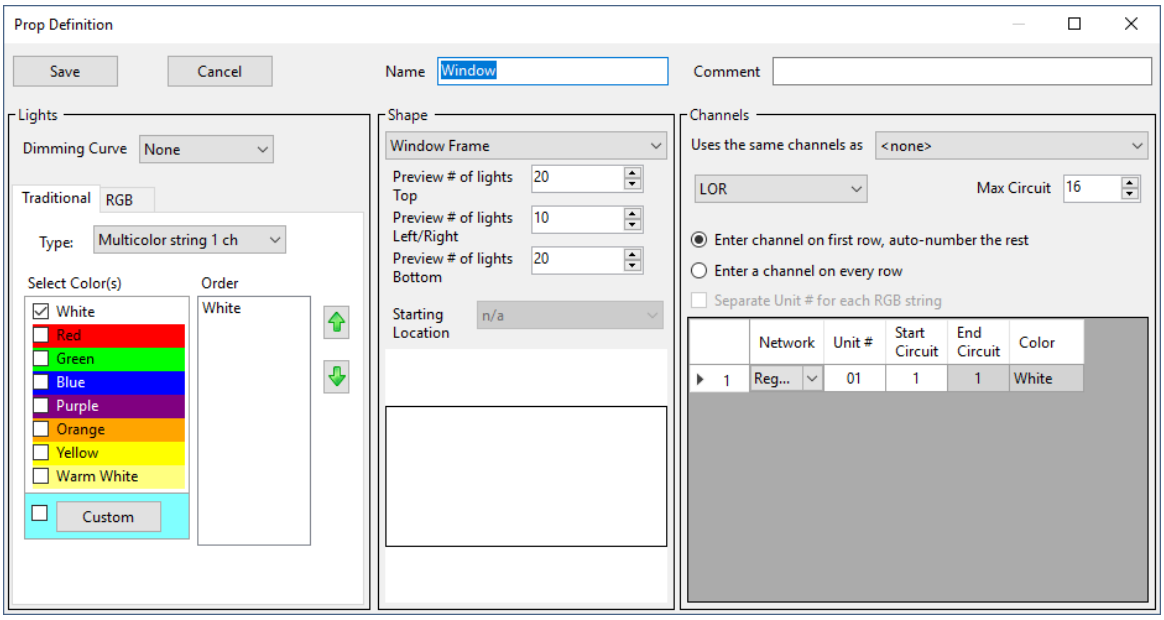


Double-clicking on a channel's name brings up the Prop Definition dialog (which is part of the preview). This allows modifications to various things like the channel's name, color, unit, and circuit:



Prop Definition screen for the Window prop

Right-clicking on a channel's name brings up a popup menu with various channel-related tools:

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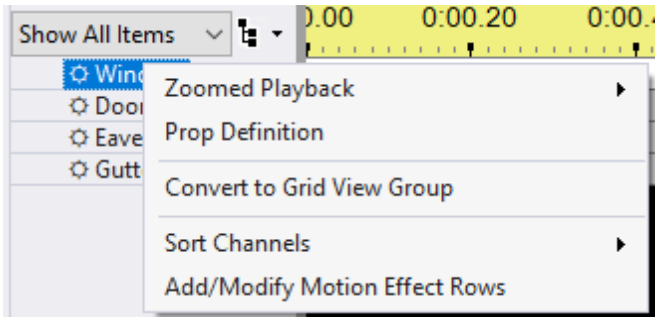


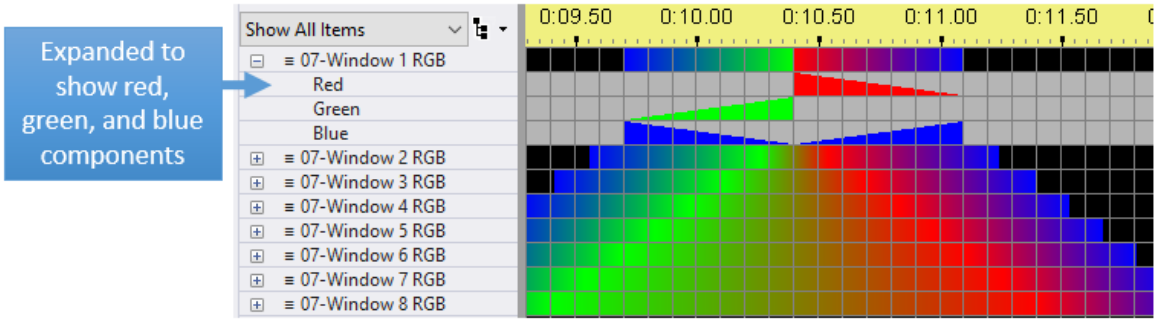
Right-click menu

Regular channel rows can be dragged up and down to rearrange their order. This has no effect on your lights; it only affects the order that they are displayed in the Sequencer. Each grid view can display channels in a different order - changing the order in the currently displayed grid view does not change the order in any other grid view.

When you play a sequence in the Sequencer, the area just to the right of the channel name flashes with the color that you selected as it turns on and off; it will also fade up and down, shimmer, twinkle, and so forth, just as your lights will. You can change the width of the "color sample" area in the Sequence Grid Preferences dialog.

RGB Channels

An RGB channel is a group of three channels - a red channel, a green channel, and a blue channel - which can be combined to produce any color. A device may have a single RGB channel, like an RGB flood light; or it can have many RGB channels, like a Cosmic Color Ribbon. In the Sequencer, an RGB channel is displayed with a black background. Lighting effects on an RGB channel are represented in the row as colors:



8 RGB channels, the first one expanded

It is important to note that the colors displayed on your computer's screen in the Sequencer are not necessarily the same colors that will appear on your actual lights, and in some cases may actually be very different. Different RGB devices may produce different colors when their constituent red, green, and blue channels are set to the exact same intensities. So, you may have to experiment a bit to figure out colors as displayed in the Sequencer that wind up looking the way you want on your actual RGB devices.

The primary tool for applying colors to an RGB channel is the Color Fade tool. This tool allows you to specify a start color and an end color; when applied to a time range in the RGB channel, it will cause that time range to gradually fade from the start color to the end color.

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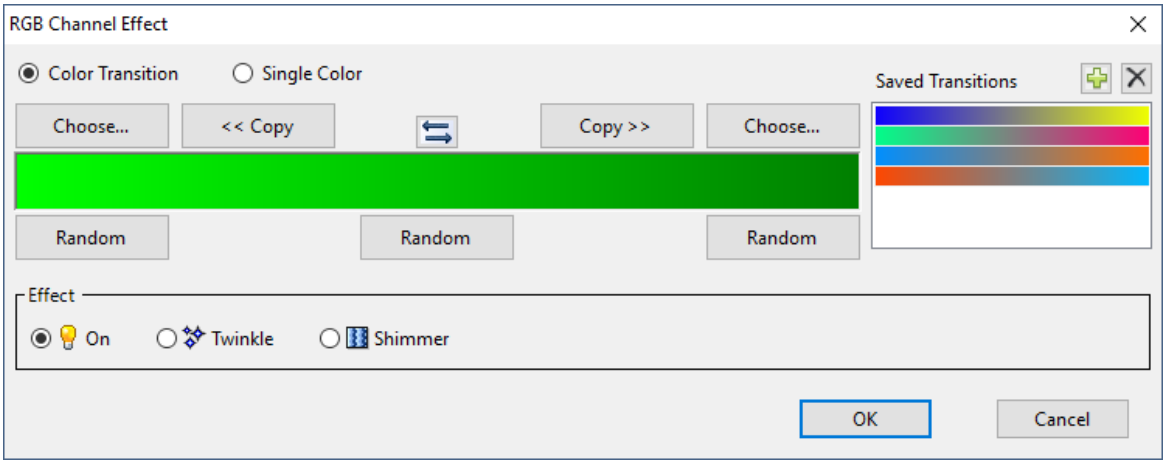
Another tool which may be particularly useful for RGB channels is the Fill tool, which (on a normal channel) allows you to click an empty area and cause it to become a fade from the preceding intensity to the following intensity. For example, if you have a normal channel which has a fade up from 40 to 60, followed by the lights being off, followed by a fade down from 80 to 20, then applying the Fill tool to the area where the lights are off will cause that area to become a fade up from 60 to 80 (because the effect preceding the empty area ended at intensity 60, and the effect following the empty area started at 80). On an RGB channel, the Fill tool will instead cause a color fade from the preceding color to the following color, allowing you to quickly set up smooth color transitions across several different colors.

The Chase and Repeat tools may also be of particular use on RGB channels. The Chase tool causes the lighting effects in a single channel (or RGB channel) to be applied through a range of following channels (or RGB channels), offset in time a bit with each passing row, so that the effect seems to be "chasing" through the channels (or RGB channels) as time passes. The Repeat tool causes one or more copies of the lighting effects in your selection to be applied immediately following your selection.

Other tools, such as Max Intensity or Fade Up or Fade Down, can also be applied to RGB channels. Doing so will cause the tool to be applied using the current color shown on the toolbar. For example, if the toolbar color is solid blue, applying the Fade Up tool, with intensities 0 to 100, to an RGB channel will cause the toolbar blue to fade up from 0 to 100, thus making the RGB channel itself fade from black to blue.

To edit an effect on an RGB channel row, just double-click on the effect and a pop-up window will prompt for the new colors and effect.



Double-clicking on an RGB channel's name brings up the Prop Definition dialog (which is part of the preview). This allows modifications to various things like the channel's name, unit, and circuit:

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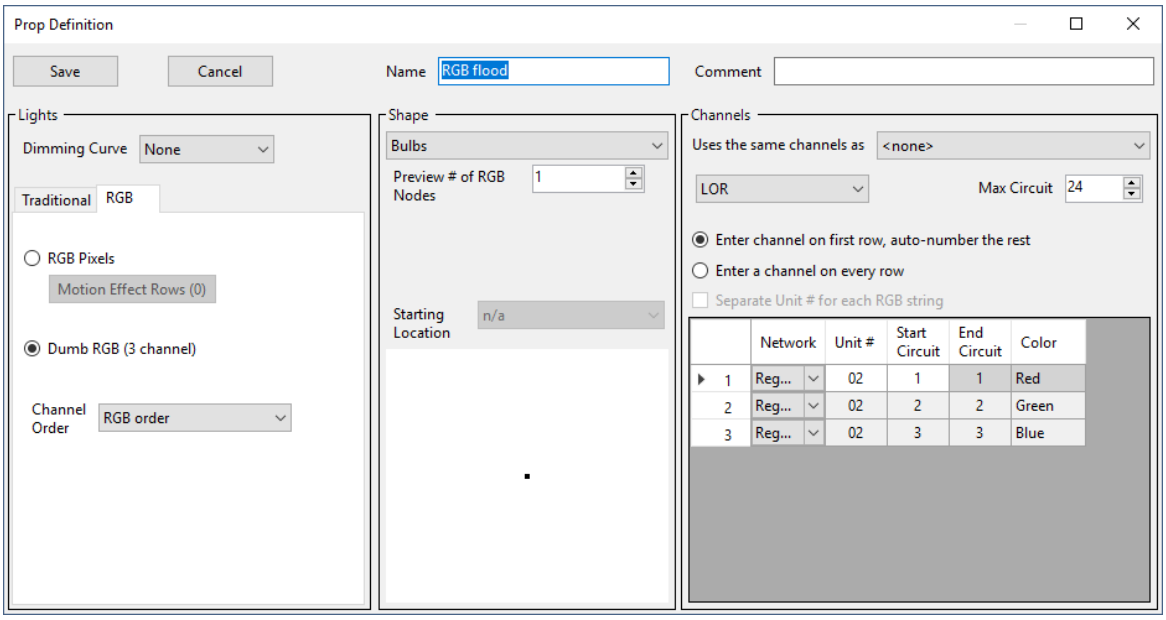
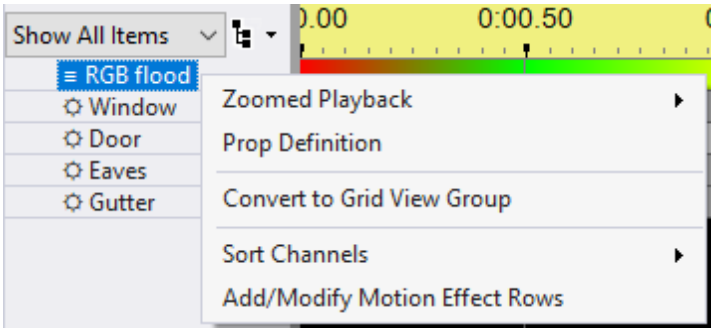


The RGB Channel Settings dialog

Right-clicking on an RGB channel's button will open up a popup menu with various channel and RGB channel-related tools:



Right-click menu

RGB channel rows can be dragged up and down to rearrange their order. This has no effect on your lights; it only affects the order that they are displayed in the Sequencer. Each grid view can display channels in a different order - changing the order in the currently displayed grid view does not change the order in any other grid view.

When you play a sequence in the Sequencer, the area just to the right of the RGB channel name is filled with the color of the current effect; the same color as your lights will display. You can change the width of the "color sample" area in the Sequence Grid Preferences dialog.

RGB channels are added to the sequence by adding props to the preview associated with the sequence.

Motion Effect Rows

Motion effect rows contain motion effects, which are moving color patterns applied to props (or groups of props) built with RGB pixels. For example, there are motion effects for spirals, snowflakes, fireworks, pictures, text, etc.

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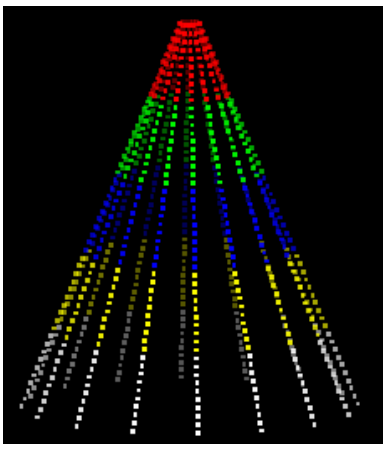
You can only add motion effect rows to a sequence if you have a Pro level license.

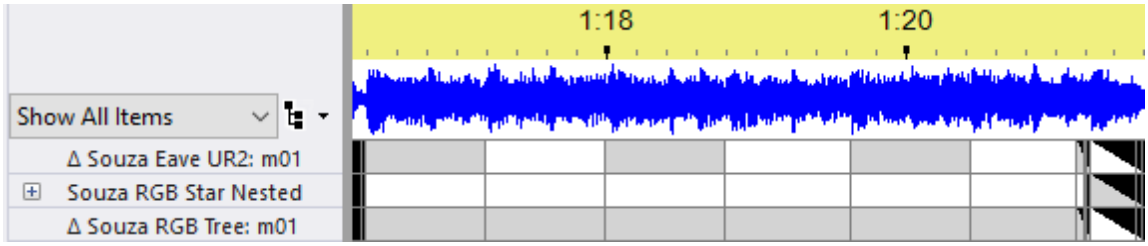


Motion effect on a pixel tree

Motion effects can be created using the Motion Effect Generator or the SuperStar Sequencer. The SuperStar Sequencer requires a separate license. To edit an existing effect on a motion effect row, just double-click on the effect -- the Motion Effect Generator or SuperStar Sequencer will open and allow you to make changes to the effect.

Motion effects can be displayed on lights connected to Enhanced LOR networks, as well as DMX networks. They cannot be displayed on LOR networks that are not enhanced. Furthermore, they cannot be used in a stand-alone sequence that is loaded into a controller.

Motion effect rows are displayed with a black background. The row names have a "Δ" prefix. Effects on a motion row alternate colors in order to show where one effect stops and the next effect starts. By default the 2 colors are white and gray. So the first effect on a row will be white, the second effect gray, the third effect white, etc. The colors shown on the grid have nothing to do with the colors that are used in the effect.



3 motion effect rows

You can customize the alternating colors in the Motion Effect Preferences screen. Also on that preferences screen, you can enable a feature that displays the first 4 letters of the effect's name on the sequence grid. This can help identify the effect. Here is the same example with name display enabled. You can see that the first row contains a series of Colorwash effects, the second contains Bars effects, and the third row contains Spiral effects.

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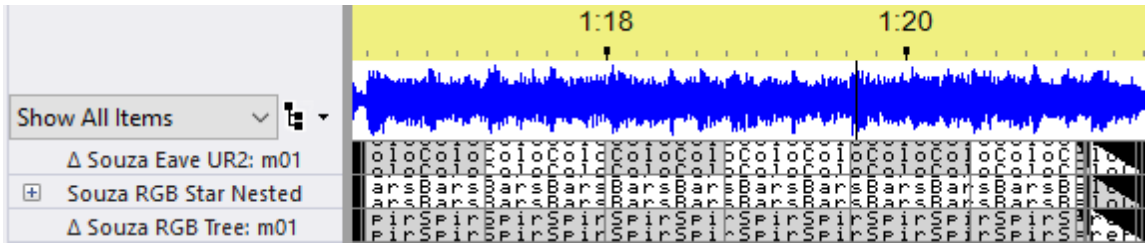
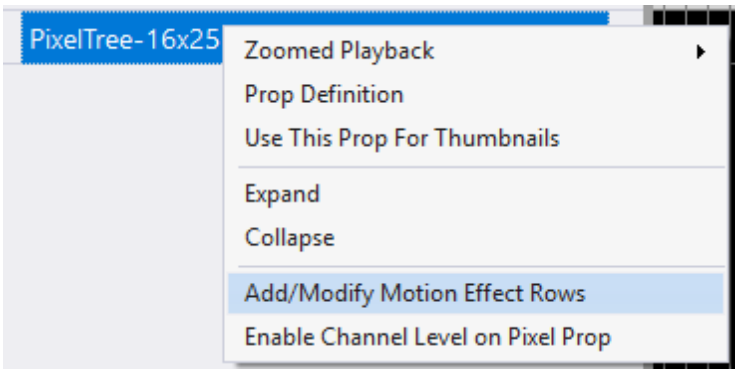
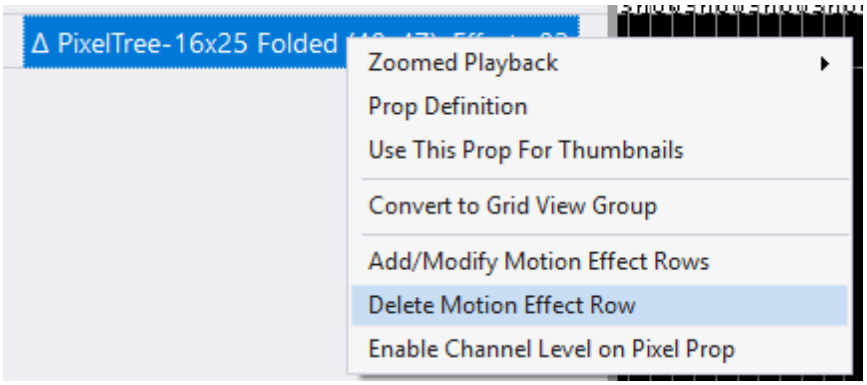


Motion effects with naming enabled

Motion effect rows are created automatically for pixel-based props and groups when you create a sequence and set the "Default number of motion effect rows for pixel props" field to a number greater than 0 (see the New Animation Sequence and New Musical Sequence dialogs). You can create them later (or add more) by right-clicking on a prop, group, motion row, or channel name on the left side of the sequence grid and selecting "Add/Modify Motion Effect Rows".



You can remove a motion effect row by right-clicking on the motion effect row name and selecting "Delete Motion Effect Row". You can do some bulk deletions by selecting Sequence > Delete Grid Rows from the main menu.



Subsequences

A subsequence is a sequence that is used as a part of another sequence (its "parent sequence", or "the main sequence"). Subsequences are displayed with a "§" prefix in the sequence grid.

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A subsequence

A sequence grid row for a subsequence can be turned on and off, using the Sequencer, in the same ways that other channels can be. When the channel in the main sequence is turned on, the subsequence will begin playing, from its beginning. It will continue playing for as long as the channel remains on; if play of the subsequence reaches its end before the channel has been turned off in the main sequence, the subsequence will simply loop back to its beginning and continue playing.

When the channel in the main sequence is turned off, the subsequence will stop playing. If the channel is subsequently turned back on, the subsequence will start playing again, from its beginning (not from the last point that it left off at).

In S5, the effects contained in a subsequence will be displayed in the playback window while the sequence is being played. This is different from prior versions.

Tip: Do not set up the same physical unit and circuit to be a channel in a sequence *and* a channel in a subsequence of that sequence (or two channels in two different subsequences of a sequence). Doing so will likely cause unexpected and undesired results, as the two channels compete for control over the same physical circuit.

Note: If a sequence with a Windows shell command is used as a subsequence, that command will *not* be executed. Only the shell command associated with the main sequence (if any) will be executed.

A subsequence can be created by selecting "Subsequence" from the "Add New" item on the Sequence menu or on the Grid View menu.

Right-click on a subsequence's name and select "Modify Subsequence" to change its name, color, or referenced sequence file.

Right-click on a subsequence's name and select "Delete Subsequence" to remove it completely from the sequence.

Beat Channels

Beat channels are intended to hold sequence effects related to the beat of the music; however, you can put any regular channel effect anywhere you want in a beat channel. Beat channels can only be added to musical sequences and are shown with a "♪" symbol as a prefix. Beat channels are not shown in the playback window when the sequence is played and they cannot control real lights. Beat channels stay frozen at the top of the sequence grid so they are always visible. You can add as many beat channels as you want to a sequence, there are no limits.

If you have many beat channels in a sequence, you might not want to see all of them at one time - as it could take up a lot of valuable screen space. You can control this by selecting the Beat Channel Row Count item from the Grid View menu.

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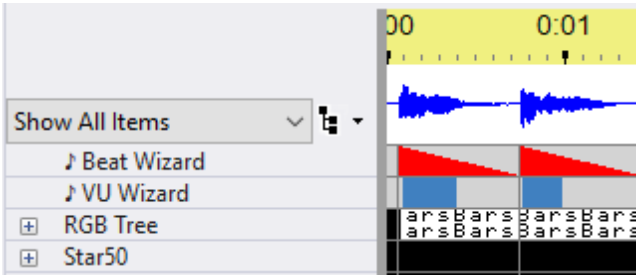

2 beat channels at the top of a sequence

Beat channels can be created:

- Within any of the 4 audio wizards.
- By selecting "Beat Channel" from the "Add New" item on the Sequence menu or on the Grid View menu.
- By right-click on an existing beat channel name and selecting "Add Beat Channel"

Right-click on a beat channel's name and select "Modify Beat Channel" to change its name and/or color.

Right-click on a beat channel's name and select "Delete Beat Channel" to remove it completely from the sequence.

You can copy sequencing from a beat channel to other areas of your sequence using copy/paste.

Loop Rows

An animation sequence (but not a musical sequence) can contain loops. When the Show Player or the Sequencer plays a sequence with loops, when the end of a loop is reached, the sequence will go back to the beginning of the loop. This will happen a certain number of times (which you specify), after which the sequence will continue on past the end of the loop.

Each time through a loop, you can have the sequence speed up, slow down, or remain at the same speed.

A sequence can contain many loops. Loops can be nested - that is, a loop can contain other loops.

Loop rows are shown with a white background are fixed to the top of the sequence grid. They do not scroll away when the rest of the sequence is scrolled vertically.

For example, the following picture shows a sequence with a loop starting at 1 second and ending at 2 seconds. The number of times the loop will repeat is shown in the middle of loop (1 in this case). If the loop were to speed up after each pass, then the repeat count would be followed by a "+" symbol. If the loop were to slow down after each pass, then the repeat count would be followed by a "-" symbol. In this case the loop speed is set to stay the same, so no symbol is displayed.

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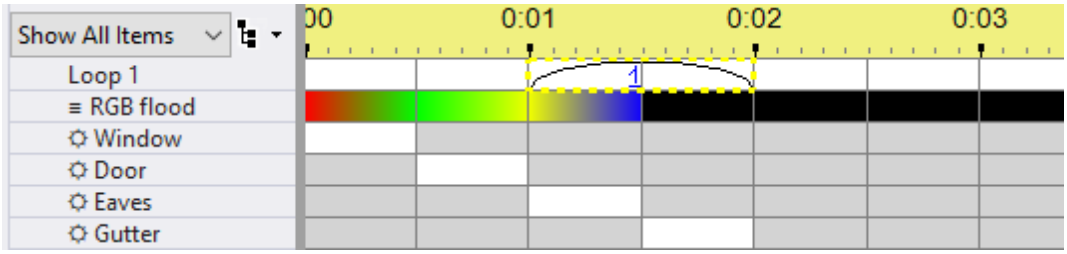
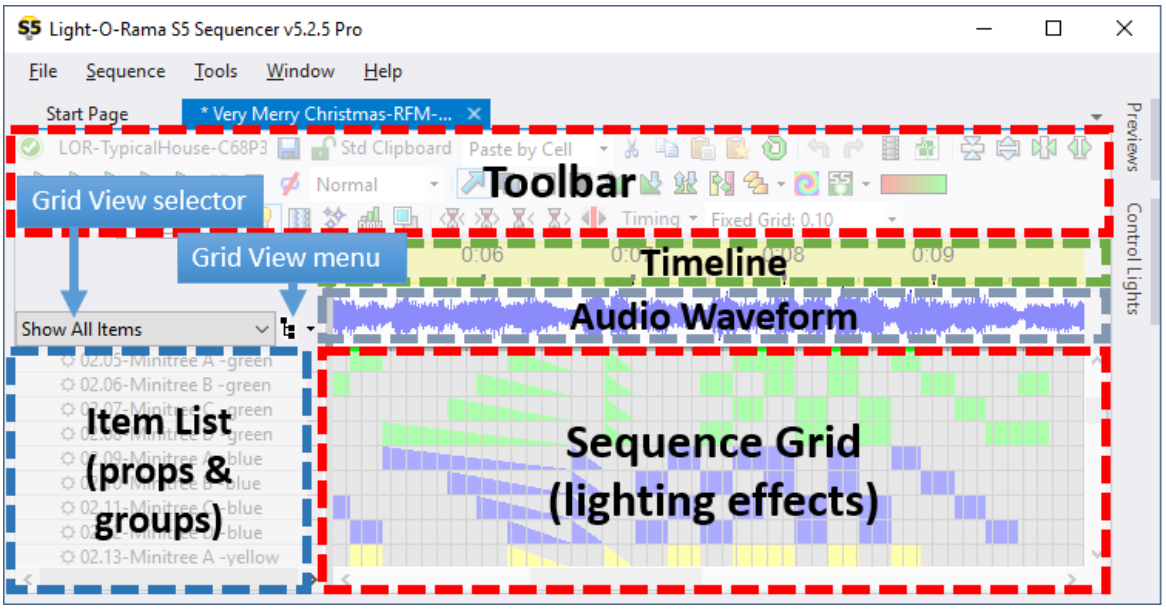


A sequence with a loop starting at 1 second and ending at 2 seconds

See the Loops in Animation Sequences topic for more information.

5.3.5.2.2 Using The Item List

The item list appears to the left of the sequence grid.



Areas within the Sequence Tab

Subjects covered in this topic:

- Item List Hierarchy
- Condensed Mode
- Item List Double-Click
- Reordering The Item List
- Item List Right-Click Menu
- X'ed Out Rows

Item List Hierarchy

The item list is a hierarchical tree where items in the list can have child items, and those children can in turn have children. Items in the hierarchy with child items below them will be displayed with a "+" or "-" symbol inside a small box to the left of the name:

- a "+" symbol means the children are hidden; clicking on the "+" will expand the tree node and display the children

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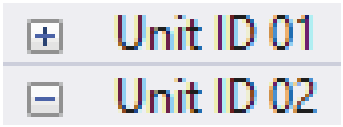
- a "-" symbol means the children are displayed; clicking on the "-" will collapse the tree node and hide the children.

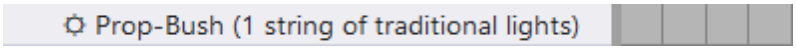


- You can right-click on a collapsed item (one with a "+" button next to it) and select "Expand" from the pop-up menu to display all children at all levels below the item that was clicked.
- You can right-click on an expanded item (one with a "-" button next to it) and select "Collapse" from the pop-up menu to hide all children at all levels below the item that was clicked.
- You can select Expand All from the Grid View Menu to display all children for every item in the Item List.
- You can select Collapse All from the Grid View Menu to hide all children for every item in the Item List.

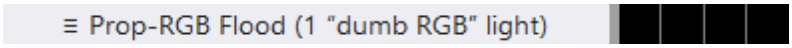
Preview Props

Preview props that have a single regular channel, RGB channel, or motion effect row will be displayed as a single row in the sequence grid.

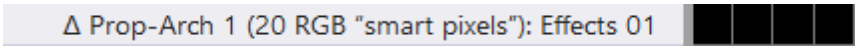
A prop with a single string of lights (such as a bush):



An RGB flood light:



A pixel-based arch with 1 motion effect row and the channel level disabled (motion effect rows require a Pro license):



Preview props that have more than one regular channel, RGB channel, or motion effect row will be displayed as a tree in the item list. The examples below are shown with Condensed Mode off.

A mini-tree with multiple strings of lights, and each string color is assigned to a separate channel:

A megatree built with strings of traditional lights (c01 is the first string, c02 the second, etc):

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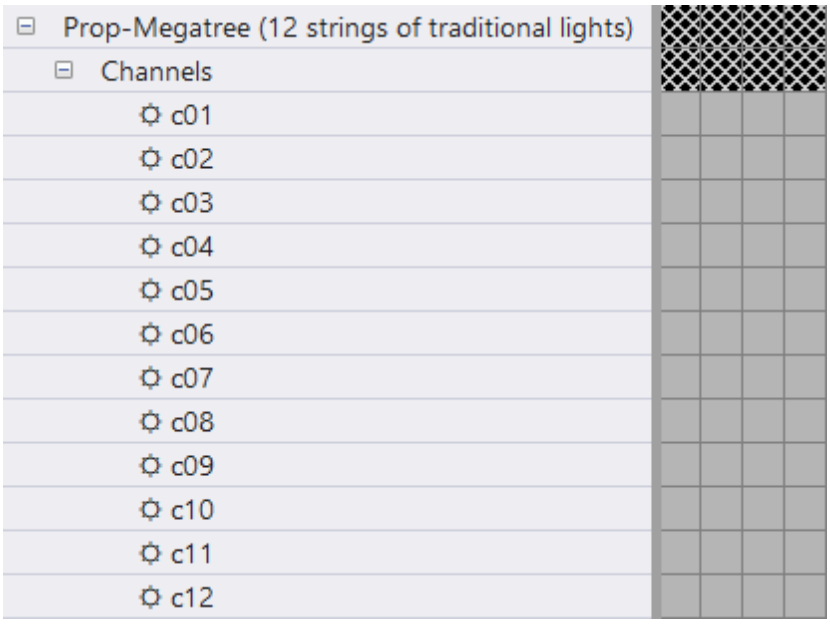
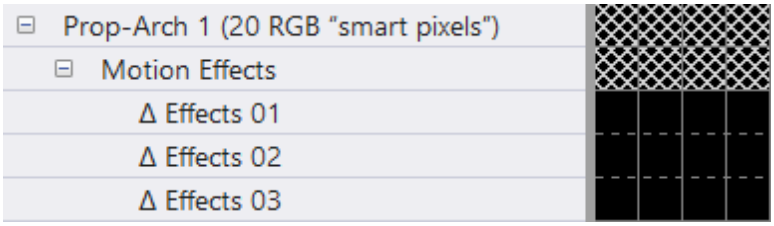


A pixel-based arch with 3 motion effect rows and the channel level disabled (motion effect rows require a Pro license):



Preview Groups

Preview groups can generate a hierarchy because they can have motion effect rows (if the group's arrangement setting is not "none"). Members of the group (props and/or other groups) are also listed under the group.

Note: motion effects on groups allow you to do some amazing things, like color sweeps across several props or even your entire display.

As an example, here are 3 pixel arches combined into a group.

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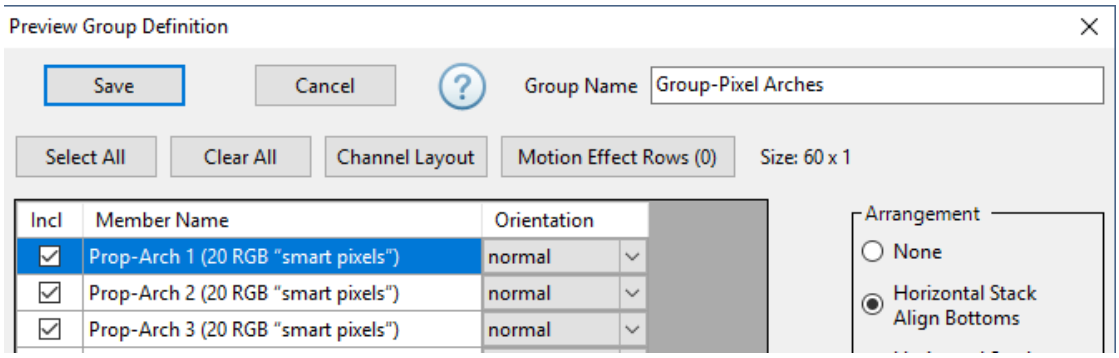
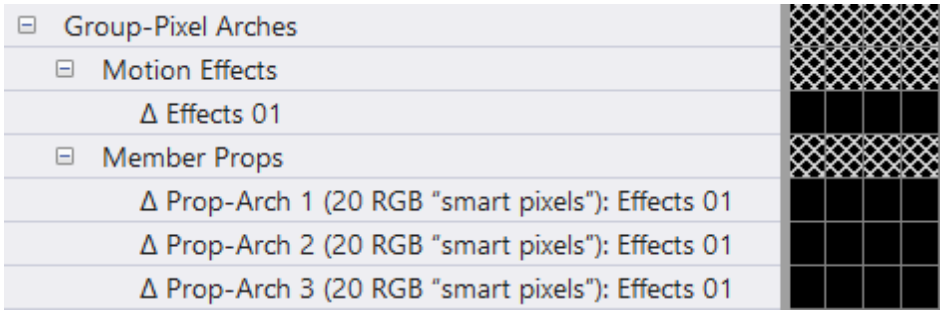


Group Definition

The first motion effects row is for the group - effects created here will act as if the combined arches are one big prop. This is followed by motion effect rows for each individual prop.

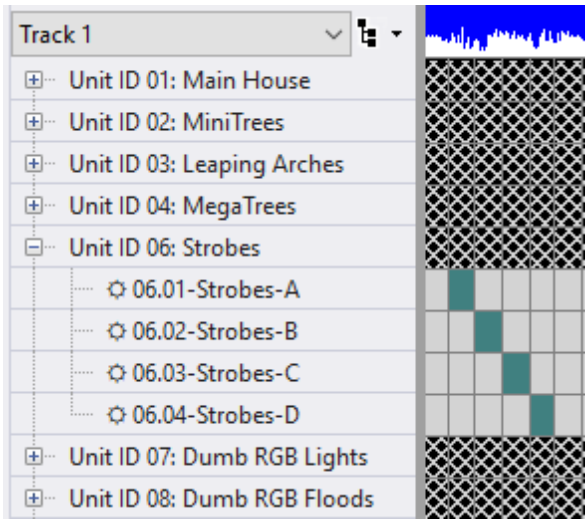


Group displayed in the sequence grid

Grid View Groups

A grid view group is a set of regular channels or RGB channels or Motion Effect rows or beat channels (or, conceivably, other grid view groups) that is nested together, so that it can be collapsed down to a single row in the sequence grid, or expanded to show all of its members.

In this example, the grid view group "Unit ID 06: Strobes" has been expanded. The other grid view groups are collapsed.



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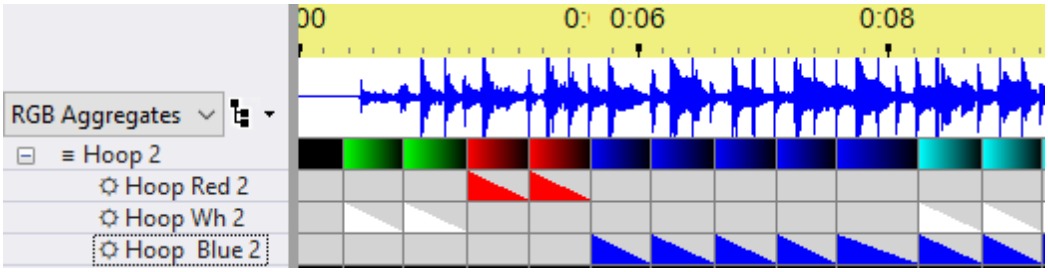
RGB Aggregates

RGB aggregates have 3 channels that are displayed as children in the hierarchy.

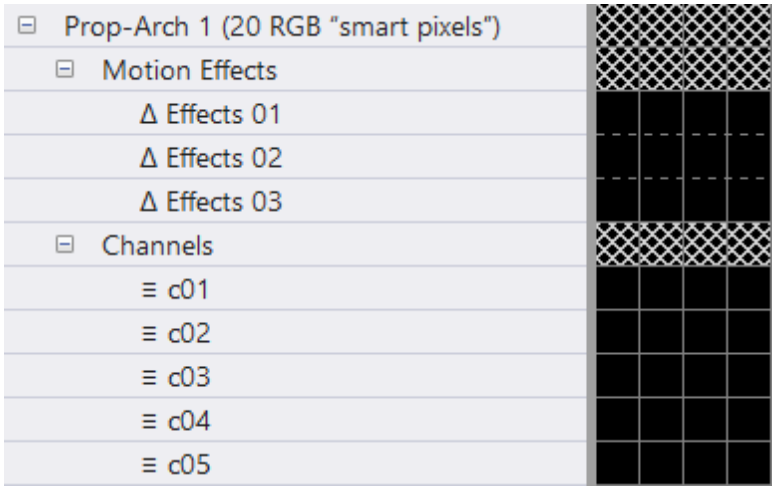


"Hoop 2" is an RGB Aggregate

RGB Channels on Pixel Props

If you have a Pro license, pixel-based props are displayed with motion effect rows by default. You can display the RGB channels by right-clicking on the prop name and selecting "Enable Channel Level on Pixel Prop" on the pop-up menu. Later, if you decide that you no longer need the channel level, you can right-click on the prop name and select "Remove Channel Level on Pixel Prop". If you don't have a Pro license, then RGB channels are always displayed (motion effect rows are not available at these license levels).

As an example, here is a pixel-based arch with the channel level enabled (only the first 5 RGB channels are included in the picture). With these settings, the prop can be sequenced using motion effects and channel effects interchangeably. Channel names use a "Rxx Cyy" notation, where xx is the row number and yy is the column number. If the prop only has 1 row, the row number is omitted. If the prop only has 1 column, the column number is omitted You can find out which pixel is which by setting Pixel labeling to "Row / Column" in Preview Design and then selecting the prop in question. The row and column numbers shown in the channel description also correspond to the rows and columns shown in the Layout View.



Condensed Mode

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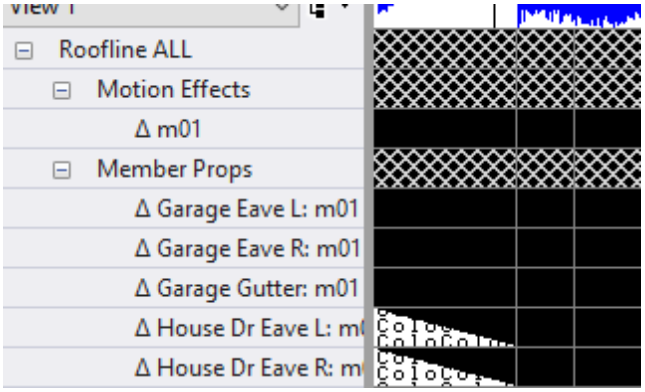
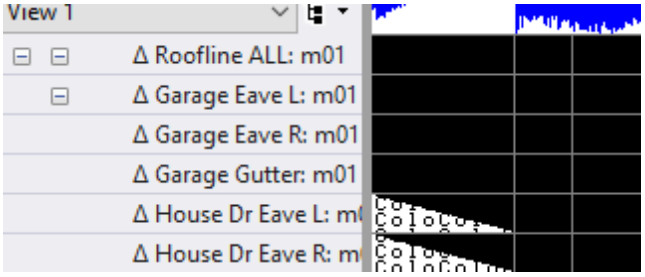
The item list hierarchy can be displayed such that all levels of the tree are displayed, or a "condensed" mode where higher levels of the tree are hidden when lower levels are displayed.

Turning condensed mode off makes it easier to understand the item list hierarchy, but it leaves "blank" rows (the ones with X's) in the sequence grid.



Condensed Mode OFF

Turning condensed mode on mimics the behavior of the Sequence Editor in prior versions, and uses the screen space more efficiently. This is the same example as above; however, with condensed mode enabled, the "Roofline ALL", "Motion Effects", and "Member Props" items have been hidden because their children are visible.



Condensed Mode ON

You can turn condensed mode on or off via the Grid View Menu.

Item List Double-Click

Double-clicking on an item name brings up the Prop Definition or Group Definition or Beat Channel Definition, depending on the type of item that was clicked. If a prop or group definition is modified in this way, the sequence grid will be updated to reflect the changes and the preview will be saved to disk.

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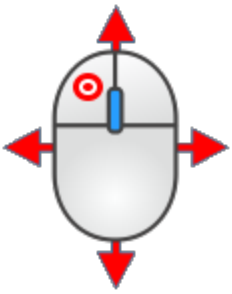
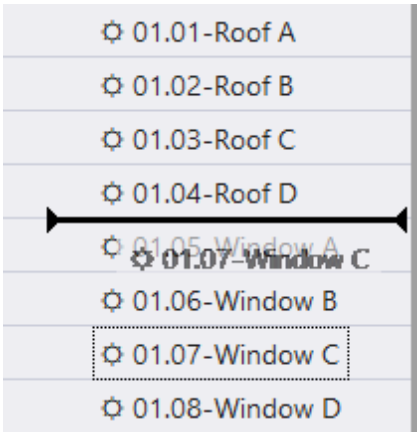
Reordering The Item List



You can reorder the list by clicking and dragging items. In the picture below, "01.07-Window C" is being dragged to a new position. You can also use this technique to move items in and out of grid view groups.



Other ways of reordering the item list include:

- Right-clicking on a channel name and selecting "Sort Channels" from the pop-up menu.
- Selecting Sort Item List from the Grid View Menu.

Item List Right-Click Menu

Right-clicking on an item name brings up a context menu of actions you can take with that item. The content of the menu is highly dependent on the type of item that was clicked.

Menus for regular channels, RGB channels, motion effect rows, and preview groups

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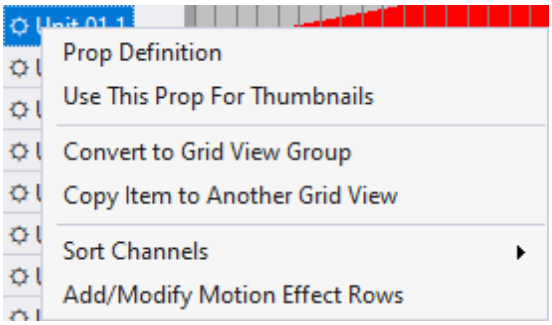
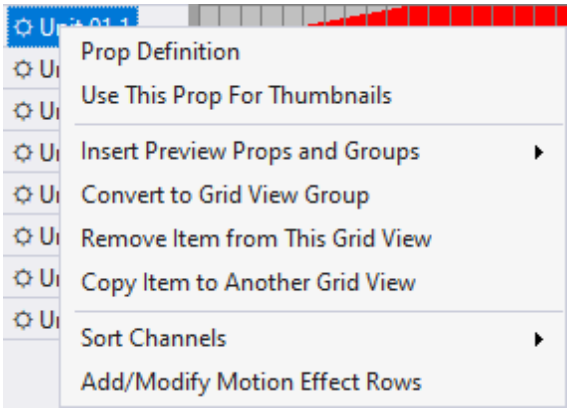
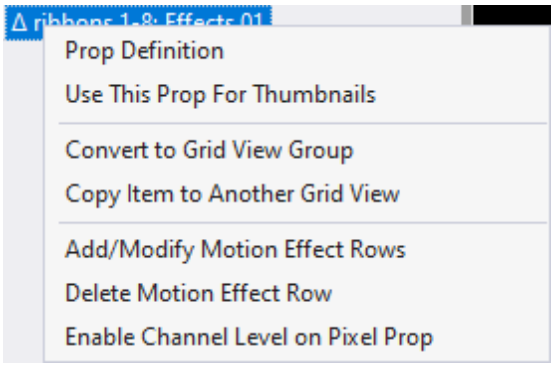


Menu for a regular channel or RGB channel in the "Show All Items" grid view



Menu for a regular channel or RGB channel in a user grid view



Menu for a motion effect row

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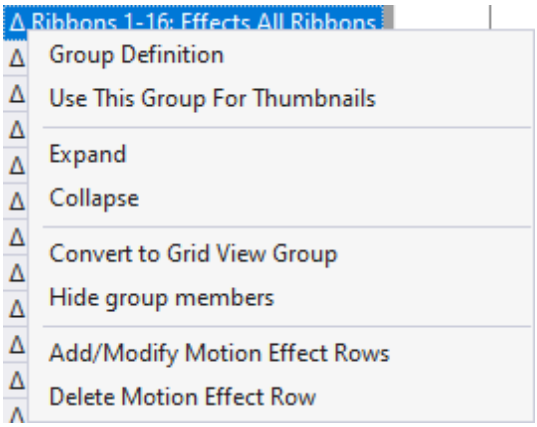
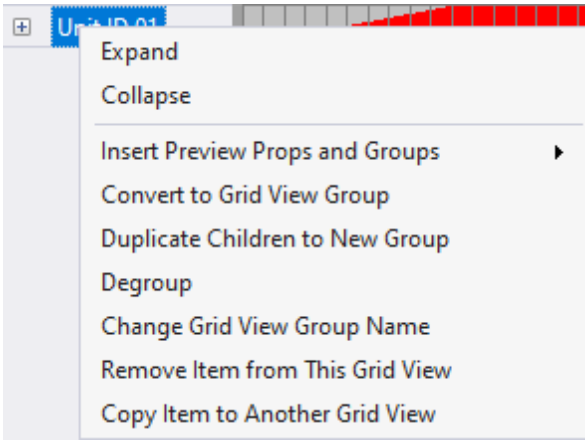


Menu for a preview group



Menu for a grid view group

As you can see from the examples above, not all menu items are available in every situation. However, here is a compilation of the menu items you will encounter:

- **Prop Definition** - opens the Prop Definition window for the prop
- **Group Definition** - opens the Group Definition window for the group
- **Use This Prop (or Group) For Thumbnails** - by default, effect thumbnails displayed in the Motion Effects Window use a 50 by 50 matrix. However, with this command you can have the thumbnails generated using the selected prop or group.
- **Expand** - expands all levels of the selected prop or group, such that all child items are displayed.
- **Collapse** - collapses all levels of the selected prop or group, such that all child items are hidden.
- **Insert Preview Props and Groups** - adds additional props or groups to the current grid view via the Insert Props And Groups Dialog. This menu item is for user grid views only (not the "Show All Items" grid view).
- **Convert to Grid View Group** - opens a dialog that allows you to move the clicked item, and optionally those below it, into a new grid view group.
- **Duplicate Children to New Group** - allows you to copy the children of the current grid view group into a new group.
- **Degroup** - removes the selected grid view group, but leaves the members of the group in its place.

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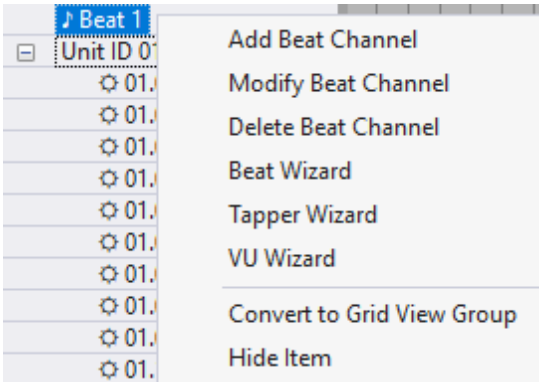
- **Change Grid View Group Name** - allows you to change the name of the selected grid view group.
- **Remove Item from This Grid View** - removes the selected item for the current grid view. The item is not deleted, it is simply no longer visible in the current view. This menu item is for user grid views only (not the "Show All Items" grid view).
- **Copy Item to Another Grid View** - opens a dialog that allows you to make the selected item visible in another grid view (an existing grid view or a new one).
- **Hide group members** - by default, when you include a preview group in a grid view, you will see "member props" and/or "member groups" nodes below the group node. Use this menu option to hide those "member" nodes. This can be useful If you are at the Pro license level and using motion effects to sequence the preview group - you may not want to see the members of the group.
- **Sort Channels** - Sort all of the channels on the same hierarchy level by name, channel color, row number within the prop layout, column number within the prop layout, physical channel settings, or reverse the current order.
- **Set Channel Name** - sets the channel name. This menu item is only available on props with multiple strings (e.g. megatrees).
- **Add/Modify Motion Effect Rows** - allows you to add new motion effect rows and/or modify existing ones via the Motion Effect Rows Dialog.
- **Delete Motion Effect Row** - displays a confirmation message, and then deletes the selected motion effect row. If you need to delete multiple rows, see the Sequence > Delete Grid Rows option on the main menu.
- **Enable Channel Level on Pixel Prop** - enables channel level sequencing on pixel-based props. If the channel level has already been enabled, this entry will be "Remove Channel Level on Pixel Prop" - which will remove the RGB channels and allow motion effects sequencing only.

Menu for a beat channel



Options on this menu include:

- **Add Beat Channel** - opens a dialog that allows you to add a new beat channel to the sequence.
- **Modify Beat Channel** - open a dialog that allows you to change the name and/or color for the selected beat channel.
- **Delete Beat Channel** - displays a confirmation message, and then deletes the selected beat channel.
- **Beat Wizard** - opens the Beat Wizard.
- **Tapper Wizard** - opens the Tapper Wizard.
- **VU Wizard** - opens the VU Wizard.

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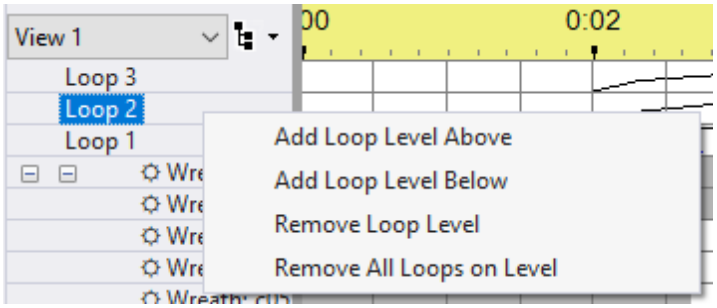
Menu for a loop row



Menu when right-cliicking on a loop name

These items are described in the Loops in Animation Sequences topic.

X-ed Out Rows

If a row is displayed with an "X" pattern, it is a placeholder in the item list and cannot have effects applied to it. This most often occurs when Condensed Mode is off -- the placeholder rows can be hidden by turning Condensed Mode on.

A placeholder row

5.3.5.2.3 Grid Views

A grid view is an ordered collection of grid rows. A grid view can contain any type of grid row except loop rows and beat channels. Loop rows (in animation sequences) and beat channels (in musical sequences) are fixed to the top of the sequence grid and do not change when the grid view is changed.

A sequence can contain multiple grid views, and there is a grid view selector that allows you to quickly flip between them. To the right of the grid view selector, is a button that opens the grid view menu.

There is a system grid view named "Show All Items" which automatically displays all items in the sequence. If an item is added to the preview, it is automatically added to the "Show All Items" grid view. You can change the order of items in the "Show All Items", but you cannot add, remove, or copy items within it. All other grid views are user created, and you have complete control over their content. You might have a grid views for lights in your yard and another for lights on your house. Or you might have one grid view for props with traditional lights and another for ones that have pixels. Creating grid views is optional; you can stick with the "Show All Items" grid view and leave it at that.

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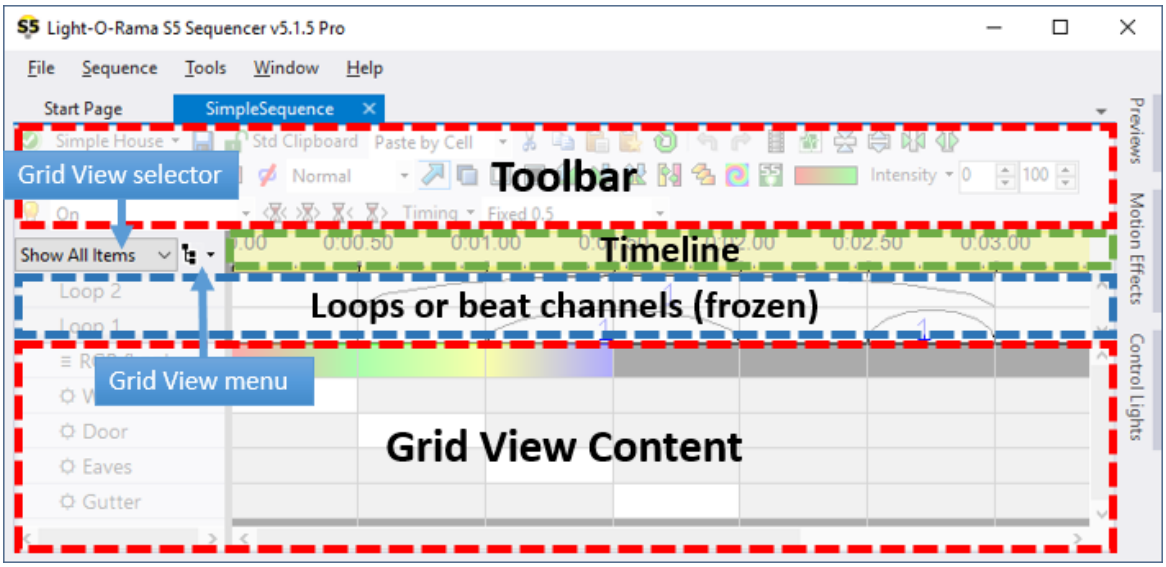


Areas within the Sequence Tab

All sequences are initially created with a "Show All Items" grid view. There are a few ways to add another grid view using the Sequencer:

- From the Grid View menu:
  - "Add New View" will add a grid view and let you pick the props and groups that appear in it
  - "Save View As" will create a new grid view with the same props and groups as the current grid view. This can also be used to copy the "Show All Items" system grid view to a user grid view, which you can more extensively customize.
- Right-click on a channel, prop, or group name on the left side of the grid and select "Copy to Other Grid View". This will allow you to add the item to an existing grid view or to a brand new grid view.

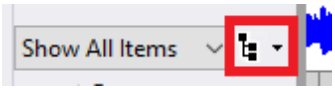
Import/Export

It can make the process of sequencing easier if your props and groups are listed in the same order in every sequence. You can do this by setting up the desired order in one sequence, and perhaps categorize the props into several grid views. To make your grid views available in other sequences you export then from the original sequence and import them into the others. See the "Grid Configuration" item on the Grid View menu (also available on the Sequence menu).

Note: the "Show All Items" grid view is excluded from the export/import process because it is system-generated. Use the "Save View As" item on the Grid View menu to copy it to a user view, which will be exported.

5.3.5.2.4 Grid View Menu

The Grid View Menu is opened by clicking the icon just to the right of the Grid View selector. The icon is marked with a red box in the following picture:



When opened, the menu displays options to control the grid view:

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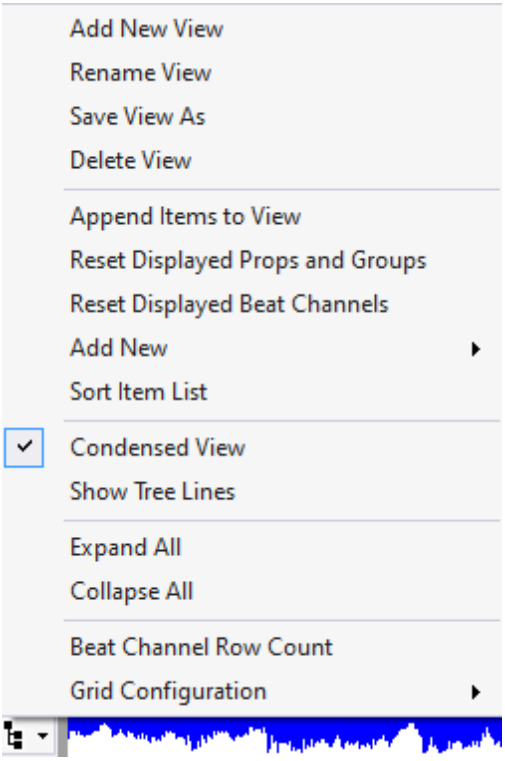
- Add New View
- Rename View
- Save View As
- Delete View
- Append Items To View
- Reset Displayed Props And Groups
- Reset Displayed Beat Channels
- Add New Sub-menu
- Sort Item List
- Condensed View
- Show Tree Lines
- Expand All
- Collapse All
- Beat Channel Row Count
- Grid Configuration Sub-menu



Add New View

This menu item prompts for the name of a new grid view. It then opens the Insert Props And Groups Dialog so that you can select the items that will be in the grid view.

Rename View

This menu item allows you to enter a new name for the current grid view

Save View As

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This menu item prompts for the name of a new grid view. It then copies the current grid view into the new one.

Delete View

This menu item displays a confirmation message, and then deletes the current grid view. You cannot delete the "Show All Items" grid view, as it is system-generated.

Append Items To View

This menu item opens the Insert Props And Groups Dialog, and then appends the selected items to the bottom of the current grid view. Does not apply to the "Show All Items" grid view.

Reset Displayed Props And Groups

This menu item opens the Insert Props And Groups Dialog, and then replaces the items in the current grid view with the ones selected in the dialog. Does not apply to the "Show All Items" grid view.

Reset Displayed Beat Channels

This menu item opens a dialog that allows you to select amongst the beat channels defined in the sequence. The newly selected beat channels replace any that are currently displayed in the grid.

Add New Sub-menu

This menu item opens a sub-menu that allows you to add a new a loop row, subsequence, beat channel, or RGB aggregate. "Add New" is also available on the main menu at Sequence > Add New.

Sort Item List

This menu item opens the sort dialog, allowing you to reorder the item list. It sorts the top level of the item list. For each category of item, click the radio button according to your desired sort priority. "1" means it sorts to the top; "6" means it sorts to the bottom. Items at the same sort priority will be intermixed and sorted together alphabetically.

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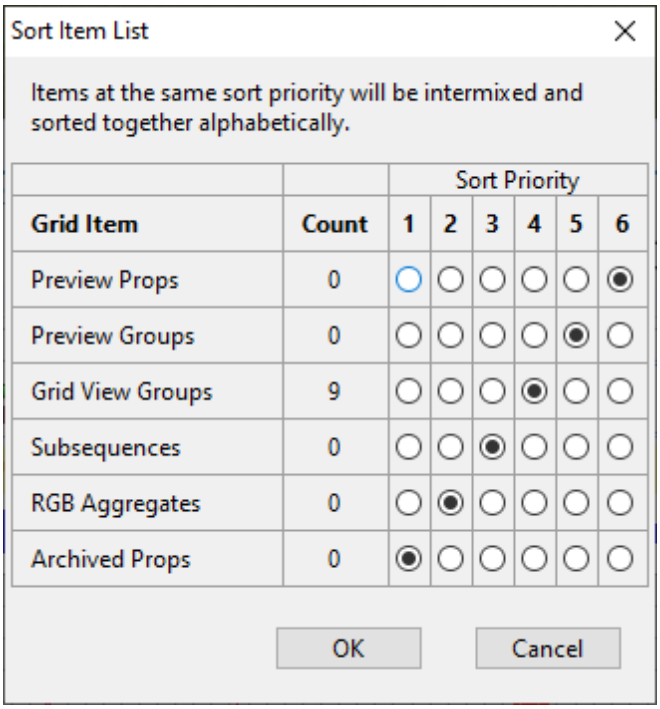

The Sort Item List Dialog

Other ways of reordering the item list include:

- Dragging an item and dropping it in its new position in the list.
- Right-clicking on a channel name and selecting "Sort Channels" from the pop-up menu.

Condensed View

This menu item toggles the condensed mode on and off.

Show Tree Lines

This menu item toggles the display of tree lines in the item list.

Expand All

This menu item causes all children for every item in the item list to be displayed.

Collapse All

This menu item causes all children for every item in the item list to be hidden.

Beat Channel Row Count

This menu item opens a dialog that allows you to modify the maximum number of beat channels that are displayed. The default is 10.

Grid Configuration Sub-menu

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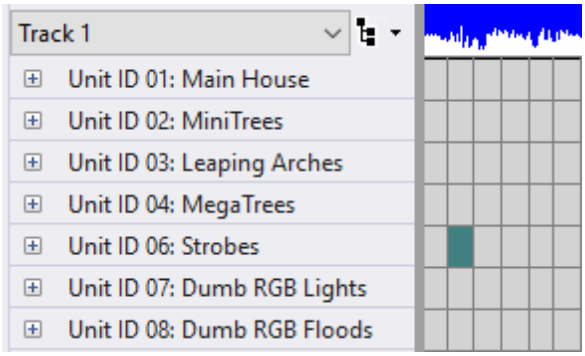
The "Grid Configuration" sub-menu is the same as the one at Sequence > Grid Configuration. See that topic for more information.

5.3.5.2.5 Grid View Groups

A grid view group is a set of regular channels or RGB channels or Motion Effect rows or beat channels (or, conceivably, other grid view groups) that is nested together, so that it can be collapsed down to a single row in the sequence grid, or expanded to show all of its members.

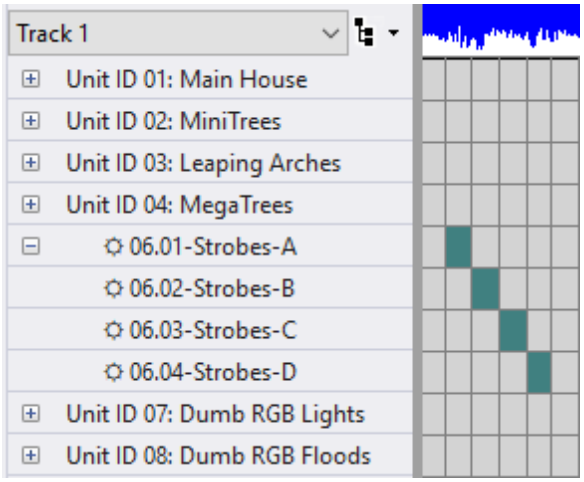
Note that the Sequencer has 2 ways to create groups: Preview Groups and Grid View Groups. Preview Groups are often the preferred method of creating groups, as they are automatically shared by all of the sequences using the same preview. On the other hand, Grid View Groups can only be shared with another sequence by exporting the grid configuration from one sequence and importing it into another.

When a grid view group is first created, the grid view group is shown as a single row:



Several collapsed grid view groups

Click the "+" button on the left to expand the group, and the "-" button to collapse it.



The "Strobes" group has been expanded

Notice that the "Unit ID 06: Strobes" row has been hidden in the picture above because this is the sequence grid's condensed view. Sequences often have many rows and it is usually important to display as many rows as possible to make sequencing go faster. This is the purpose of the condensed view -- to show as many grid rows as possible. So when a parent (the grid view group) is expanded, the parent

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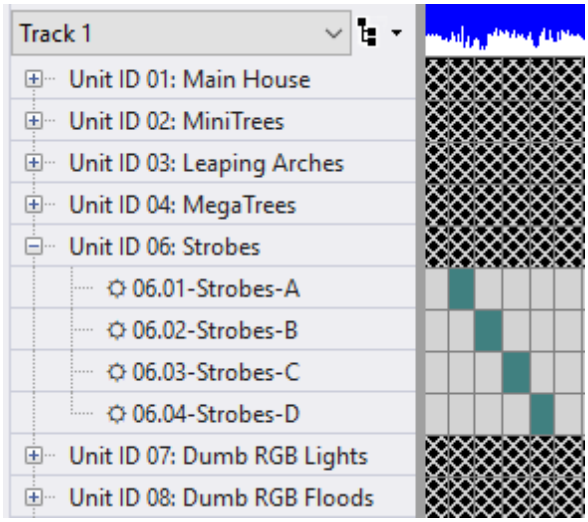
node is hidden and only the child nodes (the channels) are displayed. For new users this can sometimes be confusing, so S5 allows condensed mode to be turned off. Condensed mode is turned on or off from the Grid View menu.



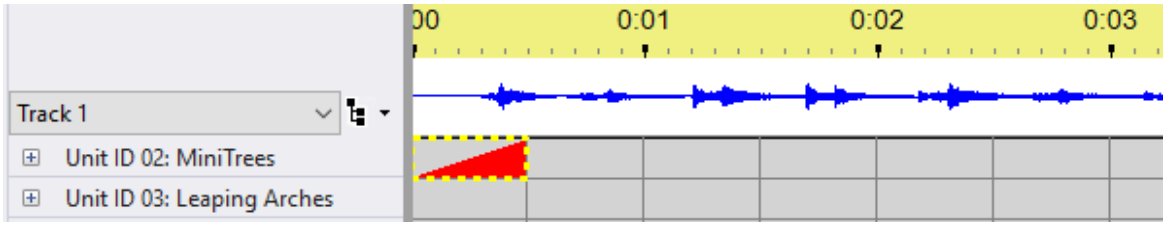
Condensed mode off, Show tree lines on

In the picture above, condensed mode has been turned off and now you can see both the parent "Unit ID 06: Strobes" and its 4 children, which makes clear the parent/child relationship. Now you can see that a grid view is a hierarchical tree!

But what happened to the sequence grid on the right -- it is showing an "X" pattern? Well, that is the other thing that condensed mode does: collapsed parent rows (where a "+" button is at the beginning of the row) display the effects for their first child in the grid. So in the top picture, the grid row for "Unit ID 06: Strobes" was actually showing the effects for "06.01-Strobes-A". When condensed mode is turned off, there is nothing to be displayed for the parent, which is what the "X" pattern indicates.

The rest of this topic will show the sequence grid with condensed mode enabled.

So again, when a grid view group is collapsed, the effects displayed on its row are the events of its first member (be it a regular channel, RGB channel, or motion effect row). However, applying a tool to the row actually applies it to ALL of its members. For example, with the grid view group collapsed, if you apply the Fade Up tool to its first cell, the result will look like this:



Fade Up tool applied while group was collapsed

But when you expand the grid view group, it becomes apparent that the Fade Up tool was applied to all of the grid view group's members:

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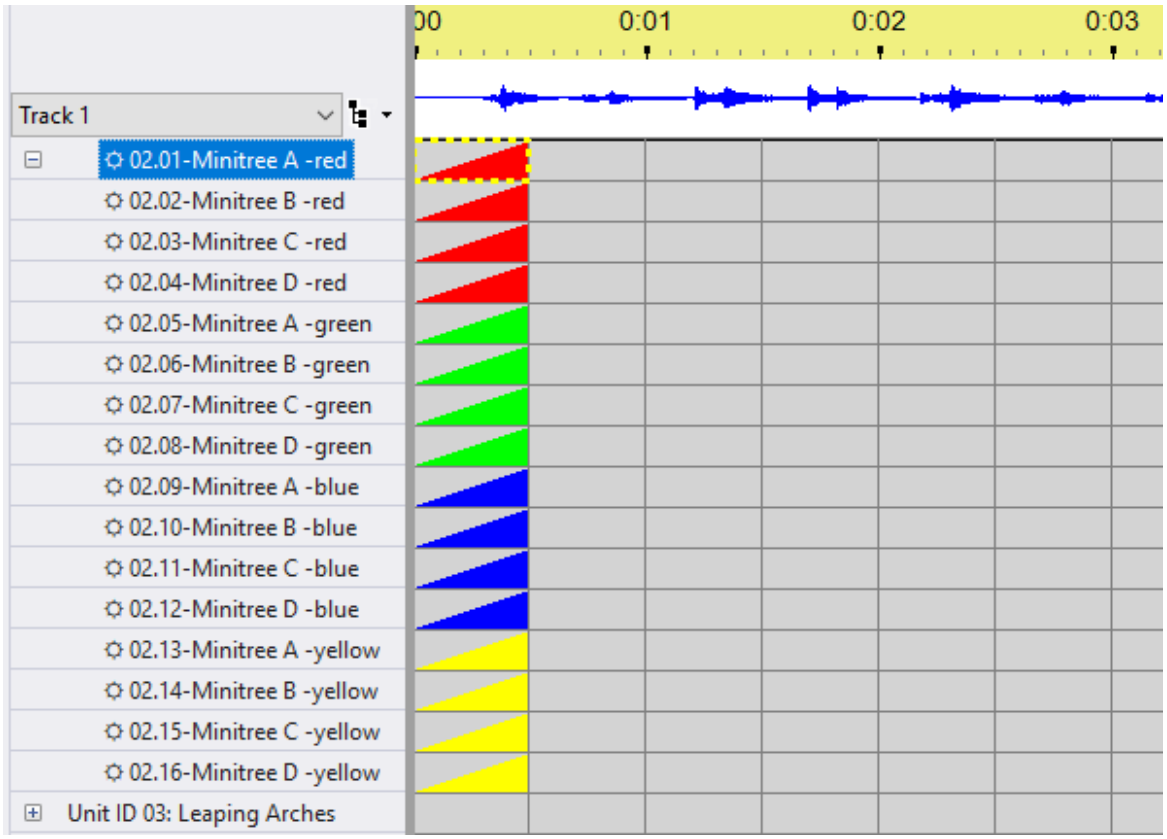
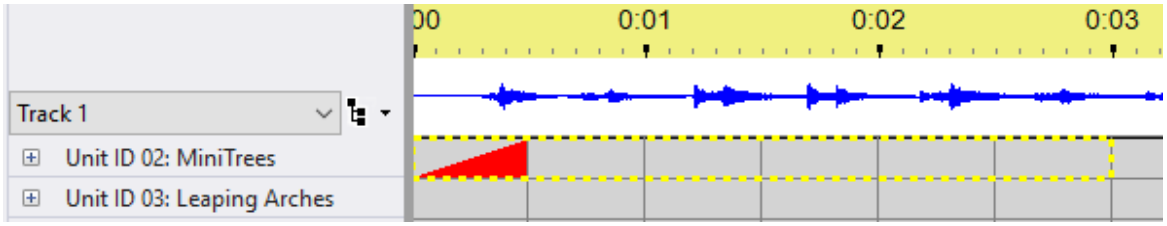


The same group, expanded

If you then collapse the grid view group, and apply the Chase tool to it while it is collapsed, no change will be evident from what is displayed:



After applying the Chase tool, while collapsed

But a change did happen - the Chase tool was applied to the entire grid view group. The only reason that no change is evident from what is displayed is because when the grid view group is collapsed, only the effects of the first channel are displayed, and the Chase tool did not alter the effects of the first channel. Expanding the grid view group reveals the change:

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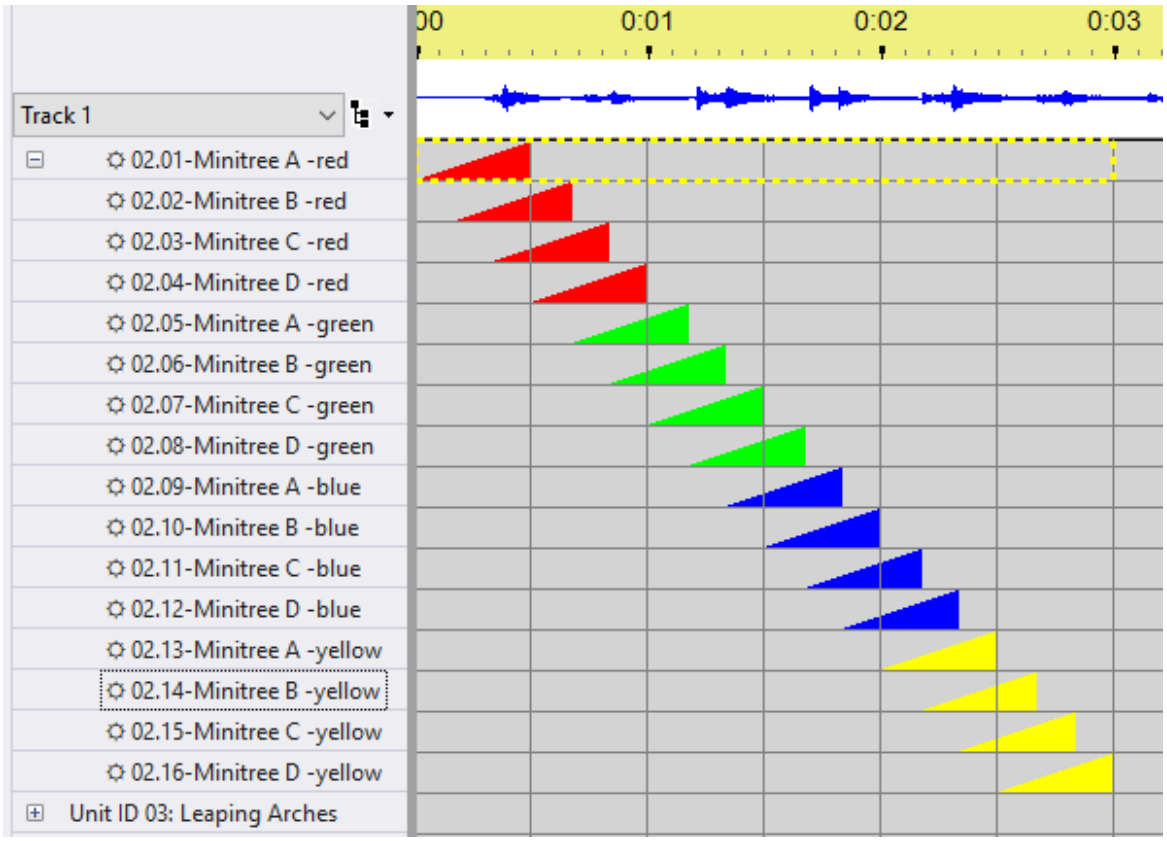
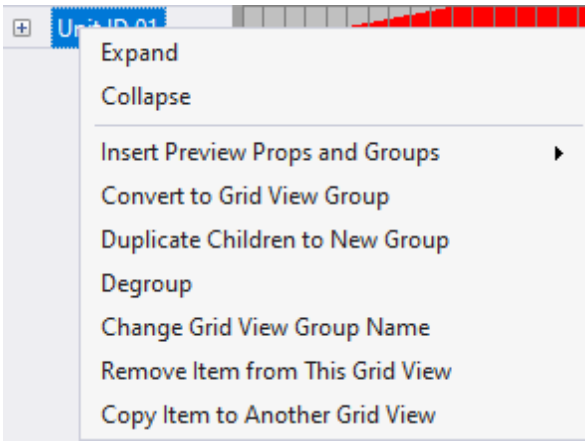


Expanded, after a chase

You can convert existing channels (and RGB channels, etc.) so that they become part of a new grid view group, by right-clicking on a channel, prop, or group name on the left side of the grid and select "Convert to Grid View Group" on the pop-up menu. You can also "degroup" a group -- that is, remove the group node and leave the group's children in its place -- by using "Degroup" on that same pop-up menu.



Menu for a grid view group

The complete menu is described in the Item List topic.

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5.3.5.2.6 Motion Effect Rows Dialog

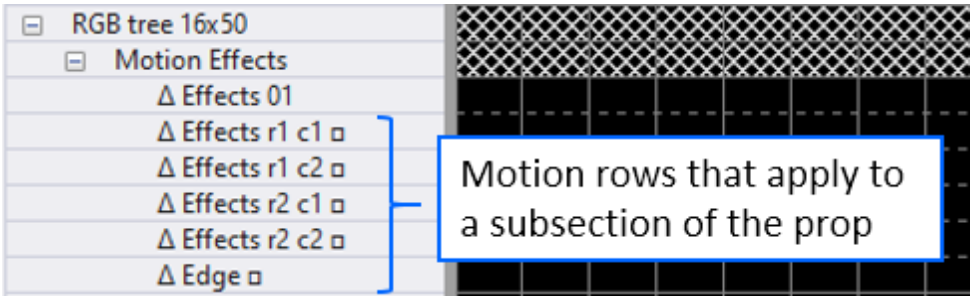
This dialog window serves 2 distinct purposes:

- When right-clicking on a prop or motion effect row in a sequence's Item List and selecting "Add/Modify motion effect rows" from the pop-up menu, you add or modify motion effect rows in the sequence. Any changes made while in this dialog will be applied to the sequence after clicking the "OK" button.
- When clicking on the "Motion Effect Rows" button in Prop Definition or Group Definition, you can define motion effect rows that will be applied when new sequences are created. It does not change existing sequences.

Motion effect rows do not have to apply to all of the pixels in a prop (or group). Using this dialog, you can specify that a motion effect row applies to:

- all of the pixels in a prop or group (subsection=none)
- a rectangular subsection of the prop's pixels (subsection=rectangle). For example, you could divide a pixel tree into tiers.
- a custom set of pixels chosen by you (subsection=custom). For example, you could draw a face.

When motion effect rows are displayed in a sequence's Item List, the row name is displayed with a square icon suffix to indicate those rows apply to a subsection of the prop or group. Rows with subsection=none are displayed without the suffix, indicating they apply to the entire prop or group.



Motion effect rows in a sequence

In the window, the current set of motion effect rows are listed in the table on the left, and the prop's pixels are shown on the right. If you click on a row in the table on the left, then the pixels used by that entry will be graphically represented on the right.

Within this dialog you can:

- Add A New Row
- Change Row Name
- Add Rows By Subdividing
- Manually Specify a Rectangular Subsection
- Create a Custom Subsection
- Set the Motion Row Combination Mode
- Copy/Paste the Motion Row Configuration

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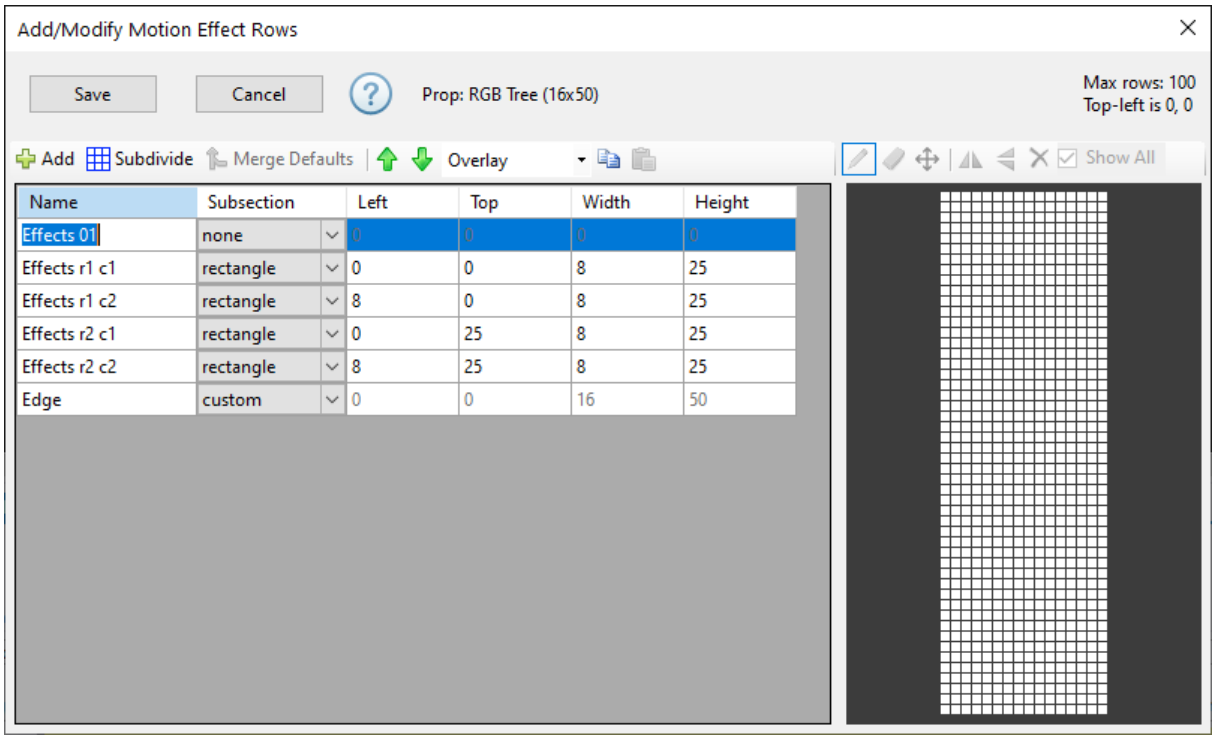

The Motion Effect Rows Dialog

Add A New Row

Clicking the "Add Row" button will add a new motion effect row to the table. The new row will use all of the pixels in the prop or group (the Subsection field will be set to "none").

Change Row Name

By default, motion effect rows are named "Effects 01", "Effects 02", etc. You can change the name of a row by clicking on the name in the table, and then typing the new name.

Add Rows By Subdividing

Using the "Subdivide" button, you can divide the pixels into rows and columns, creating a separate motion effect row for each section.

The following picture shows a 16x50 pixel tree subdivided into 2 columns and 2 rows. There will be 4 new motion effect rows created, with each subsection being 8x25 pixels

Note that the new motion row names are listed on the right. You can modify those names by changing the fields on the left:

- Base name - controls the beginning of the name
- Row prefix - controls how rows are identified. Try "r" if you like short names, or "row" if you prefer longer names.

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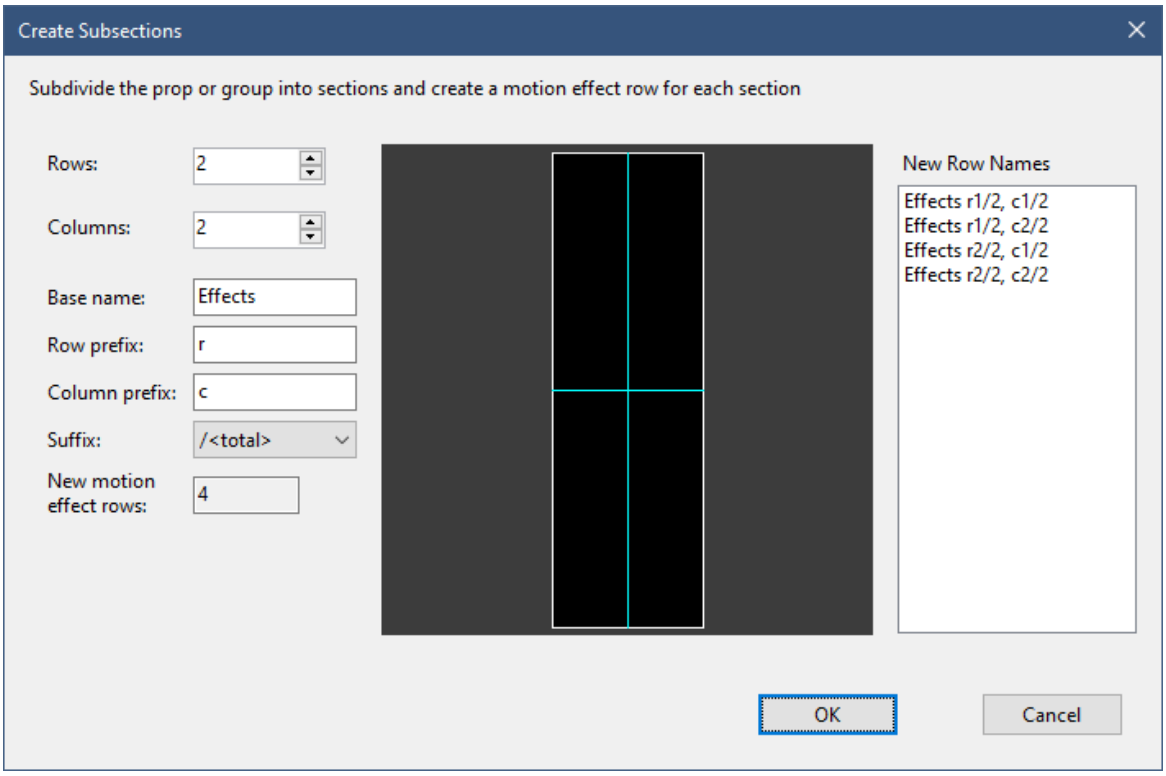
- Column prefix - controls how columns are identified. Try "c" if you like short names, or "col" if you prefer longer names.
- Suffix - controls whether a suffix is added that reflects the total number of rows and/or columns being created. This is important if you subdivide a prop multiple times - for example into 2 rows, 4 rows, and 8 rows. Adding a suffix will allow you to identify which motion rows belong to which group.



Subdividing a pixel tree into 2 columns and 2 rows

After clicking "OK" in the Create Subsections dialog, this is the result. The "r" in the name stands for "row" and the "c" stands for "column". Notice that clicking on a row in the table graphically displays the subsection on the right.

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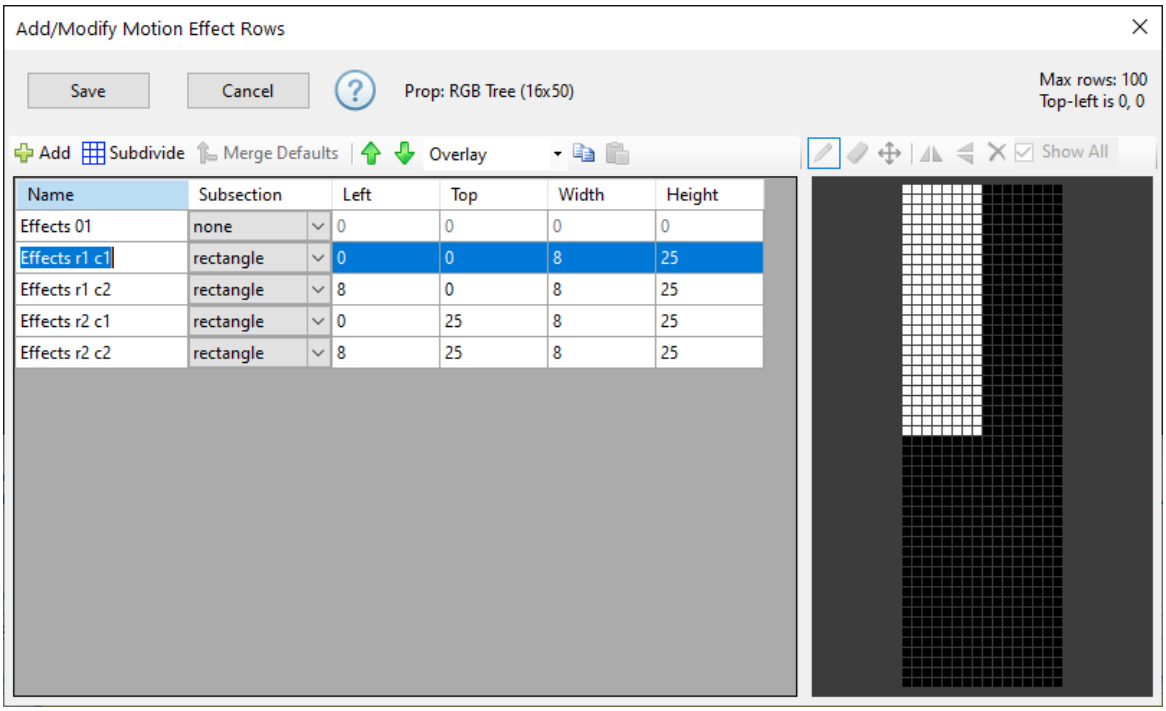

Result of subdividing the pixel tree into 4 sections

Merge Defaults from Prop or Group Definition

After right-clicking on a prop or motion effect row in a sequence's Item List and selecting "Add/Modify motion effect rows" from the pop-up menu, the "Merge Defaults" button will be visible. Clicking this button will cause the program to look for new or updated motion row DEFAULTS on the Definition screen for this prop or group. If any updates are found, they will be merged into the list of motion rows.

Motion row defaults are automatically applied to new sequences, but this button allows you to quickly load them into existing sequences.

Manually Specify a Rectangular Subsection

While the "Subdivide" button is very convenient for creating equally sized subsections, you might have need to manually specify a subsection. You can do this by making sure the "Subsection" drop-down is set to "rectangle" for the motion effect row, and then manually typing the values for left, top, width, and height.

Creating a Custom Subsection

Custom subsections allow you to do things like define singing faces on a pixel matrix or pixel tree. You can also use it to define sections of a pixel-based custom shape -- for example arms of a snowflake.

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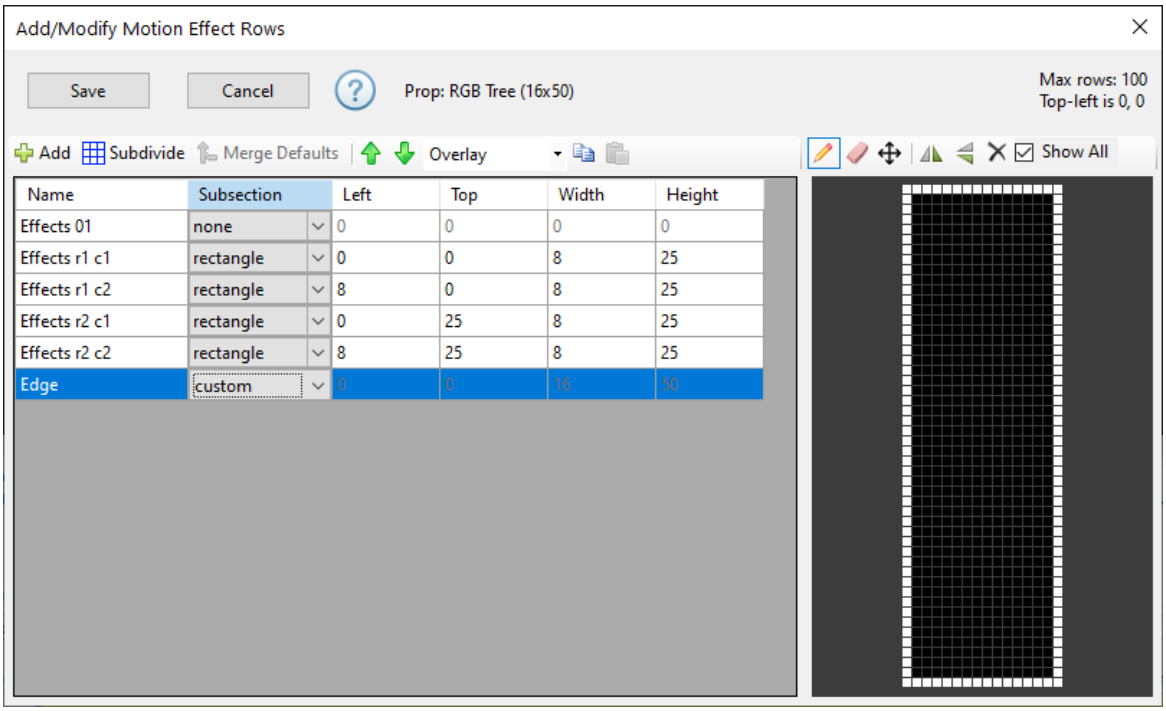
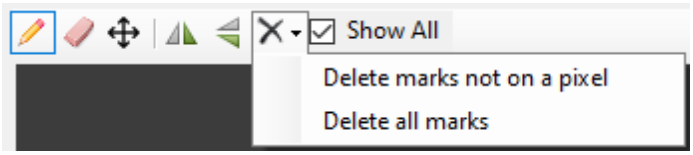


Defining a custom set of pixels to be controlled by the motion effect row

The first step is to change the "Subsection" drop-down to "custom". Once that is done, you will notice that the toolbar on the right side is now enabled.



- Use the "Pencil" tool to turn on pixels (make them part of the subsection). Left-click on a pixel in the diagram to turn it on, or drag across the diagram with the left mouse button depressed to select multiple pixels at a time.
- Use the "Eraser" tool to turn off pixels (remove them from the subsection). Left-click on a pixel in the diagram to turn it off, or drag across the diagram with the left mouse button depressed to deselect multiple pixels at a time.
- Use the "Move" tool to reposition the selected (on) pixels.
- Use the "Flip Horizontal" tool to reverse the enabled pixels left to right.
- Use the "Flip Vertical" tool to reverse the enabled pixels top to bottom.
- After creating a custom subsection in Add/Modify Motion Effect Rows for a prop with a custom shape and then subsequently changing the custom layout, it is possible to end up with nodes in the custom subsection that are no longer on a pixel. Use the "Delete marks not on a pixel" menu item to clean up such nodes.
- Use the "Delete all marks" menu item to turn off all of the pixels. This is useful if you want to start over with your custom selection.
- Use the "Show All" check box to show all of the motion effect rows with a "custom" subsection on the diagram at the same time. For example, if you are drawing a face on a pixel matrix, you might first draw the outline of the head on one motion effect row. Then you might draw the eyes on another row. While drawing the eyes, it is useful to see where the outline of the head is, so you would keep "Show All" enabled.

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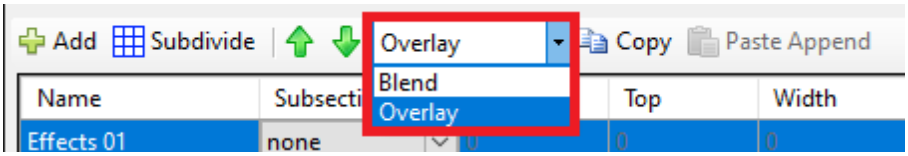
Motion Row Combination Mode

When this dialog is opened from the sequence grid using the "Add/Modify motion effect rows" right-click menu item, an extra drop-down box is displayed in the middle of the toolbar. When a prop or group has more than one motion effect row, this setting controls how the rows are combined.

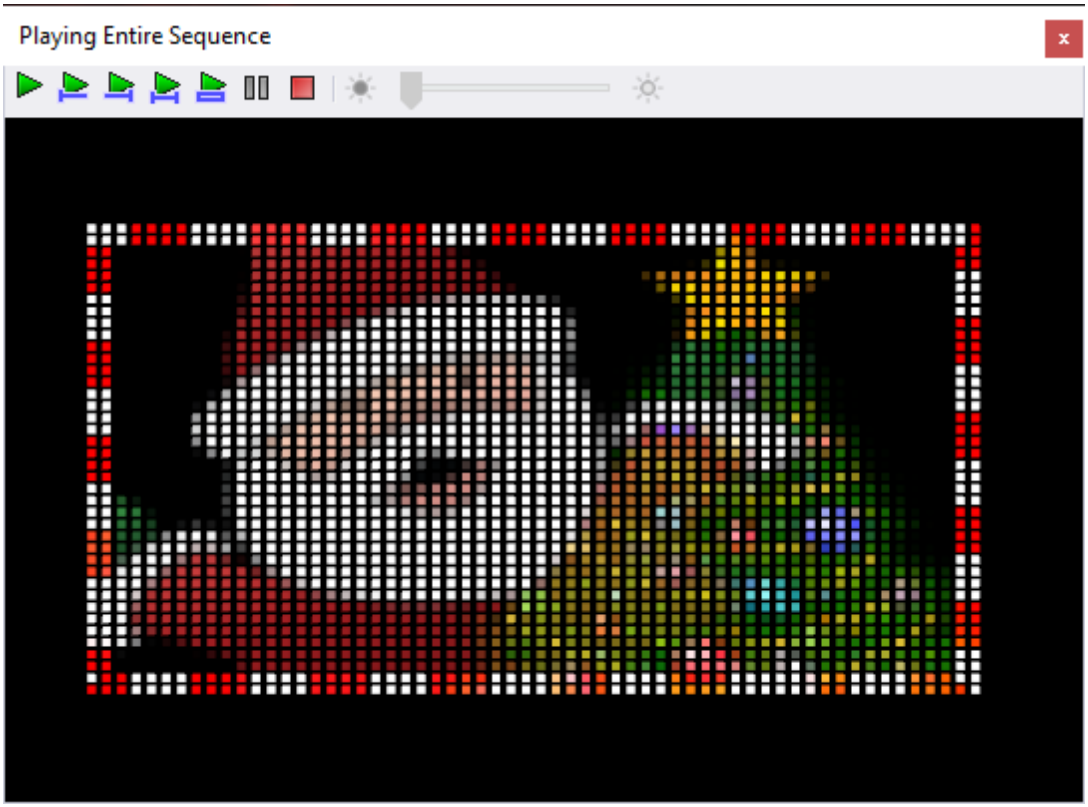


Motion Row Combination Mode

Blend Mode

In Blend mode, the maximum brightness for each pixel is taken from the effects across all motion rows. This mode is backward compatible with prior versions, including the S4 Pixel Editor.

In the following example, the tree is on the first motion row, Santa is on the second motion row, and a Marquee effect is on the third motion row. Notice that Santa's left arm gets lost in the tree, and the tree mixes with the marquee effect the bottom. For Picture effects, blend mode doesn't work very well.



Blend mode

Overlay Mode

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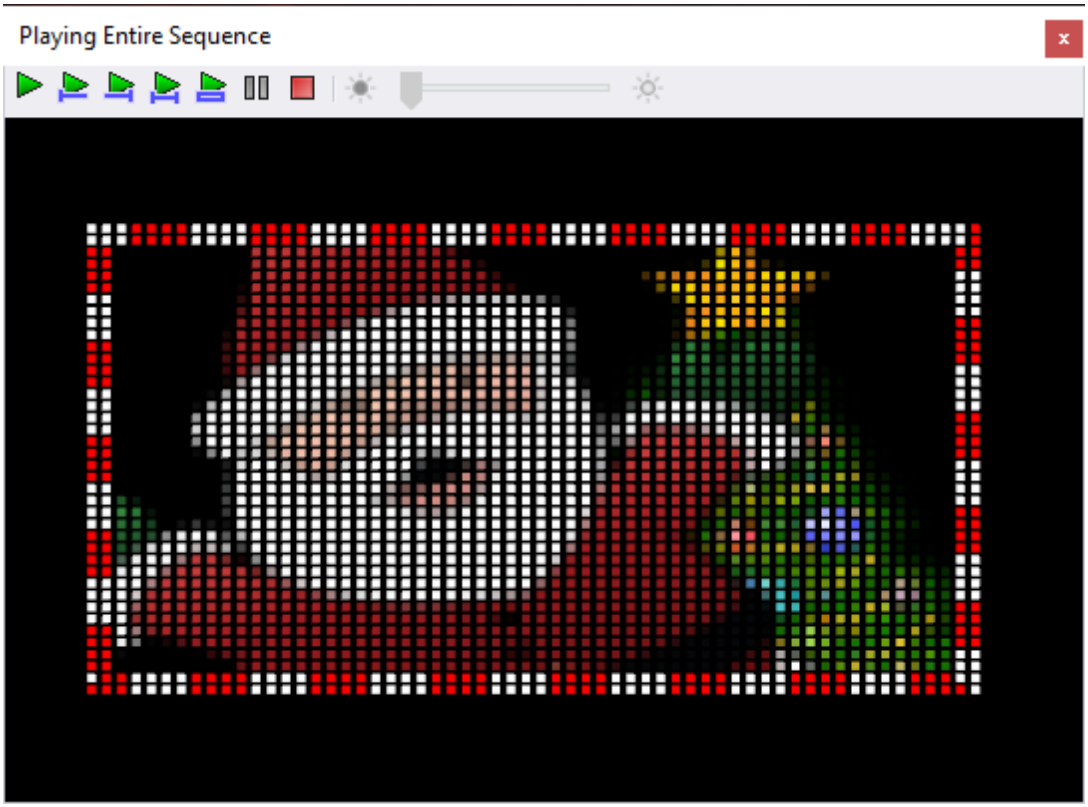
In Overlay mode, motion rows are overlaid one on top of the other using alpha blending (i.e. effects can have areas that are transparent). The first row listed in this dialog is used as the background, then successive rows are layered on top of it. Note that you can use the up and down arrows on the toolbar to change the order of the rows, thus changing the order in which rows get overlaid. Overlay mode is the default for new sequences.

Using the exact same sequence as the Blend mode example, you can see that Overlay mode produces a much better result -- the tree is in the background, Santa is in front of the tree, and the marquee is in the foreground.



Overlay mode

Copy/Paste the Motion Row Configuration

You can copy the contents of the motion effect row table to the clipboard, and then use the paste button to append the data into the Motion Effect Row dialog for another prop. This can be useful when you want to:

- copy motion effect rows defined in a sequence to the motion effect row defaults for a prop or group, so they will be applied whenever a new sequence is created.
- copy motion effect row defaults you just created on a prop or group into existing sequences.
- copy motion effect rows defined in one sequence to the motion effect rows for a same prop or group in another sequence.

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- copy motion effect rows defined on one prop to other props with the same shape and dimensions. For example, you might define some motion effect rows for a pixel-based mini-tree and copy those rows into your other mini-trees.

Let's take the second situation as an example -- you added motion effect row defaults to a prop. New sequences will use those defaults, but you need to get them into an existing sequence. Here are the steps to follow:

1) open the existing sequence

2) double click on the name of the prop to open Prop Definition

3) click on the "Motion Effect Rows" button in Prop Definition

4) click on the first motion row

5) shift-click on the last motion row, which should select all rows

6) click the "Copy" button

7) click "Cancel" to close the Default Motion Rows window

8) click "Cancel" to exit Prop Definition

9) back in the sequence, right-click on the prop name and select "Add/Modify motion effect rows" from the menu

10) click the "Paste Append" button. All of the rows copied in step 6 should now appear in the list

11) click the "Save" button to return to the sequence

5.3.5.2.7 Insert Props And Groups Dialog

This dialog is opened when you select "Add New View", "Append Items to View", or "Reset Displayed Props and Groups" from the Grid View menu. It is also opened after you select "Insert Props and Groups" from the Item List's right-click menu. It allows you to choose preview props, preview groups, and archived props that will become part of a grid view.

Check the boxes next to the items you want to include. The selected items will appear in the list on the right. Only items listed on the right side will be applied to the grid view after you click the "OK" button.

Selecting Items (left side)

Check the boxes next to the items you want to include. The selected items will appear in the list on the right. Clicking the box for "Preview Props" will cause all props to be selected. The check boxes for "Preview Groups" and "Archived Props" work the same way.

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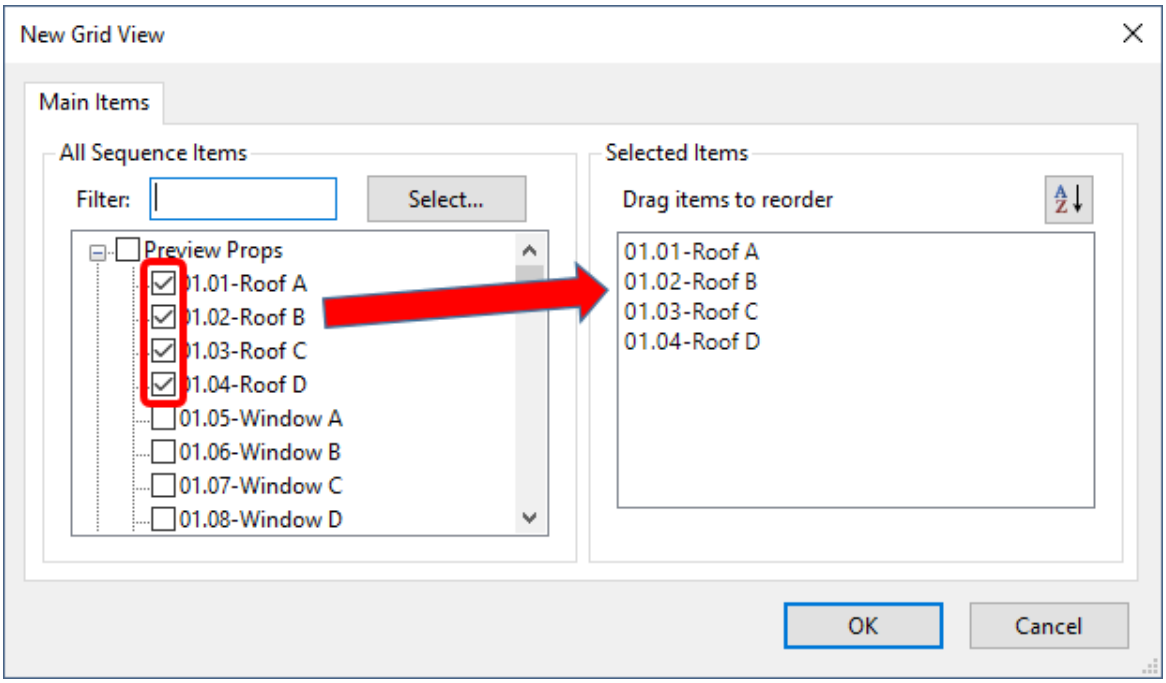
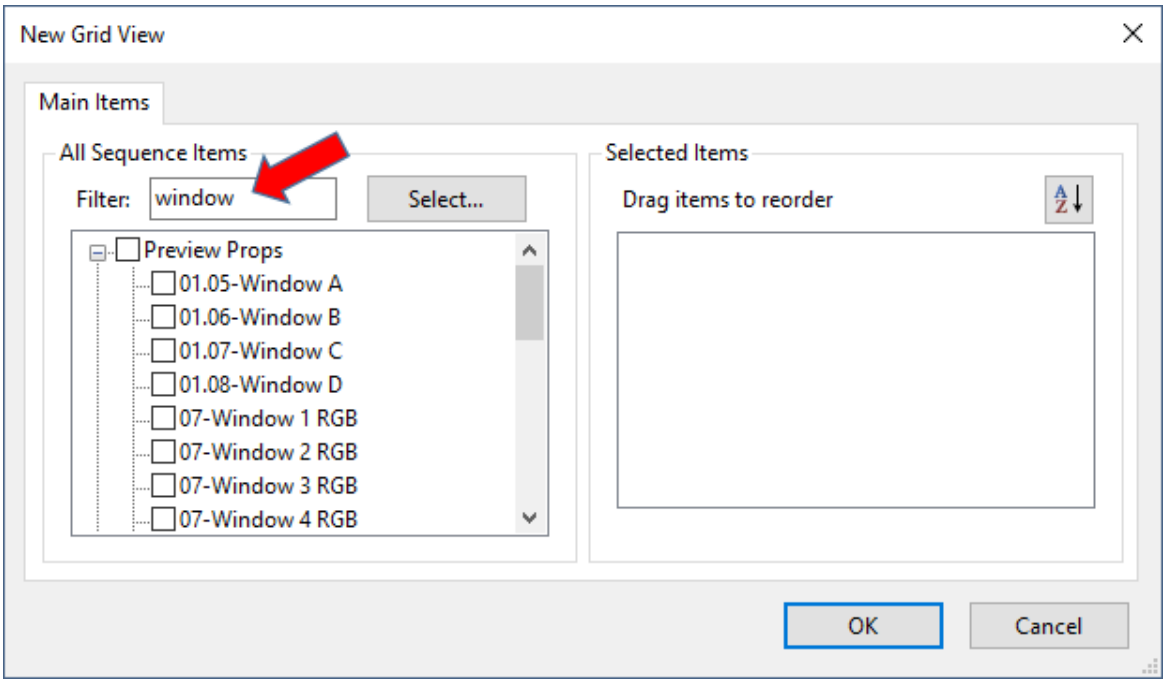


Applying a Filter

You can enter some text into the Filter box and the list on the left side will only show items that contain that text in their name. The list is automatically filtered as you type each character. In the example below, only props and groups with the word "window" in their name will be listed:



If you subsequently click the box next to "Preview Props", then all of the props with "window" in their name will be selected and appear in the list on the right.

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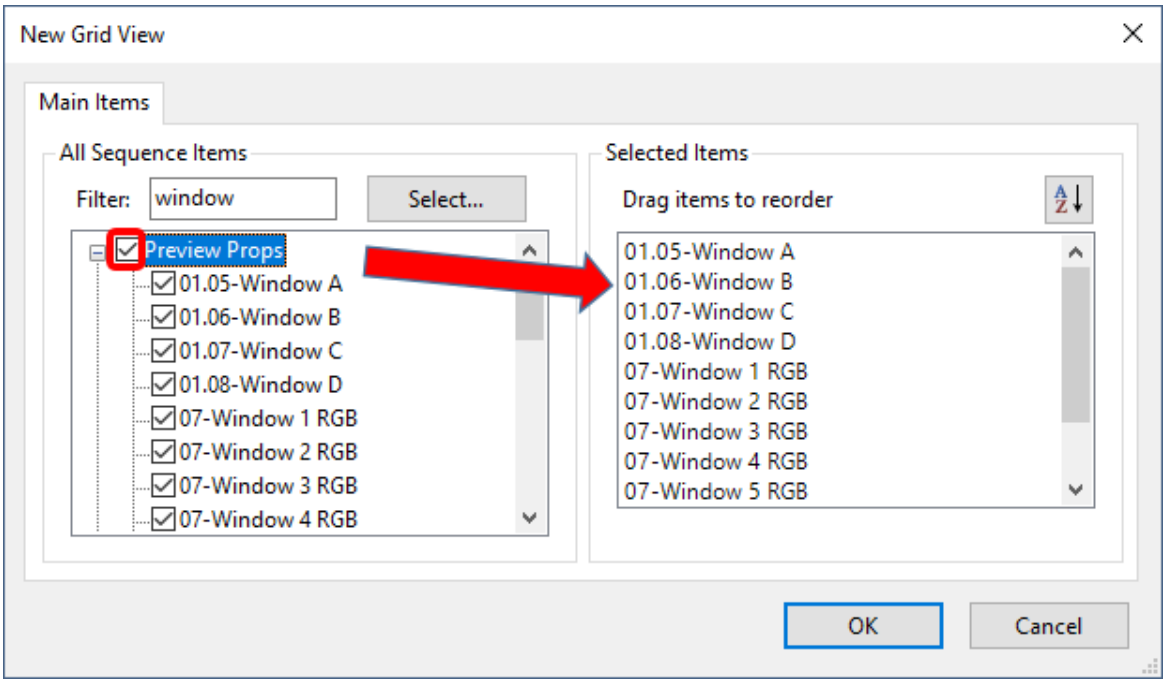
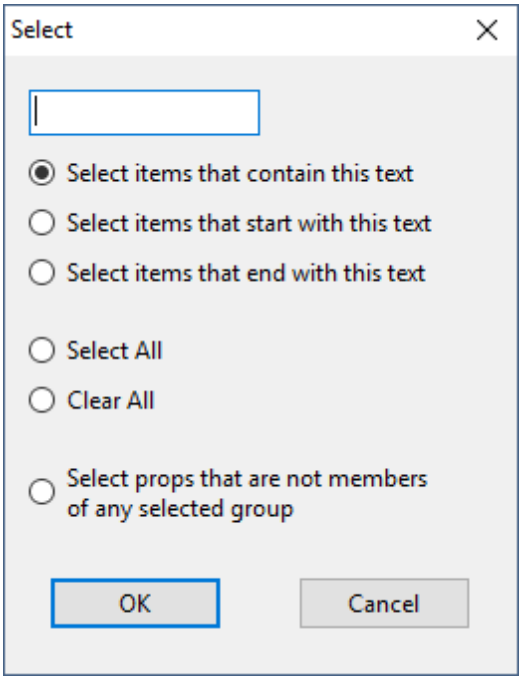


Using the "Select..." button

If you have special selection requirements, you can click the "Select..." button, which opens the following window:



- **Select items that contain this text** - enter some text in the box at the top of this dialog, then click the "OK button. All of the items that contain the text that was entered will be selected. You can get the same functionality by using the Filter box on the main dialog.

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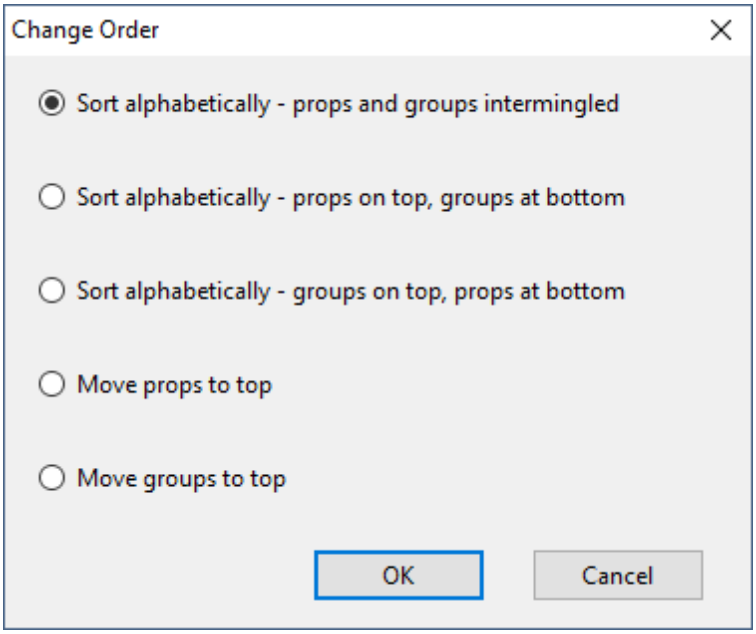
- **Select items that start with this text** - enter some text in the box at the top of this dialog, then click the "OK button. All of the items that start with the text that was entered will be selected.
- **Select items that end with this text** - enter some text in the box at the top of this dialog, then click the "OK button. All of the items that end with the text that was entered will be selected.
- **Select All** - selects all of the items that are currently listed on the left side.
- **Clear All** - clears all of the items that are currently listed on the left side.
- **Select props that are not members of any selected group** - if you select some or all of your preview groups first, you can then use this function to select props that are not members of any group. This ensures that the grid view you are creating will contain all of your props: props that are members of a group and those that are not.

Sorting Items (right side)

You can re-order items on the right side so that they are in the desired order when added to the sequence grid. You can move individual items by clicking and dragging them up or down.

You can also click the sort icon at the upper right to sort items alphabetically. It will open the following dialog:



- **Sort alphabetically - props and groups intermingled** - this option sorts all of the items in the list on the right according to their name. Props and groups are intermingled.
- **Sort alphabetically - props on top, groups at bottom** - this option sorts all of the items in the list on the right according to their name, except props are sorted to the top, leaving groups at the bottom.
- **Sort alphabetically - groups on top, props at bottom** - this option sorts all of the items in the list on the right according to their name, except groups are sorted to the top, leaving props at the bottom.
- **Move props to top** - this option leaves the order of items intact, except that props are moved to the top of the list, leaving groups at the bottom.
- **Move groups to top** - this option leaves the order of items intact, except that groups are moved to the top of the list, leaving props at the bottom.

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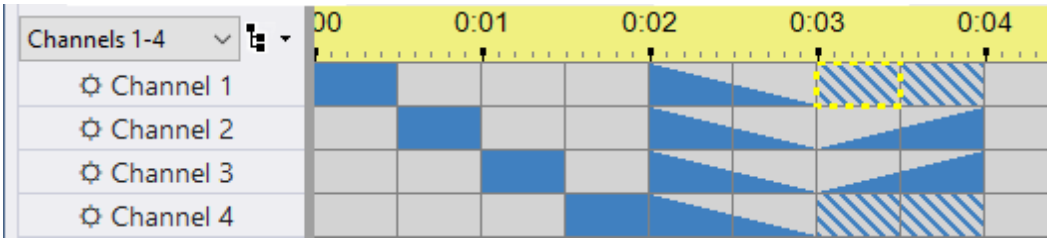
5.3.5.3 Selecting Cells

A cell, or a range of cells, can be selected in the sequencing grid, allowing you to apply various tools to it (such as specifying what lighting effects should be placed in that cell). You can recognize the currently selected cell (or cells) by a thick dashed yellow border. For example, in the following sequence, a cell on the first row is selected between 3.00 seconds and 3.50 seconds:



A cell on the first row is selected

In the sequencing grid, you can select an area using the:

- mouse
- keyboard shortcuts
- right-click context menu

When using the mouse, the area that gets selected depends on the Selection Mode.

Selection Modes

There are 4 selection modes: cells, effects, rows, and freeform. The selection mode determines the area of the sequence grid that gets selected when you use your mouse. The selection mode is always "cells" when using the keyboard.

You can designate one of the 4 modes as the Primary Selection Mode and another mode as the Secondary Selection Mode:

- The primary selection mode is invoked when selecting with the mouse and the **Ctrl key is not pressed**.
- The secondary selection mode is invoked when selecting with the mouse and the **Ctrl key is pressed**.

Thus, you have 2 selection modes that are quickly accessible: chosen by whether or not you hold the Ctrl key down while selecting with the mouse.

You can set the primary and secondary selection modes by clicking on the small down arrow to the right of the Select Tool on the toolbar. Use the first 4 options on the menu to choose the primary selection mode. Use the 4 options under the "With CTRL key" sub-menu to select the secondary mode.

The "Save as defaults" menu option saves the current primary and secondary modes as defaults. These will be used as the initial settings whenever you open a sequence.

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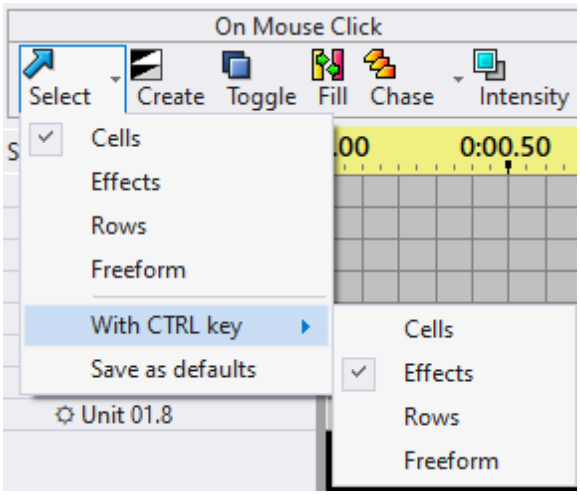
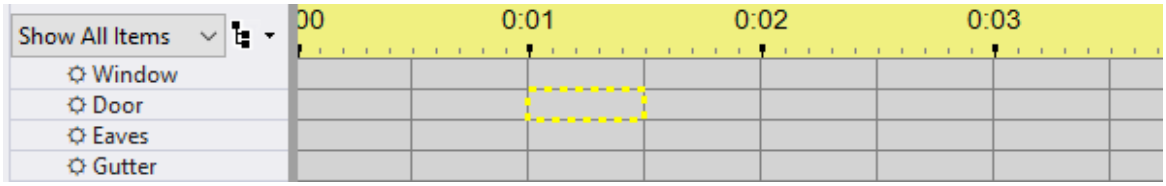


The Selection Mode menu

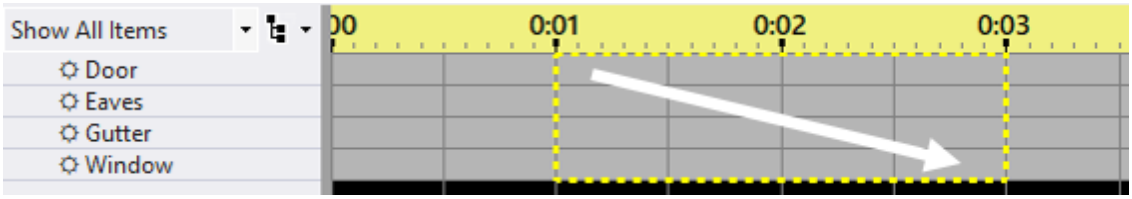
Select Cells

When the selection mode is set to "Cells", the grid selection always starts and stops on a timing mark. In the following picture, the sequence has a fixed timing grid with timings every half second. No matter where you click between 1.0 and 1.5 seconds, the selection will start at 1 second and stop at 1.5 seconds - on the timing marks.



The Door channel is selected between 1.0 and 1.5 seconds

Click and drag the mouse to select a larger area:



Selecting multiple cells

Select Effects

When the selection mode is set to "Effects" and you click on an effect, the entire effect is selected - the selection is not constrained by the timing marks. In the following example, a chase runs across 8 rows and clicking on any part of an effect will select the entire effect.

You can also expand the current selection to encompass the entire effect (or effects) by using the "E" shortcut key or choosing Select > Effect from the sequence grid's right-click context menu.

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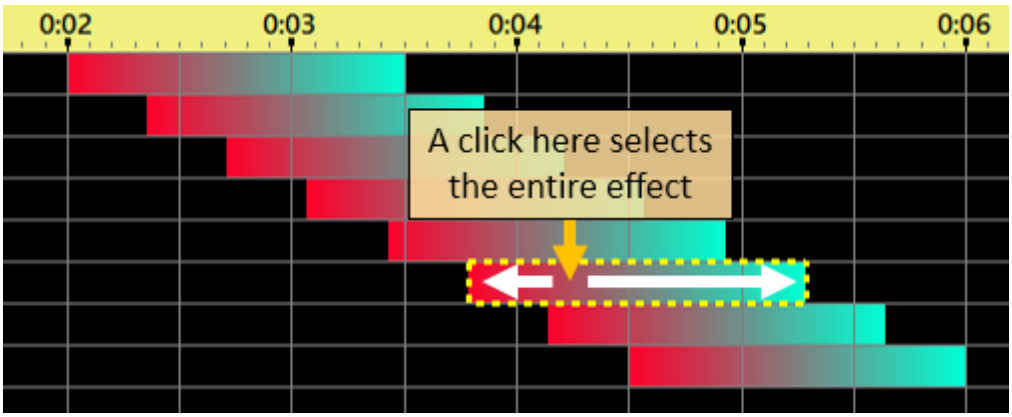
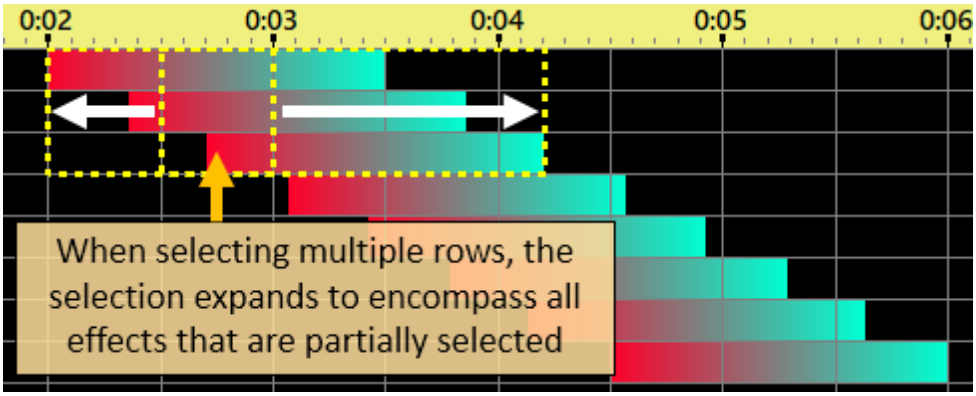
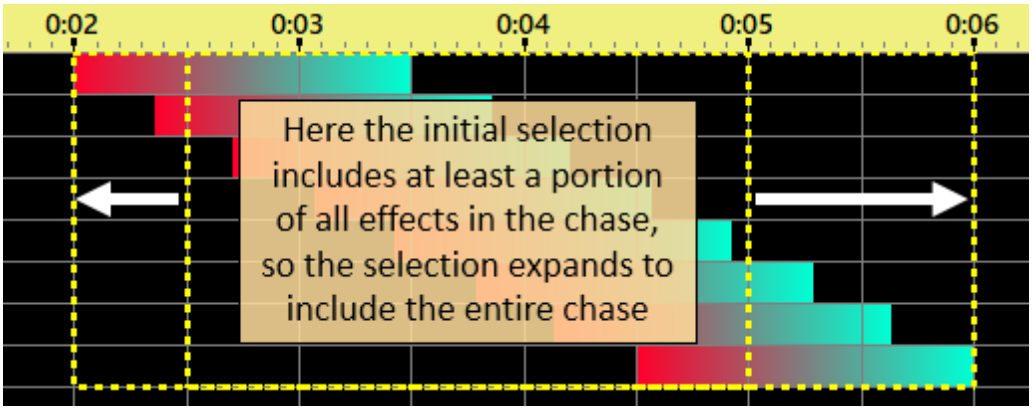


"Effects" selection mode - mouse click

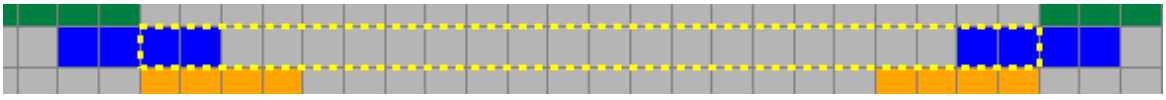


"Effects" selection mode - mouse drag



"Effects" selection mode - mouse drag

Note that the logic for "Select Effect" only selects the *first* effect in each row of the initial selection. So if the initial selection is this:



Then the "Select Effect" logic will only select the first effect:

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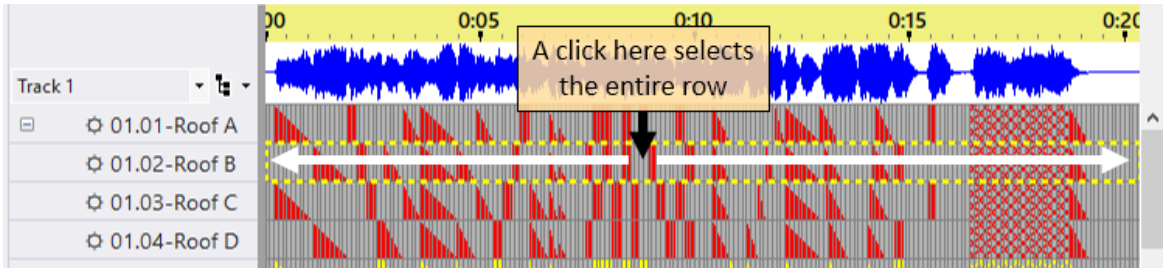
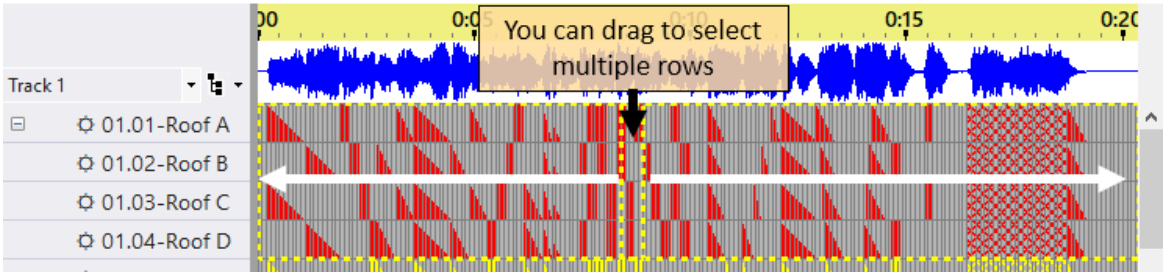
Select Rows

When the selection mode is set to "Rows", clicking anywhere on a row will select the entire row. In the following example, clicking on a single cell of the "01.02-Roof B" channel results in the entire row being selected. This mode can be especially useful when copying and pasting the sequencing from one channel to another.

You can also expand the current selection to encompass the entire row (or rows) by using the "R" shortcut key or choosing Select > Row from the sequence grid's right-click context menu.



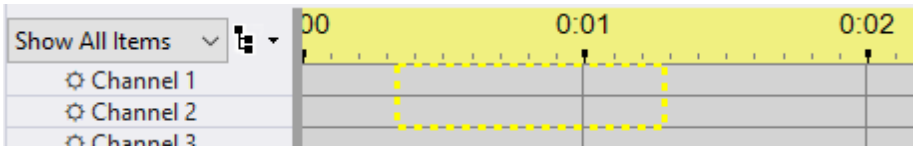
"Rows" selection mode - mouse click



"Rows" selection mode - mouse drag

Freeform Selection

When the selection mode is set to "Freeform", your selection is not constrained by the timing marks - the selection starts where you pressed the left mouse button and stops where you released it. In the following example, the mouse button was pressed at 0.3 seconds and released at 1.3 seconds.



"Freeform" selection mode

Grid Selection Using The Mouse

Click On The Grid

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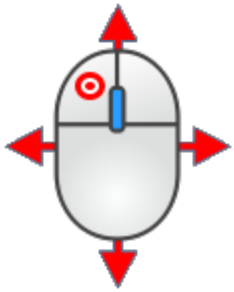
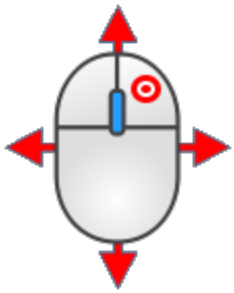
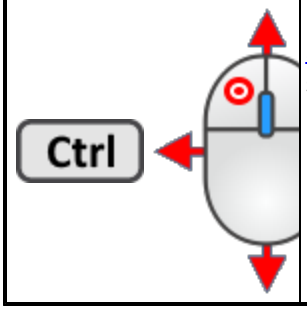
	When you click on the sequence grid, a portion of the channel you clicked on will get selected. Exactly which portion gets selected depends on the Selection Mode (as described above). If you select a motion effect, that effect starts playing in the Playback Window.

Click And Drag

Select multiple cells by clicking on a cell and then dragging the mouse across the range.

	If you drag with the left mouse button depressed, what happens after the button is released depends on the Primary Selection Mode and which tool is selected on the toolbar. For example: Select – the area is selected, but no effect is applied Max Intensity – will apply the current effect, as listed on the toolbar, to the selected area at the maximum intensity shown on the toolbar. Fade Up – will apply the current effect, as listed below the Effect Generator button, to the selected area. The effect is ramped up from the minimum intensity at the left-most selected cell to the maximum intensity at the right. Fade Down – will apply the current effect, as listed below the Effect Generator button, to the selected area. The effect is ramped down from the maximum intensity at left-most selected cell to the minimum intensity at the right.
	If you drag with the right mouse button depressed, after the button is released the grid's context menu will open
	Holding the Ctrl key down while dragging switches to the Secondary Selection Mode. This allows you to quickly switch between 2 different selection modes - just by holding the Ctrl key down or not.

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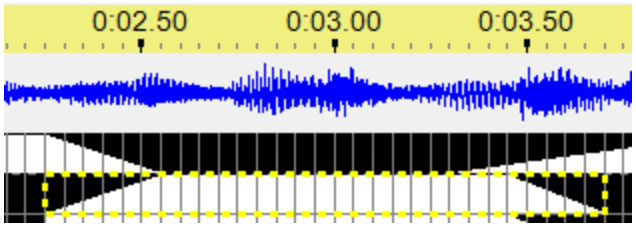
Expanding the Selection

	Expand the selection by shift-clicking on a cell.

Double-Click Selection And Edit

	Double-clicking on any portion of an effect in the sequencing grid will select the entire effect, then open a dialog window that allows the effect to be modified: • Regular Channels - effect can be changed from intensity, shimmer, twinkle, or DMX intensity • RGB Channels - colors can be modified • SuperStar Effects - SuperStar is opened, allowing the effect to be edited • Other Motion Effects - the Motion Effect Generator is opened • Loops - the repeat count and speed can be modified If the effect is modified and the user clicks “OK”, then those modifications are applied to the selected cells. In the following picture, one of the cells in the second row was double-clicked, causing all of the cells for that effect to be selected (including the ramp up and ramp down portions).  There is a user preference option that switches how this action is invoked to Ctrl-Shift Double-Click.

Keyboard Selection

The keys listed here are part of the default mapping. You can change the key mapping by selecting Tools > Keyboard Preferences.

Key	Effect

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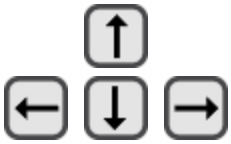	Use the arrow keys to move one cell in the direction of the arrow
	Move to the first cell in the current row
	Move to the last cell in the current row
	Move up 1 screen
	Move down 1 screen
	Expand the selection by holding down the shift key while using any of the keys listed above
	If part of an effect is selected, then "E" will expand the selection to encompass the entire effect
	"C" will expand the selection to the entire column
	"R" will expand the selection to the entire row
	Ctrl-A will select the entire grid.

Right-Click Context Menu, Select sub-menu

Right-clicking in the sequencing grid provides many options, including grid selection. From the Select sub-menu, you can expand the current selection to encompass:

- any partially selected effects
- the entire row or rows
- the entire column or columns
- the entire sequence grid

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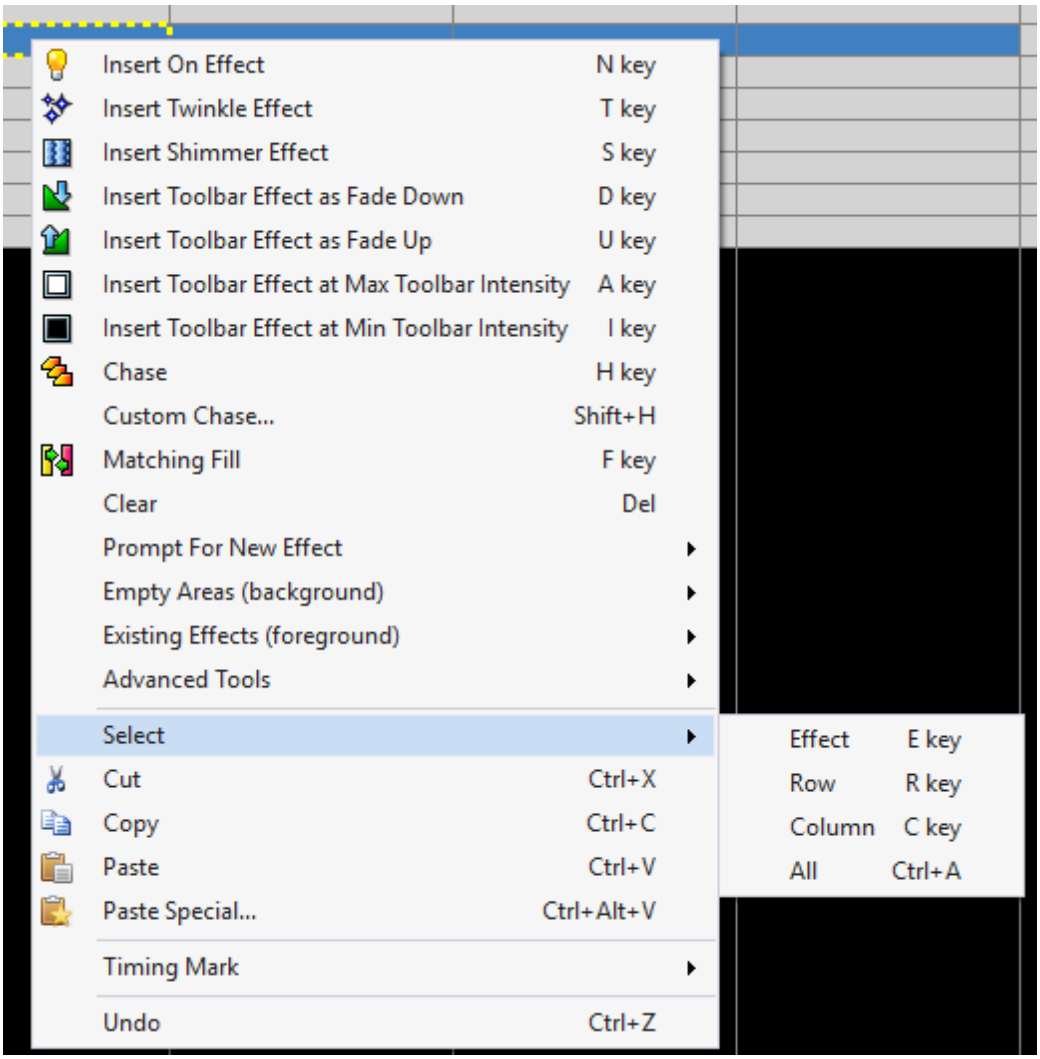
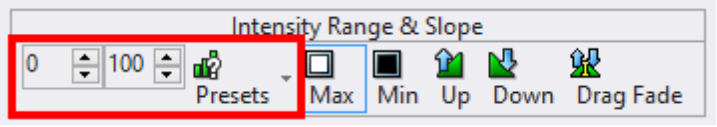


Right-click context menu with Select sub-menu shown

5.3.5.4 Intensity Range

Many commands in the Sequencer take into account the intensity range displayed on the toolbar (part of the Intensity Range & Slope section). When you open a sequence the intensity range will be set at "0" and "100". This means that :

- the "Max Intensity" tool will create effects at 100% (maximum brightness)
- the "Min Intensity" tool will create effects at 0% (since 0% is completely off, this erases any effects where it is applied)
- the "Fade Down" tool will create effects that go from 100% to 0%
- the "Fade Up" tool will create effects that go from 0% to 100%



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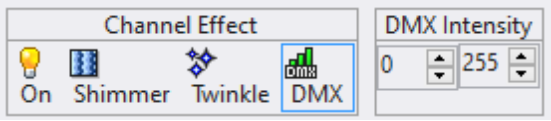
The intensity settings consists of 3 parts:

1. The first intensity value
2. The second intensity value
3. The Presets menu, opened by clicking the icon

It doesn't matter which order you enter the 2 intensity values. "100" and "0" is the same as "0" and "100".

The full intensity range is normally 0 to 100. However, if the toolbar effect is set to DMX Intensity, then the full intensity range is 0 to 255 and the intensity is set with the DMX Intensity fields.

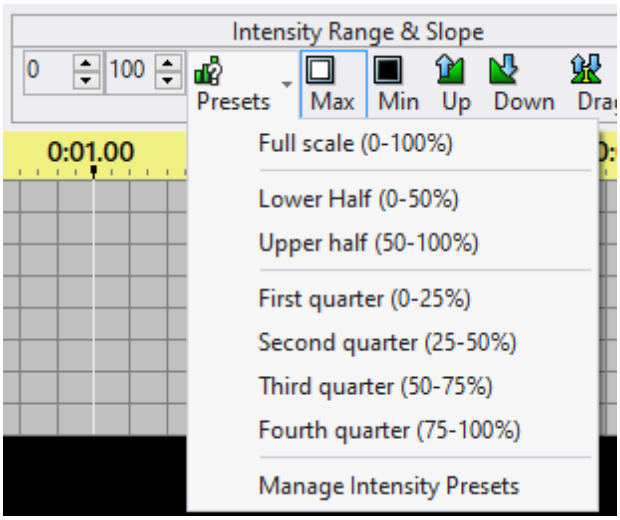


DMX Intensity Range

Entering Values

There are 3 ways to change an intensity value on the toolbar:

- You can type numbers for the desired intensity range directly into the number boxes.
- You can increment and decrement the intensity values by clicking on the small buttons to the right of the number.
- Clicking the "Presets" button to the right of the number boxes will open a menu where you can select from some predefined ranges. You can also create your own ranges from this menu by choosing Manage Intensity Presets.



Presets Menu. Upper and lower half are built-in, the quarters are presets.

Managing Presets

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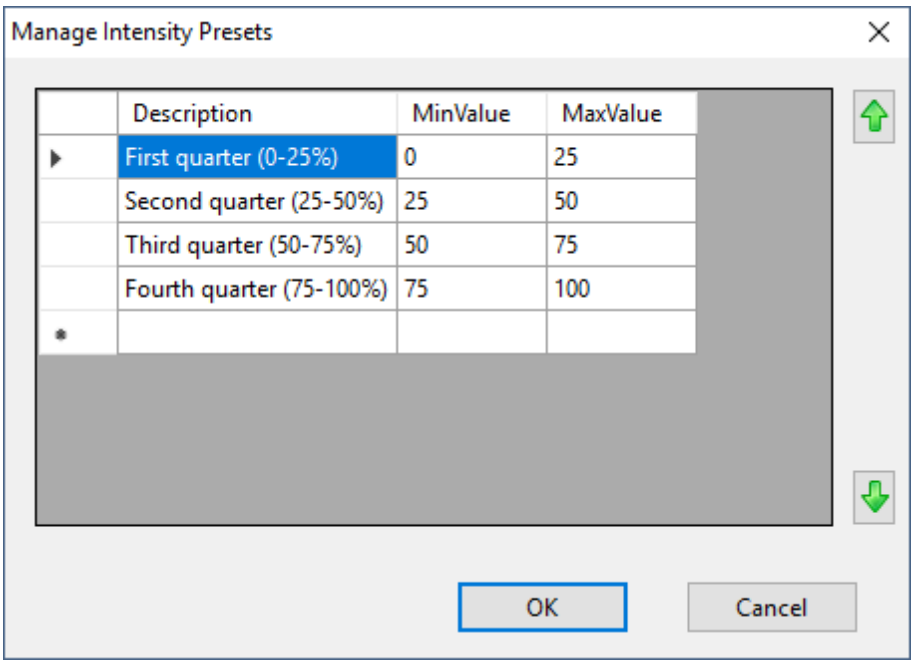
Selecting the "Manage Intensity Presets" item from the toolbar's Intensity menu, will open the "Manage Intensity Presets" dialog:



The Manage Intensity Presets dialog

You can use the arrows keys to navigate around the grid, or left-click on any cell using your mouse pointer. Click the OK button to save your changes when you are done.

Add a Preset

Start adding your information on the last row of the grid - the one marked with a "*" in the left margin. As soon as you start typing, a new empty row will be created, but keep entering data on the row you started. Enter data in all 3 columns. Use the Tab key after finishing the entry in one cell - it will move you to the next cell. After entering data in the last column, you can you use the Tab or Enter key to finish the entry for that row.

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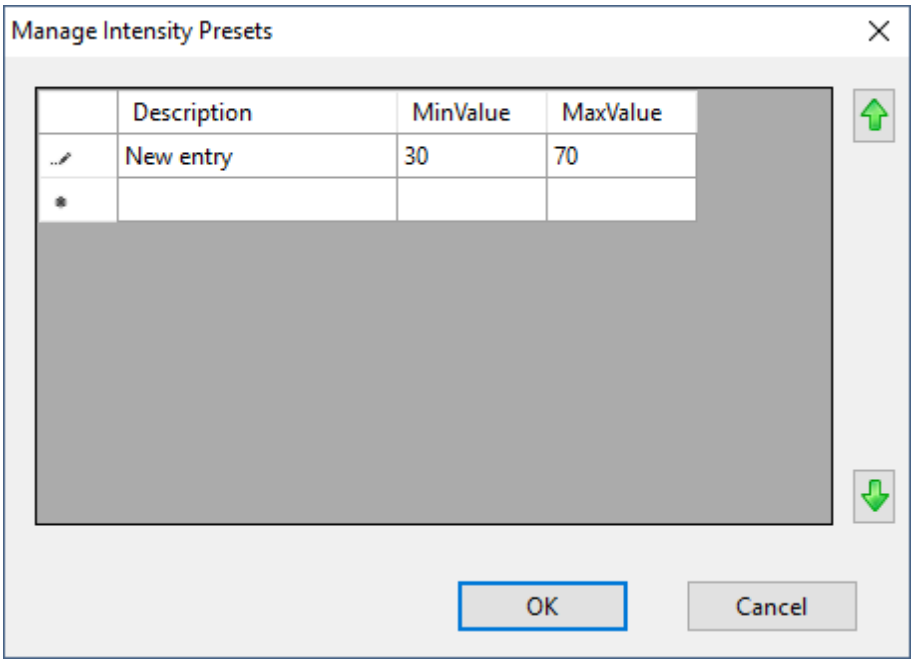

Adding a new preset

Modify a Preset

To start editing a cell, left-click on it using the mouse pointer, or use the F2 shortcut key if the desired cell is already highlighted. To commit the change, type the Enter key. To cancel the change, use the Esc key.

Delete a Preset

Click in the left margin of the row you want to delete, then use the Delete key.

5.3.5.5 Adding Effects

Light-O-Rama gives you the tools to make your lights do amazing things. In addition to simply turning them on and off, you can turn them on to varying levels of brightness, have them fade up or down, shimmer, or twinkle. You can make RGB lights change to any color. And with motion effects, you can apply colorful patterns to pixel-based props.

The process involves assigning these effects to grid rows in a sequence using the Sequencer. The sections below will describe how to create effects using the toolbar. However, most tools also have a shortcut key, which will be noted below. In addition, most tools can be accessed using the grid's right-click context menu.

To summarize, you can add effects by using any of the following methods:

- the toolbar
- keyboard shortcuts
- the right-click context menu

When using the toolbar, only one Select Action can be active at a time. Click on the icon for the tool in order to make it active. The active tool will have a border drawn around it.

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- When the Select tool is active, the standard mouse pointer is displayed when you move the mouse over the grid, and the mouse can be used to select grid cells.
- When any other tool is active, the mouse pointer specified in Cursor preferences is displayed, and effects will be placed in cells that are selected.

When using keyboard shortcuts or the right-click context menu to create effects, the Select Action on the toolbar is ignored.

Basic Operations: Max Intensity, Min Intensity, Fade Up, and Fade Down

To start adding effects to a sequence using the toolbar, the first step is to set the Select Action to "Create". This is important! If you leave the Select Action as "Select", then no effects will be created.

Now set the Intensity Range. The range defaults to 0-100, which is usually fine for starting out. If you want different values, then type the numbers into the 2 boxes. The order of the numbers does not matter: entering 0 in the first box and 50 in the second has the same effect as entering 50 in the first box and 0 in the second. You can use the "Presets" button to quickly set common ranges.

Now choose the "Slope".

Slope Tool	Button	Action
Max Intensity		Applies the selected effect at the maximum value in the intensity range
Min Intensity		Applies the selected effect at the minimum value in the intensity range. If the minimum intensity is 0%, this will erase any existing effects where it is applied.
Fade up		Ramps the selected effect from the minimum value in the intensity range to the maximum value in the intensity range
Fade down		Ramps the selected effect from the maximum value in the intensity range to the minimum value in the intensity range

Now choose the Effect Type:

Effect Type	Description
Channel Effect	Simple effects originally meant to control AC-powered lights. However these effects can also be applied to RGB lights and pixels.
Color Fade	Applies a color transition to an RGB light. However, these effects work equally well on RGB pixels.
Motion Effect	an effect intended for pixel-based display elements created by the Motion Effect Generator or the SuperStar Sequencer. The motion effect that will be applied when drawing on the grid is the one currently displayed in the Playback Window. Motion Effects can only be placed on Motion Effect Rows, and require a Pro level license. Furthermore, motion effects can only be displayed on lights connected to Enhanced LOR networks, or DMX networks. They cannot be displayed on LOR networks that are not enhanced. Lastly, they cannot be used in a stand-alone sequence that is loaded into a controller.

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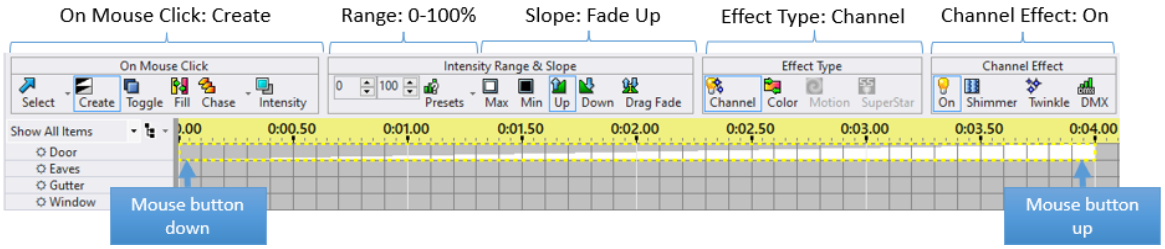
SuperStar Effect	These effects are created using the SuperStar Sequencer, but the data is stored in the S5 Sequencer's file.

For a channel type, choose the specific effect:

Channel Effect	Description
On	the light is turned on (no shimmer or twinkle)
Shimmer	causes your lights to quickly vary between on and off at a constant high rate.
Twinkle	causes your lights to quickly vary between on and off at a random rate.
DMX Intensity	this is useful for sending DMX commands to DMX devices that require specific DMX values (like some moving head lights). The DMX protocol supports intensities from zero to 255, and so this effect gives you precise control over the DMX intensities sent to a device. Please note that not all Light-O-Rama controllers support this functionality; DMX intensity events sent to a controller that does not support them will simply be ignored. To check whether any particular controller supports it, please refer to that controller's documentation.

After making those choices and then moving your cursor over the sequence grid, your cursor will change to a pencil indicating that you are in "effect drawing mode". Click the left mouse button and drag over some cells. When you release the mouse button those cells will be filled with the effect you chose, at the intensity range you chose, and reflecting the tool type you chose.



In the example above, an effect was applied to a regular channel row. However, this technique applies equally well to RGB channel rows. The only difference is that RGB channel rows need a color. If the Effect Type is set to Color, then the color currently shown on the toolbar's Sample button is used; otherwise, white is used.

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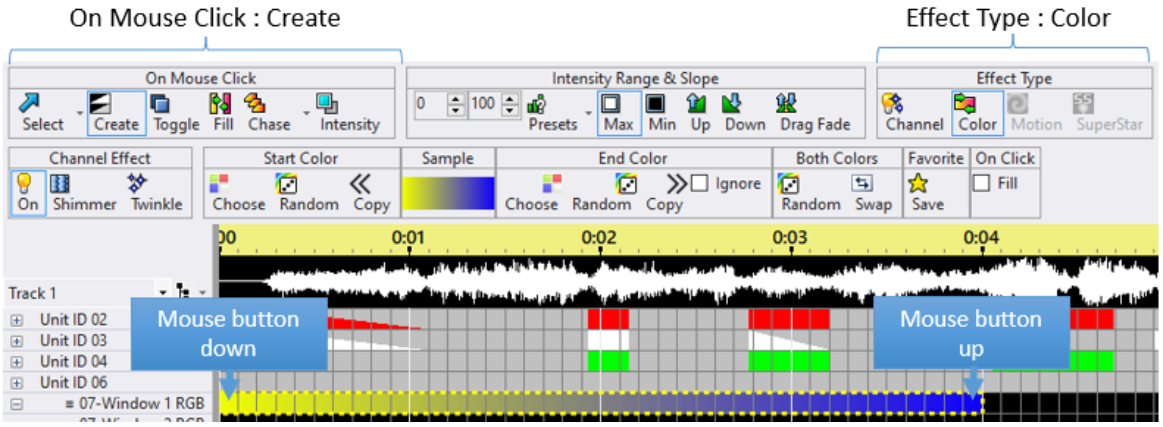
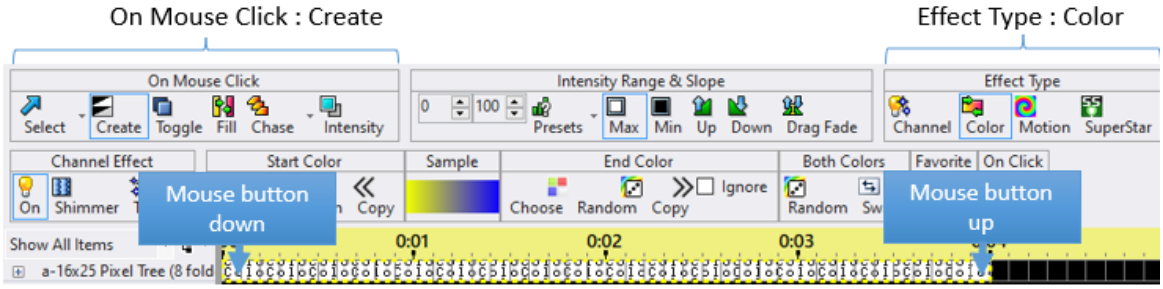
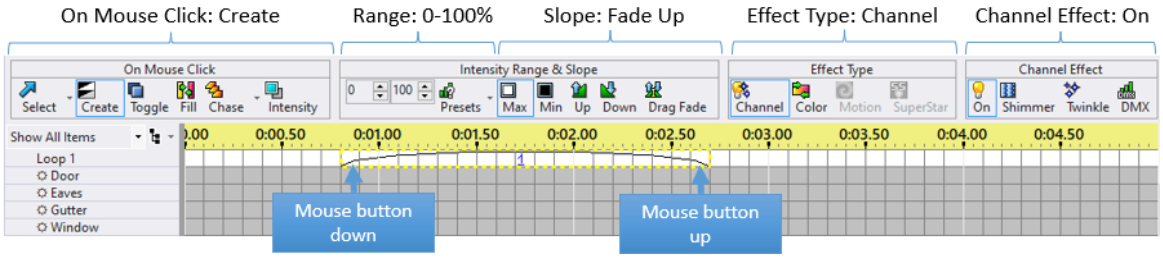


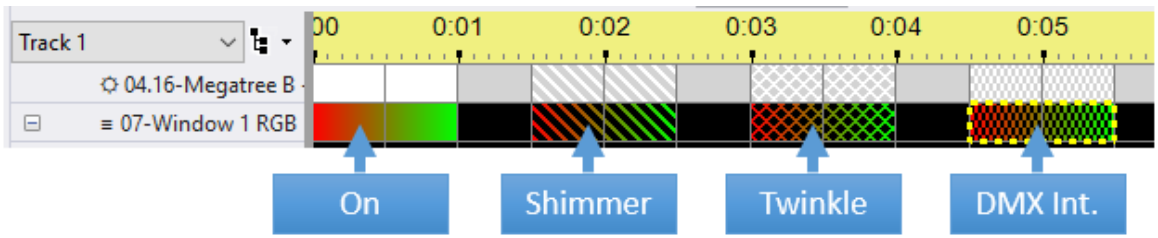
In the example above, a color effect was applied to an RGB Channel Row. This technique applies equally well to Motion Effect Rows. When you do, it will apply the color to all of the pixels in the prop (a ColorWash motion effect). The only difference is the way the resulting motion effect is displayed in the grid. In the picture below, the display of motion effect names option is enabled.



You can even use the same technique to create loops in animation sequences. Loops don't use color, so it is more like the first example.



Each channel effect (on, shimmer, twinkle, and DMX intensity) has its own pattern when displayed on the sequence grid. This makes it easy to identify what your sequence is doing without even playing it back. The patterns are applied to both regular channel rows and RGB channel rows.



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Keyboard Shortcuts for Basic Operations

All of the actions listed above can be performed using keyboard shortcuts. The actions listed below are also available on the right-click context menu.

Tool	Shortcut Key	Action
Max Intensity	A	applies the selected toolbar effect at the maximum value in the intensity range
Min Intensity	I	applies the selected toolbar effect at the minimum value in the intensity range
Fade up	U	ramps the selected toolbar effect from the minimum value in the intensity range to the maximum value in the intensity range
Fade down	D	ramps the selected toolbar effect from the maximum value in the intensity range to the minimum value in the intensity range
On	N	set selected cells to the ON effect at max toolbar intensity (ignores the toolbar effect selection)
Shimmer	S	set selected cells to the SHIMMER effect at max toolbar intensity (ignores the toolbar effect selection)
Twinkle	T	set selected cells to the TWINKLE effect at max toolbar intensity (ignores the toolbar effect selection)
Any	Enter	Use the currently selected tool (from the toolbar) on the grid selection

Intelligent Fade Tool

When using your mouse, the intelligent fade tool will create a:

- Fade Up when you use it by clicking and dragging left-to-right
- Fade Down when clicking or dragging right-to-left
- Fill if you click without dragging

This tool is not available when using the keyboard. Use the shortcuts for fade-up, fade-down, and fill instead.

Fill Tool

Shortcut Key: F

The Fill tool can be used to create smooth fades from one effect to another. For example, if a fade up from 10% to 40% is followed by the lights being off, which is followed by a fade up from 20% to 80%, then applying the Fill tool on the area where the lights are off will make it into a fade down from 40% to 20%:

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Before a fill...

... and after a fill

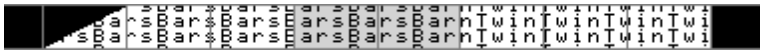
It can also be used in a similar manner on RGB channels to smoothly fade from one color to another.

Before a fill...

... and after a fill

The Fill tool can also be used on Motion Effect Rows.

Before a fill...


... and after a fill

With motion effects, the Fill tool tries to perform a cross-fade. However, you will achieve better results by creating the cross-fade yourself (which requires a second motion effects row):

Cross fading the 2 effects using a second motion effect row

The Fill tool does not do anything when used on cells that contain an effect.

The Intelligent Fade tool and the Color Fade tool can also be used to apply fills in certain situations.

Chase Tool

Shortcut Key:

The Chase tool can be used to take a pattern and "chase" it through several channels over a time range. For example:

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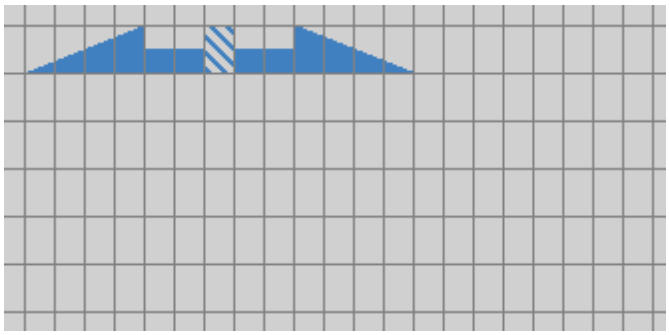
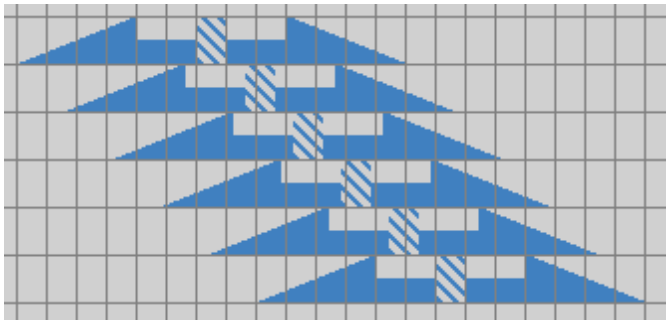


Before a chase...

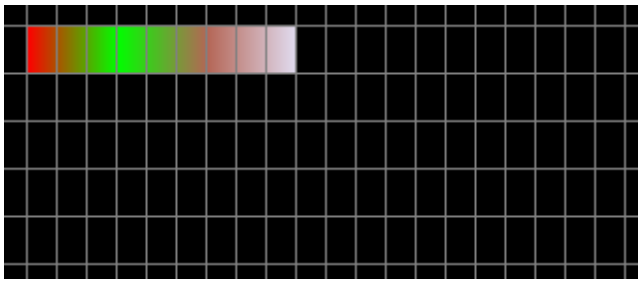


... and after a chase

Exactly what is chased, and where it is chased to, depends upon how you click-and-drag (or, if using the keyboard, how you expanded the selection). The lighting effects in the corner that you started dragging from will be chased to the corner that you finished dragging to so that, for example, you could chase effects "up" or "down" through channels.

The effects that are chased will include everything up to and including the last lighting effect in the channel that you start dragging from (or, if dragging backwards, everything from the first lighting effect).

The Chase tool can also be used on RGB channels:



Before an RGB chase...

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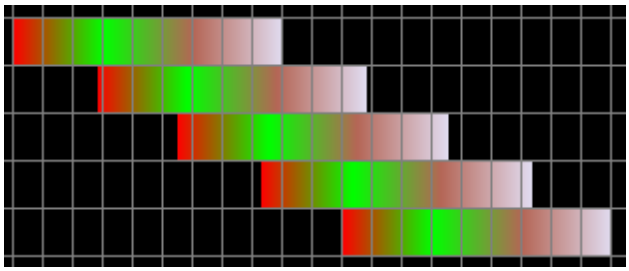
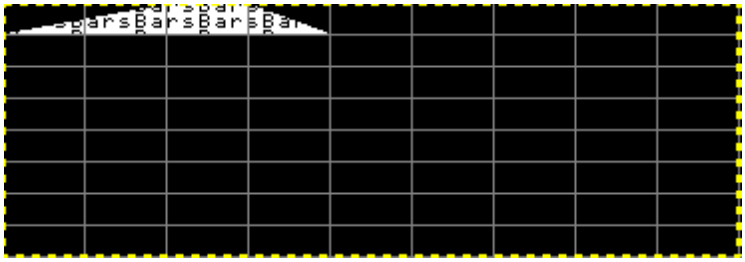
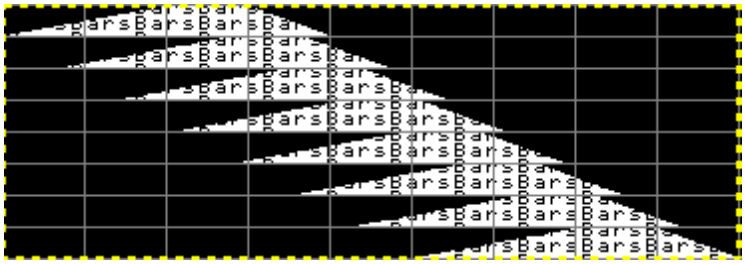


... and after an RGB chase

The Chase tool can also be used on Motion Effect Rows:

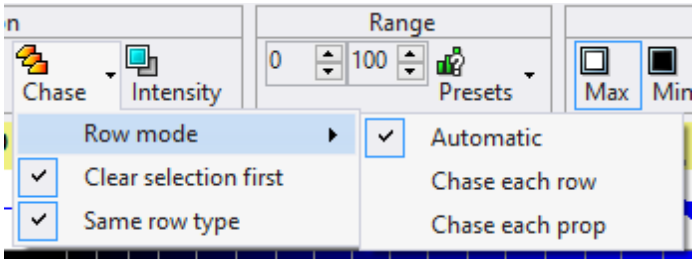


Before a motion effect chase...



... and after a motion effect chase

The Chase tool has additional options that can be accessed by clicking on the small down arrow to the right of the chase button.



The Chase Options menu

- Row Mode:
  - Auto: chase each prop if the effect being chased is a motion effect and that motion row applies to the entire prop (not a subsection); otherwise chase each row
  - Chase Each Row: perform the chase on each row in the selected area
  - Chase Each Prop: perform the chase on the first row of each prop in the selected area (makes a difference on pixel props with multiple motion effect rows)
- Clear Selection First: clears the chase area of any existing effects before placing the new effects that are part of the chase.

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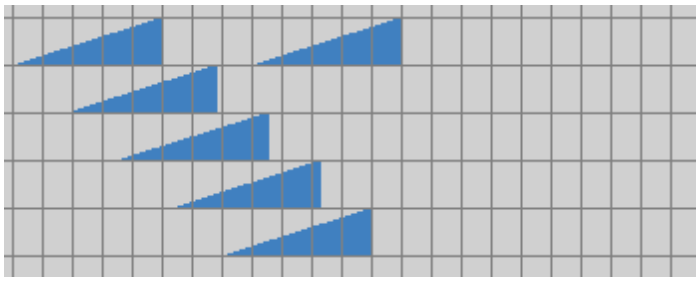
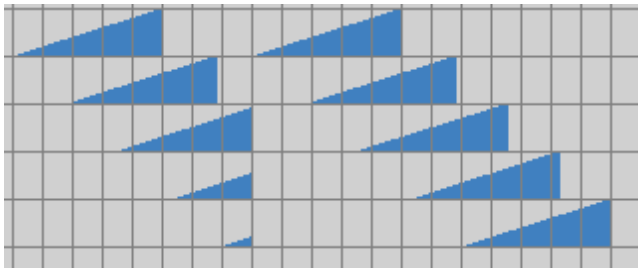
- Same Row Type: if selected, the chase will only occur on rows of the same type as the first row. For example, if the first row is a regular channel, any RGB channels or motion effect rows will be skipped. If there is no check mark next to this option, then the chase will proceed through all selected rows, regardless of type.

For example, consider the following sequence, and imagine that you want to chase the second fade up in the first channel:



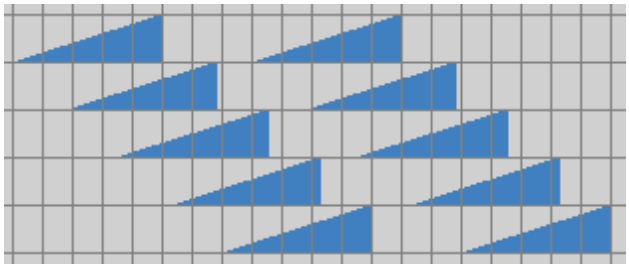
Before chasing the second fade

If you had "Clear selection first" turned on, the chase would overwrite the ends of the existing fades in some of the other channels:



After chasing the second fade, with "Clear selection first" enabled

But with "Clear selection first" turned off, the existing effects are kept in place:



After chasing the second fade, with "Clear selection first" disabled

Motion Effect Tool

After selecting one or more cells on a motion effect row with this tool active, the Motion Effect Generator will open. Create your effect and then click the OK button to close the Motion Effect Generator. The new effect will be placed in the selected cells. This tool requires a Pro level license.

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SuperStar Tool

After selecting one or more cells on a motion effect row with this tool active, the SuperStar Sequencer will open. After you finish your sequencing in SuperStar, close SuperStar by clicking on the Red X in the upper right of the program (there is no need to use SuperStar's save function). You will then be returned to the S5 Sequencer and your new SuperStar effects will be automatically saved as part of the S5 Sequencer's sequence. They will be displayed in the selected cells as a single effect at the maximum value in the toolbar's intensity range, This tool requires a Pro level license.

Color Fade Tool

Shortcut Key: O

Note: the colors displayed on your screen will not necessarily match those shown by your actual RGB lights; you may have to experiment to determine colors that wind up looking the way you want, and different RGB devices may show different colors when sent the same intensities.

The Color Fade tool can be used to apply colors to RGB channels and Motion Effect Rows. Setting the Effect Type to "Color" on the toolbar displays a set of buttons that enables you to specify the colors to be used:

With the Color Fade tool selected, clicking and dragging an area of an RGB channel or multiple RGB channels will cause that area to become those colors:

Applying a color fade to an RGB channel

If you drag backwards, however, the colors will be applied in reverse order (this also happens if you are using the keyboard, and expand the selection from right to left instead of left to right):

Applying a color fade to an RGB channel by dragging backwards

If the "On Click - Fill" box is checked in the window and you click on an empty cell (as opposed to clicking-and-dragging) will cause the Color Fade tool to perform a fill, smoothly fading from the preceding color to the following color:

Before clicking the empty area...

... and after clicking the empty area

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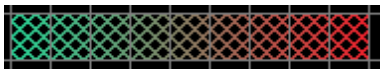
If the "On Click - Fill" box is not checked and you click on an empty cell, then the color sample will be applied to the cell that was clicked.

The Color Fade toolbar buttons give several ways to select the colors to be used:

- The "Choose" buttons on either side will open a color picker dialog to specify the color for that side
- The "Copy" button on either side will copy the color from the opposite side
- The "Swap" button will move the two colors to their opposite sides
- The "Random" buttons on either side will apply a random color for that side
- The "Random" button in the "Both Colors" section will apply random colors to both sides

The Color Fade tool takes into account the selected effect on the toolbar. For example, here is a twinkling color fade:



A twinkling color fade

5.3.5.6 Modifying Effects

This section covers techniques for modifying existing effects.

- One simple way to edit your sequence is to place new effects over the old ones -- if that is what you want to do, then see the Adding Effects topic.
- You can also use cut, copy, paste, and repeat to modify a sequence -- which is covered in the clipboard topic.

Covered in this topic are:

- Double-Click Selection And Edit
- Nudge Tools
- Changing Colors
- Changing Intensity
- Prompt For New Effect
- Toggle Tool

A condensed list of keyboard shortcuts for modifying a sequence can be found in the Keyboard Shortcut Summary.

Double-Click Selection And Edit

This section refers to "double-clicking". However, whether it is a "plain double-click" or a "Ctrl-Shift double-click" is controlled by the Double-Click Preference.

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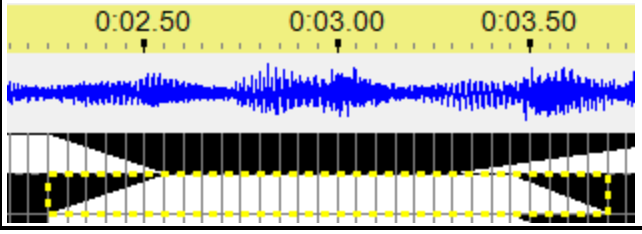
Double-clicking on an effect in the sequencing grid will select all of the cells for that effect, then open a dialog window that allows the effect to be modified:

- Regular Channels - effect can be changed from intensity, shimmer, twinkle, or DMX intensity
- RGB Channels - colors can be modified
- SuperStar Effects - SuperStar is opened, allowing the effect to be edited
- Other Motion Effects - the Motion Effect Generator is opened
- Loops - the repeat count and speed can be modified

If the effect is modified and the user clicks “OK”, then those modifications are applied to the selected cells. In the following picture, one of the cells in the second row was double-clicked, causing all of the cells for that effect to be selected (including the ramp up and ramp down portions).



Nudge Tools

The nudge tools allow you to make small adjustments to existing effects in the grid. By default, each click of the button moves effects in 0.05 second increments. However, if you hold the Ctrl key down while clicking the button, effects will move in 0.25 second increments.

Effects can also be moved left or right by using the Skew Selection command.

Nudge tools on the toolbar

Nudge Effect Left

When you click on this button, any effects completely or partially within the selected area will be moved to the left.

Nudge Effect Right

When you click on this button, any effects completely or partially within the selected area will be moved to the right.

Shorten Effect

When you click on this button, any effects completely or partially within the selected area will be shortened. The starting time of the effect remains the same.

Lengthen Effect

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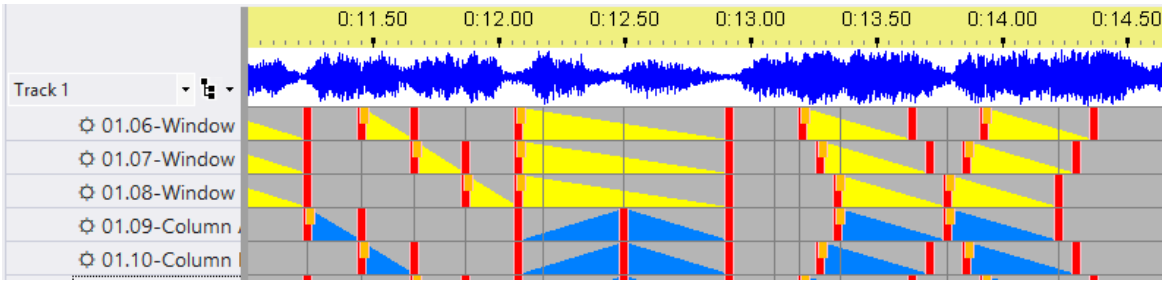
When you click on this button, any effects completely or partially within the selected area will be lengthened. The starting time of the effect remains the same.

Display Drag Handles

When you click this button, all effects (except RGB effects) display a drag handle on each side of the effect. Dragging the red part of the handle with your mouse will move the edge of the effect. Dragging the green part of the handle will create a fade. When your cursor is over the green part of the handle the cursor will change to an angle. The direction of the angle will indicate whether you are creating a fade in or a fade out.



Changing Colors

You can change the colors of RGB Channel effects by:

- setting Effect Type to "Color" and select the new color
- selecting an area of the grid that contains the effects to be changed. These must be RGB Channel rows.
- right-click on the area, then opening the Existing Effects (foreground) Sub-menu, then selecting Apply Toolbar Color or Apply Toolbar Hue.

Changing Intensity

Tools to change the intensity of existing effects are accessed by right-clicking on the sequence grid, then opening the Existing Effects (foreground) Sub-menu.

You can also change the intensity of existing effects by using the "Change Intensity" select action on the toolbar. To use the tool, set the intensity range and slope to the desired values, then select a region of the grid containing effects you want to change.

Prompt For New Effect

You can modify a group of effects to all be a new effect that you choose. First select an area that contains effects you wish to modify, then either:

- right-click on the selection, open the Prompt For New Effect Sub-menu and select Modify Existing Effects, or
- use the Shift-M keyboard shortcut

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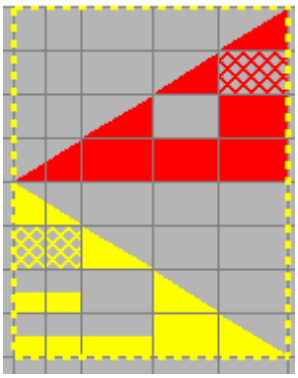
This works with regular channels, RGB channels, and motion effect rows.

Toggle Tool

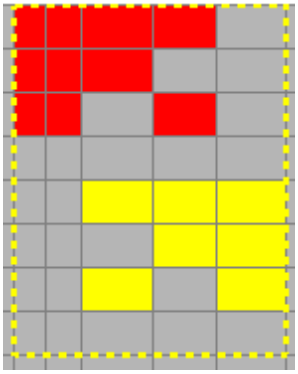
This command will toggle the effects in the selected area between on and off. Any that had been off will be turned on; all others will be turned off (note that this includes not just those that had been on, but also, for example, those that had been shimmers or fades).

You can invoke it by:

- Selecting the Toggle select action on the toolbar, then selecting an area of the grid to toggle.
- Selecting an area on the grid, then right-clicking and select "Toggle" on the Advanced Tools sub-menu.
- Selecting an area on the grid, then using the "G" shortcut key



Before Toggle



After Toggle

5.3.5.7 Deleting Effects

To delete existing effects in the grid, select an area, then:

- Click the Cut button on the toolbar, or
- Use the Delete keyboard shortcut, or
- Select Clear from the right-click menu

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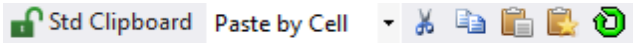
- Use the Min Intensity tool when the minimum intensity is set to 0%

5.3.5.8 Clipboards & Cut/Copy/Paste/Repeat

In the S5 Sequencer, the sequence grid supports cut, copy, and paste operations on 2 types of data:

- The copying and pasting of timing marks is covered in the Timing Mark sub-menu topic.
- The copying and pasting of lighting effects is covered in this section.

The Sequencer supports basic cut, copy, and paste operations on lighting effects. But it also supports more advanced operations. All operations can be accessed from the toolbar.



Clipboard section of the Toolbar

From the toolbar you can:

- Select And Manage Clipboards
- Choose The Paste Mode
- Cut
- Copy
- Paste
- Paste Special
- Repeat

Cut, copy, paste, and paste special can also be accessed using keyboard shortcuts or from the right-click menu.

Select And Manage Clipboards

Clipboards are used to copy (or cut) and paste lighting effects from one area of the sequence grid to another. In the Sequencer, you can have multiple different clipboards, allowing you to keep several different sets of effects available to be pasted. However, only one clipboard can be active at any given time.

You can also lock clipboards so that they cannot be copied into (thus preventing accidental overwriting of their contents):

Unlocked clipboard

Locked clipboard

The default clipboard is named "Std Clipboard" and it cannot be locked. The active clipboard is shown on the toolbar with an icon to indicate whether it is locked or unlocked.

The active clipboard

Click on the name of the active clipboard to open the Clipboard Management window.

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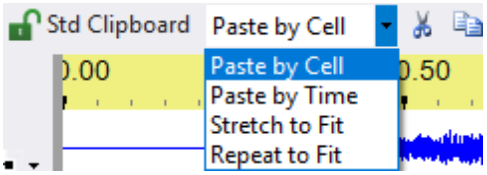
Choose The Paste Mode

When pasting in the sequencing grid, use the paste mode selector on the toolbar to choose the desired mode before you paste. There are 4 different paste modes:

- Paste By Cell
- Paste By Time
- Stretch to Fit
- Repeat to Fit

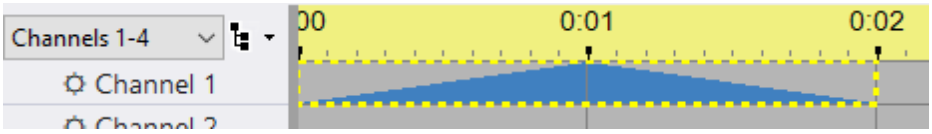


Paste Mode selector on the toolbar

Paste By Cell

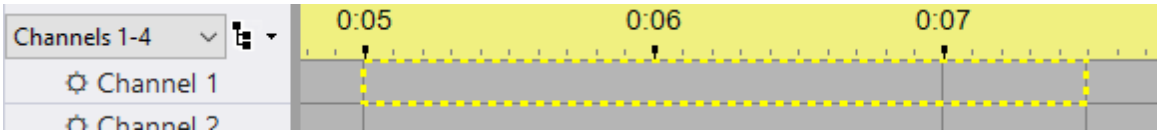
Paste by Cell pastes effects based upon the relative durations of the copied cells and the cells where they will be pasted.

For example, consider timings at 0 seconds, 1 second, and 2 seconds. Between 0 and 1 is a fade up, and between 1 and 2 is a fade down:



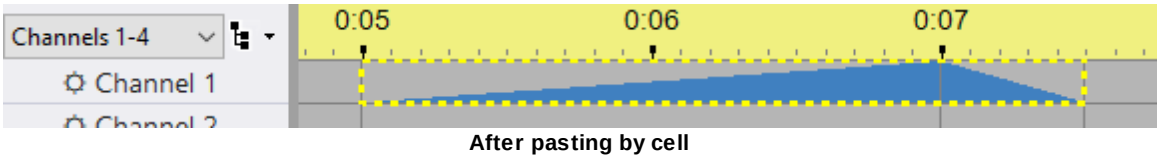
Effects to be copied

These events will be copied, and pasted to the time starting at 5 seconds. There are timings at 5 seconds, 7 seconds, and 7.5 seconds:



Where they will be pasted to

If "Paste by Cell" is selected, then there will be a fade up from 5 to 7, and a fade down from 7 to 7.5:



After pasting by cell

Paste By Time

Paste by Time pastes effects based upon their durations as they were copied.

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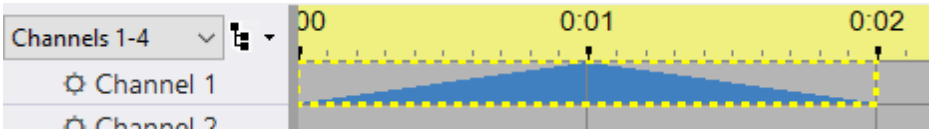
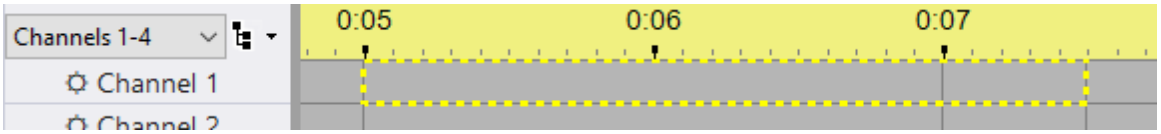
For example, consider timings at 0 seconds, 1 second, and 2 seconds. Between 0 and 1 is a fade up, and between 1 and 2 is a fade down:



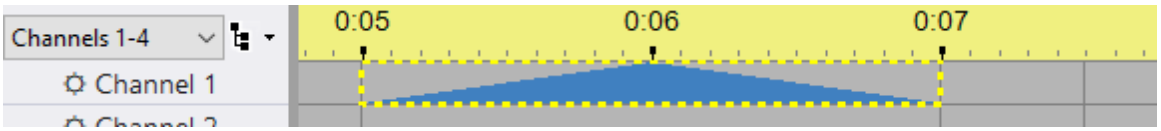
Effects to be copied

These events will be copied, and pasted to the time starting at 5 seconds. There are timings at 5 seconds, 7 seconds, and 7.5 seconds:



Where they will be pasted to

If "Paste by Time" is selected, then there will be a fade up from 5 to 6, and a fade down from 6 to 7. The timings at 7 and 7.5 are ignored; only the original lengths of the events are used:

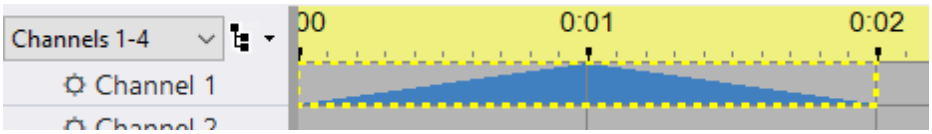


After pasting by time

Stretch to Fit

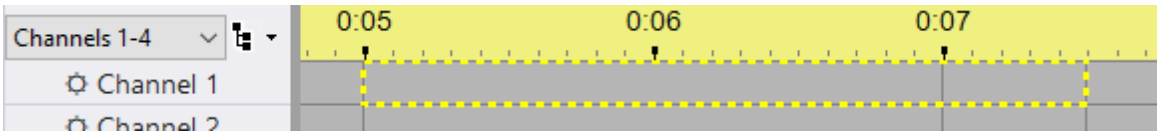
Stretch to Fit stretches (or compresses) effects to fit into the area that you have selected, without regards to any timings within that area.

For example, consider timings at 0 seconds, 1 second, and 2 seconds. Between 0 and 1 is a fade up, and between 1 and 2 is a fade down:



Effects to be copied

These events will be copied, and pasted to the time starting at 5 seconds, with the area between 5 seconds and 7.5 seconds selected. There are timings at 5 seconds, 7 seconds, and 7.5 seconds:



Where they will be pasted to

If "Stretch to Fit" is selected, then since the copied effects totalled two seconds in length, and since the area being pasted to is two and a half seconds in length, each effect will be stretched to 125% of its original length (since 2.5 seconds is 125% of 2 seconds). Therefore, there will be a fade up from 5 seconds to 6.25 seconds, and a fade down from 6.25 seconds to 7.5 seconds:

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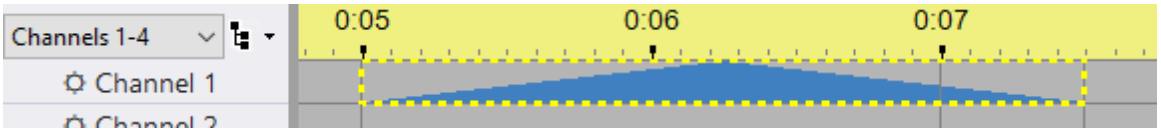
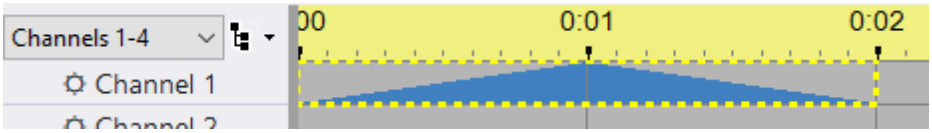


After stretching to fit

Repeat to Fit

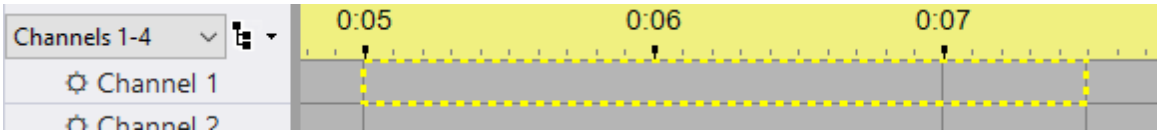
Repeat to Fit repeats (or cuts off) effects to fit into the area that you have selected, without regards to any timings within that area.

For example, consider timings at 0 seconds, 1 second, and 2 seconds. Between 0 and 1 is a fade up, and between 1 and 2 is a fade down:



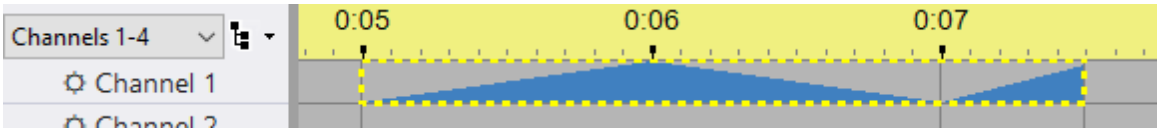
Effects to be copied

These events will be copied, and pasted to the time starting at 5 seconds, with the area between 5 seconds and 7.5 seconds selected. There are timings at 5 seconds, 7 seconds, and 7.5 seconds:



Where they will be pasted to

If "Repeat to Fit" is selected, then since the copied effects totalled two seconds in length, and since the area being pasted to is two and a half seconds in length, there will be one full copy of the copied effects for the first two seconds, followed by the first half second of a second copy of the effects. That is, there will be a fade up from 5 seconds to 6 seconds, a fade down from 6 seconds to 7 seconds, and the first half of a fade up from 7 seconds to 7.5 seconds:



After repeating to fit

Cut

The Cut command removes the selected effects from their original position in the grid and stores those effects on the current clipboard. If the current clipboard is locked, an error message is displayed.

"Cut" has a keyboard hotkey: Ctrl X

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Copy

The Copy command copies the selected effects onto the current clipboard. If the current clipboard is locked, an error message is displayed.

"Copy" has a keyboard hotkey: Ctrl C

Paste

The Paste command copies the effects in the current clipboard onto the selected area of the grid, taking into account the current paste mode. The source row doesn't necessarily need to be of the same type as the destination row, as shown in the table below.

Copy From:	**Paste Into:**		
	Regular Channel or Beat Channel	RGB Channel	Motion Effects Row
Regular Channel or Beat Channel	Fully supported - no change to the effect	"on", "twinkle", and "shimmer" are preserved. The RGB channel effect takes on the color of the source channel.	"on", "twinkle", and "shimmer" are recreated as motion effects. The motion effect takes on the color of the source channel.
RGB Channel	"on", "twinkle", and "shimmer" effects are created at 100% intensity, wherever those RGB channel effects existed in the source. Color information is not used in conversion.	Fully supported - no change to the effect	"on", "twinkle", and "shimmer" are recreated as motion effects. The motion effect takes on the color of the source effect.
Motion Effects Row	A twinkle motion effect is converted to a twinkle channel effect. All other motion effects get converted to the "on" channel effect. Start and end intensity of the source motion effect are preserved in the destination channel effect.	A twinkle motion effect is converted to a twinkle channel effect. All other motion effects get converted to the "on" channel effect. The first selected color of the motion effect is used as the color for the RGB channel effect. That color is dimmed according to the source motion effect's starting and ending intensity values.	Fully supported - no change to the effect

"Paste" has a keyboard hotkey: Ctrl V

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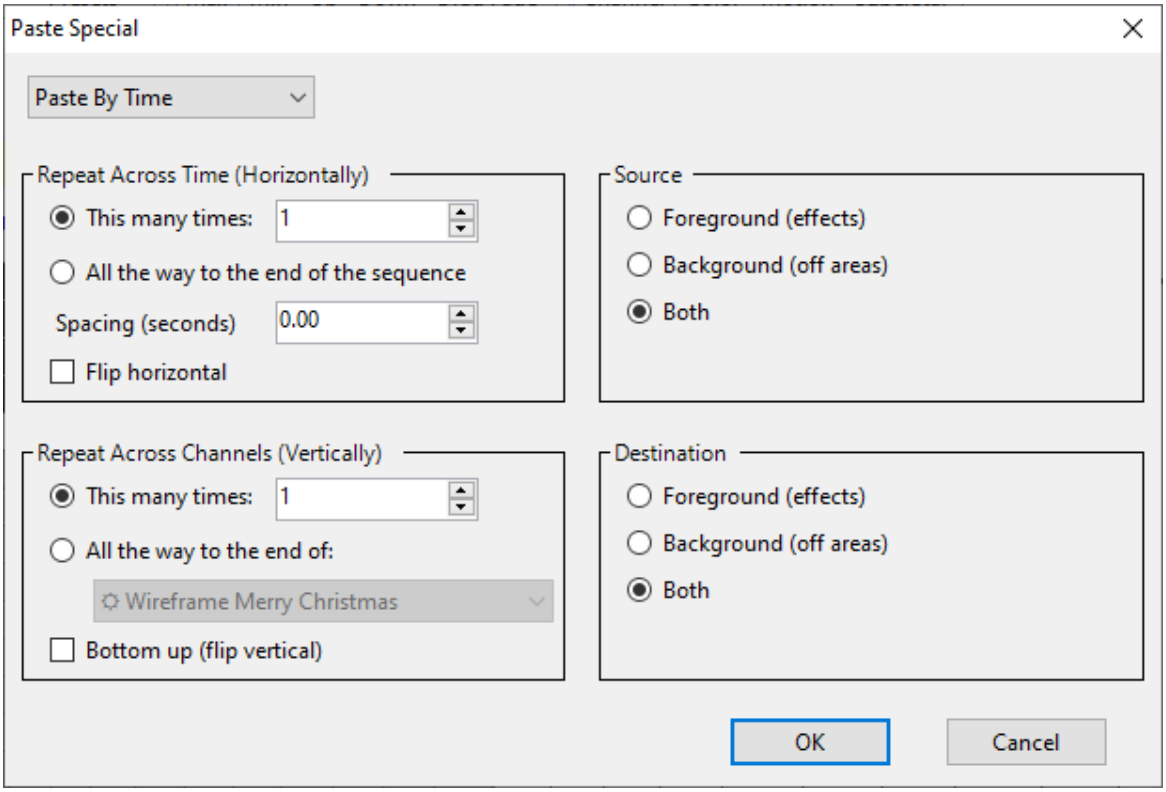
Paste Special

The Paste Special command will open a dialog window, allowing you to specify additional options when pasting.



The Paste Special dialog

"Paste Special" has a keyboard hotkey: Ctrl Alt V

Paste Mode

The paste mode down-down box is initially set from the value shown on Toolbar #2. However, you can change the value here before pasting. Changing the value here does not update the value shown in Toolbar #2.

Repeat Across Time (Horizontally)

Specify the number of times the clipboard data should be repeated horizontally.

The Spacing entry can be used to control the spacing between copies as shown in the picture below. If pasting by cell, then the spacing value is the number of cells. For all other paste modes, the spacing is specified in seconds and fractions of a second. Every time you open the Paste Special dialog, spacing will initially be set to 0, regardless of any value you might have entered before.

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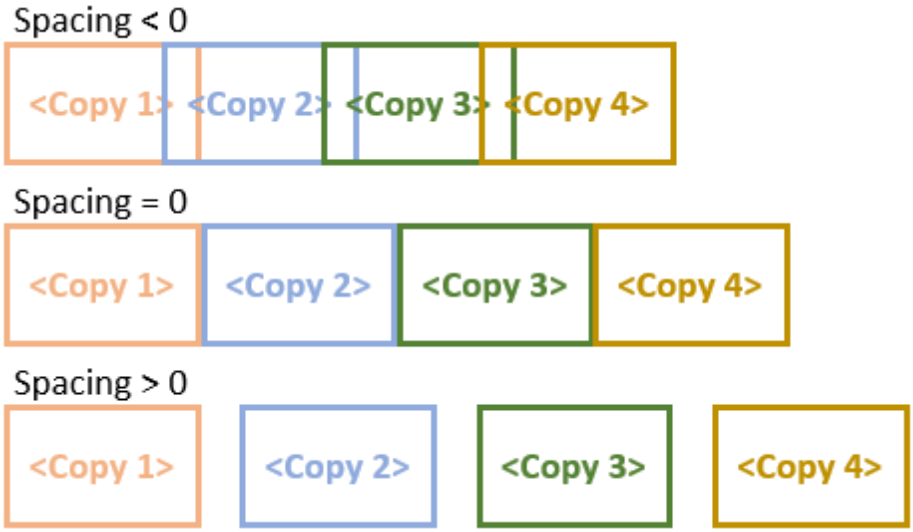
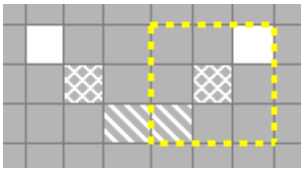


Checking the Flip Horizontal box will cause the clipboard data to be pasted in reverse (horizontally). In the example below, the 3 by 3 section on the left was copied to the clipboard. Then Paste Special was used with the Flip Horizontal option checked, with the result shown in the selected area.

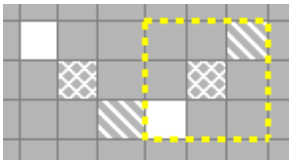


Flip Horizontal

Repeat Across Channels (Vertically)

Specify the number of times the clipboard data should be repeated vertically.

Checking the Bottom Up/Flip Vertical box will cause the clipboard data to be pasted from the bottom of the selection first -- the first row in the clipboard will be pasted into the bottom row of the selection. This will reverse the clipboard vertically **if the clipboard data and the selection have the same number of rows**. In the example below, the 3 by 3 section on the left was copied to the clipboard. Then Paste Special was used with the Flip Vertical option checked, with the result shown in the selected area.



Flip Vertical

Source and Destination

The "Source" box controls which portions of the copied effects will be pasted:

- "Background" means that only areas that are completely off will be pasted;
- "Foreground" means that only effects will be pasted;

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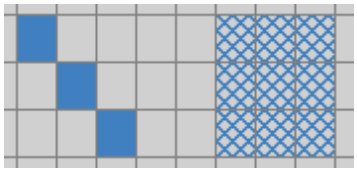
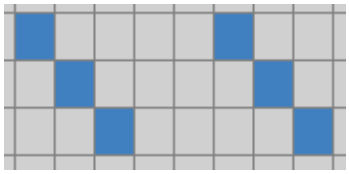
- "Both", which is the default, means that off areas as well as effects will be pasted (i.e. foreground and background).

For example, consider the following portion of a sequence, and imagine that the simple chase on the left will be copied and pasted on top of the twinkle effects on the right:



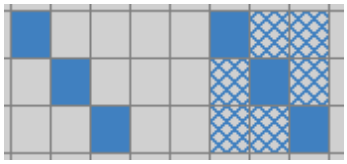
Before pasting the chase on top of the twinkling

For now, assume that the "To" box (which we will discuss momentarily) is set to "Both". Then if the "From" box is also set to "Both", then the entire copied area - including the off effects - will be pasted:



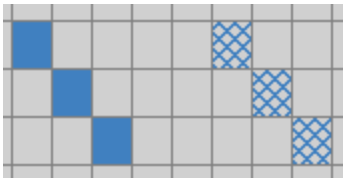
After pasting, from Both to Both

But if "From" is set to "Foreground", then the empty areas are not pasted, leaving some of the cells twinkling:



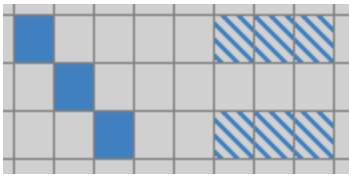
After pasting, from Foreground to Both

Or if "From" is "Background", then only the off areas are pasted:



After pasting, from Background to Both

The "To" box is similar, but it controls which of the cells in the area being pasted in*to* will actually be overwritten. For example, if "From" is set to "Both":



Before pasting

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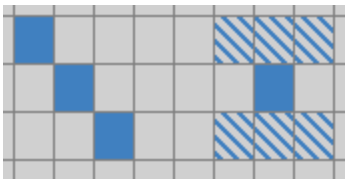
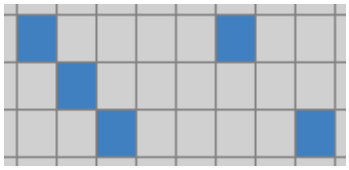
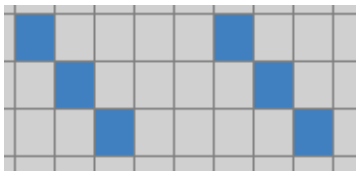


After pasting, from Both to Background

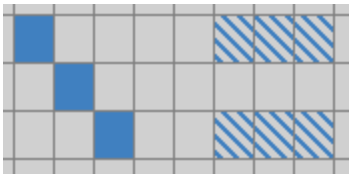


After pasting, from Both to Foreground

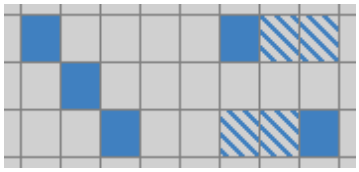


After pasting, from Both to Both

You can even combine "From" and "To". For example:



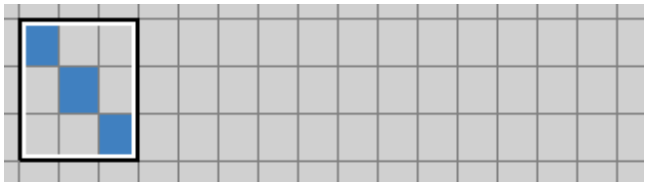
Before pasting



After pasting, from Foreground to Foreground

Repeat

The Repeat tool can be used to automatically place a copy of the selected area immediately after the selected area. For example, consider the following:



Before repeating

Then pressing the Repeat button will make the following:

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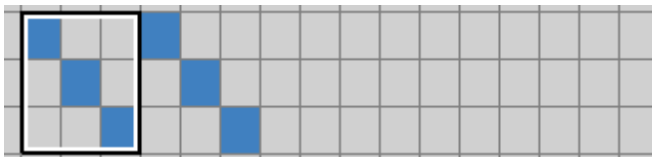
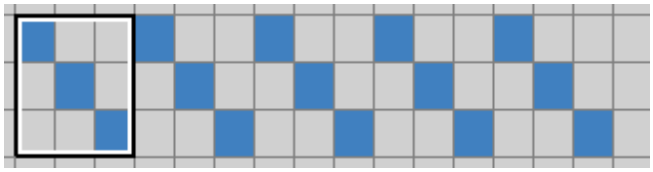


After repeating once

And you can repeat as many times as you like thereafter; for example, pressing Repeat three more times will make the following:



After repeating four times

"Repeat" has a keyboard hotkey:

5.3.5.8.1 Clipboard Management

Clipboards are used to copy (or cut) and paste lighting effects from one area of the sequence grid to another. In the Sequencer, you can have multiple different clipboards, allowing you to keep several different sets of effects available to be pasted. However, only one clipboard can be active at any given time.

You can also lock clipboards so that they cannot be copied into (thus preventing accidental overwriting of their contents):

- Unlocked clipboard
- Locked clipboard

The default clipboard is named "Std Clipboard" and it cannot be locked, renamed, or deleted. The active clipboard is shown on the toolbar with an icon to indicate whether it is locked or unlocked.

The active clipboard (enlarged)

Click on the name of the active clipboard on the toolbar to open the Clipboard Management window.

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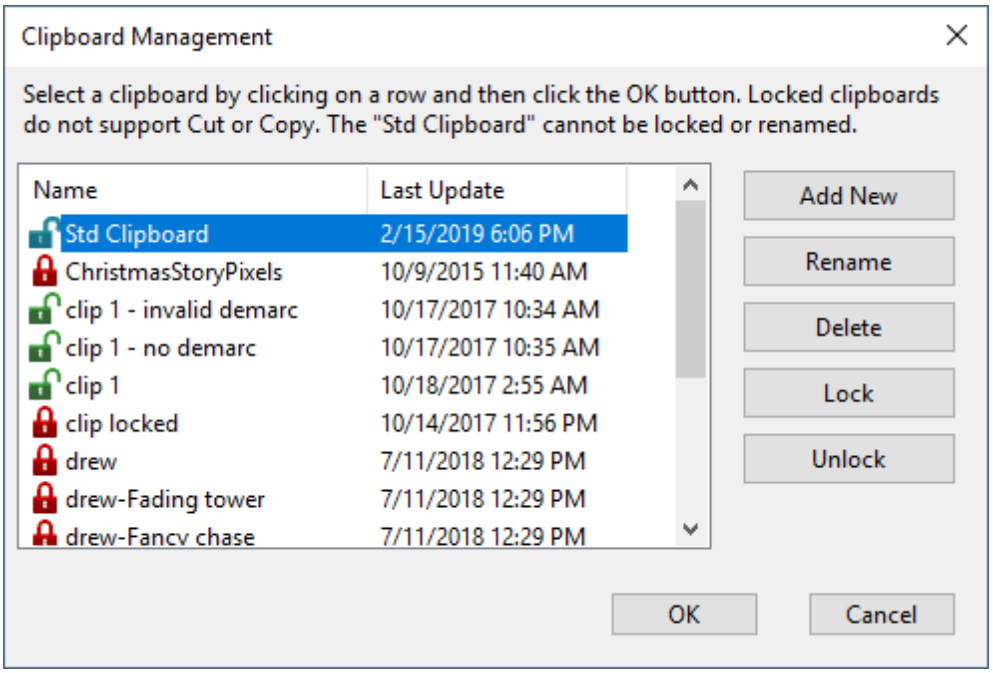

The Clipboard Management Window

Setting the Active Clipboard

To select the active clipboard (the one that will be used for cut, copy, paste, and repeat operations), simply click on its name in the Clipboard Management window so that the desired row is selected, then click the OK button to close the window. The toolbar will update to reflect your selected clipboard.

Adding New Clipboards

By default, the Sequencer has a single clipboard. However, the "Add New" button can be used to quickly create multiple clipboards. After clicking the button, you will be prompted for the new clipboard name.

Renaming a Clipboard

Click on a clipboard in the list, then click the Rename button. You will be prompted for the new name.

Deleting a Clipboard

Click on a clipboard in the list, then click the Delete button. The deletion will happen immediately -- you will not be prompted to confirm.

Locking and Unlocking Clipboards

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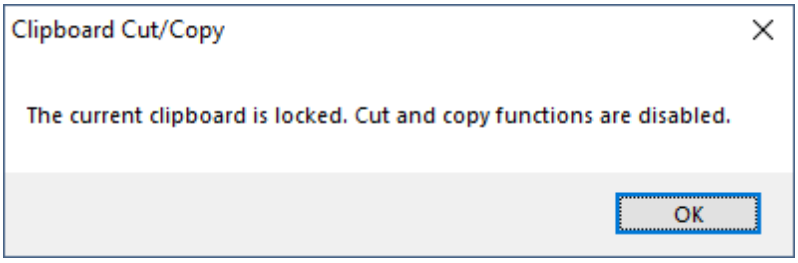
A clipboard can be locked or unlocked; a locked clipboard cannot be copied into (though it can still be pasted from). This prevents accidentally overwriting copied effects that you want to keep available. If you attempt to copy to a locked clipboard, you will get a pop-up message:



To lock a clipboard, click on its name to select it, then click the Lock button. To unlock a clipboard, click on its name to select it, then click the Unlock button.

Adding Clipboard Files Created by External Applications

There are some third-party tools that can create clipboard files (files with an LCB extension). You can make these available in the Sequencer by moving or copying the file into the Clipboards folder. Once the file is in that folder, the file name will appear the Clipboard Management window.

5.3.5.9 Toolbars

Each sequence tab in the Light-O-Rama Sequencer has its own set of toolbars. The toolbar selections on one tab can be different than the selections on another tab. For example, the current intensity range and current effect can be set differently for each sequence.

Command buttons for saving, playing, and modifying the sequence are organized into 3 toolbars:

- Toolbar #1 is fixed at the top. If you right-click on this toolbar, you can choose from 2 display options:
  - Timing Toolbar - Left
  - Timing Toolbar - Right

- Toolbar #2 is positioned immediately below Toolbar #1. If you right-click on this toolbar, you can choose from 3 display options:
  - Large - display large icons and text, if space permits
  - Medium - display small icons and text, if space permits
  - Compact - display small icons without text (recommended for experienced users)

- Toolbar #3 is positioned immediately below Toolbar #2. You can right-click on this toolbar to choose among 3 display options:
  - Icon and text
  - Text only
  - Icon only (recommended for experienced users)

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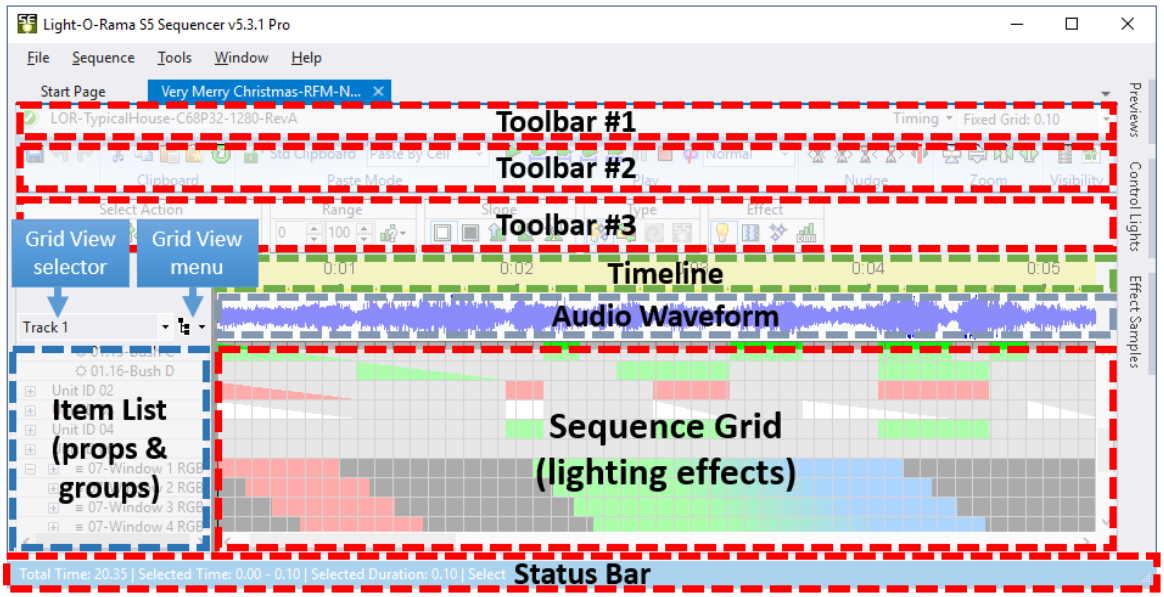

Areas within the Sequence Tab

Toolbar #1

Toolbar Item	Description
	Calculation Status: certain data is calculated in the background in order to facilitate on-screen playback. When calculations are in progress, this icon spins and the playback buttons on the toolbar are disabled. Once calculations are completed, the green check mark icon is displayed and playback is enabled. Click on the green check-mark and it will change to a pause icon. While the pause icon is displayed, background calculations will not be performed, allowing you to change motion effects without any delays. When you play the sequence, data will be calculated at that point. You can click the pause icon to return to the green check-mark at any time. Calculations will then be performed after every change to the sequence.
Preview 2019	Shows the name of the Preview assigned to the sequence. Click on the name to open the sequence's preview for editing in the Preview Design window.
	Timing Grid
Timing	Click here to open the toolbar's Timing Grid Menu
	Indicates whether the timing marks are locked or unlocked. Click the icon to toggle the mode. When unlocked, you can change the location of a timing marks in freeform timing grids by hovering over its line with your mouse (which will change your mouse cursor from a "pointer" cursor to an "east-west" cursor), and clicking and dragging the line to the left or the right. When in this mode, right-clicking on the grid shows only the Timing Mark sub-menu, which can save time. You can specify whether effects should move when adjacent timing marks are moved using the last option on the Timing Grid Menu.
Fixed Grid: 0.10	Shows the current Timing Grid and allows you to change it

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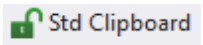
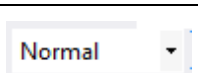
Toolbar #2

Toolbar Item	Description
	Save Button
	Undo / Redo
	Undo Button. This will undo the last modification to the sequence grid.
	Redo Button. This re-applies the last action performed by the Undo button.
	Clipboard Cut / Copy / Paste
	Cut Button
	Copy Button
	Paste Button
	Paste Special Button -- opens a dialog that allows you to specify additional options when you paste
	Repeat Button
	Shows the name of the active clipboard (the one that will be used for cut, copy, paste, and repeat operations). To the left of the clipboard name is an icon that indicates whether the clipboard is locked or unlocked. Cut and copy operations can only be performed with an unlocked clipboard. Click the clipboard name to open the Clipboard Management window.
	Shows the current Paste Mode, and allows you to change it.
	Playback Control
	Play the full sequence
	Play from the left edge of the visible sequence grid to the end of the sequence
	Play from the beginning of the sequence to the right edge of the visible sequence grid
	Play the visible portion of the sequence
	Play the current selection. If there is a freeform play range defined then that is played; otherwise the current grid selection (dashed yellow outline) is played.
	Pause playback. Press again to resume
	Stop playback
	Repeat playback. When enabled, this will cause playback to repeat until the Stop Playback button is pressed. When disabled, this icon will have a red slash through it.
	Shows the current Playback Speed and allows you to change it. Playback speeds other than normal may not be supported on some types of media files.
	Nudge Tools
	Nudge Effect Left
	Nudge Effect Right
	Shorten Effect
	Lengthen Effect

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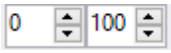
	Show handles on the edge of every effect that can be dragged to resize the effect
	Zoom Control
	Zoom row height shorter
	Zoom row height taller
	Zoom time out (total number of visible seconds will increase)
	Zoom time in (total number of visible seconds will decrease)
	Visibility Toggles
	Toggle playback window visibility
	Toggle waveform visibility

Toolbar #3

Toolbar Item	Description
	On Mouse Click - only 1 action can be active at a time
	Select tool. If this effect tool is enabled, then clicking on a cell or cells in a sequence's grid will simply select those cells. No lighting effect will be applied, nor will any be applied by hitting the enter key.
	Create an effect. This will cause the effect specified in the Effect Type area to be placed in the sequence grid.
	Toggle tool. If this effect tool is enabled on the Tools menu, then clicking on a cell or cells in a sequence's grid will turn individual parts of the selection on or off. Each portion of the selection that had been on will be turned off, and every other portion will be turned on. Note that the latter includes not just portions of the selection that had been off, but also those that had been twinkles, fades, shimmers, and intensities.
	Fill
	Chase. Click the down arrow next to the button to specify chase options.
	Change Intensity. This tool allows you to change the intensity of existing effects, using the intensity range and slope specified on the toolbar.
	Intensity Range & Slope
	Shows the current Intensity Range and allows you to change it by: 1) typing new numbers into the boxes, or 2) using the up and down arrows to adjust the current values. Valid values are from 0 to 100.
	Click here to open the Intensity Menu, which will allow you to choose from a list of preset intensity ranges.
	Maximum Intensity. Inserts the current effect (as shown on the toolbar) into the grid - at the maximum intensity shown on the toolbar.
	Minimum Intensity. Inserts the current effect (as shown on the toolbar) into the grid - at the minimum intensity shown on the toolbar.
	Fade Up
	Fade Down
	Intelligent Fade

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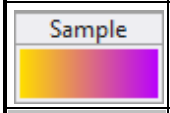
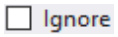
	Effect Type - only 1 effect type can be active at a time
	Channel Effect
	Color Fade Effect
	Motion Effect (only displayed with a Pro license)
	SuperStar Effect (only displayed with a Pro license)

The icons that appear next on the toolbar depend on which Effect Type is selected.

Toolbar #3 - Channel Effect

Toolbar Item	Description
	Channel Effect - only 1 effect can be active at a time
	On effect
	Shimmer effect
	Twinkle effect
	DMX intensity effect. Selecting this effect will cause a pair of numeric entry boxes to appear where you can specify the starting and ending DMX values (0-255)

Toolbar #3 - Color Fade Effect

Toolbar Item	Description
	Channel Effect - only 1 effect can be active at a time
	On effect
	Shimmer effect
	Twinkle effect
	Start Color
	Select the start color
	The system chooses a random start color
	Copy the end color to the start color
	Color Sample
	Displays a sample of the color that will be placed in the grid. You can also click on the left side of the sample to set the start color, or the right side to set the end color.
	End Color
	Select the end color
	The system chooses a random end color
	Copy the start color to the end color
	When checked, the end color is ignored and only the start color is used. In other words, you are specifying a solid color, not a color transition.
	Both Colors
	The system chooses a random start and end color

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	Swaps the start and end colors
	Favorite
	Save the current color sample as a favorite
	On Click
	When checked and you click on an empty cell in the grid, the system will attempt to perform a matching fill. When unchecked, the system will place the color sample in the selected cell.

Toolbar #3 - Motion Effect Source (Pro license only)

Toolbar Item	Description
	Source of motion effect that will be placed in the sequence
	Prompt for new effect (opens the Motion Effect Generator)
	Insert the effect displayed in the Playback Window
	Insert the selected effect in the Effect Samples Window

Toolbar #3 - SuperStar Source (Pro license only)

Toolbar Item	Description
	Source of SuperStar effect that will be placed in the sequence
	Prompt for new effect (opens SuperStar)

5.3.5.9.1 Toolbar Timing Grid Menu

The Timing Grid menu is the second-to-last item on the toolbar. This menu can be used to create, rename, and delete timing grids. You can also create timing grids in a Musical Sequence using the audio wizards. Use the Right-Click Timing Mark Sub-menu to manipulate timing marks within a timing grid.

From this menu you can:

- Change Timing Grid Name
- Add New Fixed Grid
- Add New Freeform Grid
- Duplicate to New Freeform Grid
- Import Timings
- Export Timings
- Delete Timing Grid
- Drag Events with Timings

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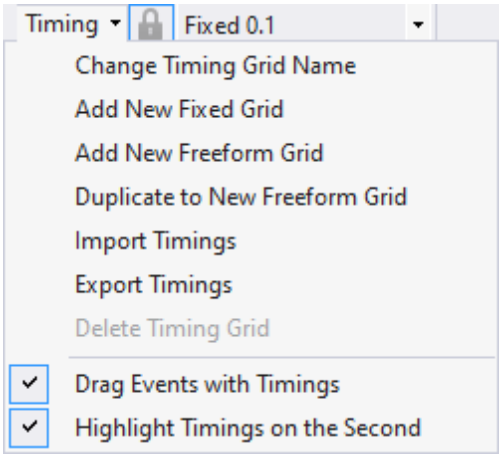


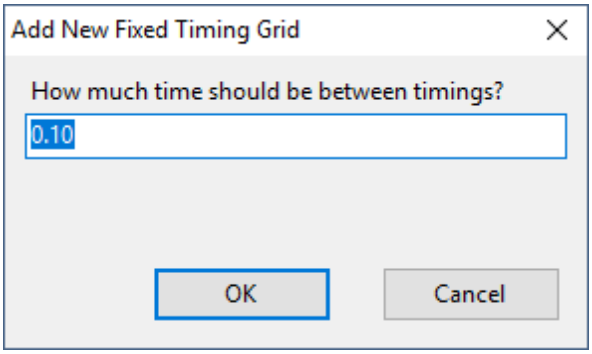
The Toolbar's Timing Grid Menu

Change Timing Grid Name

This menu item can be used to change the name of the current timing grid. The main purpose of giving a timing grid a name is to make it easier to distinguish when it is listed on the toolbar.

Add New Fixed Grid

This menu item can be used to add a new fixed timing grid to the sequence. After you select this item, you will be asked to specify the length of time between timings - for example, to make the timings a quarter second apart, enter "0.25".



Add New Freeform Grid

This menu item can be used to add a new freeform timing grid to the sequence. After you select this item, you will be prompted to enter a name for the new timing grid.

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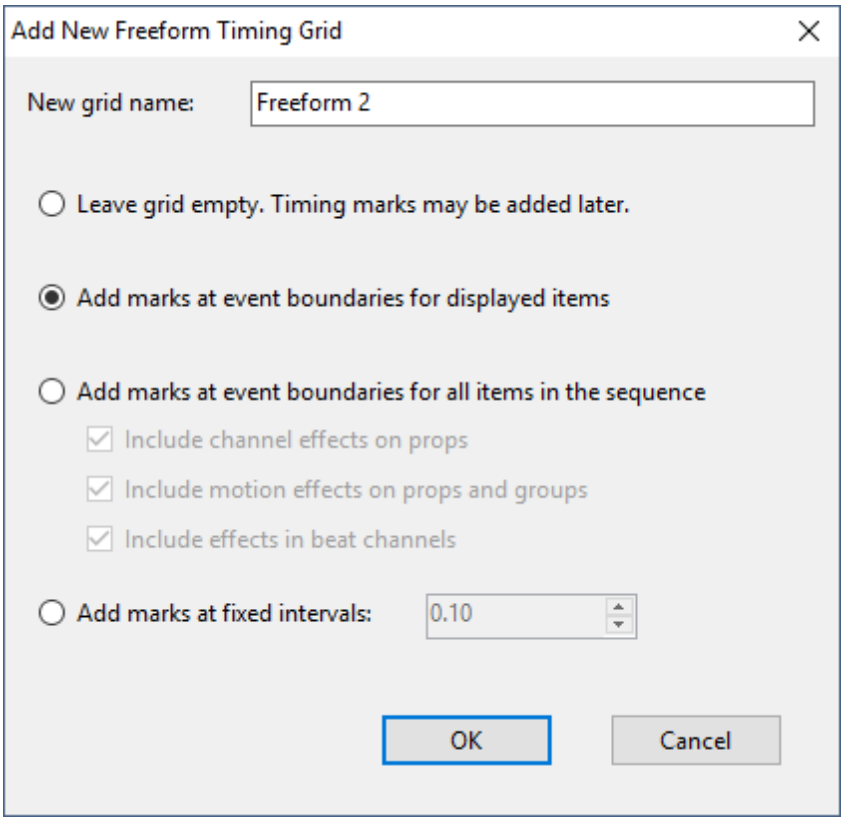

Duplicate to New Freeform Grid

This menu item can be used to create a new freeform timing grid, initially populating it with the same timings that are in the current timing grid.

Note that this can be done regardless of whether the current timing grid is a freeform grid or a fixed grid.

Import Timings

This menu item opens a dialog that allows you to import timing marks from several sources.

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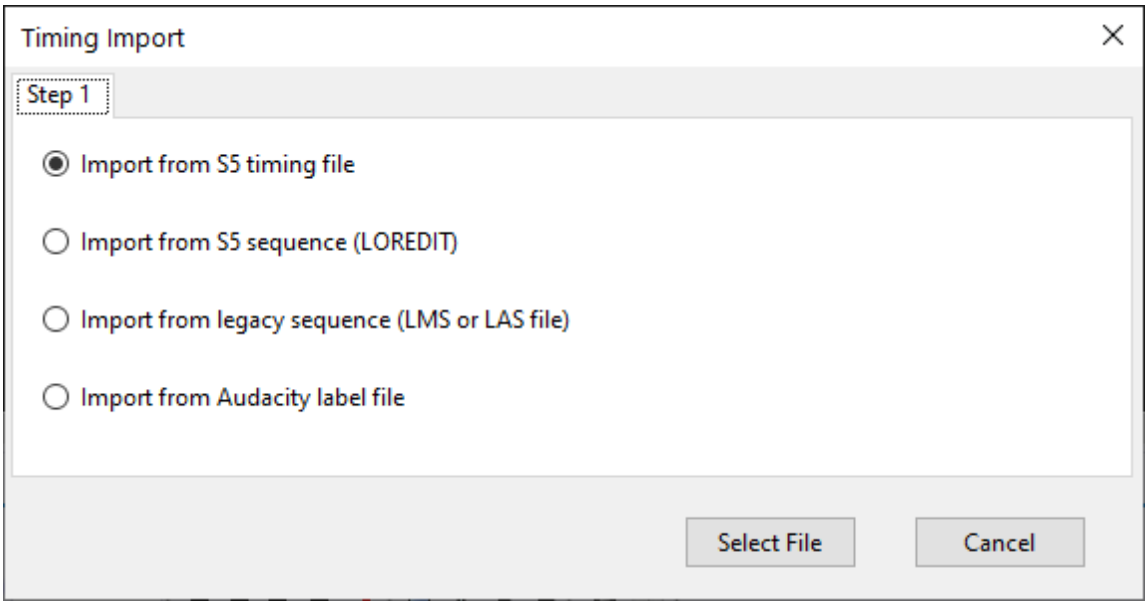

Timing grid import - source selection

S5 Timing File

You can import an S5 timing file which has an LORTIME extension -- one created using Export Timings.

S5 Sequence

This option will import all freeform timing grids from the selected S5 sequence. This eliminates the need to first export the timings from the source sequence.

One difference between this option and the previous one is that when you export timings, you have the option to include beat channels. Using this option to import timings directly from a sequence does not include the beat channels.

LMS or LAS Sequence

You can import timings from an LMS or LAS file. Typically you would upgrade one of these sequences, which would bring in the timings and the effects; but this function is available if you just need the timing marks.

Audacity Label File

An Audacity label file. Audacity is a free audio editing and analysis program available from https://www.audacityteam.org/. It has the ability to analyze beats and notes in music. As an example:

1. Start the Audacity program
2. Open your music file in Audacity
3. Open the Analyze menu and choose a tool, for example "Bar and Beat Tracker: Bars". After the analysis is run, you should see a label track with some markers in it.

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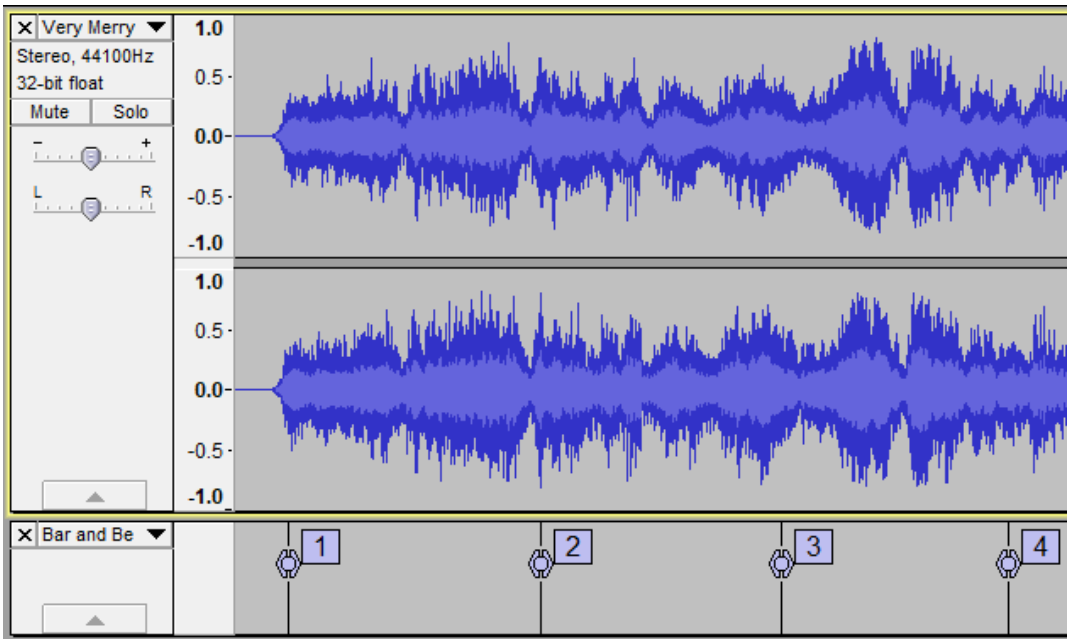
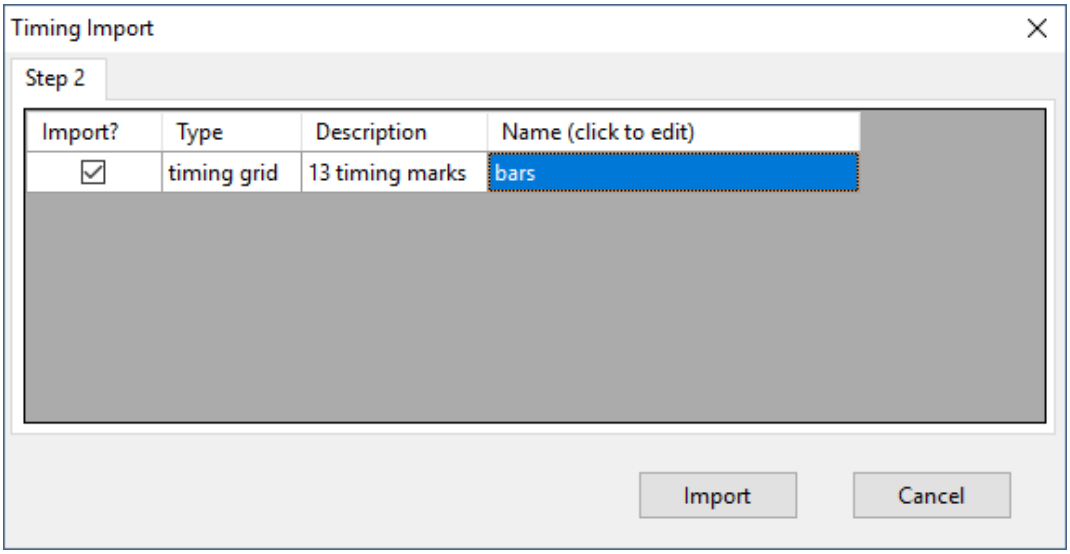


Audacity screen with timing labels at the bottom

4. Select File > Export Labels from the Audacity menu. Choose a file name and location. The file extension will be TXT.
5. In the S5 Sequencer, select Import Timings from the toolbar's Timing Grid menu.
6. Select the "Import from Audacity label file" option
7. Select the timing grids to import, then click the "Import" button



Export Timings

This menu item will open a dialog allowing you to choose the freeform timing grids and beat channels to be included in the export file. After choosing the items to include in the file, click the "Select File" button. Select a name for the file and click "Save". By default, these files will be saved to the

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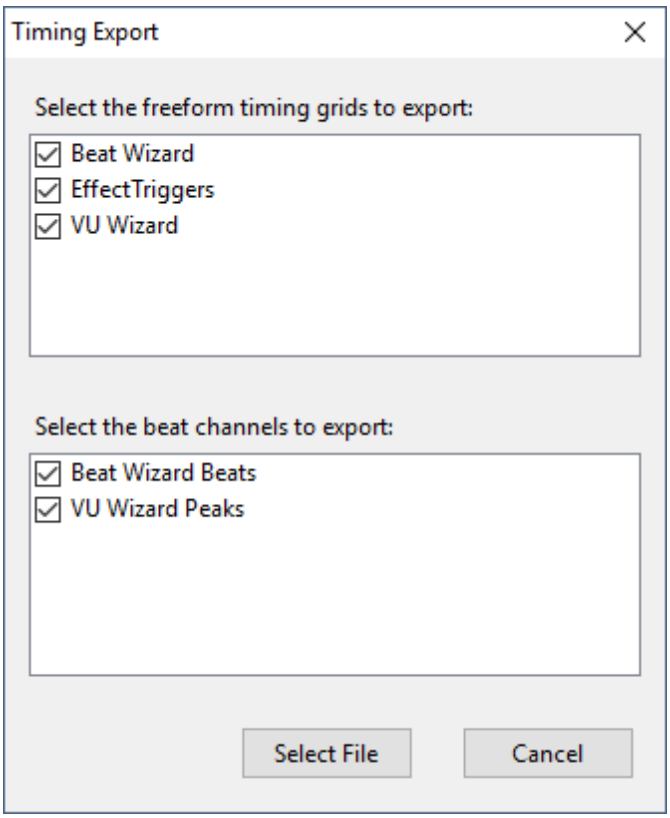
ImportExport folder, but you can change the folder if desired. Files created by this method will have an LORTIME extension.



The Timing Export dialog

Delete Timing Grid

This menu item can be used to delete the current timing grid from the sequence. There must be at least one timing grid in a sequence, so this menu item will be unavailable if there is only one timing grid.

Drag Events with Timings

When a timing grid is unlocked, the timings in a sequence can be dragged with the mouse to change their location. If "Drag Events with Timings" is turned on, and any effects start or end at the same time as the timing mark being dragged, the edges of those adjacent effects will be dragged along with the timing mark. If not, only the timing mark will move, and the adjacent effects will remain unchanged.

Note that the effects of archived props are never moved with the timing mark.

Highlight Timings on the Second

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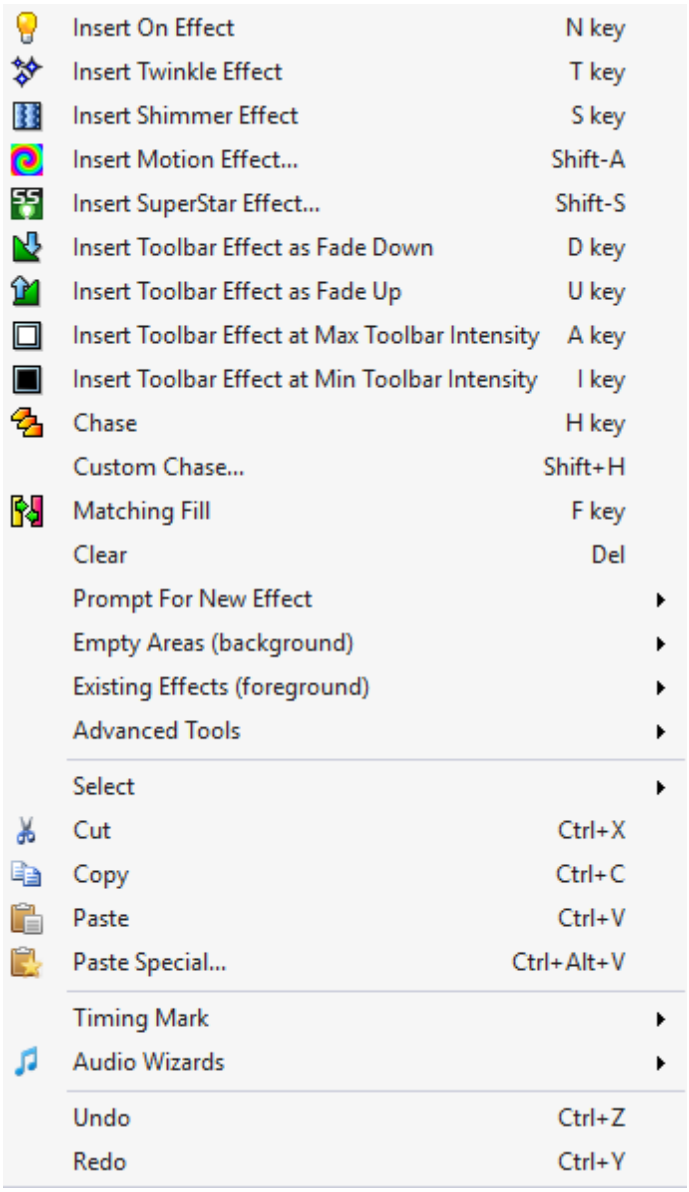
If this option is enabled and a fixed timing grid is active, timing marks that fall on exact seconds (1.00, 2.00, etc) are displayed a shade lighter, making them easy to pick out and use as a reference.

This option affects all open sequences, and its state is remembered from the last time the Sequencer was run.

5.3.5.10 Right-Click Context Menu

Right-clicking on the sequence grid brings up a pop-up menu. This menu contains items which allow you to modify the currently selected cells, in a variety of ways. For example, you can insert lighting effects, cut, copy, and paste (both effects and timings), and delete or resize timings. Some items on the menu may be hidden depending on the type of grid row you click on and your license level.



The Right-Click Context Menu

The following items are available on this right-click context menu:

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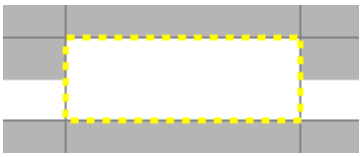
- Insert On Effect
- Insert Twinkle Effect
- Insert Shimmer Effect
- Insert Motion Effect
- Insert SuperStar Effect
- Insert Toolbar Effect as Fade Down
- Insert Toolbar Effect as Fade Up
- Insert Toolbar Effect at Max Toolbar Intensity
- Insert Toolbar Effect at Min Toolbar Intensity
- Chase
- Custom Chase
- Matching Fill
- Clear
- Prompt For New Effect sub-menu
- Empty Areas (background) sub-menu
- Existing Effects (foreground) sub-menu
- Advanced Tools
- Select sub-menu
- Cut, Copy, Paste
- Paste Special
- Timing Mark sub-menu
- Audio Wizards
- Undo and Redo

Insert On Effect

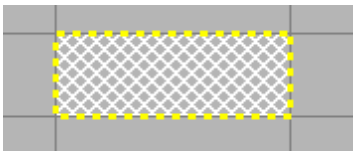
Inserts an "on" effect into the currently selected cells at the maximum value in the toolbar's intensity range. It does this regardless of the currently selected effect on the toolbar.



ON effect (with intensity range 50-100%)

Insert Twinkle Effect

Inserts a "twinkle" effect into the currently selected cells at the maximum value in the toolbar's intensity range. It does this regardless of the currently selected effect on the toolbar.



TWINKLE effect (with intensity range 0-100%)

Insert Shimmer Effect

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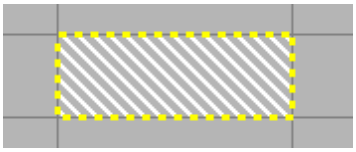
Inserts a "shimmer" effect into the currently selected cells at the maximum value in the toolbar's intensity range. It does this regardless of the currently selected effect on the toolbar.



SHIMMER effect (with intensity range 0-100%)

Insert Motion Effect

This command only appears on the menu if you have selected one or more cells on a motion effect row. It opens the Motion Effect Generator, where you can create an effect. After clicking the OK button in the Motion Effect Generator, the effect that was created will be inserted into the selected cells at the maximum value in the toolbar's intensity range,

To edit the motion effect, just double-click on the effect in the sequence grid and the Motion Effect Generator will re-open.

This command requires a Pro level license.

Insert SuperStar Effect

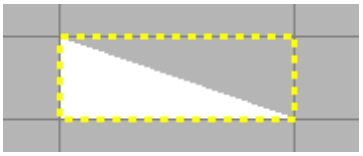
This command only appears on the menu if you have selected one or more cells on a motion effect row. It opens the SuperStar Sequencer, where you can create one effect, or many effects, or load a purchased sequence. After you finish your sequencing in SuperStar, close SuperStar by clicking on the Red X in the upper right of the program (there is no need to use SuperStar's save function). You will then be returned to the S5 Sequencer and your new SuperStar effects will be automatically saved as part of the S5 Sequencer's sequence. They will be displayed in the selected cells as a single effect at the maximum value in the toolbar's intensity range,

To edit the SuperStar effect, just double-click on the effect in the S5 Sequencer's grid and SuperStar will re-open.

This command requires a Pro level license.

Insert Toolbar Effect as Fade Down

Inserts the current effect into the selected cells as a ramp from the maximum value in the toolbar's intensity range to the minimum value in the toolbar's intensity range.



Fade Down (ON effect with intensity range 0-100%)

Insert Toolbar Effect as Fade Up

Inserts the current effect into the selected cells as a ramp from the minimum value in the toolbar's intensity range to the maximum value in the toolbar's intensity range.

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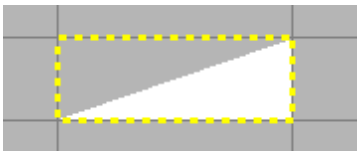
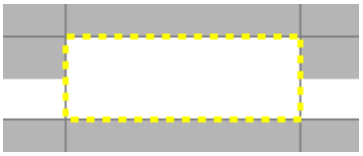


Fade Up (ON effect with intensity range 0-100%)

Insert Toolbar Effect at Max Toolbar Intensity

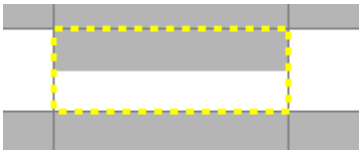
Inserts the current effect into the selected cells at the maximum value in the toolbar's intensity range



Max Intensity (ON effect with intensity range 50-100%)

Insert Toolbar Effect at Min Toolbar Intensity

Inserts the current effect into the selected cells at the minimum value in the toolbar's intensity range



Min Intensity (ON effect with intensity range 50-100%)

Chase

Creates a chase across the selected cells.

Custom Chase

Opens the Custom Chase dialog, then creates the chase across the selected cells with the options specified in the dialog.

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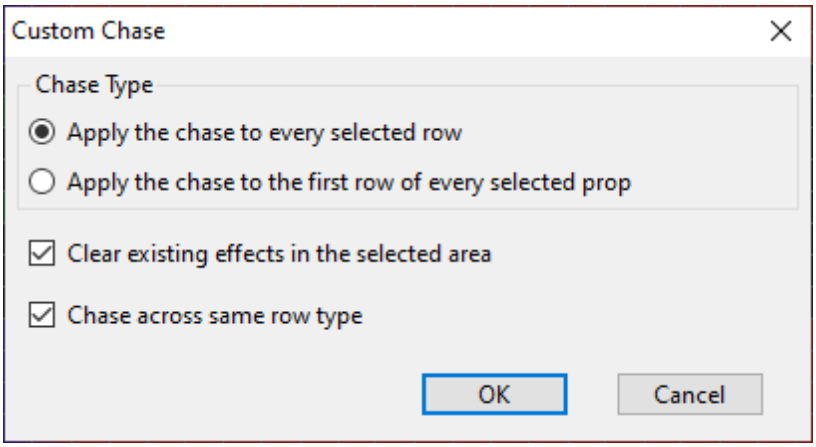

The Custom Chase dialog

- Row Mode:
  - Chase Each Row: perform the chase on each row in the selected area
  - Chase Each Prop: perform the chase on the first row of each prop in the selected area (makes a difference on pixel props with multiple motion effect rows)
- Clear existing effects: clears the chase area of any existing effects before placing the new effects that are part of the chase.
- Same Row Type: if selected, the chase will only occur on rows of the same type as the first row. For example, if the first row is a regular channel, any RGB channels or motion effect rows will be skipped. If there is no check mark next to this option, then the chase will proceed through all selected rows, regardless of type.

Matching Fill

Creates a matching fill across the selected cells.

Clear

Deletes any effects in the selected area of the grid.

Prompt For New Effect sub-menu

Opens the Prompt For New Effect sub-menu.

Empty Areas (background) sub-menu

Opens the Empty Areas (background) sub-menu.

Existing Effects (foreground) sub-menu

Opens the Existing Effects (foreground) sub-menu.

Advanced Tools

Opens the Advanced Tools sub-menu.

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Select sub-menu

This sub-menu displays items to expand the grid selection to encompass:

- the entire effect
- the entire row
- the entire column
- the entire grid

Cut, Copy, Paste

These items perform standard cut, copy, and paste functions. See the Clipboards & Cut/Copy/Paste/Repeat topic for more information.

Paste Special

Opens a dialog window that allows you to select additional options when you are pasting. See the Clipboards & Cut/Copy/Paste/Repeat topic for more information.

Timing Mark sub-menu

Opens the Timing Mark sub-menu.

Audio Wizards

Opens a sub-menu that allows you to initiate an Audio Wizard.

Undo and Redo

These allow you to undo and redo changes that you make to a sequence. A wide variety of changes can be undone and redone - changing lighting effects, moving timings, and many more. If there is no action to be undone, the "Undo" menu item will not be shown. If there is no action to be redone, the "Redo" menu item will not be shown.

There is a limit to how many changes will be remembered for the purposes of undo and redo, so if you make many changes to a sequence and then start undoing them all, you may eventually reach a point where you can't undo any more, even though you haven't undone all of the changes that you made.

Undo and redo have keyboard shortcuts: Ctrl-Z and Ctrl-Y, respectively.

5.3.5.10.1 Right-Click Prompt For New Effect Sub-menu

A variety of tools for adding new effects are available by right-clicking on the sequence grid and then opening the "Prompt For New Effect" sub-menu. As the name implies, you will be prompted for the effect first, and then the chosen effect will be inserted into the selected area of the grid.

From "Prompt For New Effect" sub-menu you can:

- Create new Fade Down, Fade Up, Max Intensity, or Min Intensity effects
- Modify Existing Effects

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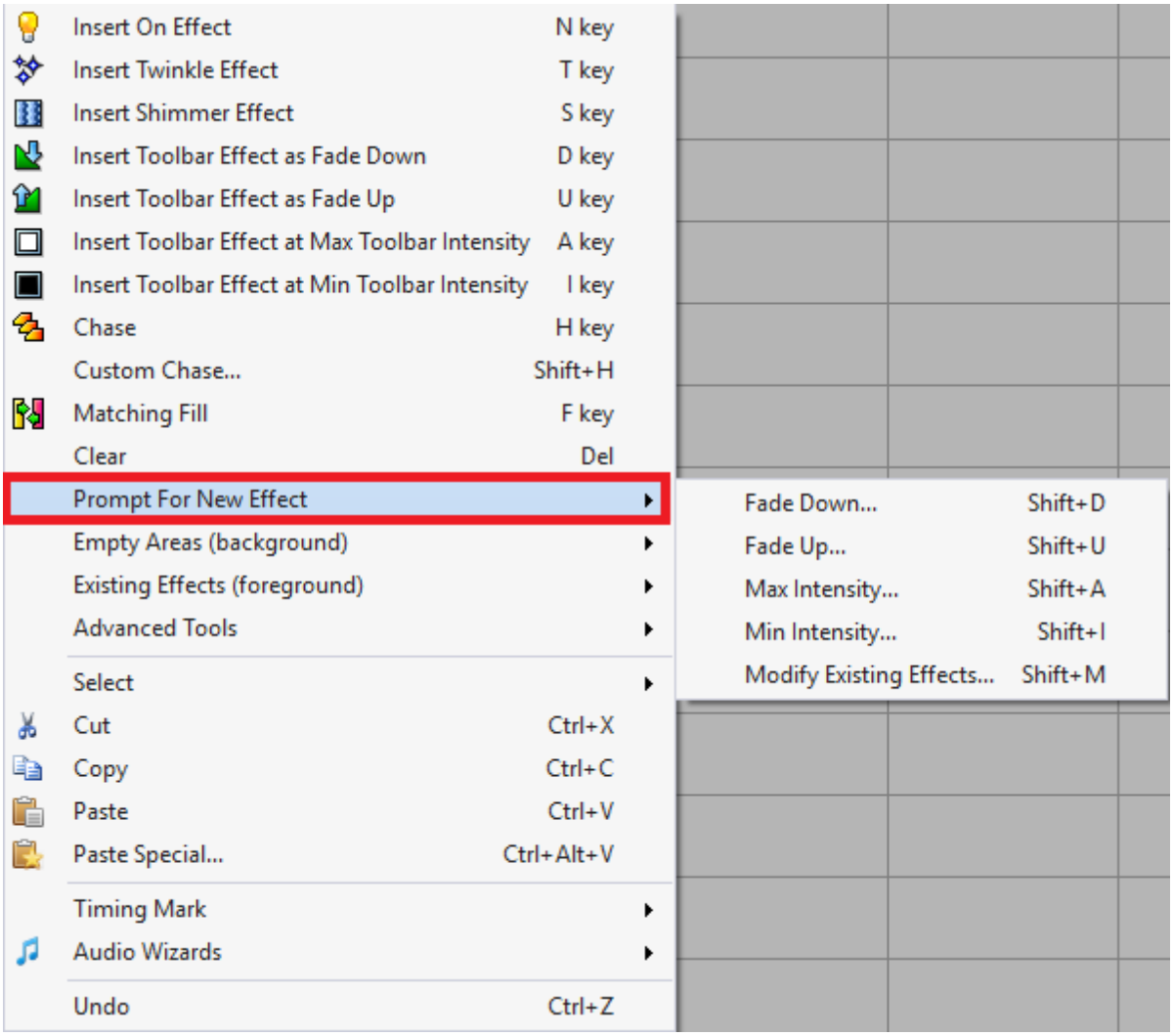
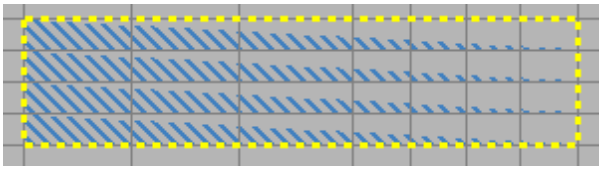


Right-click menu with the Prompt For New Effect sub-menu open

Fade Down, Fade Up, Max Intensity, Min Intensity

These items will open a dialog that allows you to choose the type of effect to be inserted. The particular dialog that is opened will depend on the type of grid rows in the selection. The dialog for each row type is shown below. After clicking the OK button in the dialog, the entire selection will be filled with the chosen effect at the intensity level specified by the menu item.



The result of Prompt For New Effect > Fade Down, and then choosing the Shimmer effect from the dialog

Regular Channels and Beat Channels

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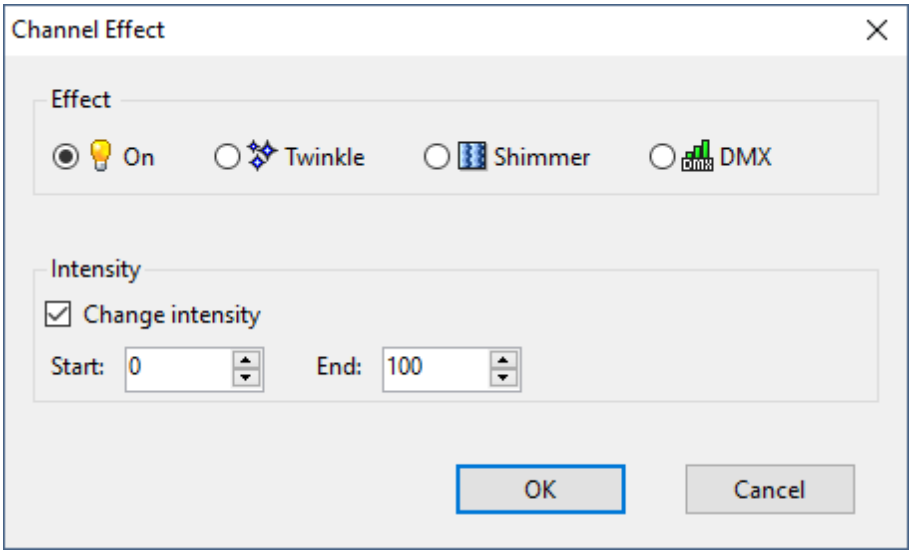
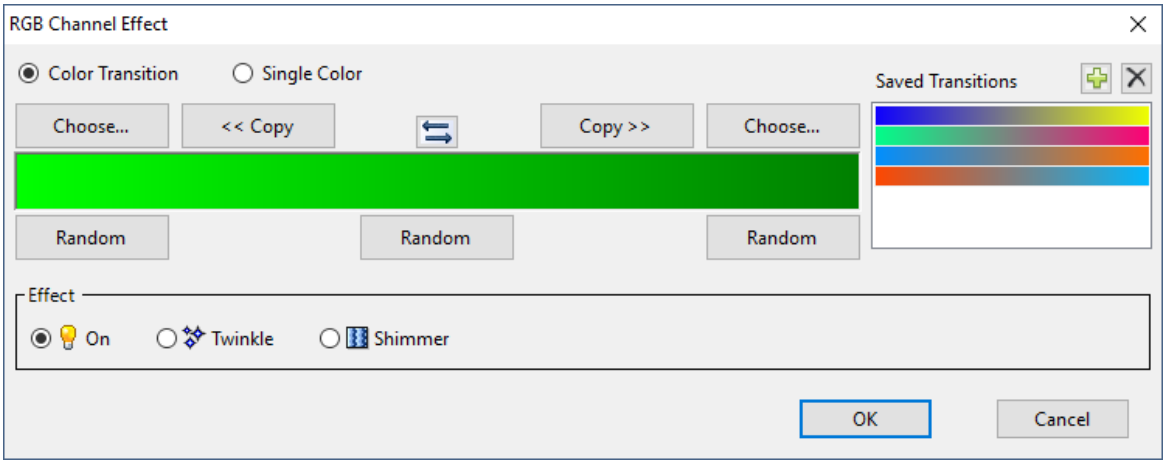
When used on Regular Channels and Beat Channels, these menu items will open the following dialog:



RGB Channels

When used on RGB Channels, these menu items will open the following dialog:



Motion Effect Rows

When used on Motion Effect Rows, these menu items will open the Motion Effect Generator.

Modify Existing Effects

This menu item will open the same dialogs shown above. However, after clicking the OK button in the dialog, only existing effects in the grid selection will be changed, and the intensity of those effects will remain the same.

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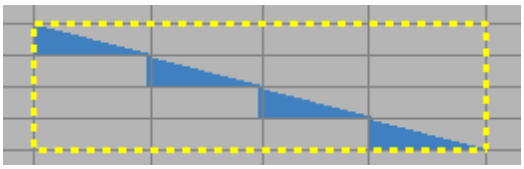
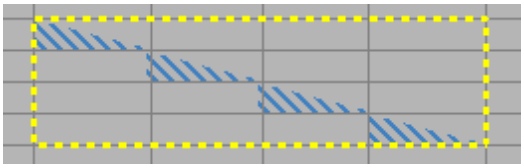
For example, if the grid contained this:



Before Modify Existing Effects

Selecting Prompt For New Effect > Modify Existing Effects, then selecting Shimmer from the dialog, would result in this:



After Modify Existing Effects

5.3.5.10.2 Right-Click Empty Areas (background) Sub-menu

The "Empty Areas (background)" sub-menu contains a list of functions that are applied to empty parts of the selected area. These functions do not make any changes to grid cells that already contain effects.

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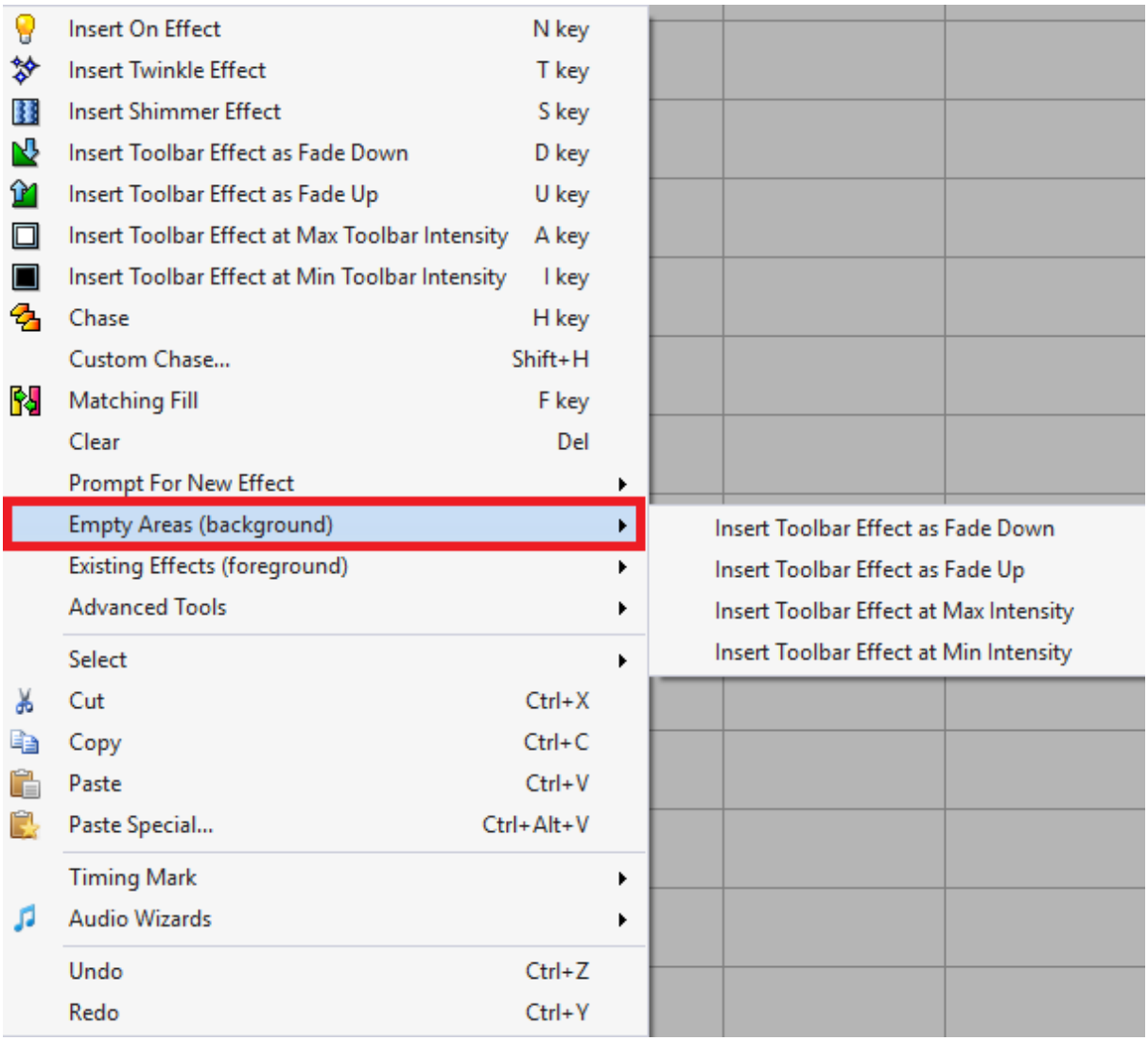
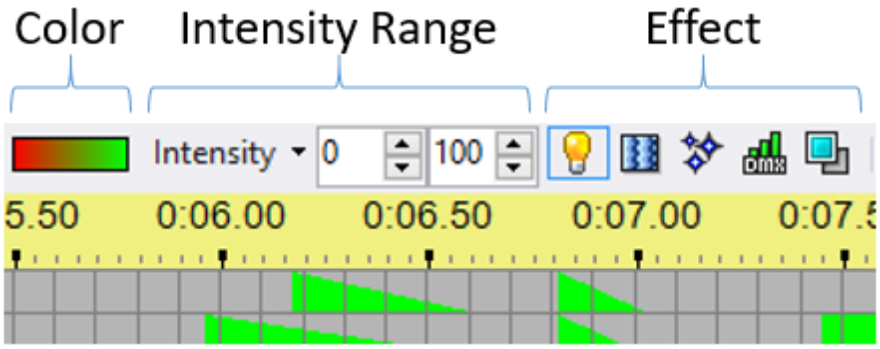


The effects that are created using these tools depend on the Intensity Range and current effect that are shown on the toolbar. For RGB channels and motion effect rows, the toolbar color will also be used. For a more detailed explanation of the toolbar settings, see the Adding Effects topic.



Toolbar settings

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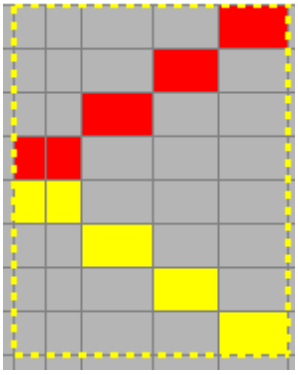
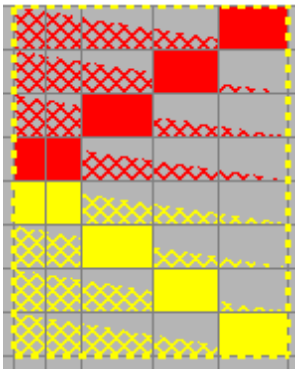
Insert Toolbar Effect as Fade Down

Adds the currently selected effect to empty portions of the selected area. This function applies the maximum intensity in the intensity range to the left side of the selection, and ramps down to the minimum intensity on the right.



Before Insert



After Insert with twinkle effect, intensity range 0-100%

Insert Toolbar Effect as Fade Up

Adds the currently selected effect to empty portions of the selected area. This function applies the minimum intensity in the intensity range to the left side of the selection, and ramps up to the maximum intensity on the right.

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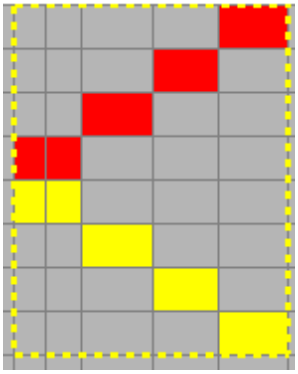
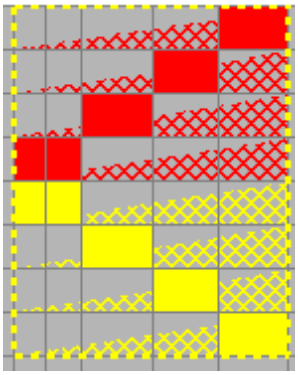


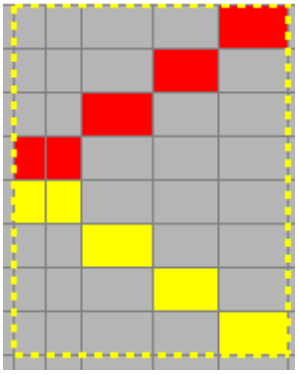
Before Insert



After Insert with twinkle effect, intensity range 0-100%

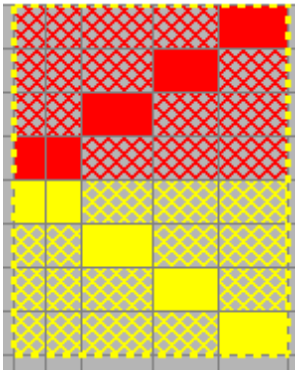
Insert Toolbar Effect at Max Intensity

Adds the currently selected effect to empty portions of the selected area at the maximum intensity in the toolbar intensity range.



Before Insert

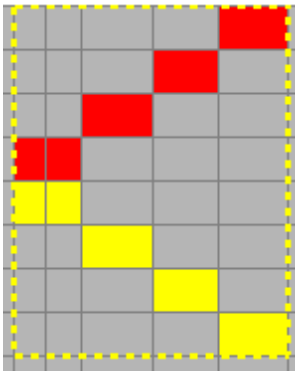
© 2021 Light-O-Rama, Inc.



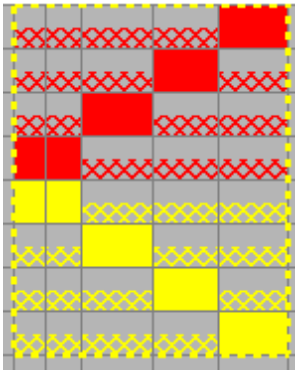
After Insert with twinkle effect, intensity range 0-100%

Insert Toolbar Effect at Min Intensity

Adds the currently selected effect to empty portions of the selected area at the minimum intensity in the toolbar intensity range.



Before Insert



After Insert with twinkle effect, intensity range 50-100%

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5.3.5.10.3 Right-Click Existing Effects (foreground) Sub-menu

The "Existing Effects (foreground)" sub-menu contains a list of functions that are applied to existing effects in the selected area. These functions do not make any changes to grid cells that are empty.

The available functions are:

- Fade Down Across Selection
- Fade Up Across Selection
- Fade Down Each Effect
- Fade Up Each Effect
- Set to Max Intensity
- Set to Min Intensity
- Apply Toolbar Effect
- Apply Toolbar Color (RGB channels only)
- Apply Toolbar Hue (RGB channels only)
- Lower to Max Intensity (cap)
- Raise to Min Intensity (floor)
- Increase Intensity
- Decrease Intensity
- Scale Intensity

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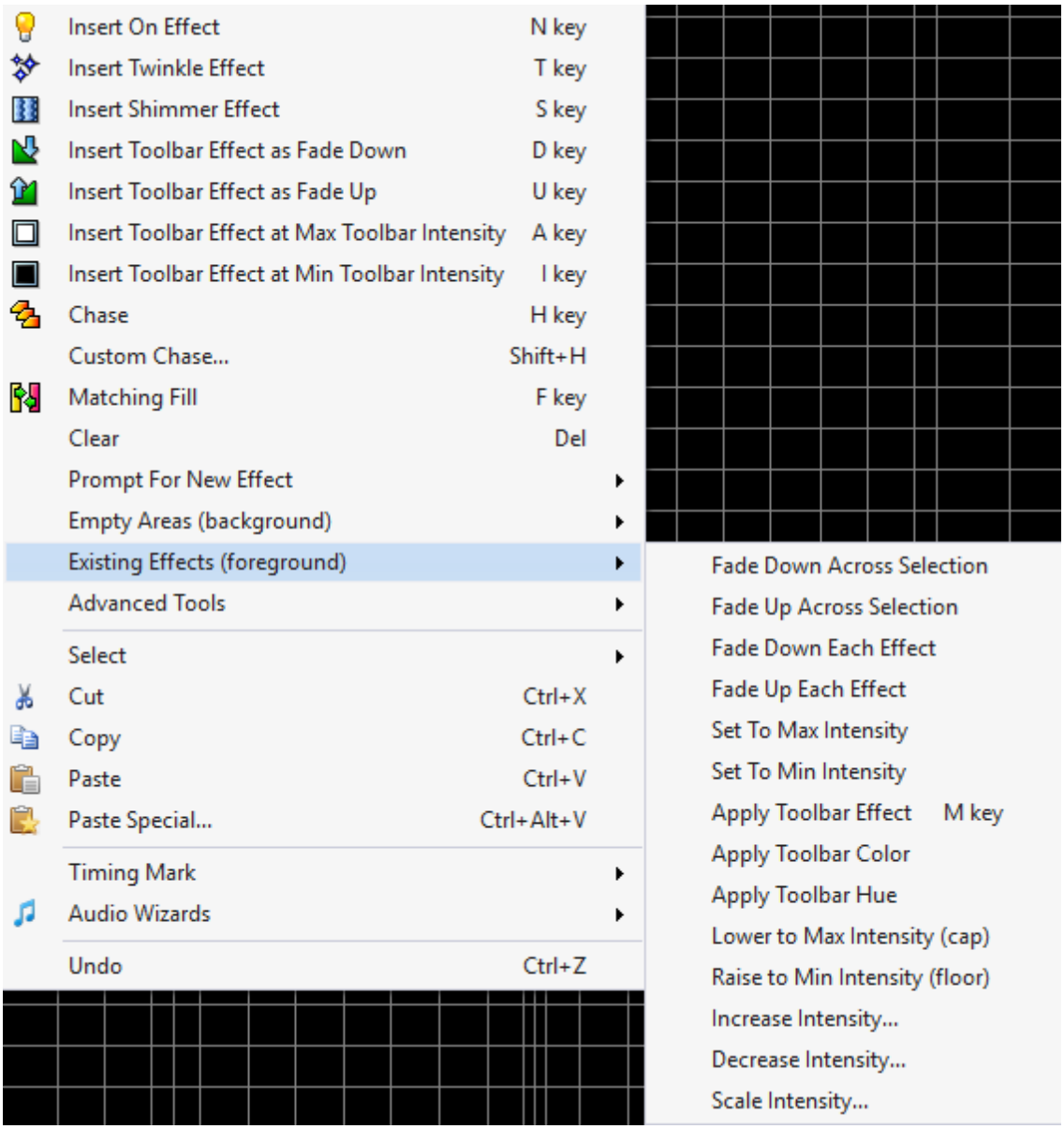

Fade Down Across Selection

Resets intensities on existing effects in the selected area. This function applies the maximum intensity in the intensity range to the left side of the selection, and ramps down to the minimum intensity on the right. This is useful for fading out your lights at the end of a sequence.

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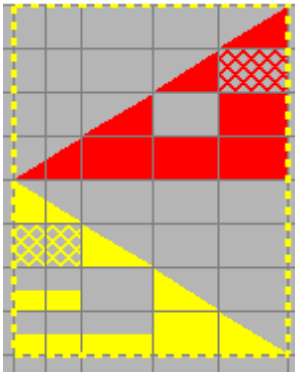
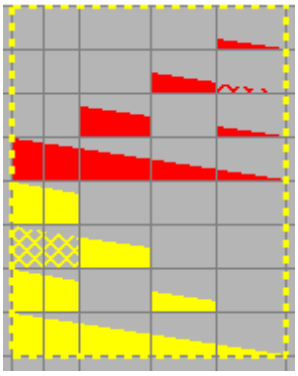


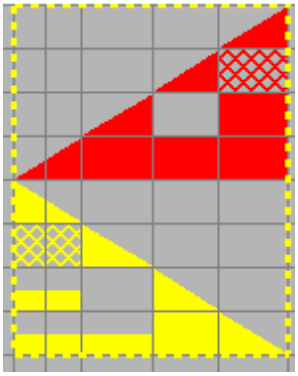
Before Fade Down



After Fade Down, intensity range 0-100%

Fade Up Across Selection

Resets intensities on existing effects in the selected area. This function applies the minimum intensity in the intensity range to the left side of the selection, and ramps up to the maximum intensity on the right. This is useful for fading in your lights at the beginning of a sequence.



Before Fade Up

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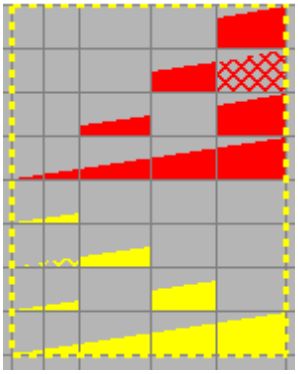
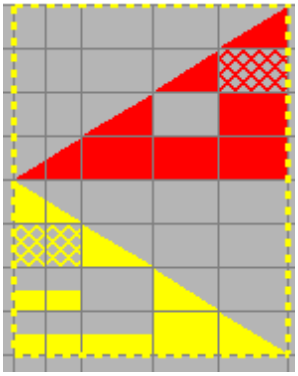


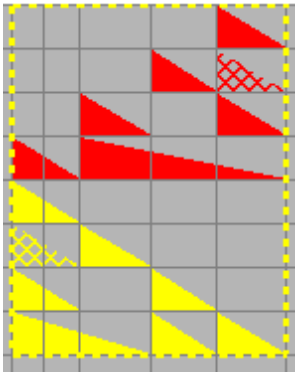
After Fade Up, intensity range 0-100%

Fade Down Each Effect

Resets intensities on existing effects in the selected area. This function applies the maximum intensity in the intensity range to the left side of each effect, and ramps down to the minimum intensity on the right side of the effect.



Before Fade Down



After Fade Down, intensity range 0-100%

Fade Up Each Effect

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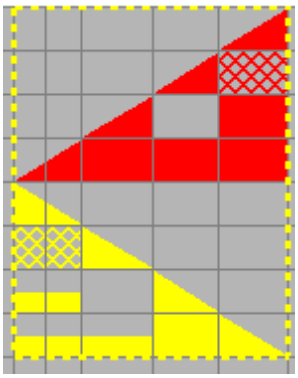
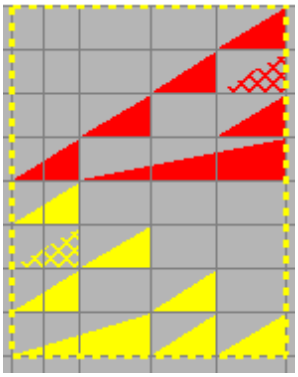
Resets intensities on existing effects in the selected area. This function applies the minimum intensity in the intensity range to the left side of each effect, and ramps up to the maximum intensity on the right side of the effect.



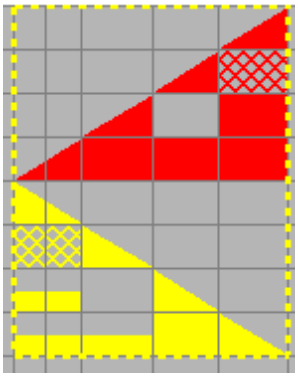
Before Fade Up



After Fade Up, intensity range 0-100%

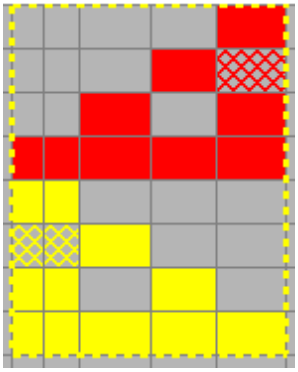
Set to Max Intensity

Resets intensities on existing effects in the selected area. This function applies the maximum intensity in the intensity range to each effect.



Before Max Intensity

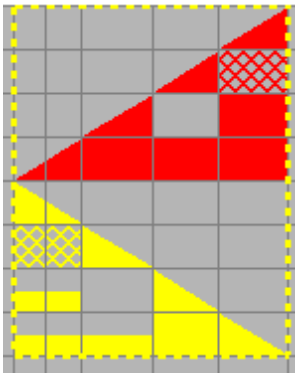
© 2021 Light-O-Rama, Inc.



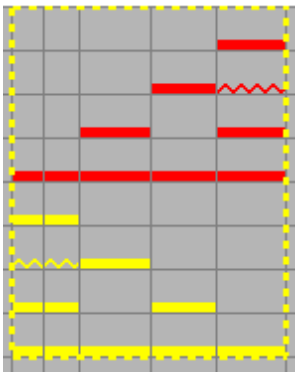
After Max Intensity, intensity range 0-100%

Set to Min Intensity

Resets intensities on existing effects in the selected area. This function applies the minimum intensity in the intensity range to each effect.



Before Min Intensity



After Min Intensity, intensity range 25-50%

Apply Toolbar Effect

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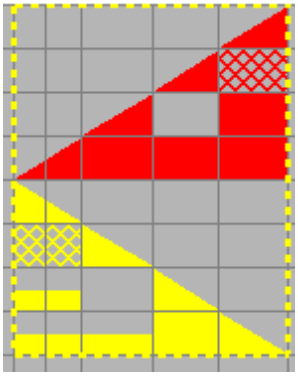
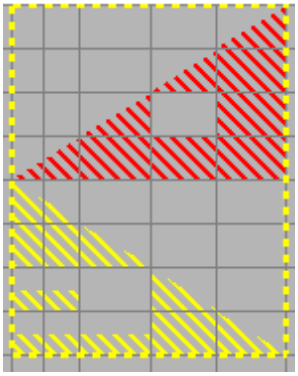
Changes existing effects in the selected area to be the effect on the toolbar. It does not change the intensity.

Regular Channels



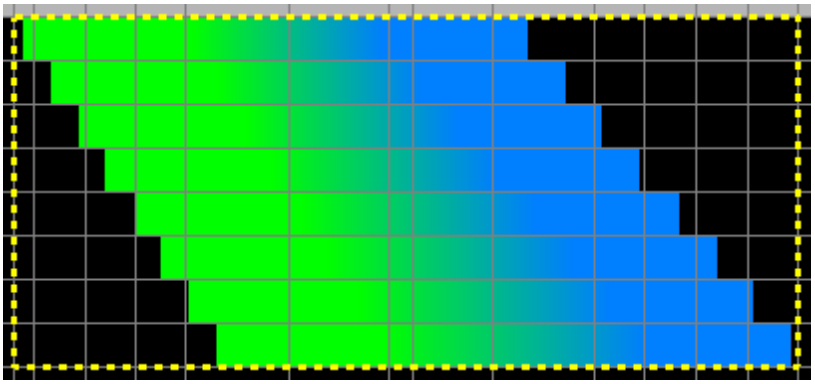
Before "Apply Toolbar Effect"



After "Apply Toolbar Effect", effect on toolbar was SHIMMER

RGB Channels

On RGB channels, the color is maintained; only the toolbar effect is applied.



Before "Apply Toolbar Effect"

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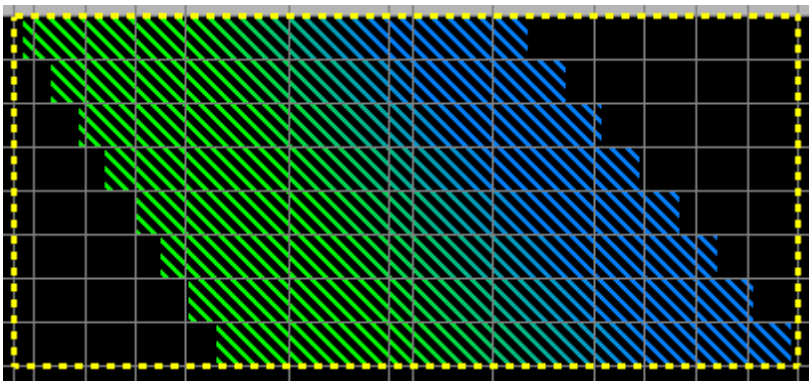


After "Apply Toolbar Effect", effect on toolbar was SHIMMER

Motion Effect Rows

In order to use this tool with motion effect rows:

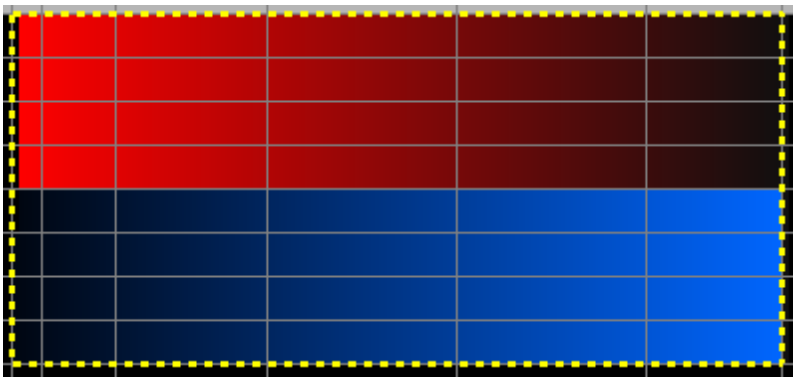
1. Left-click on a motion effect that you want to apply to another area. This makes the effect you clicked on the "current effect", and it will be displayed in the playback window.
2. Using the right-click and drag technique, drag over the destination and select this menu item from the pop-up menu.
3. Any existing motion effects in the selected area will be changed to the source effect, while leaving the intensity of those effects unchanged.

Before "Apply Toolbar Effect" (Bars)

After "Apply Toolbar Effect" (Snowflakes)

Apply Toolbar Color

Replaces the color of selected RGB channel effects with a new color. The new color will be taken from the Color Fade Tool if it is open; otherwise the color on the color fade button on the toolbar will be used.



Before "Apply Toolbar Color"

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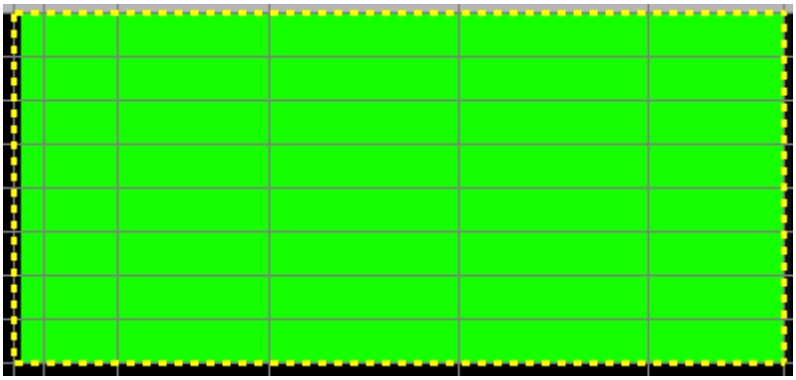
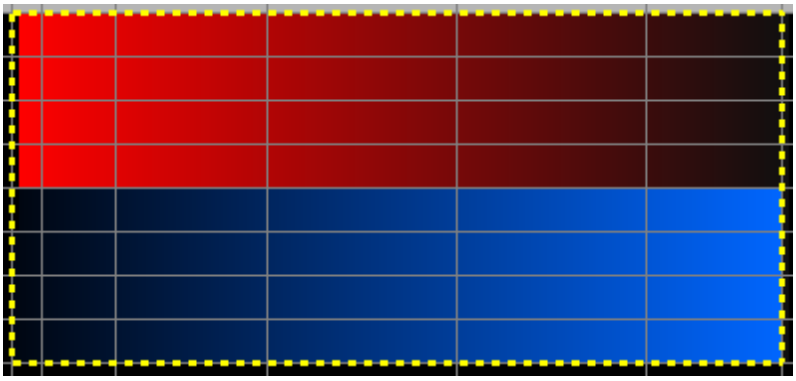


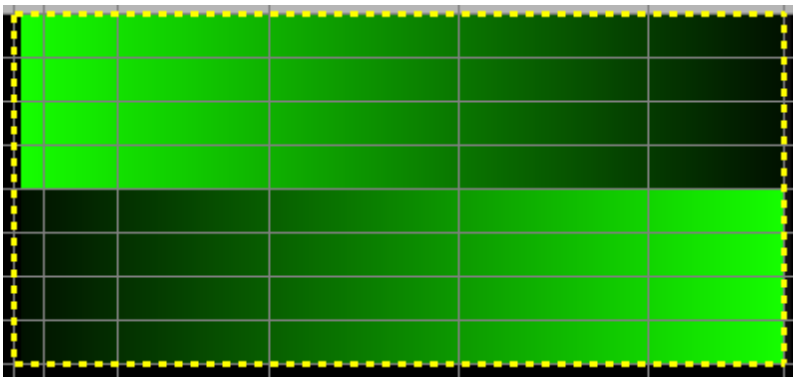
After "Apply Toolbar Color" (green)

Apply Toolbar Hue

Replaces the hue of selected RGB channel effects with a new hue. The new color will be taken from the Color Fade Tool if it is open; otherwise the color on the color fade button on the toolbar will be used. The difference between this tool and "Apply Toolbar Color" is that this tool will maintain any place there is a fade to black.



Before "Apply Toolbar Hue"



After "Apply Toolbar Hue" (green)

Lower to Max Intensity (cap)

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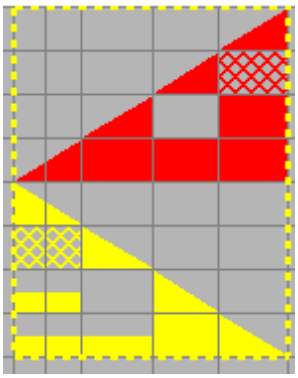
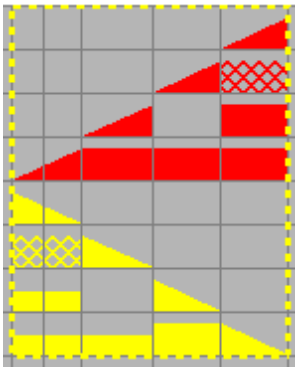
The Cap operation imposes a maximum upon the intensities in the selected area. This function applies the maximum intensity in the intensity range to each effect. The starting and ending effect intensities are treated independently. For example, using a percent of 80, any intensities above 80% of the effect type's maximum will be reduced to 80%, and any intensities that are already at or below 80% will be left unchanged.

Note that most effect types (intensity, twinkle, shimmer) have maximum possible values of 100, so for those effect types this means the same thing as "any intensity above 80 will be reduced to 80". However, the DMX intensity effect has a maximum value of 255, not 100, so for it, capping with a percent of 80 means capping at a value of 204 (i.e. 80% of 255).



Before "Lower to Max Intensity"



After "Lower to Max Intensity", intensity range 0-80%

Raise to Min Intensity (floor)

The Floor operation imposes a minimum upon the intensities in the selected area. This function applies the minimum intensity in the intensity range to each effect. The starting and ending effect intensities are treated independently. For example, using a percent of 80, any intensities below 80% of the effect type's maximum will be increased to 80% of the maximum, and any intensities that are already at or above 80% will be left unchanged.

Note that most effect types (intensity, twinkle, shimmer) have maximum possible values of 100, so for those effect types this means the same thing as "any intensity below 80 will be increased to 80".

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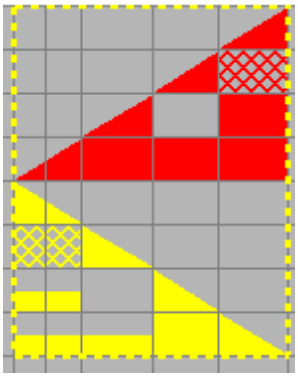
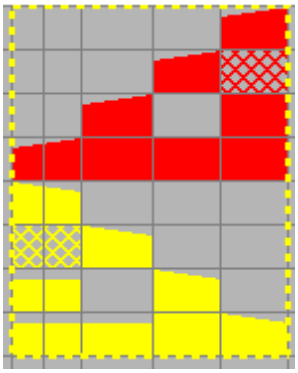
However, DMX intensity effect has a maximum value of 255, not 100, so for it, imposing a floor with a percent of 80 means imposing a floor at a value of 204 (i.e. 80% of 255).



Before "Raise to Min Intensity"



After "Raise to Min Intensity", intensity range 80-100%

Increase Intensity

The Increase operation increases all intensities in the selected area by the specified percent of the effect type's maximum value. For example, using a percent of 20, a fade up from 0 to 60 will be changed to a fade up from 20 to 80.

Note that most effect types (intensity, twinkle, shimmer) have maximum possible values of 100, so for those effect types this means the same thing as "any intensity will be increased by 20". However, the DMX intensity effect has a maximum value of 255, not 100, so for it, increasing with a percent of 20 means increasing by a value of 51 (i.e. 20% of 255).

If the increase pushes any intensity above the effect type's maximum possible value, it will be set to that maximum. For example, using a percent of 20, a fade up from 50 to 90 will be changed to a fade up from 70 to 100.

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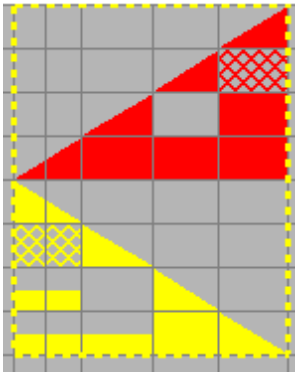
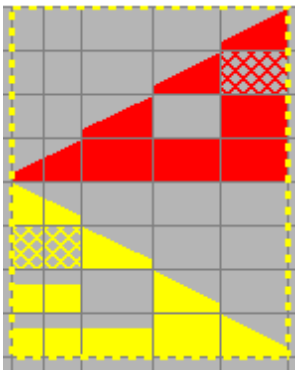


Before "Increase Intensity"



After "Increase Intensity" by 20

Decrease Intensity

The Reduce operation decreases all intensities in the selected area by the specified percent of the effect type's maximum value. For example, using a percent of 20, a fade up from 50 to 60 will be changed to a fade up from 30 to 40.

Note that most effect types (intensity, twinkle, shimmer) have maximum possible values of 100, so for those effect types this means the same thing as "any intensity will be reduced by 20". However, the DMX intensity effect type has a maximum value of 255, not 100, so for it, decreasing with a percent of 20 means decreasing by a value of 51 (i.e. 20% of 255).

If the decrease pushes any intensity below zero, it will be set to zero. For example, using a percent of 20, a fade up from 10 to 90 will be changed to a fade up from 0 to 70.

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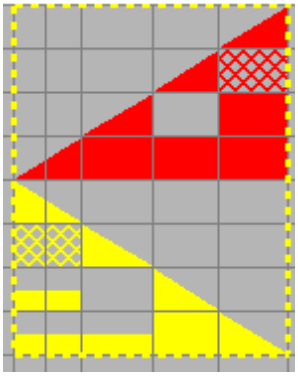
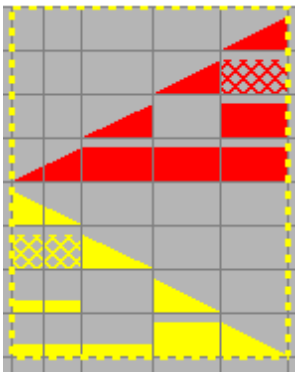


Before "Decrease Intensity"

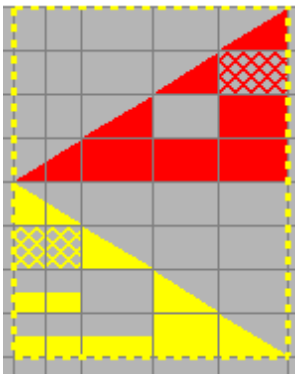


After "Decrease Intensity" by 20

Scale Intensity

The Scale operation scales all intensities in the selected area by the specified percentage. For example, a percent of 200 means doubling; a fade up from 30 to 40 will become a fade up from 60 to 80. A percent of 50 means halving; a fade up from 30 to 40 will become a fade up from 15 to 20.

If the scaling pushes any intensity above the effect type's maximum possible value, it will be set to that maximum. For example, using a percent of 200, a fade up from 30 to 80 will become a fade up from 60 to 100.



Before "Scale Intensity"

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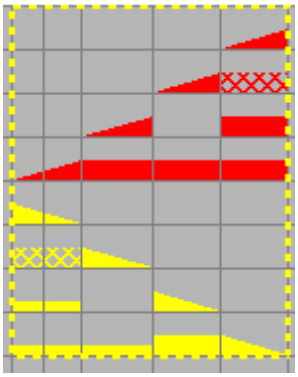

After "Scale Intensity" by 50%

5.3.5.10.4 Right-Click Advanced Tools Sub-menu

The "Advanced Tools" sub-menu contains a list of functions that are valuable in specific circumstances.

The available functions are:

- Insert at Sound Level (musical sequences only)
- Skew Selection
- Toggle
- Fade Down Each Cell
- Fade Up Each Cell

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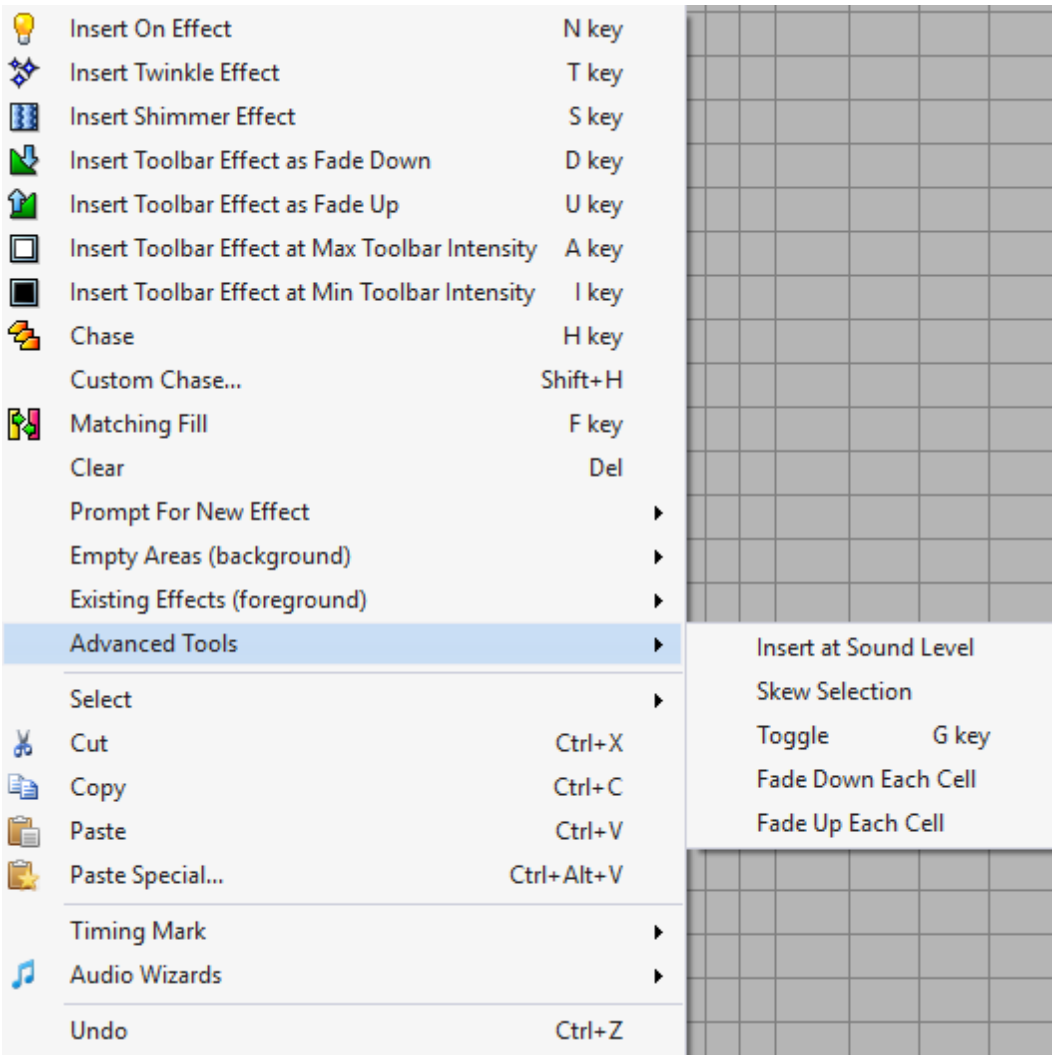
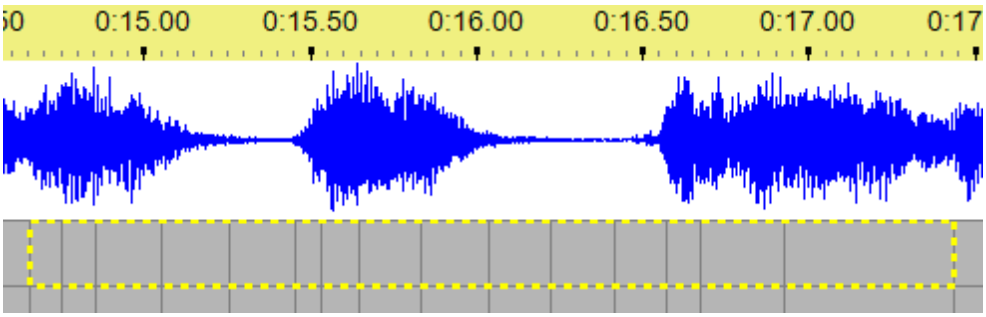


Insert at Sound Level

This command inserts a series of ON effects into the selected area, whose intensity reflects the sound level of the music. The command finds the loudest sound across the selection and uses that sound level as the 100% intensity level. All other effects being added are scaled using that loudest sound.



Before "Insert at Sound Level"

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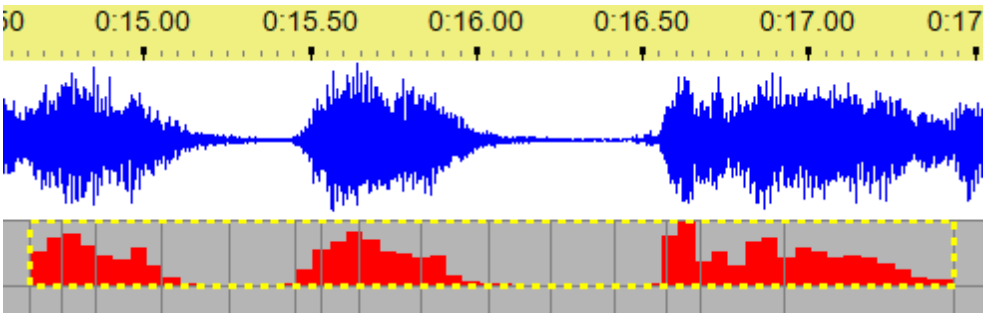
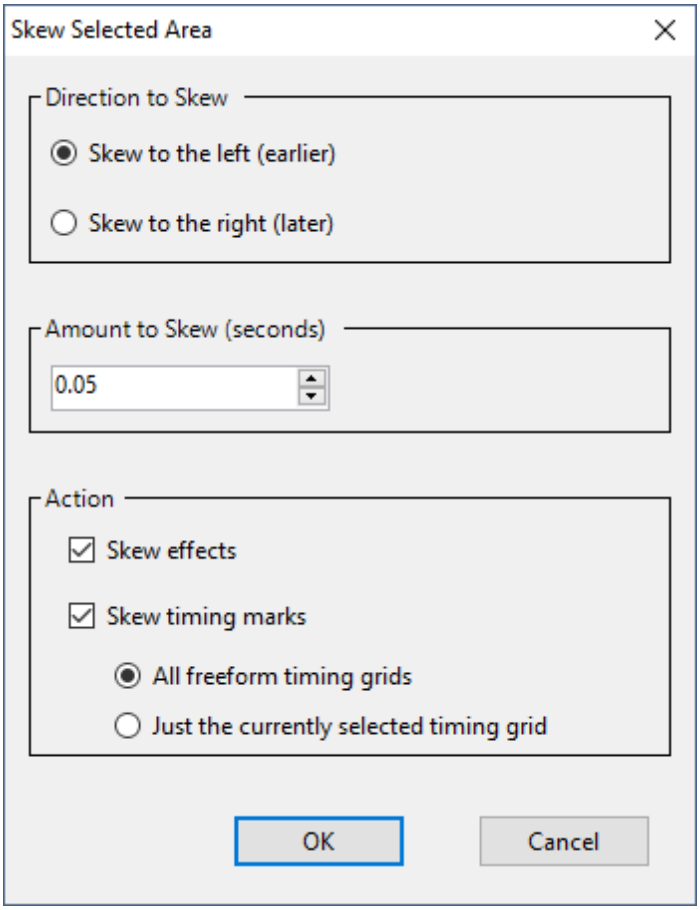


After "Insert at Sound Level"

Skew Selection

This command will allow you to move effects and/or timing marks to the left or right. It opens a dialog with fields that allow to specify how the effects and timing marks in the selected area should be moved.

Also see the Nudge Tools for a similar function.



The Skew Selection dialog

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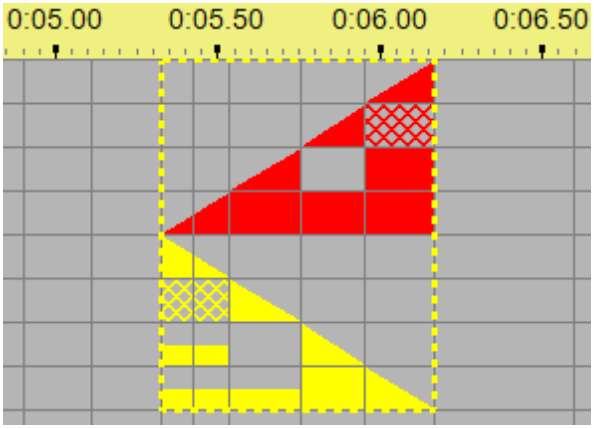
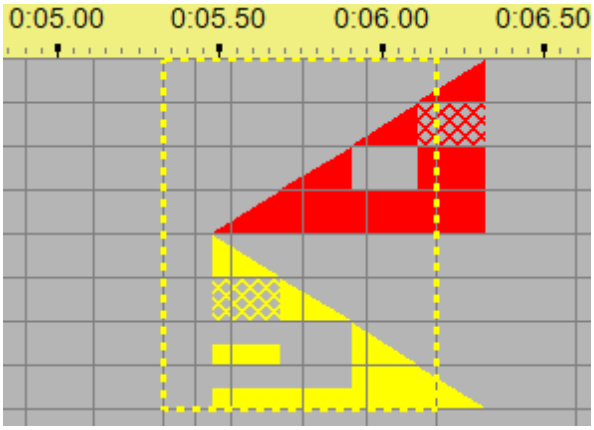
After you click the OK button, the actions you specify will be applied to the selected area of the sequence.



Before Skew Selection



After Skew Selection, effects but not timing marks, to the right by 0.15 seconds

Toggle

This menu item applies the Toggle function to the selected area of the sequence grid.

Fade Down Each Cell

Creates a fade down effect in each selected cell using the toolbar intensity range and toolbar effect.

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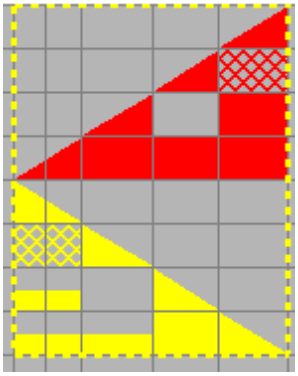
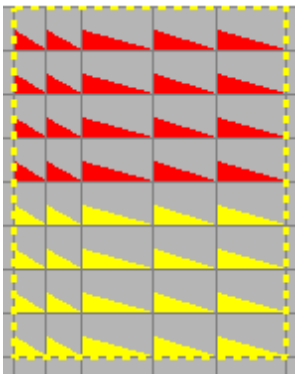


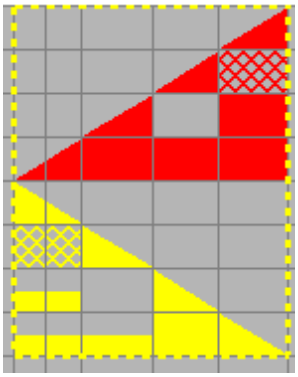
Before Fade Down Each Cell



After Fade Down Each Cell, intensity range 0-50%, ON effect

Fade Up Each Cell

Creates a fade up effect in each selected cell using the toolbar intensity range and toolbar effect.



Before Fade Up Each Cell

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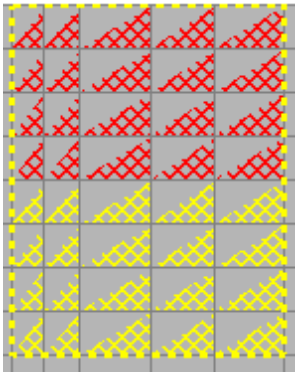

After Fade Up Each Cell, intensity range 0-100%, TWINKLE effect

5.3.5.10.5 Right-Click Timing Mark Sub-menu

A variety of tools to modify timing marks in freeform timing grids are available by right-clicking on the sequence grid and then opening the "Timing Mark" sub-menu.

From the "Timing Mark" sub-menu you can:

- Insert Timing at X.XX
- Insert Timing at ...
- Insert Timing at Selection (Left, Right, or Both)
- Insert Multiple Timings
- Subdivide Timings
- Delete Timing near X.XX
- Delete Selected Timings
- Resize Timing(s) to ...
- Resize Timings to Equal Times
- Copy Timing
- Paste Timing at X.XX
- Paste Timing at ...
- Paste Multiple Timings
- Lock Timings
- Drag Events With Timings

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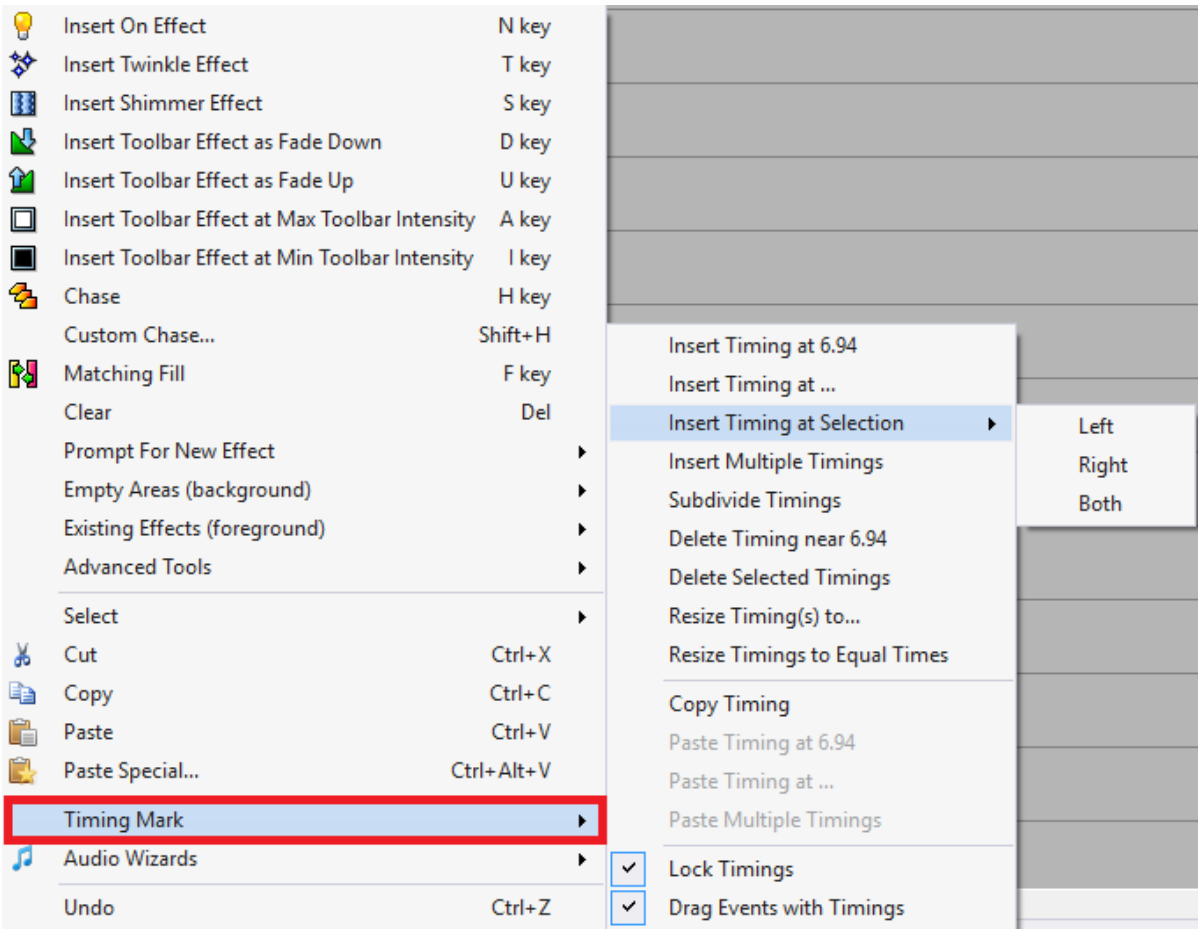

Right-click menu with the Timing Mark sub-menu open

Insert Timing at X.XX

This menu item can be used to insert a timing into the sequence. It opens a dialog asking you for the time that you want to insert a timing at (defaulting to the time that you right-clicked when opening the context menu). Please see Time Format for details on how to enter times.

Insert Timing at ...

This menu item can be used to insert a timing into the sequence at the time that you right-clicked when opening the context menu.

Insert Timing at Selection (Left, Right, or Both)

If you make a selection that does not start or end on a timing mark (perhaps by using the Ctrl key while dragging the mouse), you can use this function to add timing marks where the selection starts and/or ends.

Insert Multiple Timings

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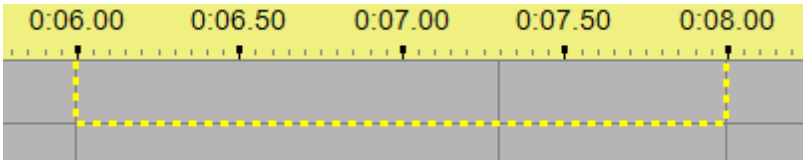
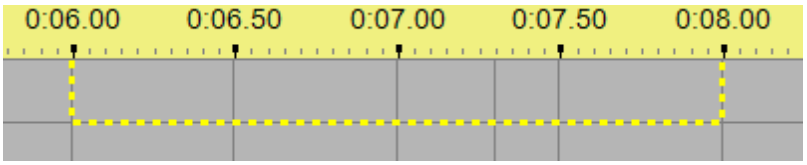
This menu item can be used to insert multiple timings into the current selection by dividing it into equally-sized parts. For example, if you select an area whose time range is from 6 to 8 seconds, and use "Insert Multiple Timings" to insert 3 equally spaced timings, then the new timings will be inserted at 6.5, 7, and 7.5 seconds, splitting the selection into four equally spaced parts of half a second each.



Before applying Insert Multiple Timings



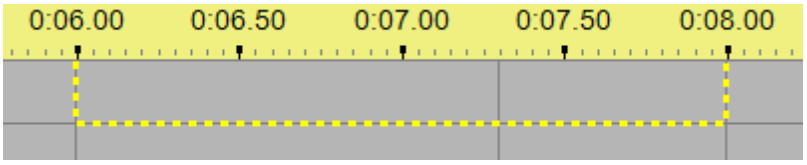
After applying Insert Multiple Timings

Also see Subdivide Timings, which divides each **selected cell** into equally-sized parts, as opposed to dividing the **entire selection** into equally-sized parts.

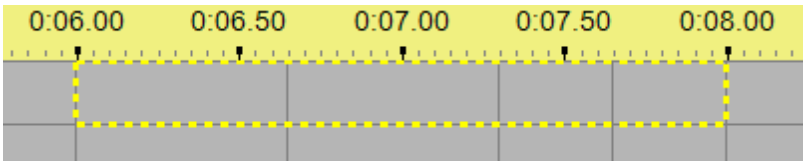
Subdivide Timings

This allows you to insert multiple timings into the current selection, dividing each selected cell into equally-sized parts. For example:

- if you select 2 cells: from 6 to 7.3 seconds, and 7.3 seconds to 8 seconds,
- then use "Subdivide Timings" to subdivide each original cell into two new cells,
- then you will end up with 4 cells: from 6 to 6.65, 6.65 to 7.3, 7.3 to 7.65, and 7.65 to 8.



Before applying Subdivide Timings



After applying Subdivide Timings

Also see Insert Multiple Timings, which divides the entire selection into equally-sized parts, as opposed to dividing each selected cell into equally-sized parts.

Delete Timing near X.XX

This item can be used to delete the timing closest to where you right-clicked when opening the context menu.

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Delete Selected Timings

This item can be used to delete the timings inside the currently selected cells. Note that the two timings on the edges of the currently selected cells are not deleted.

Resize Timing(s) to ...

This item can be used to change the duration of time between the selected timings. It will not allow any of the timings to be pushed beyond the next timing in the sequence. Please see Time Format for details on how to enter times.

Note that the length of the sequence will not be affected, nor the positions of the timings past the selected range. So, if you choose to resize some timings such that their total length decreases, this will cause the cell just past them to increase in size (since the last selected timing is moved earlier, while the next timing remains the same).

Resize Timings to Equal Times

This item can be used to change the duration of time between the selected timings so that all such durations are equal (or as close to equal as possible). For example, if you select two cells with durations of 0.2 seconds and 0.8 seconds, and use "Resize Timings to Equal Times", they will both change to 0.5 seconds.

Copy Timing

After selecting an area on the grid, you can use "Copy Timing" function to record the timing marks within the selection. After that, you can paste the timings to another point in the sequence (or even to another sequence) using any of the "Paste Timing" functions. Note that this copies only the timings, not any lighting effects (see Clipboards & Cut/Copy/Paste/Repeat for information on copying lighting effects).

For example, if you copy timings that are at 3 seconds, 3.5 seconds, and 5 seconds, and paste those timings starting at 7 seconds, you will wind up with timings at 7 seconds, 7.5 seconds, and 9 seconds.

Paste Timing at X.XX

This menu item can be used to paste copied timings into the sequence, starting at the time that you right-clicked when opening the context menu.

Paste Timing at ...

This menu item can be used to paste copied timings into the sequence. It opens a dialog asking you for the time that you want to paste the timings to (defaulting to the time that you right-clicked when opening the context menu). Please see Time Format for details on how to enter times.

Paste Multiple Timings

This item can be used to paste copied timings into the sequence, multiple times in a row.

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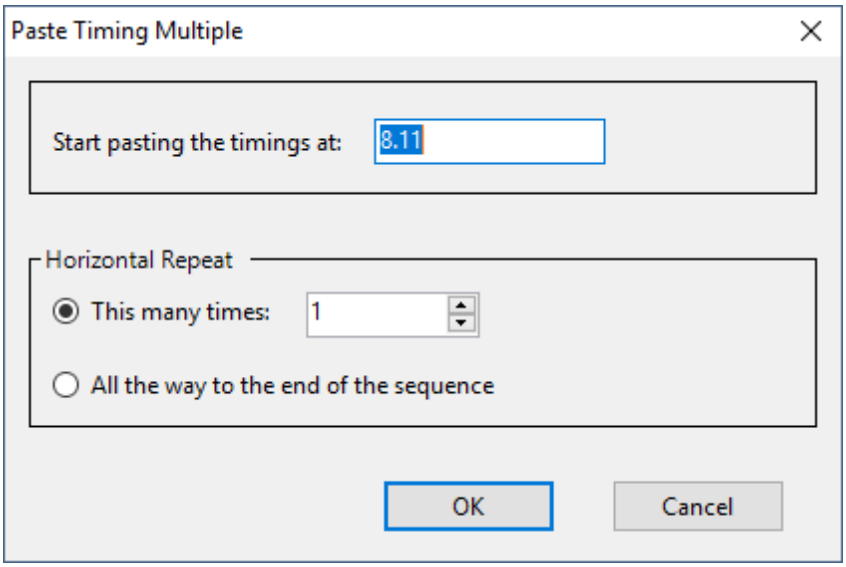

Lock Timings

Each timing in a sequence is a particular point in time (since the beginning of the sequence), and is represented by a vertical gray line. If "Lock Timings" is off (unchecked), and the current timing grid is a freeform timing grid, you can change the time of a timing by hovering over its line with your mouse (which will change your mouse cursor from a "pointer" cursor to an "east-west" cursor), and clicking and dragging the line to the left or the right.

If "Lock Timings" is on (checked), you cannot do this. This prevents you from accidentally changing the time of a timing while you're trying to modify the lighting effects in a cell between two timings.

See also Drag Events with Timings, which controls whether or not effects that start or end at the dragged timing will be dragged along with it.

Drag Events With Timings

Timings in a sequence can be dragged with the mouse to change the time that they are at (unless the Lock Timings option is turned on). If "Drag Events with Timings" is turned on, and any effects start or end at the same time as the timing being dragged, they will be dragged along with it. If not, only the timing will move; the effects will remain unchanged.

5.3.5.11 Freeform Play Range

What Is A Freeform Play Range?

A freeform play range is a user selected time range within a sequence. There can be at most one freeform play range specified at any given time.

A freeform play range is displayed with a dimmed area on the time scale and dashed vertical red lines running through the sequence grid at the beginning and end of the range.

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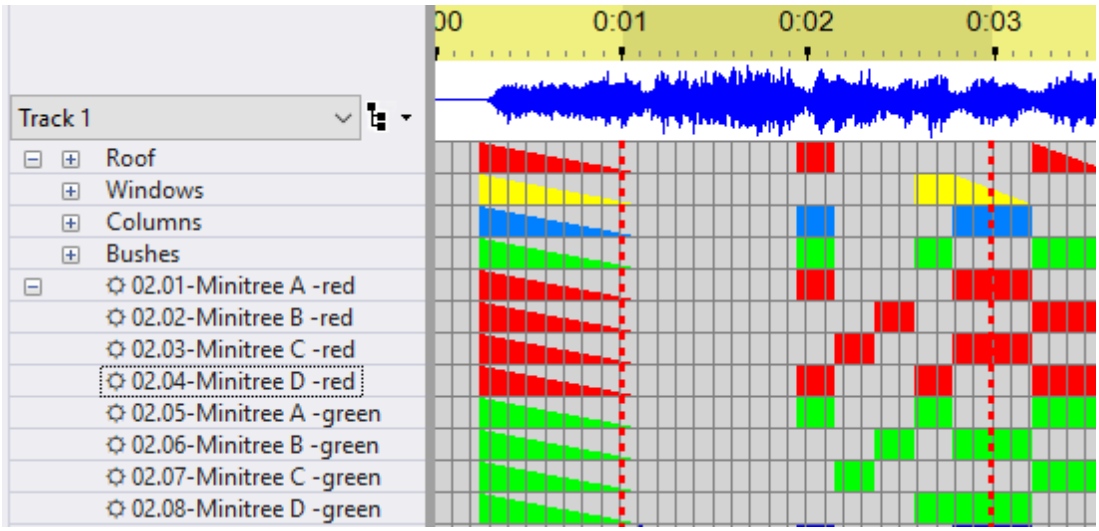

A sequence with a freeform play range

How Are They Created?

A freeform play range can be created using any of these techniques:

- By clicking and dragging across the time scale (not the waveform area). This is the quickest way to create a range that is limited to the visible area of the sequence grid.
- During sequence playback, pressing the keyboard's down arrow will mark the current time as the start of a "freeform play range". Later pressing the up arrow will mark the current time as the end of the freeform play range.
- After right-clicking on the audio waveform or timeline, select the "Set Play Range Start" or "Set Play Range End" menu items to create or extend a freeform play range.

What Can You Do With Them?

As the name implies, a freeform play range can be used to play back the specified region of the sequence.

5.3.5.12 Playback

You can play back your sequence in the Light-O-Rama Sequencer. If the playback window is open, it will show a simulation of your display. The simulation is based on the preview associated with the sequence.

- Calculating Preview
- Sequence Playback
- Playback in Action

Calculating Preview

When opening your sequence, the simulated preview is calculated in memory, which can take some time. A spinner will be displayed and the play buttons disabled until the calculations are complete:

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Calculations in progress

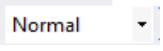
Once complete, a green check mark is displayed next to the preview name. Any subsequent changes to the sequence will cause the preview for the affected props to be recalculated; the play buttons will again be temporarily disabled until the recalculation is complete.

Calculations complete

Sequence Playback

Playback Using The Toolbar Buttons

There is a set of playback buttons on the Sequence Tab's toolbar, and another set on the Playback Window. You can use the buttons in either location to start and stop playback. These are the toolbar buttons that control sequence playback:

	Play the full sequence
	Play from the left edge of the visible sequence grid to the end of the sequence
	Play from the beginning of the sequence to the right edge of the visible sequence grid
	Play the visible portion of the sequence
	Play the current selection. If there is a freeform play range defined then that is played; otherwise the current grid selection (dashed yellow outline) is played.
	Pause playback. Press again to resume playback
	Stop playback
	Repeat playback. This icon will have a red slash through it if repeat is disabled
	Playback speed. Playback speeds other than normal may not be supported on some types of media files.

Playback Using The Spacebar

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Play the sequence using the space bar

Sequence playback can also be started and stopped using the spacebar.

If playback is currently stopped, then pressing the spacebar will:

- Play the freeform play range if one is defined, otherwise it will
- Play starting with the current selection (yellow outline) and continue to the end of the sequence if a grid selection exists, otherwise it will
- Play starting at the left edge of the visible sequence area and continue to the end of the sequence

If the sequence is playing when the spacebar is pressed, playback will be stopped and the grid column where playback was stopped will be selected. Pressing the spacebar again will restart playback at approximately the place where you had stopped it. This can be used to effectively pause and un-pause play.

Pressing shift and spacebar together will clear any freeform play range, and then perform the same action as pressing the spacebar without the shift key.

Playback in Action

During playback, color samples will be displayed real-time, immediately to the right of the channel name. The color samples will be displayed for traditional channels and RGB channels. They will not be displayed for motion effect rows. A playback marker will move as play progresses. You can change the width of the color samples and the behavior of the playback marker in Playback Preferences.

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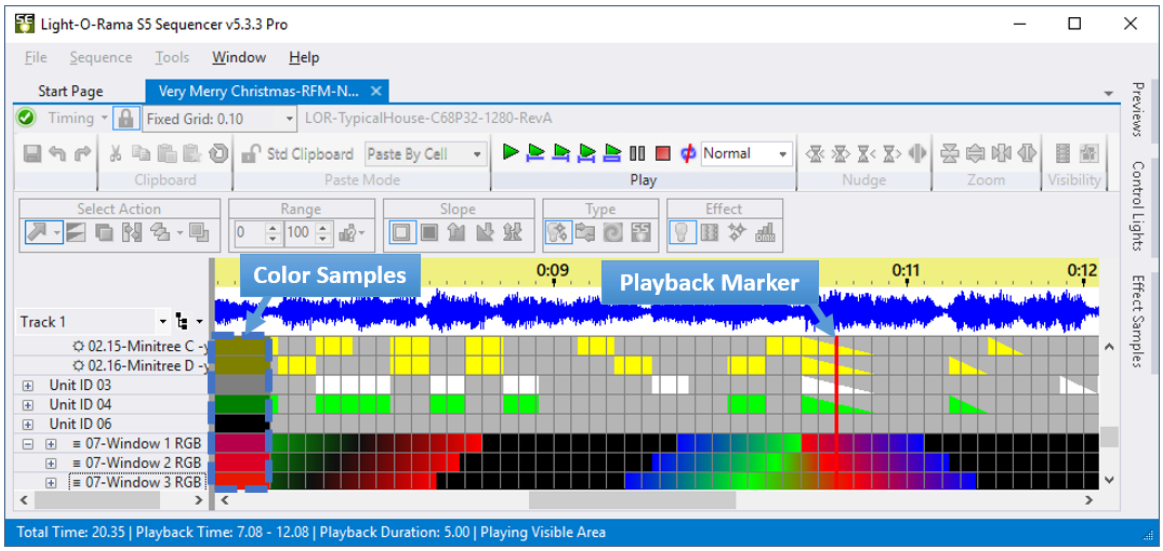


Playback in progress

5.3.5.13 Audio Waveform

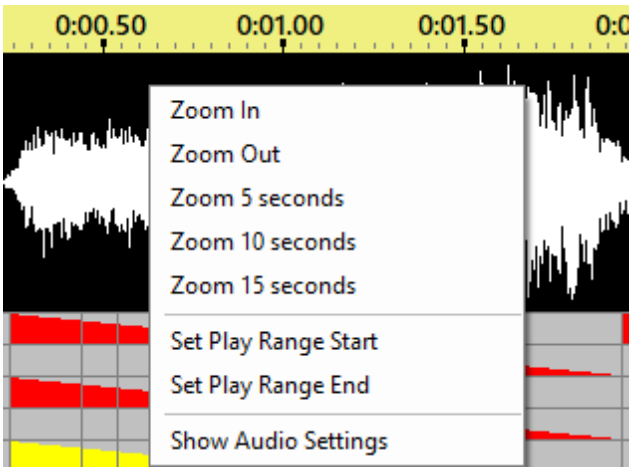
For most musical sequences, the Sequencer can display a waveform or spectrogram of the audio at the top of the sequence grid. This can be useful for visually matching up timings and events to the sound. The Waveform Display supports a wide range of media types, including video media. However, not all types of media or media containers are supported (for example, midi files are not supported).

In addition to the waveform itself, a vertical highlight bar is displayed at the time corresponding to your mouse location.

Note that control of the waveform or spectrogram display is done from the Audio Settings window.

Right-clicking on the waveform or the time scale will open a menu that allows you to:

- Zoom in and out
- Set the freeform play range
- Show the Audio Settings window



The right-click menu of the waveform

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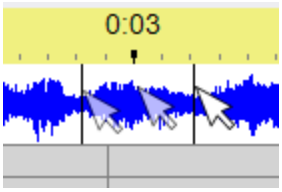
Zooming In And Out

The first 2 options on the menu allow you to zoom the time scale in and out.

The next 3 options zoom to a fixed time scale: 5, 10, or 15 seconds wide. These can quickly take you to a reasonable time scale if you have zoomed in too far.

You can also zoom in by left-clicking on the waveform and dragging across the area of the waveform where you want to zoom. When you release the mouse button, the new zoom level will take effect. Note that this only works in the waveform area, not on the time scale.



See the Zoom topic for more ways to zoom the sequence grid in and out.

Setting The Freeform Play Range

The "Set Play Range Start" and "Set Play Range End" menu items can be used to create or extend a freeform play range.

Showing The Audio Settings Window

This menu item makes the Audio Settings window visible (if it isn't already). From Audio Settings, you can control the content, colors, and filtering of the audio display area. It can give you valuable insight on how to align your lighting effects to the music.

5.3.5.14 Audio Wizards

There are 4 audio wizards that you can use to convert the beat of the music to timing marks and/or channel effects:

- The Tapper Wizard
- The Beat Wizard
- The VU Wizard
- The MIDI File Wizard (can only be used on MIDI files)

They can be accessed from:

- the Tools menu
- by right-clicking on the sequence grid
- by right-clicking on the name of a beat channel in the sequence grid

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5.3.5.14.1 The Tapper Wizard

The Light-O-Rama Sequencer's Tapper Wizard is a tool that lets you populate a musical sequence with timings and lighting effects simply by tapping along with the song, on your keyboard or your mouse. The Tapper Wizard will remember the moments in the song that you tapped at, and will insert timings and effects into the sequence at those times.

The Tapper Wizard is available as an option when creating a new musical sequence, and can be accessed later by selecting Tools > Tapper Wizard from the main menu, by right-clicking on a beat channel name, or by right-clicking in the sequence grid and opening the Audio Wizards sub-menu.

Note that you can insert timing marks into the sequence grid without using the Tapper Wizard. Simply start playing the sequence, then use the "T" shortcut key to insert timing marks.

The Tapper Wizard has the following sections and controls:

- Play Options
- What to Do with Taps
- Input Options
- Start and Stop
- Play Back
- Tap
- Apply
- Undo and Redo
- Apply and Exit
- Exit

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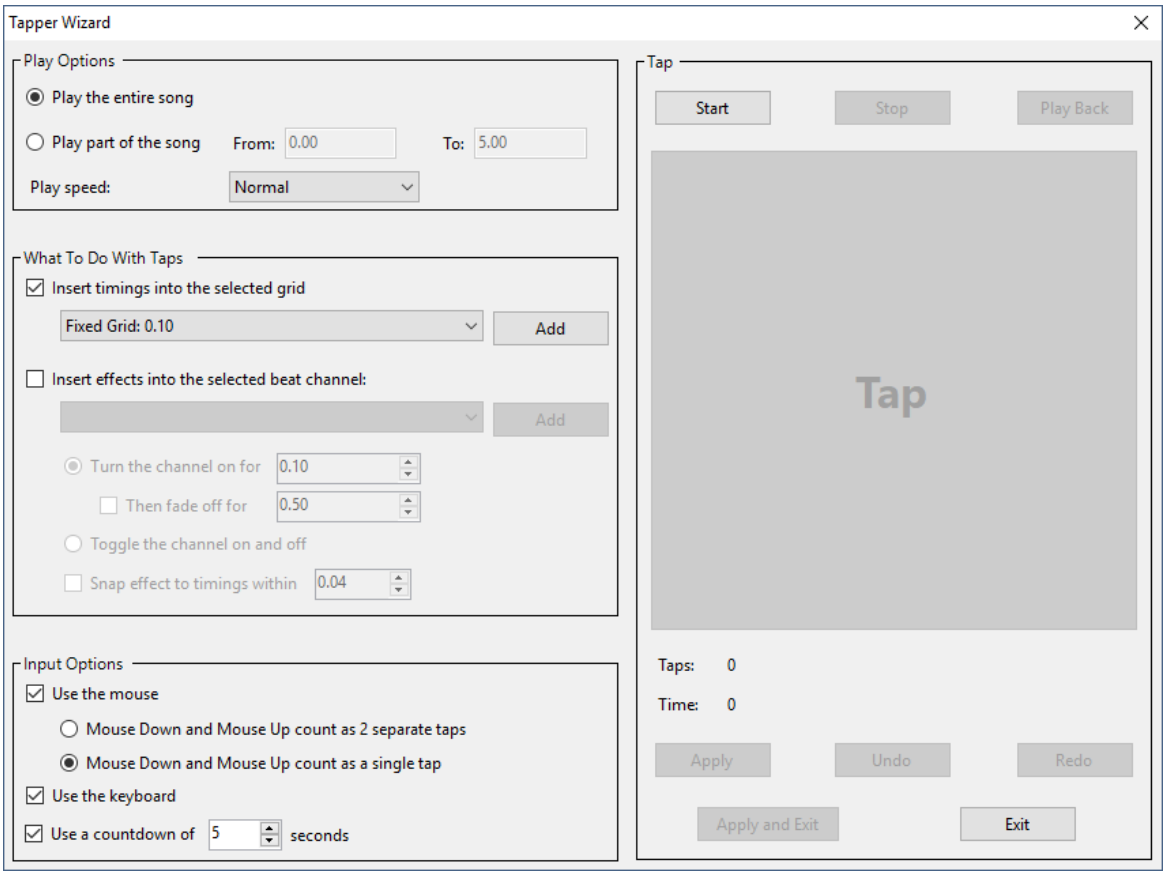

The Tapper Wizard

Play Options

This section of the Tapper Wizard lets you control how the song will be played while you are tapping. You can select to play the entire song, or just a certain time range of the song. You can also choose the speed at which the song will be played: half speed, normal speed, or double speed.

Whenever the sequence is opened, this option will be set to "Play the entire song". If you change this to "Play part of the song", that option will be used as long as the sequence is open, or until you change it back to "Play the entire song".

The time range will be set as follows:

- If there is a freeform playback range defined, that range will be used, otherwise
- If there is a selection on the sequence grid, its time range will be used, otherwise
- The currently visible time range will be used

What to Do with Taps

This section lets you tell the Tapper Wizard what you want it to do with your taps. You can choose the freeform timing grid to apply the taps to (or create a new timing grid to use), and then choose to insert timings into the timing grid, or to insert lighting effects into a channel, or both.

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If you choose to insert lighting effects into a channel, you can either have the channel briefly turn on for each tap, or you can choose to have it toggle on with one tap, off with the next, on with the third, and so forth. If you choose to have it turn briefly on for each tap, you can additionally choose to have it fade off after the tap (otherwise it will simply turn off).

You also have the option to "snap to existing events". If you select this option, and you tap at a point in time that is near an existing timing (with "near" meaning within the number of hundredths of a second that you specify here), instead of using the exact time that you tapped, the Tapper Wizard uses the time of that timing. This makes it easier to cleanly use the Tapper Wizard multiple times on the same sequence (for different channels), without introducing minor timing errors based upon your reaction time.

After you have done your tapping, and used this section to tell the Tapper Wizard what to do with your taps, click "Apply", or "Apply and Exit" to apply them to the sequence. If you clicked "Apply" rather than "Apply and Exit", then the Tapper Wizard will remain open. At this point, you could change your settings in this section to apply your existing taps in a different way (such as to a different channel, or with different types of effects), or you could tap again (by hitting "Start" again) to collect new taps. You could also undo and redo any changes that the Tapper Wizard made to your sequence.

Input Options

This section of the Tapper Wizard allows you to control how you will tap.

You can use the mouse, or the keyboard, or both.

If you use the mouse, you have two options: pushing the mouse button down and then letting it up count as two separate taps, or as a single tap. To use the mouse, you must click on the Tap button.

If you use the keyboard, you can tap with practically any key, or even multiple keys.

You can also choose whether to use a countdown or not; if you do, then when you start the song (by clicking Start), a countdown will be displayed before the song begins, rather than starting immediately. This may give you time to get ready after clicking "Start".

Start and Stop

Use these buttons to start playing the song (or to start the countdown before play), and to stop the song. When the song begins, the Tap button will become enabled. When the song ends, you do not have to use the Stop button; the Stop button is for stopping the song in the middle, for example if you are unhappy with the taps that you made.

After the song ends (or after you hit Stop), you can click Start again in order to redo your taps. This will wipe out any previously recorded taps. You will be warned that they will be wiped out, and will be given an option to cancel.

You can also redo your taps after having applied them to the sequence. This lets you use different sets of taps for different purposes, all without closing the Tapper Wizard.

Tap

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While a song is playing, the Tap button is enabled. Every time that you tap (whether by mouse or by keyboard), it will provide feedback by briefly flashing.

Play Back

After you have recorded taps, you can click "Play Back" to play the song over again. The Tap button will flash at the points in time that you tapped. You can use this to double check that you are satisfied with your taps before entering them into the sequence (by clicking the Apply button); if you are not satisfied with them, you can wipe them out and try again by hitting the Start button again.

Apply

After you have tapped, and have told the Tapper Wizard what to do with the taps, click the Apply button to apply those taps to your sequence.

Note that you can then change the settings in the "What To Do with Taps" section, and click Apply again; this will apply the new settings, using the same taps, to the sequence.

Or, you could click Start again, to collect new taps. Your old taps will be deleted when you do this, but any timings or effects that you inserted into the sequence based on them will remain. In this way, you can use different sets of taps to do different things, all without closing the Tapper Wizard.

Undo and Redo

After applying your taps to the sequence, you can use these buttons to undo and redo any such applications, without exiting from the Tapper Wizard.

Apply and Exit

Clicking the Tapper Wizard's Apply and Exit button will apply your taps to the sequence, in the manner that you specify in the "What To Do with Taps" section, and then exit from the Tapper Wizard.

If you want to apply your taps without exiting the Tapper Wizard, so that you can apply them again using new settings, or so that you can collect different taps, use the Apply button instead.

Exit

This button simply exits from the Tapper Wizard, without applying your taps to the sequence. Note, though, that if you have already applied your taps (using the Apply button), they will remain in your sequence; using this button (instead of Apply and Exit) will prevent your taps from being applied *again.*

For example, if you apply your taps, then change the settings in the What To Do with Taps section, and then click Exit, your applied taps, based on your original settings, will remain in the sequence, but your taps will not be reapplied based on the changed settings.

5.3.5.14.2 The Beat Wizard

The Light-O-Rama Sequencer's Beat Wizard can analyze the song associated with a musical sequence to try to determine its tempo, and can insert timings and lighting effects into the sequence based upon it. These are not necessarily inserted exactly the same distance apart from each other; rather, the Beat

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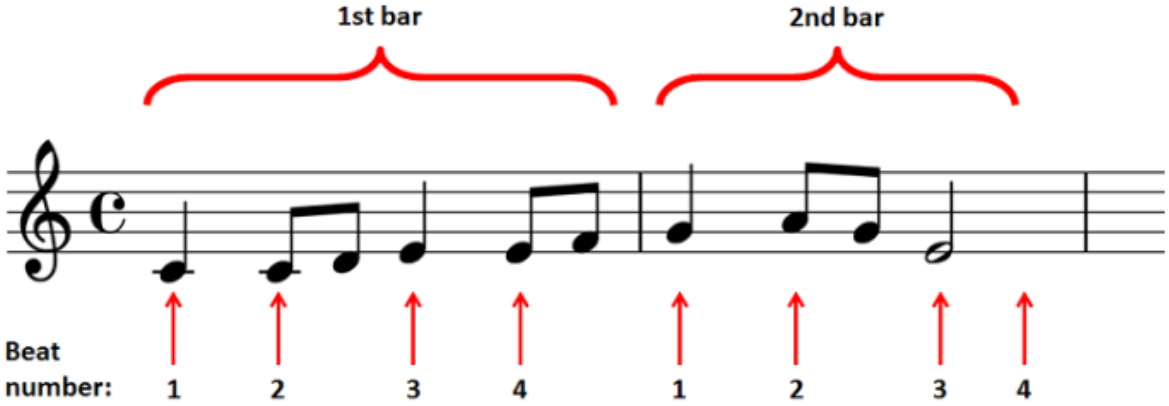
Wizard attempts to match them up with peaks in the audio that are near the tempo. This is to allow for subtle variation in the speed of the song.



The Beat Wizard is available as an option when creating a new musical sequence, and can be accessed later by selecting Tools > Beat Wizard from the main menu, by right-clicking on a beat channel name, or by right-clicking in the sequence grid and opening the Audio Wizards sub-menu.

The Beat Wizard supports a wide range of media types, including video media. However, not all types of media or media containers are supported. If the Beat Wizard cannot be used with the media file associated with your sequence, you will be presented with a message box alerting you to that fact. Also, the Beat Wizard may not be able to be used with very large media files.

- Selecting the Time Range
- Selecting the Tempo
- Previewing
- What To Do with Beats

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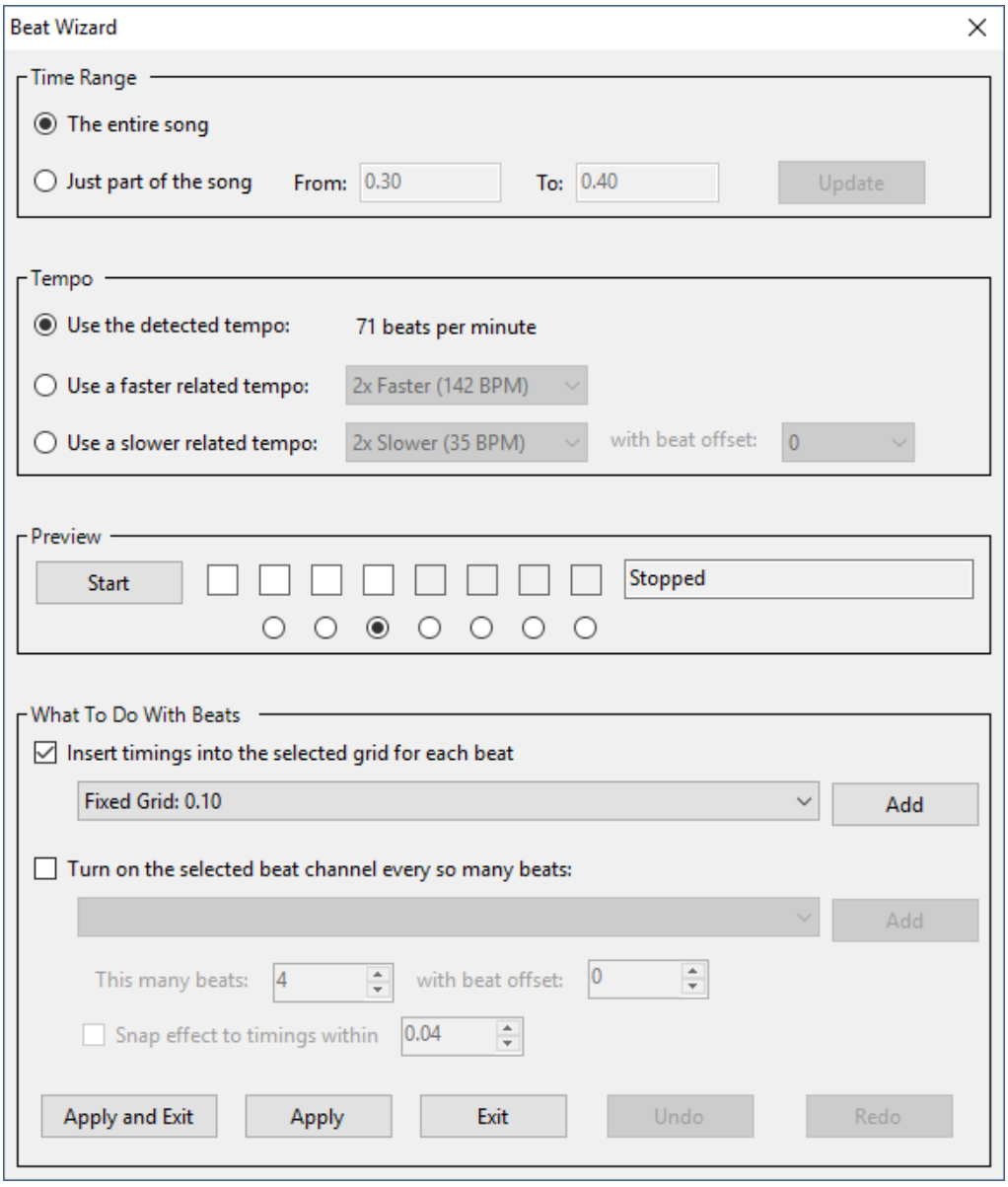

The Beat Wizard

Selecting the Time Range

The Beat Wizard can try to determine the tempo of a song as a whole, or of just a portion of the song. Use the "Time Range" settings to tell it which to try. If you select a portion of the song, be sure to click the "Update" button after changing the "From" or "To" times.

Choosing a portion of the song is useful if the song's tempo changes; the Beat Wizard will be more accurate if it only is asked to operate on a section with a near-constant tempo throughout. It may also be useful if the Beat Wizard has a problem with a certain portion of a song; if the beats seem off in a particular spot, you may want to try running the Beat Wizard on that spot individually.

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Whenever the sequence is opened, this option will be set to "Play the entire song". If you change this to "Play part of the song", that option will be used as long as the sequence is open, or until you change it back to "Play the entire song".

The time range will be set as follows:

- If there is a freeform playback range defined, that range will be used, otherwise
- If there is a selection on the sequence grid, its time range will be used, otherwise
- The currently visible time range will be used

Selecting the Tempo

The Beat Wizard shows its best guess as to the tempo of the selected portion of the song. You can choose to use that tempo, or faster or slower related tempos - for example, three times as fast, or twice as slow. Depending upon the song, one of the related tempos may seem more natural when you preview it.

Another use of related tempos is to simply insert more timings, allowing for faster lighting effects to be used that are still synchronized to the beat of the song. For example, it is unlikely that a "10x Faster" tempo will seem "more natural" in any sense, because it will probably be too quick to count along with. However, selecting it will, for example, let you set up a lighting effect with ten different channels that looks like the lights are quickly chasing each other to the beat of the music.

If a slower related tempo is chosen, you must also choose a "beat offset" to determine which beats of the "best guess" tempo will be selected: You might feel that the best guess tempo is actually twice as fast as it should be - that you would count along to it as "one - and - two - and" instead of "one - two - three - four", for example. If you therefore choose a "2x Slower" tempo, the Beat Wizard will use only every other beat from its "best guess" tempo, but it doesn't know whether to use every first beat or every second beat. So, you can let it know which to use by selecting the "beat offset".

Previewing

After you choose a tempo to use in the Beat Wizard, you can get an idea of what it will make your lights look like by using the controls in the "Preview" section. Simply click "Start" to start the preview.

The boxes to the right of the button will light up sequentially, in time with the tempo. Only the white boxes will be used; the greyed out boxes will not. However, you can choose how many white boxes there are by selecting the radio button under one of the boxes.

This allows you to make the preview section look more natural - for example, the boxes lighting up sequentially in a song that you count along with as "one, two, three, one, two, three" will look most natural if you select three boxes - doing so will make the same box light up every time you count the same number.

Clicking directly in one of the boxes will reset it so that that box lights up at that moment (and the other boxes follow sequentially from there). This is also useful for making the preview seem more natural - for example, the third box might be lighting up every time that you count "one", and if so, it might look more natural if you reset it so that the first box lights up at that time instead.

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None of this has any effect on the timings or lighting effects that will be inserted into the sequence when you decide what to do with beats - it is merely to help you see how the selected tempo looks in relation to the song.

Finally, if you are unsatisfied with the selected tempo, simply choose another tempo, or choose a different portion of the song to analyze.

What To Do with Beats

When you have selected a time range and a tempo for the Beat Wizard to use, and are satisfied with it after previewing it, you can use the controls in the "What To Do with Beats" section to insert timings, lighting effects, or both, based upon the selected tempo into the sequence .

If you choose "Turn on a channel every so many beats", you will also have to specify the channel, the number of beats, and a "beat offset". For example, to make a set of four channels chase each other in time with the beat, you could:

- Select the first channel, four beats, and a beat offset of zero;
- Click "Apply";
- Select the second channel, four beats, and a beat offset of one;
- Click "Apply";
- Select the third channel, four beats, and a beat offset of two;
- Click "Apply";
- Select the fourth channel, four beats, and a beat offset of three;
- Click "Apply and Exit".

Note that you can apply multiple effects to different channels, all in the same use of the Beat Wizard, by using "Apply" multiple times. You can even apply effects based on different portions of the song or different tempos, all without leaving the Beat Wizard.

5.3.5.14.3 The VU Wizard

The Light-O-Rama Sequencer's VU Wizard can analyze the song associated with a musical sequence to try to find peaks in the audio - much like a VU meter - and can insert timings and lighting effects into the sequence based upon them.

The VU Wizard is available as an option when creating a new musical sequence, and can be accessed later by selecting Tools > VU Wizard from the main menu, by right-clicking on a beat channel name, or by right-clicking in the sequence grid and opening the Audio Wizards sub-menu.

The VU Wizard supports a wide range of media types, including video media. However, not all types of media or media containers are supported. If the VU Wizard cannot be used with the media file associated with your sequence, you will be presented with a message box alerting you to that fact. Also, the VU Wizard may not be able to be used with very large media files.

- Selecting a Time Range
- Attack and Decay Settings
- The Peak Threshold
- Preview
- What To Do with Peaks

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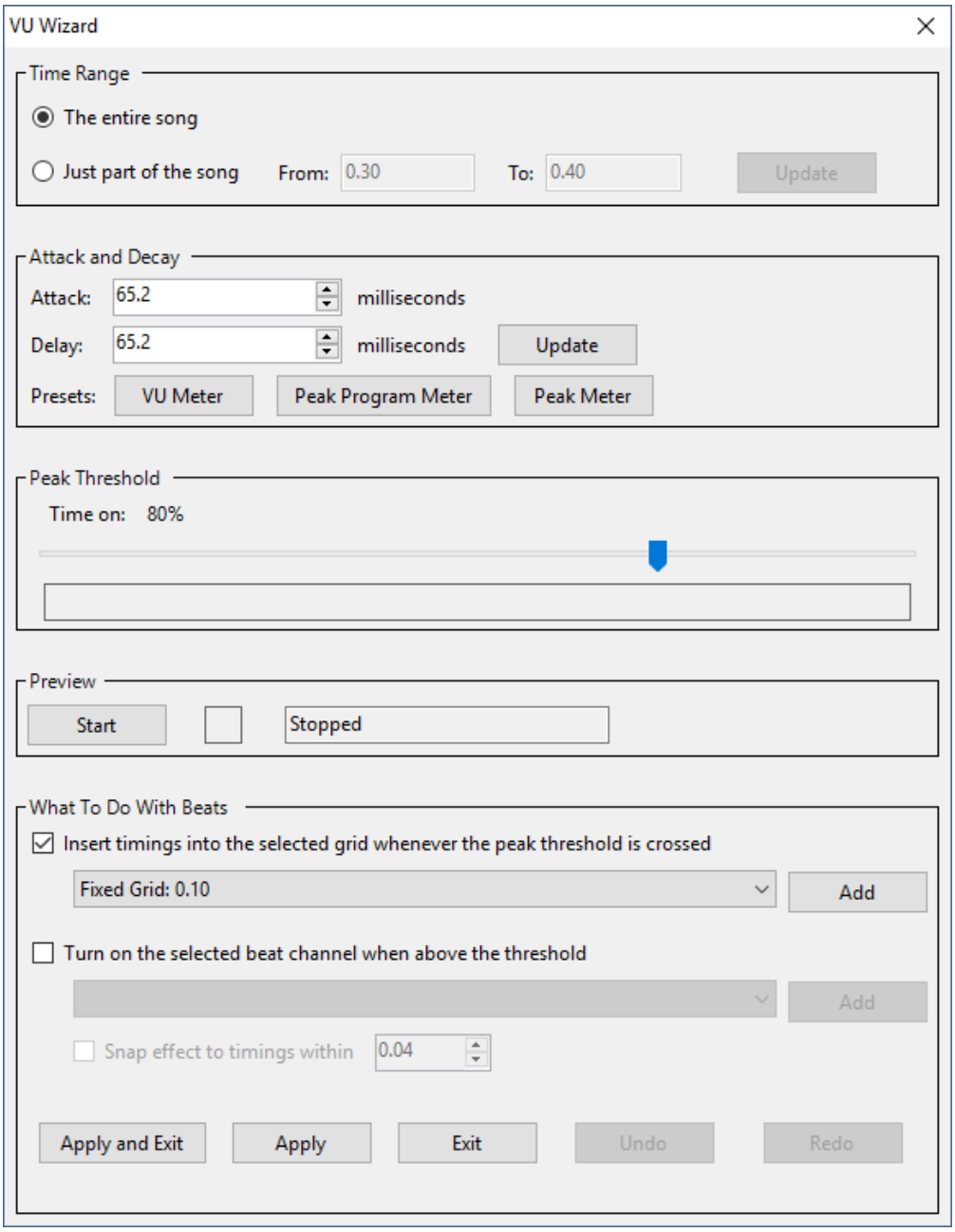

The VU Wizard

Selecting a Time Range

You can choose to let the VU Wizard look for audio peaks throughout the entire song, or limit it to a specific portion of the song. If you choose to use only a portion of the song, be sure to hit the "Update" button after setting the "From" and "To" times.

Whenever the sequence is opened, this option will be set to "Play the entire song". If you change this to "Play part of the song", that option will be used as long as the sequence is open, or until you change it back to "Play the entire song".

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The time range will be set as follows:

- If there is a freeform playback range defined, that range will be used, otherwise
- If there is a selection on the sequence grid, its time range will be used, otherwise
- The currently visible time range will be used

Attack and Decay Settings

These two values determine how quickly the VU Wizard will react to changes in the audio volume. "Attack" is how quickly it reacts to increased volume, and "Decay" is how quickly it reacts to decreased volume. The higher the number, the more slowly it reacts to changes.

You can enter specific numbers (make sure to hit "Update" if you do), or you can use one of the "Preset" buttons to simulate common types of audio meters:

- "VU Meter" simulates a standard VU meter, as often found on home stereo systems.
- A "Peak Program Meter" reacts very quickly to increased volume, but very slowly to decreased volume. This causes peaks to last longer.
- A "Peak Meter" reacts instantaneously to changes in volume.

Peak Threshold

Using the Peak Threshold section, you can tell the VU Wizard to look for audio peaks on either the left stereo channel or the right stereo channel, or on the sum of the two.

The track bar (slider) represents the threshold for what will be considered a peak. Above the slider's handle is a peak; below the handle is not. The handle can be slid left and right to increase and decrease the threshold.

The "Time On" percentage displayed in this section shows the percentage of the selected time range that is above the specified peak. Updating any of the settings such as the peak threshold, the attack and decay, or the time range will cause the "Time On" percentage to be automatically updated as well, taking the new settings into account.

When you play the song (using the "Preview" section), the rows will pulse along with the audio volume, showing blue starting at the left and continuing rightwards based upon how loud the audio is at any given point in time. When the selected stereo channel (or channels) is above the threshold, it will turn red instead of blue.

Note that this is strongly affected by the attack and decay settings - lower values will cause the pulsing to react more slowly to the music, and higher values more quickly. Try playing with the various "Preset" buttons to see this.

Preview

Clicking the Start button in the VU Wizard's Preview section plays the song, and pulses the rows in the Peak Threshold section along with the audio. It also flashes the box in the Preview section whenever the pulse is above the selected threshold.

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You can change both threshold settings and the attack and decay settings during preview, and the VU Wizard will react instantly to such changes. However, only the final settings will be used when you apply the peaks to the sequence (using the "What To Do with Peaks" section).

What To Do with Peaks

Once you are satisfied with the peaks found using your chosen attack and decay settings and peak threshold settings, you can apply the peaks to the sequence using the "What To Do with Peaks" section of the VU Wizard. You can insert a timing every time the threshold is crossed (no matter whether from below or from above), or turn a selected channel on whenever above the threshold, and off whenever below, or both.

You can reuse the VU Wizard for multiple channels (and multiple settings) without closing it by clicking "Apply" rather than "Apply and Exit".

5.3.5.14.4 The MIDI File Wizard

The Light-O-Rama Sequencer's MIDI File Wizard can be used to automatically populate beat channels based on a the notes in the MIDI file.

The MIDI File Wizard is available (for musical sequences based on MIDI files) as an option when creating a new musical sequence, or can be accessed later via any of the methods listed in the Audio Wizards topic.

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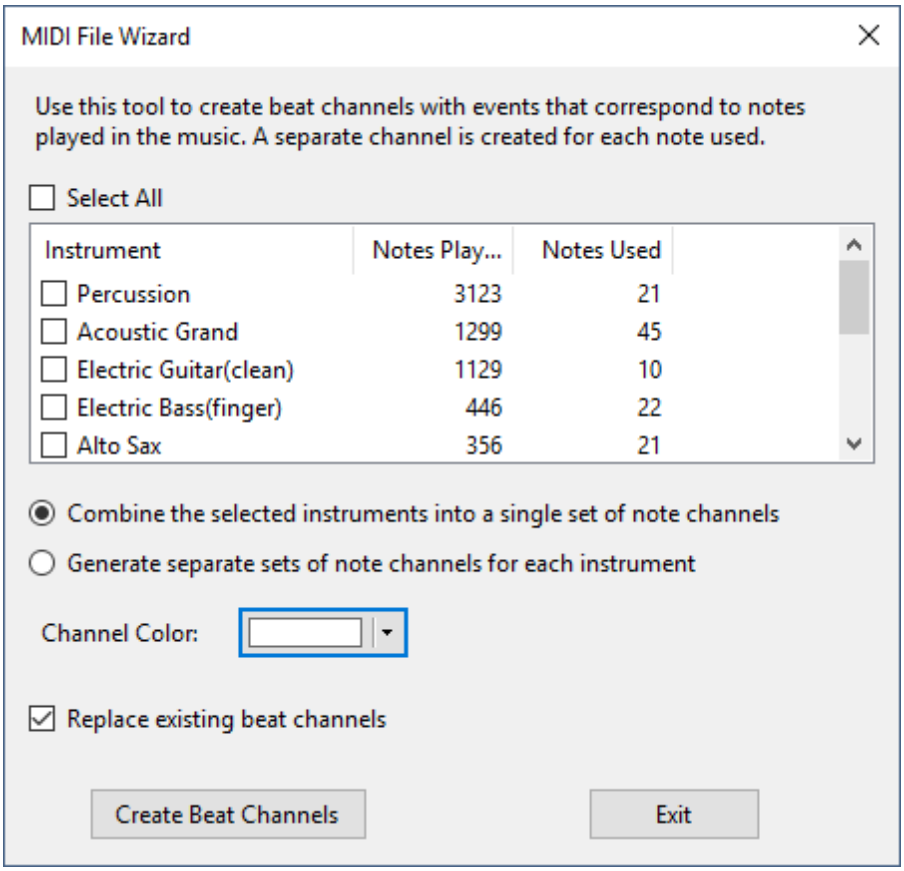

The MIDI Wizard window

Select Which Instruments to Include

The window lists all of the instruments used in the song. For each instrument it lists:

- how many total notes are played by the instrument
- the number of distinct notes played by the instrument

Check the boxes next to the names of the instruments you wish to include.

Combine Instruments?

Click the radio button that indicates how you want the beat channels created:

- One channel for each note -- combining the notes for all selected instruments
- One channel for each note and instrument (this can produce a lot of beat channels)

Channel Color

Choose the color that the new beat channels will use when displayed on the sequence grid.

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Replace Existing Beat Channels?

The MIDI wizard can create a lot of beat channels. By checking this box, you can have the existing beat channels deleted and replaced with the new set you are creating. Leave the box unchecked if you want to keep the existing beat channels -- the new ones will be appended to the list.

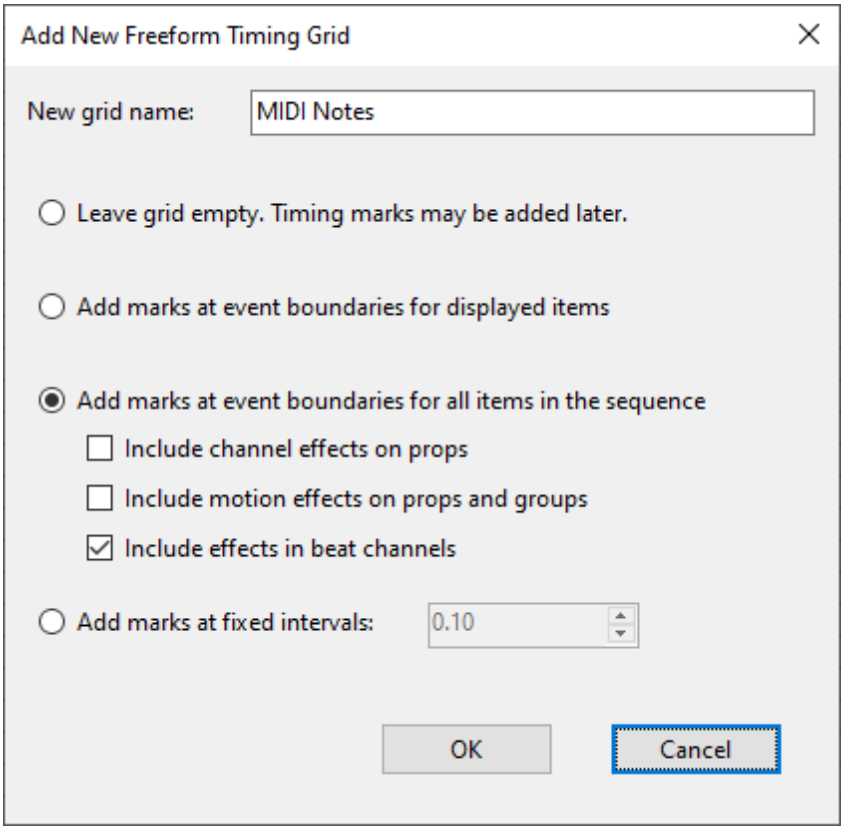
Finish

Click the "Create Beat Channels" button to create the new beat channels and close the window.

Create Timing Marks

Unlike the other audio wizards, the MIDI wizard does not create timing marks. However, after closing the wizard, follow this procedure:

- From the Timing Menu, select Add New Freeform Grid
- Select "Add marks at event boundaries for all items in the sequence", then under that check "include effects in beat channels".
- Clicking OK should then create a timing grid with marks at the beginning and end of each MIDI note.



Adding a new freeform grid for MIDI notes

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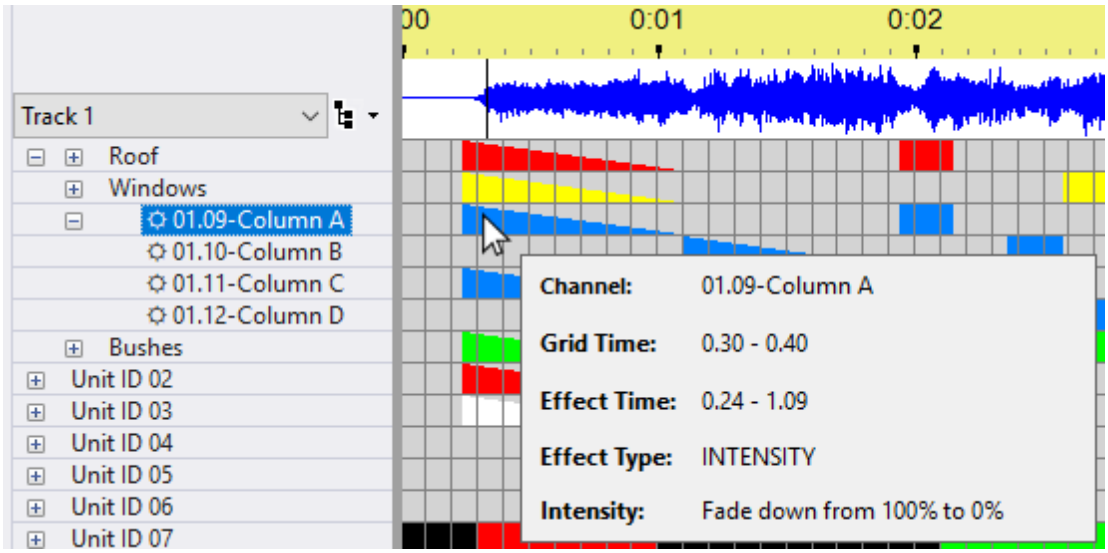
5.3.5.15 Tooltips

When hovering over a cell in the Sequencer's sequence grid, a tool-tip can be displayed which shows information about the grid cell and any effect it might contain.



Tool-tips can be turned on or off. There are also options for how long to hover before they are displayed and how they should be closed. These settings can be changed in Sequence Grid Preferences.

5.3.5.16 Loops in Animation Sequences

An animation sequence (but not a musical sequence) can contain loops. When the Show Player or the Sequencer plays a sequence with loops, when the end of a loop is reached, the sequence will go back to the beginning of the loop. This will happen a certain number of times (which you specify), after which the sequence will continue on past the end of the loop.

Each time through a loop, you can have the sequence speed up, slow down, or remain at the same speed.

A sequence can contain many loops. Loops can be nested - that is, a loop can contain other loops.

Loop rows are shown with a white background are fixed to the top of the sequence grid. They do not scroll away when the rest of the sequence is scrolled vertically.

For example, the following picture shows a sequence with a loop starting at 1 second and ending at 2 seconds. The number of times the loop will repeat is shown in the middle of loop (1 in this case). If the loop were to speed up after each pass, then the repeat count would be followed by a "+" symbol. If the loop were to slow down after each pass, then the repeat count would be followed by a "-" symbol. In this case the loop speed is set to stay the same, so no symbol is displayed.

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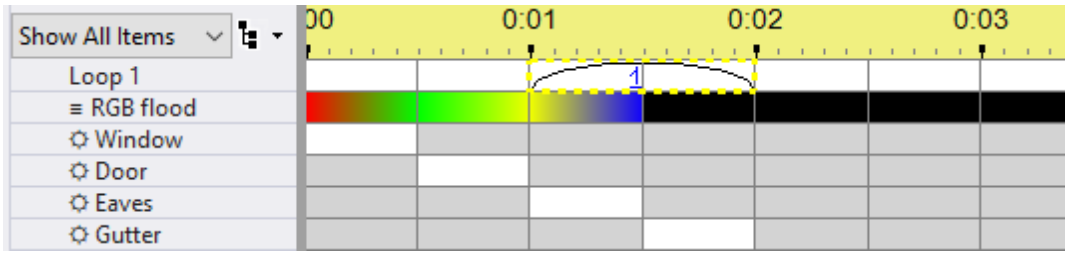
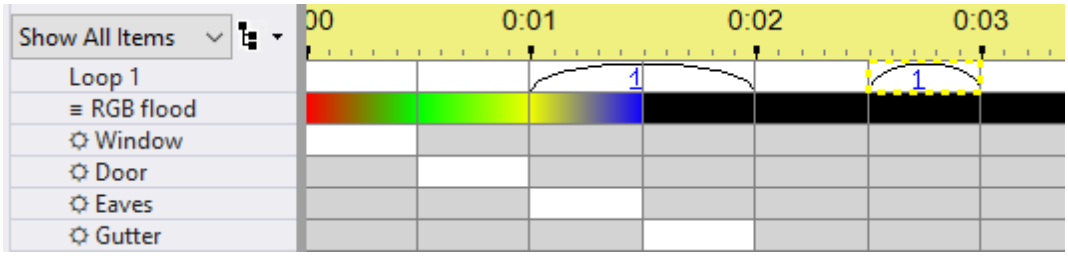


A sequence with a loop starting at 1 second and ending at 2 seconds

More than one loop can be in a sequence. For example, here is the same sequence, with a second loop added, from 2.5 seconds to 3 seconds:



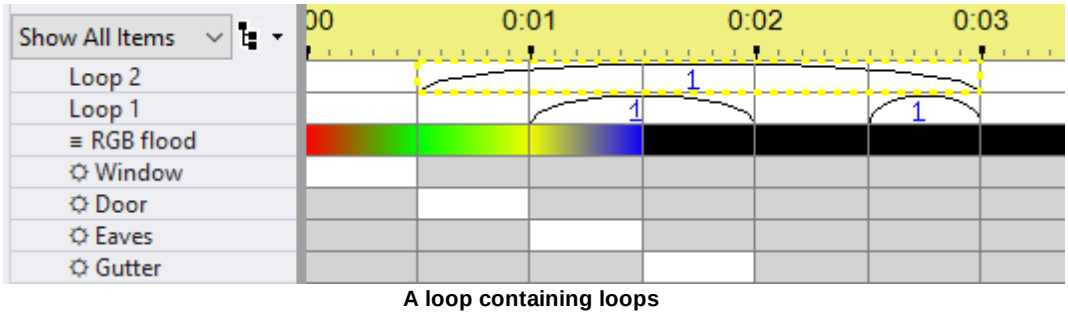
Two loops in a sequence

Subjects covered in this topic:

- Adding a Loop Row
- Adding A Loop
- Modifying a Loop
- Deleting a Loop
- Right-Clicking on the Loop Name

Adding a Loop Row

Loops can contain loops; this is represented by having multiple rows of loops. For example, in the following picture, a second loop level has been added, and a loop was put into it from 0.5 seconds to 3 seconds, thus containing both of the loops of the lowest loop level.



A loop containing loops

To create a loop row, select "Loop Level" from the "Add New" menu present on both the Sequence menu and the Grid View menu. You can also right-click on the name of an existing loop to add additional

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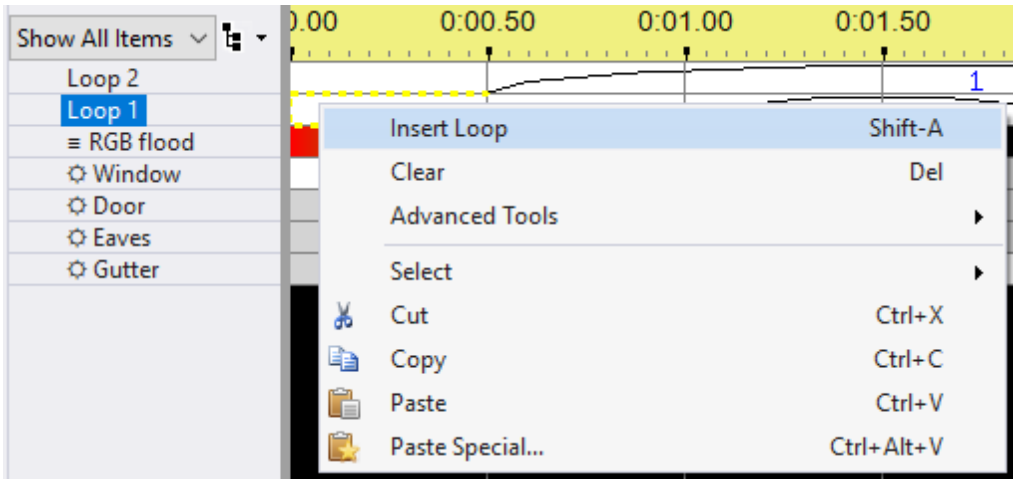
levels. The bottom loop level in a sequence is always labeled "Loop 1"; the one immediately higher than that is labeled "Loop 2", and so on.

Adding A Loop

To add a loop to a loop row, select the desired time range on the row, then either right-click and select "Insert Loop" or use the "shift-A" shortcut key.



The Loop Context menu

You will then be prompted for how many times the loop should loop back and whether (and by how much) it should increase, decrease, or remain the same speed in each pass through the loop:

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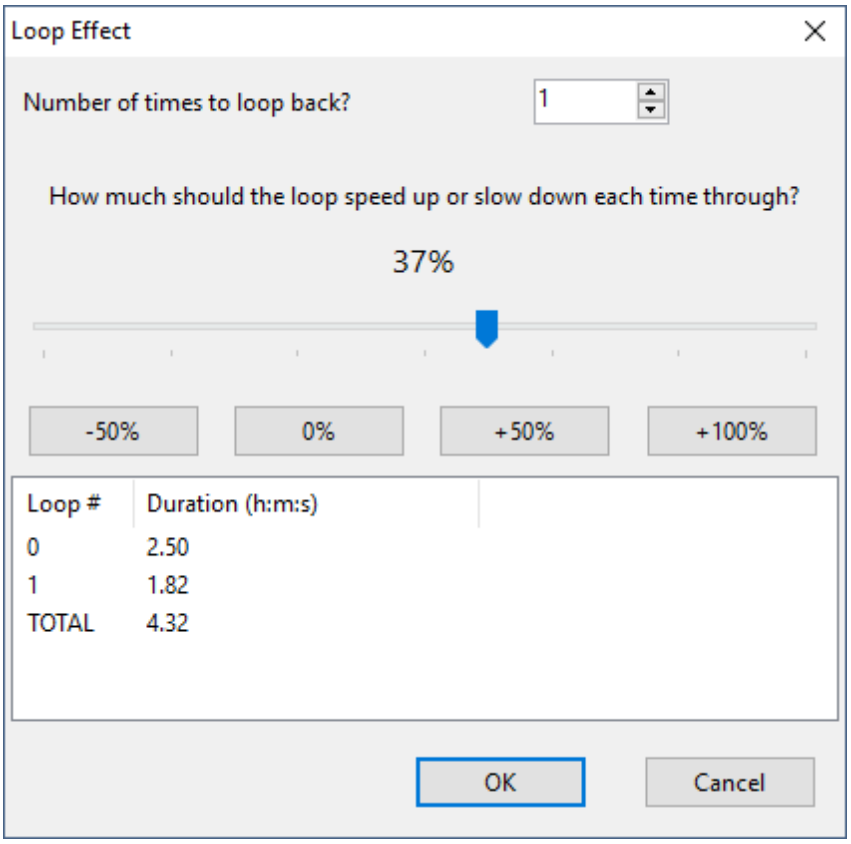

Loop Effect dialog

Modifying a Loop

To modify a loop, just double-click on it -- the Loop Effect dialog will open, allowing you to make changes.

Deleting a Loop

To delete a loop, select it, then either right-click on the selection and choose "Clear" from the pop-up menu, or use the "Delete" shortcut key.

Right-Clicking on the Loop Name

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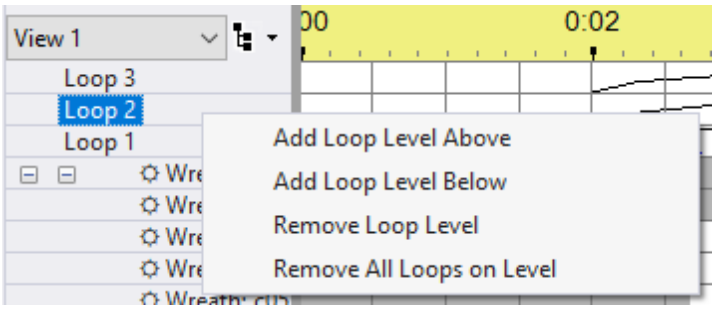

Menu when right-cliicking on a loop name

Right-clicking on a loop name, such as clicking on "Loop 2" in the picture above, opens the Loop Context menu.

Add Loop Level Above

This item on the Loop Context menu can be used to add another loop level to the sequence, above the selected loop level. Loops on the new (higher) level can contain loops within the preexisting (lower) level.

Add Loop Level Below

This item on the Loop Context menu can be used to add another loop level to the sequence, below the selected loop level. Loops on the preexisting (higher) level can contain loops within the new (lower) level.

Remove Loop Level

This item on the Loop Context menu can be used to delete the entire selected loop level, including all loops on it.

If you wish to delete all of the loops on a level, but to keep the level itself, use Remove All Loops on Level instead.

Remove All Loops on Level

This item on the Loop Context menu can be used to delete all of the loops on the selected loop level, but to keep the loop level itself.

If you wish to additionally delete the loop level itself, use Remove Loop Level instead.

5.3.5.17 Sharing Sequences

Sequences created using the S5 Sequencer can be shared with fellow lighting enthusiasts. To share a sequence, you would send the other person your LOREDIT file. This file includes a copy of the preview for that sequence. However, your sequence may also need other files to play back properly. To see a list of those files, select Sequence > File References from the main menu.

Conversely, if a person shares a sequence with you, they should send you their LOREDIT file and potentially other files. The first time you open their file in the Sequencer, you will receive a pop-up message indicating that the preview was imported. The new preview will have a name like “Imported from JingleBells.loredit on 6/17/2018”. After the sequence opens, you should then check File References to make sure the sequence can find any other files it needs, and make corrections if necessary.

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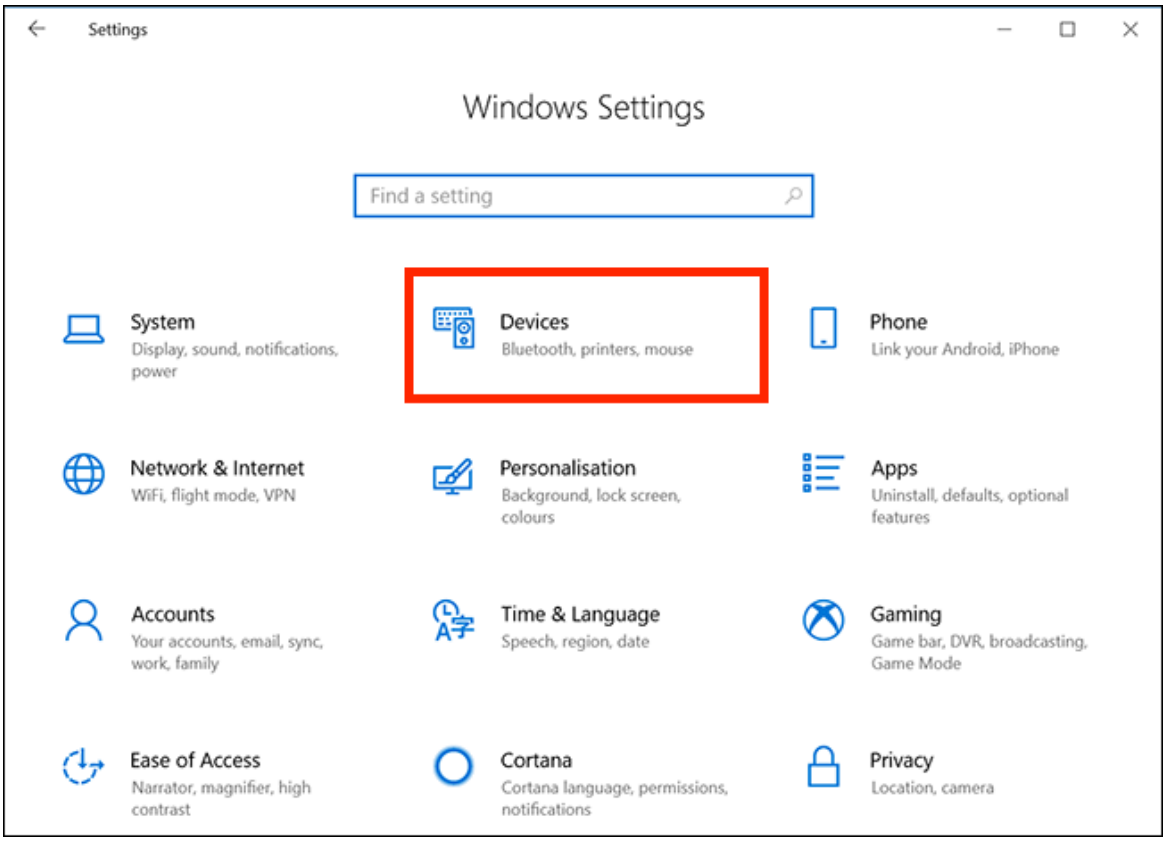
5.3.5.18 Mouse Double-Click Speed

The S5 Sequencer responds to both single clicks and double clicks on the sequence grid. Therefore, it is important to set your mouse's double-click time carefully -- this setting is what distinguishes a single click from a double click. To adjust it in Windows 10, follow these steps (content from Microsoft):

1. Open the **Settings** app by pressing the **Windows logo key** + **I** on the keyboard or via **Start Menu** > **Settings.**
2. In the Settings app, select **Devices**.



3. On the next screen, select **Mouse** in the left column.
4. Under **Related settings** in the right column, click **Additional mouse options**.

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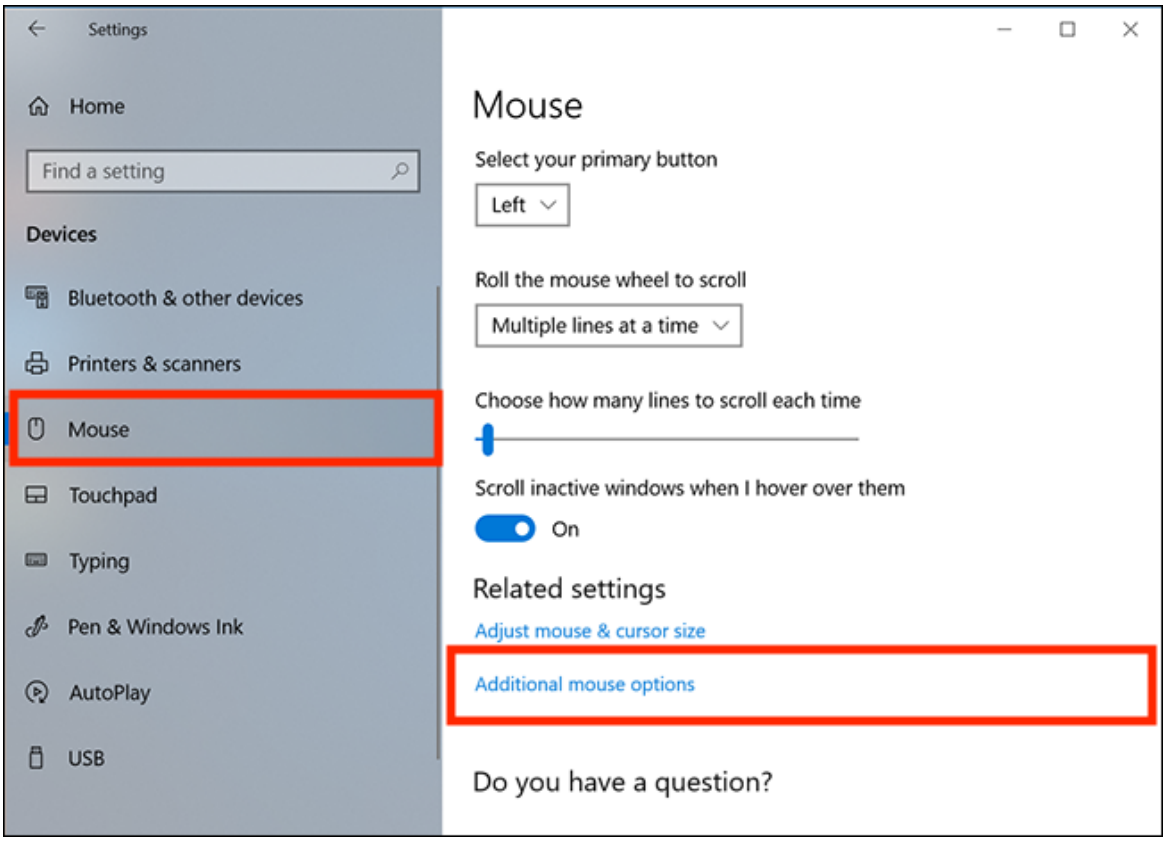

5. In the **Mouse Properties** window that appears, select the **Buttons** tab.
6. In the **Double-click speed** section adjust the speed slider to set a more comfortable speed.

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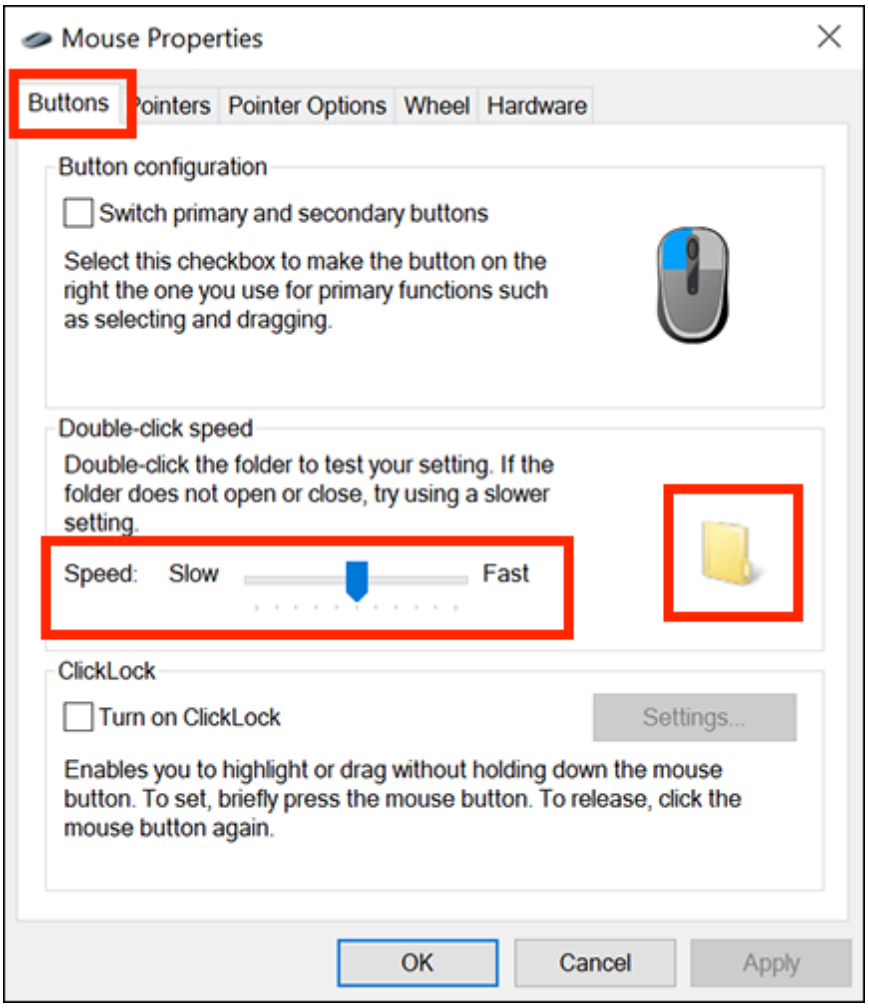

7. You can test your setting by double-clicking on the folder icon.
8. When you are happy with your settings click the **X** close button in the top-right of the window

5.3.6 Motion Effect Generator

The Motion Effect Generator is the tool used to create and modify motion effects in the Light-O-Rama Sequencer.

The Motion Effect Generator window has three parts. The left and right sides can each independently generate an effect. The result of those two effects is mixed in the middle. This middle portion is what gets saved to the grid when you click OK to close the Motion Effect Generator window.

- Opening the Effects Generator
- Creating an Effect
- Using the Effect Slider
- Mixing Two Effects
- Favorites
- Effect Length
- Bulb Size

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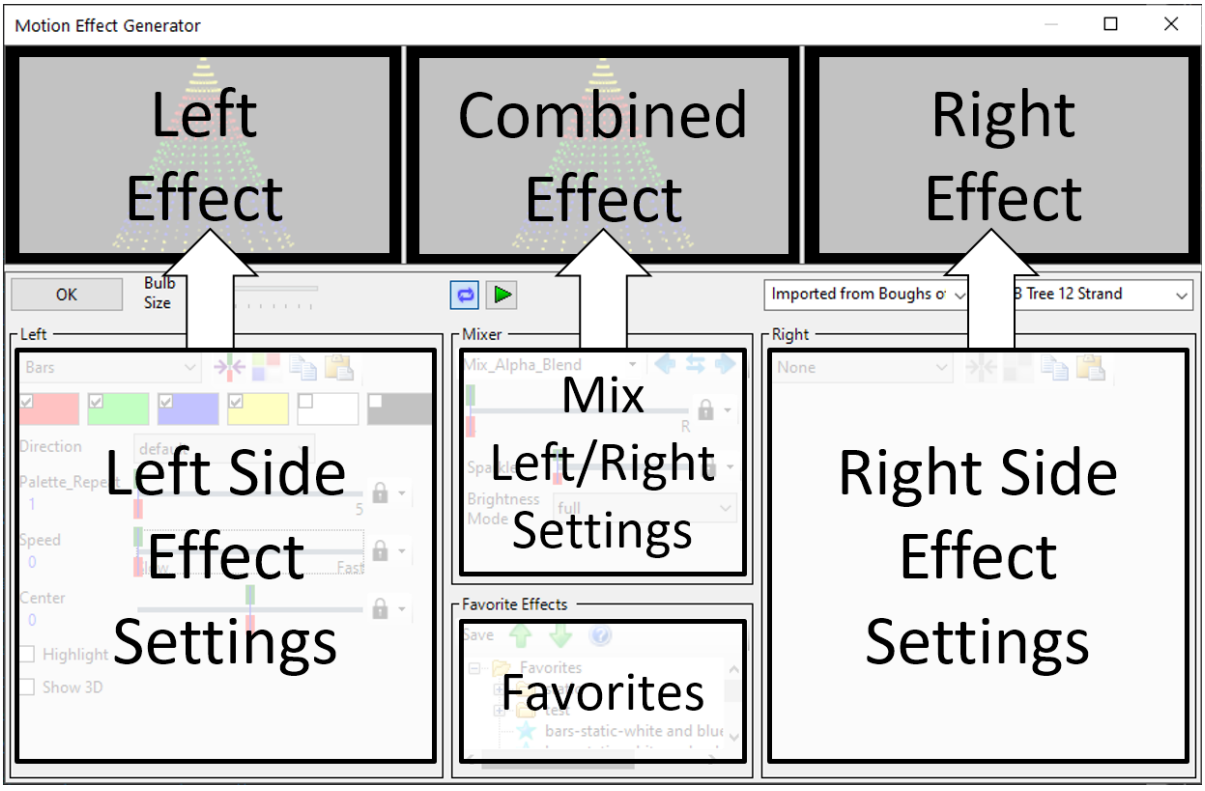

5.3.6.1 Opening the Motion Effect Generator

The Light-O-Rama S5 Sequencer's Motion Effect Generator can be opened in several ways:

- From the Tools menu.
  - This menu item can be used when no sequences are open to test effects and optionally save the one's you like as favorites. You can do this at any license level.
  - When a sequence is open, this menu item can be used to place a motion effect into the current grid selection See the Sequencing topic for more information on how to use the Motion Effect Generator when editing your sequences. Placing motion effects into a sequence requires the Pro license level.

- Double-click on a motion effect on the sequence grid. This will select the entire motion effect and then open the Motion Effect Generator set to this effect. If you make changes and click OK, the changes will be saved back to the selected effect on the grid. This is the fastest way to modify existing motion effects in your sequence.

- Select an empty set of cells on a motion effect row, and then right-click and select Insert Motion Effect from the pop-up menu. Or you can use one of these shortcut keys: shift-A (max intensity), shift-U (ramp up), or shift-D (ramp down). The Effect Generator will open allowing you to choose a new effect. When closed, the new effect will be applied to the selected cells.

- Select a range of cells containing one or more effects on the grid, right-click in the selected area, and choose Prompt For New Effect > Modify Existing Effects from the pop-up menu (or shortcut key shift-M). In this case, the new effect will overwrite the existing effects in the selection. However, the

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intensity (for example 100% on, ramp up, or ramp down) of the existing effects will be preserved.

- With a sequence open, click the Motion Effect button on the toolbar. The pointer will change to the edit cursor when positioned over the sequence grid. Drag the edit cursor over some cells on a motion effect row. The Motion Effect Generator will open, allowing you to build a motion effect.

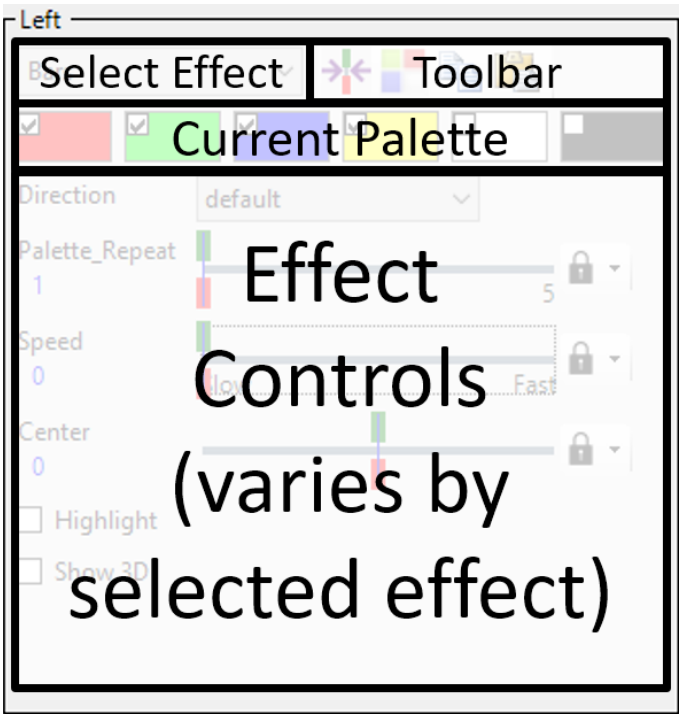
- Double-click on a thumbnail in the Motion Effects window. The Motion Effects window can only displayed when you have a Pro license.

5.3.6.2 Creating an Effect

When creating an effect in the Sequencer's Motion Effect Generator, the left and right sides operate identically. However, it is recommended to always start on the left side, just to be consistent.

Creating an motion effect can be as simple as selecting the type of effect, picking some colors, and then modifying the effect controls to your liking. This can all be done from the Effect Settings Panel. Read through the topics below to learn more:

- Select an effect
- Select colors from the current palette
- Modify effect parameters
- Changing Color Order
- Using The Effect Toolbar
  - Reset Effect Parameters
  - Manage Color Palettes
  - Copy/Paste Effect Panel Settings



Effect Settings Panel

Select An Effect

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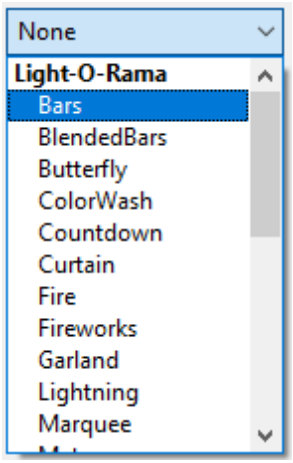
The first step in creating an effect is selecting the effect from the drop down list. The list is grouped by effect author/publisher.



See the Motion Effect Reference for detailed information on each effect.

Select Colors From The Current Palette

Choose the colors for the selected effect by clicking the checkboxes next to the desired colors. Not all effects use every chosen color. For example, the Color Wash effect only uses the first selected color. The Picture effect doesn't use any. If you haven't selected any check boxes, the color defaults to white.

The Toolbar and Color Palette

The size of the palette is fixed at 6 entries, but each palette entry can be set to a color of your choosing. Simply click on the color (not the check box), and the Select Color Transition window will open allowing you to choose a previously saved color, a custom color, a random color, or transparent.

Selecting the Single Color mode will cause the selected color to be used for the entire duration of the effect. Save the current color by clicking the "+" button at the top right. Select a saved color by clicking on one in the list on the right side. Delete a saved color by clicking on one in the list and then clicking the "X" button.

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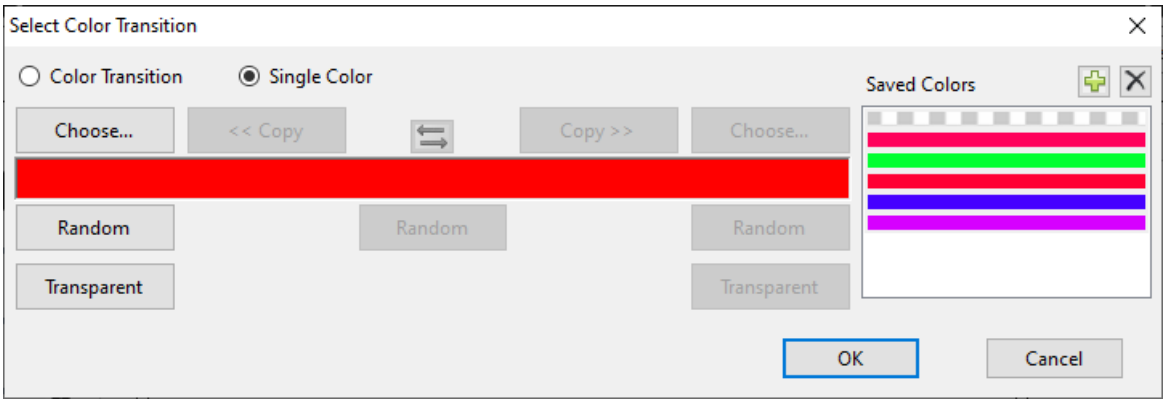
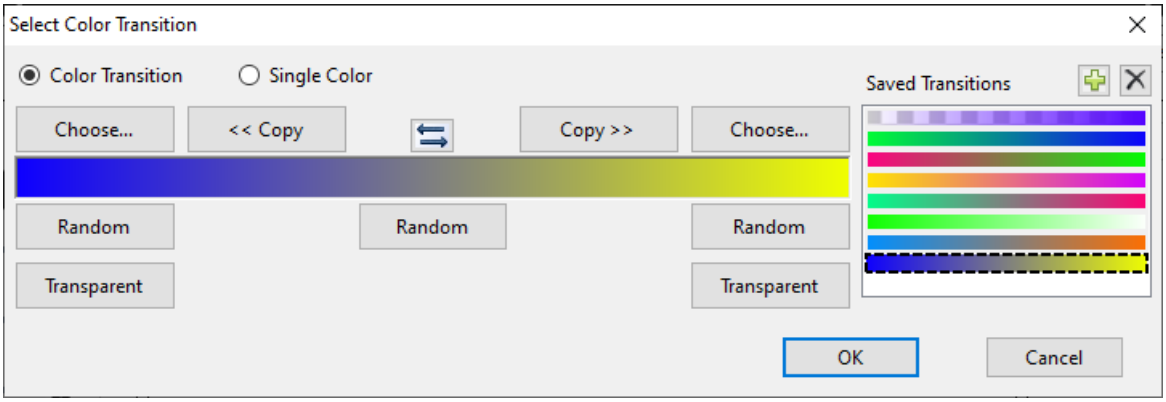


The Select Color Transition Window (single color mode)

Selecting a color transition will cause the color to change over the course of the effect, starting with the color on the left and ending with the color on the right. The double-arrow button in the center will swap the left and right colors. The Random button on the left will change the starting color. The Random button on the right will change the ending color. The Random button in the center will change both.



The Select Color Transition Window (color transition mode)

The Transparent color is shown with a gray and white checkerboard pattern:

In some cases, the color Black and Transparent will produce the same effect. However, Transparent is different when you are using the Alpha Blend mix mode -- Transparent will let the other effect be visible, whereas Black will hide it. The same is true when you set the mode for combining Motion Rows to Overlay. In the following example, the Transparent color allows the Butterfly effect on the right to show through.

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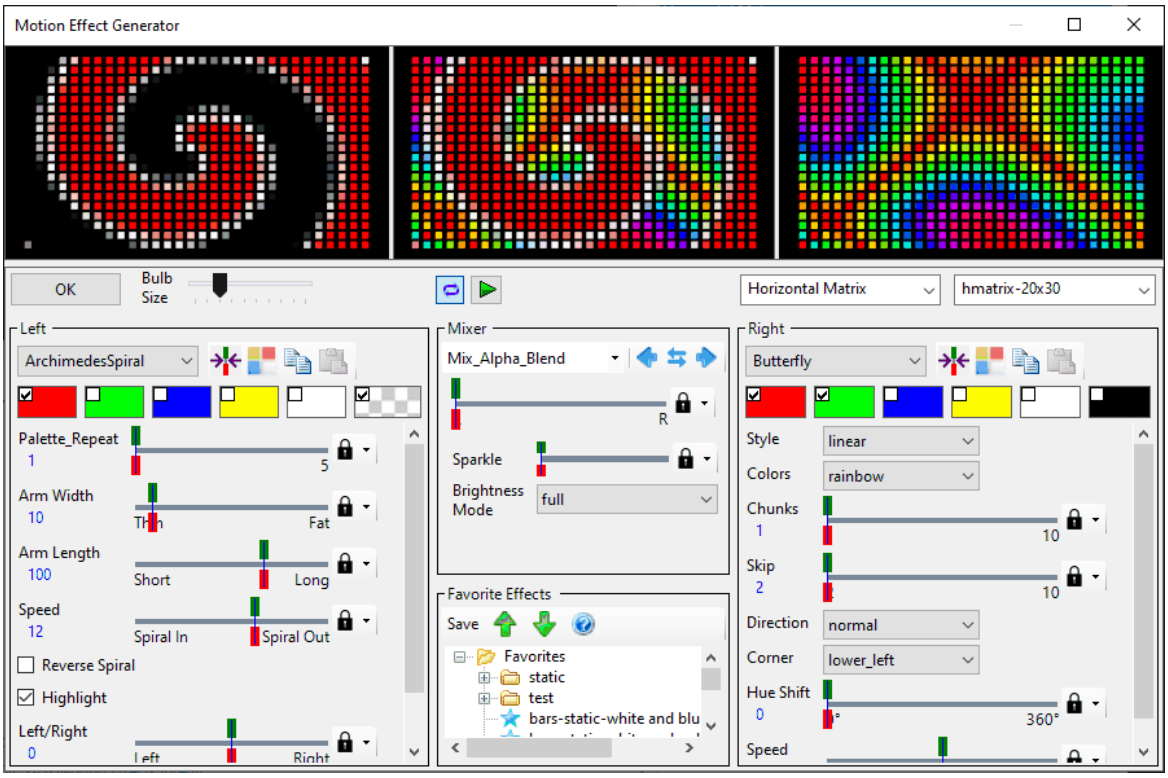
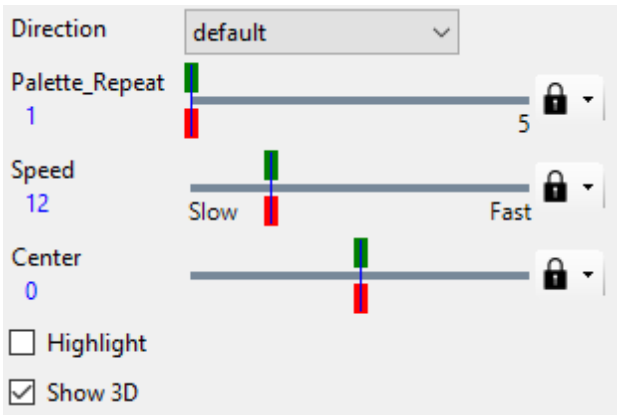


Combining effects with the Transparent color

Modify Effect Parameters



Example of Effect Controls

Below the palette area will be a set of buttons, sliders, and other controls that are specific to the type of effect you have chosen in the drop down. Each time you select a different effect type, these buttons, sliders, and other controls will change. Modifying a control will change how the effect is displayed. The sliders in particular have a lot of options and their use is detailed in the Using the Effect Slider topic.

Feel free to experiment with all of the options. That is part of the fun of the Motion Effect Generator – seeing all of the different effects you can make!

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Changing Color Order

For some effects, color order is important. Color order can be changed by dragging a color to a new location.
Then drop it on top of another color square. When you do, the colors will rearrange.

To start dragging, click on the color you want to move (blue in this example). Avoid the check box.

Now drag...

And drag some more...

Now release the mouse button to drop. Blue moves to the front of the line!

Using The Effect Toolbar

Using the Effect Toolbar you can:

- Reset Effect Parameters
- Manage Color Palettes
- Copy/Paste Effect Panel Settings

Reset Effect Parameters

Sometimes after making adjustments to the effect controls, you might get to the point where you want to start over. Clicking the toolbar icon shown above will reset the effect parameters to their default values (for the selected effect).

Shift-clicking on this icon will set the effect to None.

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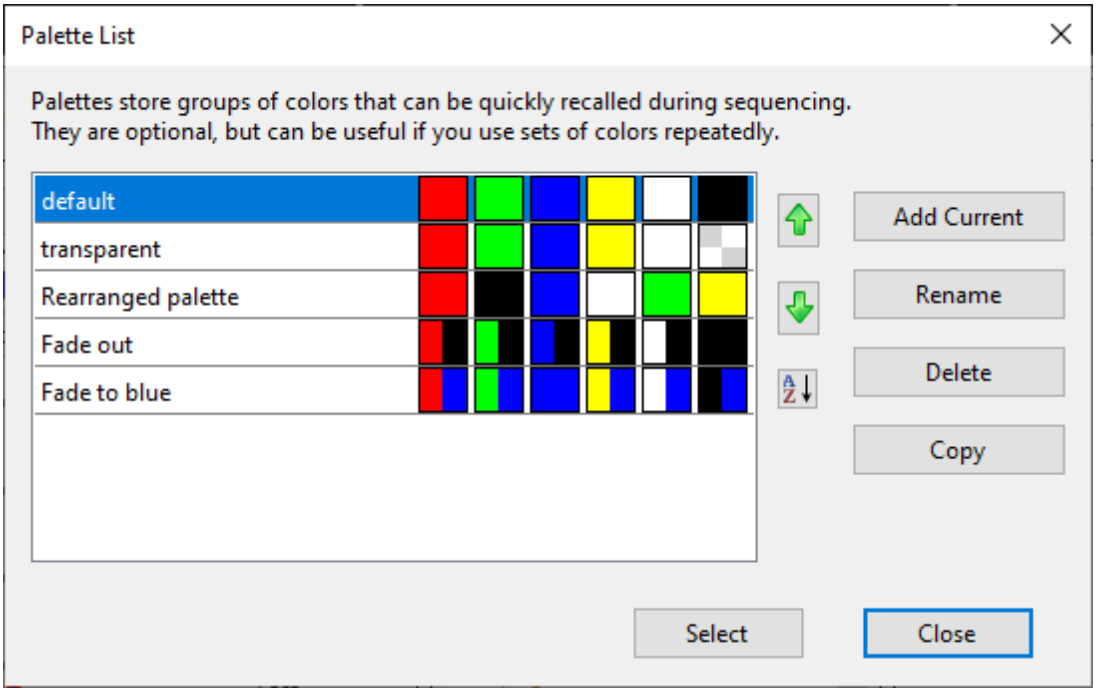
Manage Color Palettes

The current palette (6 colors) can be saved for later reuse. In fact, you can have an entire collection of color palettes. Manage your palettes or select a saved one by clicking the toolbar icon shown above. This will open the following dialog:



The Palette List dialog

In the Palette List dialog, each palette is listed by name. Following the name are the 6 palette entries. If an entry is split into 2 parts, the left part is the color at the start of an effect and the right part is the color that applies at the end of an effect.

Replace the current palette with one in the list by double-clicking on an entry. Or you can single-click on an entry and then click the Select button.

Click on an entry to select it, then use the up or down arrows to move it to a new position in the list.

Click the sort icon to alphabetize the list.

"Add Current" adds the current palette to the list. You will be prompted for the name.

Click on an entry and then click the "Rename" button to give it a new name.

Click on an entry and then click the "Delete" button to remove it.

Click on an entry and then click the "Copy" button to make a copy of it. You will be prompted for the name.

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Copy/Paste Effect Panel Settings

There is a special clipboard that can hold effect panel settings. The settings include the current effect, the current palette, and the effect parameters. A single clipboard is shared by the left and right panels. The value stored in the clipboard does not go away when the Motion Effect Generator is closed. It stays there for as long as the Sequencer program remains open.

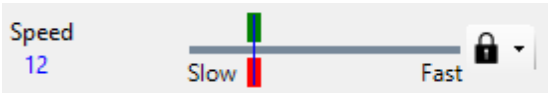
Here is a simple example to demonstrate how this works. In the mixer area of the Effect Generator, there is a "Copy left effect to the right" button (right arrow icon). You can use these copy and paste buttons to perform the same task. Click the copy button on the left panel, then click the paste button on the right panel. The effect you have on the left panel is now also on the right panel.

More importantly, you can use these buttons to combine the left side of one effect with the right side of another effect. If you have a sequence open, double-click on a motion effect to open it in the Motion Effect Generator. Click the copy icon on the left side. Close the Motion Effect Generator. Now double-click on a different effect. Click the paste icon on the right side. You have just copied the left side of the first effect into the right side of the second effect. You can use the same technique when creating motion effect favorites -- instead of double-clicking on motion effects in the sequence, you would be double-clicking on entries in the motion effect favorites tree..

5.3.6.3 Using the Effect Slider

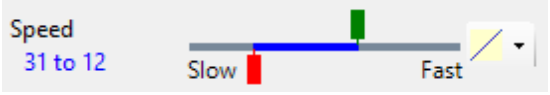
Basic Operation

In the Sequencer's Motion Effect Generator, the top of the effect slider is green, indicating the value that will be used when the effect begins. The bottom of the slider is red, indicating the value that will be used when the effect ends. By default, the red and green handles are locked together, which is indicated by the lock icon . In this mode, the value does not change during the course of the effect, and the value can be changed by dragging the top or bottom handle using your mouse.



Speed fixed at 12

However, if you double-click anywhere along the effect slider, the handles will become unlocked and you can set the start and stop values independently. In the example below, the speed will start out fast and then get slower during the course of the effect. To re-lock the start and stop positions, just double-click on the slider again.



Speed starts at 31 and slows to 12

Keyboard Operation

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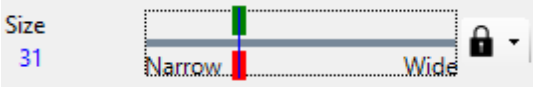
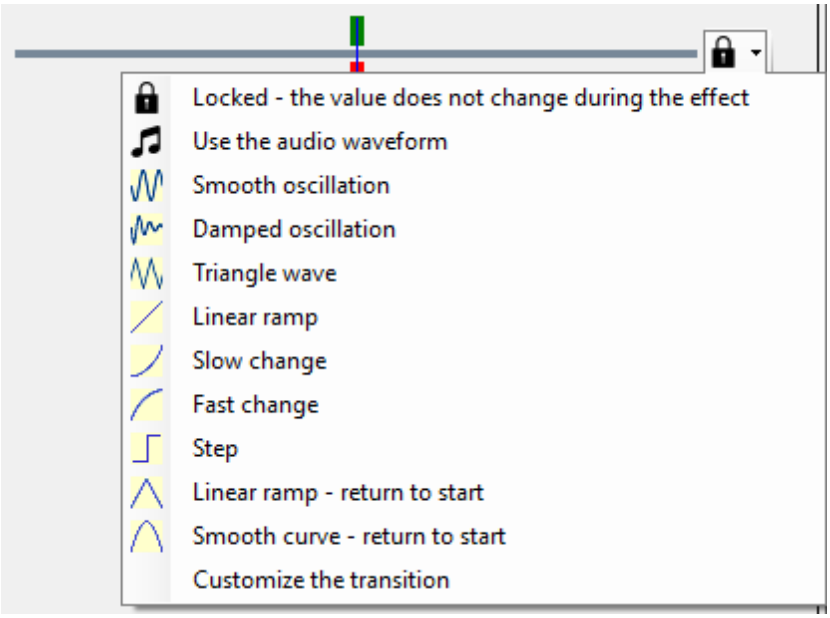
After clicking on a slider using your mouse, the slider will have "focus", meaning that the value can be adjusted using the left and right arrows on your keyboard. A slider with focus will have a box drawn around it, as shown below. You can move focus to the next control using the tab key. You can move focus to the previous control using the shift-tab keyboard combination.



A slider with focus

Transition Modes

You can customize how the value transitions from the start value to the end value by clicking on the icon to the right of the slider. This will open the menu of choices shown below:



Slider transition menu

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Icon	Mode
	Slider is locked. The start and end values are always the same.
	Slider value changes with the loudness of the music. The start value corresponds to low volumes, and the end value corresponds to high volumes.
	Slider value smoothly oscillates between the start value and the end value (sine wave).
	Slider value starts oscillating between the start and end values, but dampens to the mid-point between the start and end values when the effect finishes.
	Slider value ramps back and forth between the start and end values (triangle wave).
	Slider value ramps from the start value to the end value (linear).
	The transition starts slowly and then speeds up.
	The transition starts quickly and then slows down.
	The transition happens all at once (step).
	The slider value ramps from start value to end value and then returns back to the start value.
	The slider value smoothly transitions from start value to end value and back to the start value

Customizing the Transition

Opening the slider transition menu and selecting "Customize the transition" (last option) allows you to further customize how the transition occurs during the course of the effect. For transitions that oscillate, you can customize the oscillation frequency as shown below:

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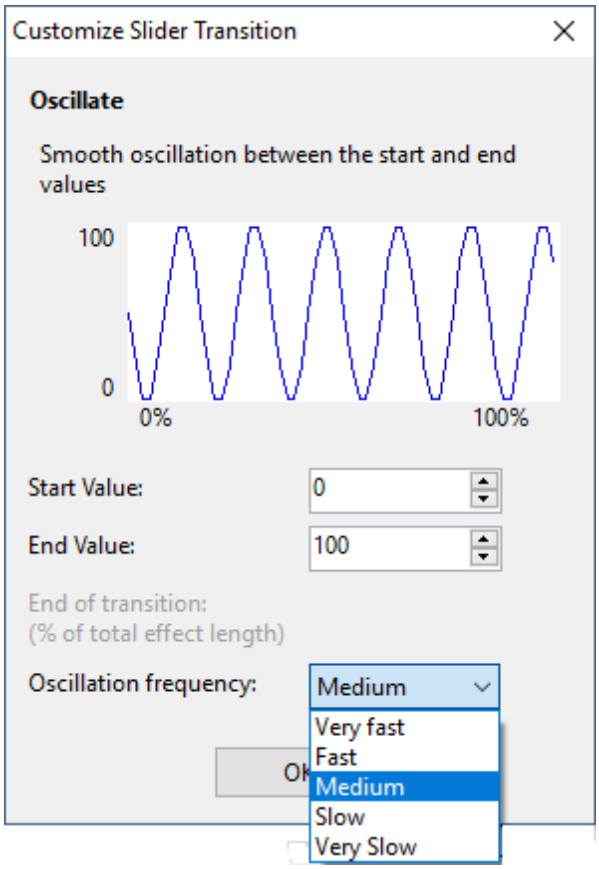

Customizing the oscillation frequency

For most transitions, you can also customize when the transition ends. This is specified as a percentage of the total effect length. It is especially useful for the step transition mode, as this controls when the step occurs. In the picture below, the step transition is customized to occur at 50% of the way through the effect.

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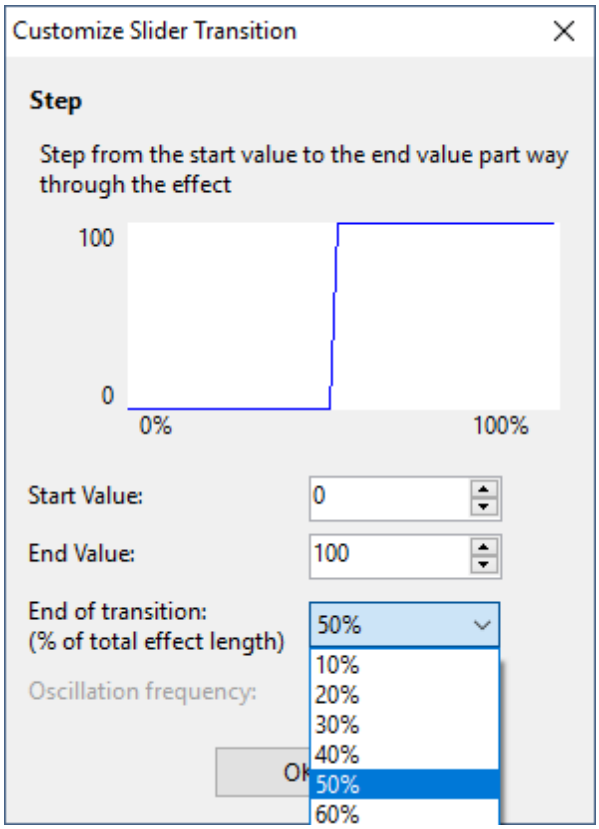

Customizing the end of the transition

5.3.6.4 Mixing Two Effects

In the Sequencer's Motion Effect Generator, you can use just the left side of the window to create your effects. But for even more creative possibilities, you can create a second effect on the right and see the mixed result in the middle. Controls below the middle window adjust how the left and right sides are mixed. You can select the type of mixing with the drop down, then control the strength (more left or more right) using the slider. You can also adjust the brightness of the result using the Brightness Mode drop down.

- Mix Types
- Copy/Swap Buttons
- Sparkle
- Brightness Modes
- Masking Effects on One Side
- Masking Effects on Arbitrary Rows or Columns

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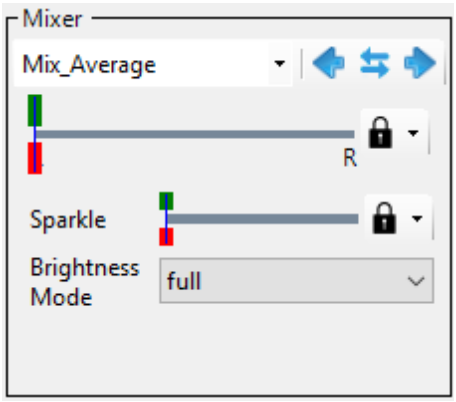
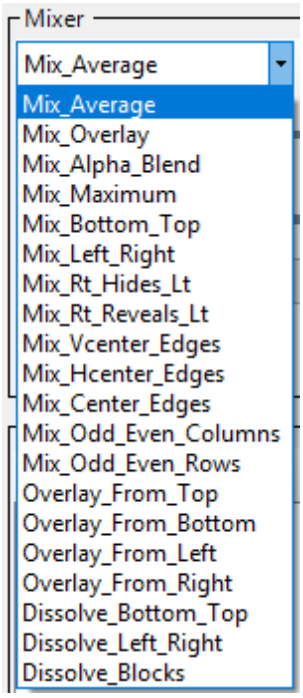


Mixer Section of the Motion Effect Generator

Mix Types



Mix Types

Mix Average

The combined effect is a weighted average of the effect on the left side with the effect on the right side. The weighting is determined by the slider below the Mix Type selector. Setting the slider all the way to the left will result in the combined effect being the same as the left effect. Setting the slider all the way to the right will result in the combined effect being the same as the right effect. Setting a transition mode on the slider can be a used to smoothly transition between the left and right effects.

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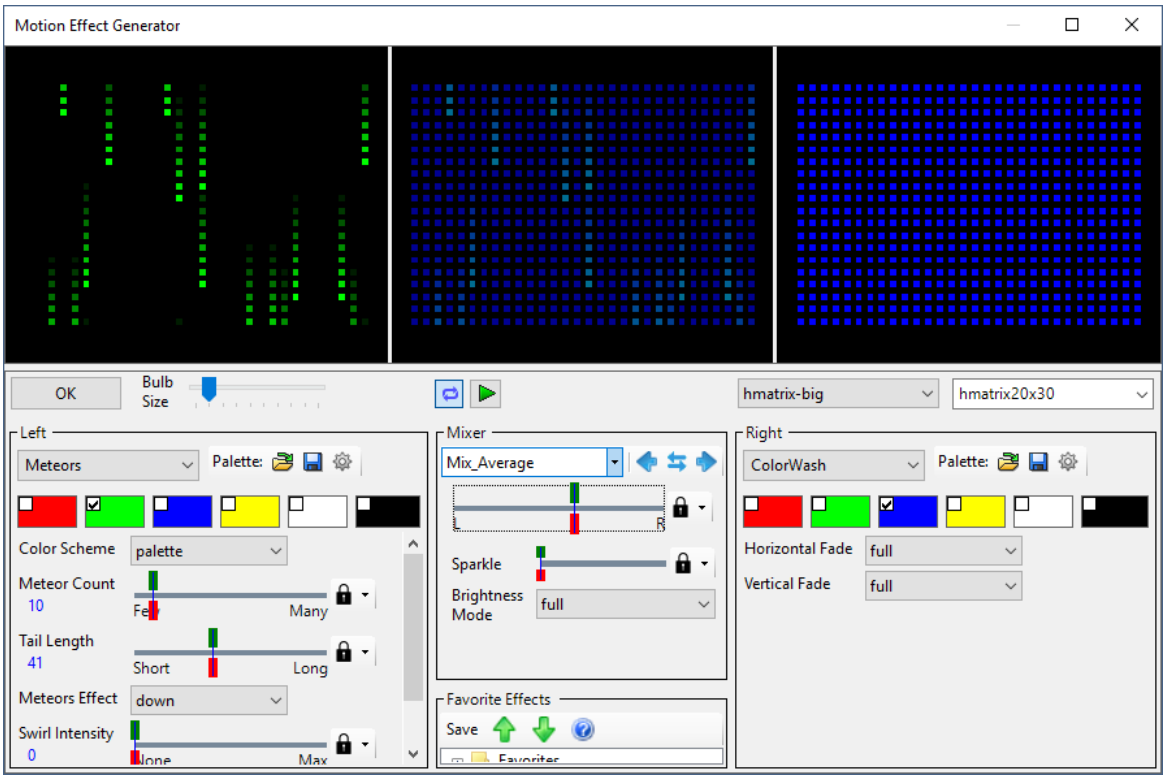

A 50% mix of left and right, leaves both effects dimmed in the combined effect.

Mix Overlay

Areas that are completely black on one side, will be replaced by the corresponding area on the other side. Areas that are not black on both sides will behave like Mix Average.

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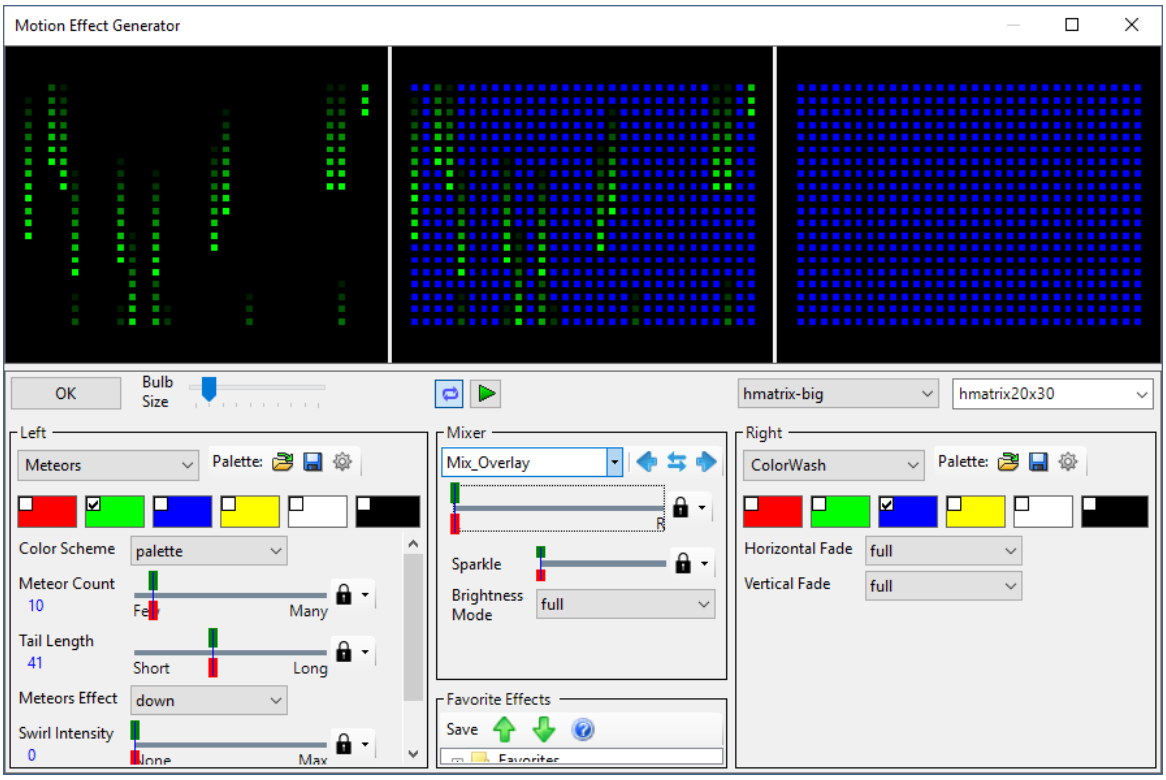

In Mix Overlay mode, the transparency of the meteor tails is not taken into account.

Mix Alpha Blend

Darkened areas of effects are treated as partially transparent (or completely transparent if black). The combined effect overlays the left effect on top of the right effect, blending the areas that are partially transparent.

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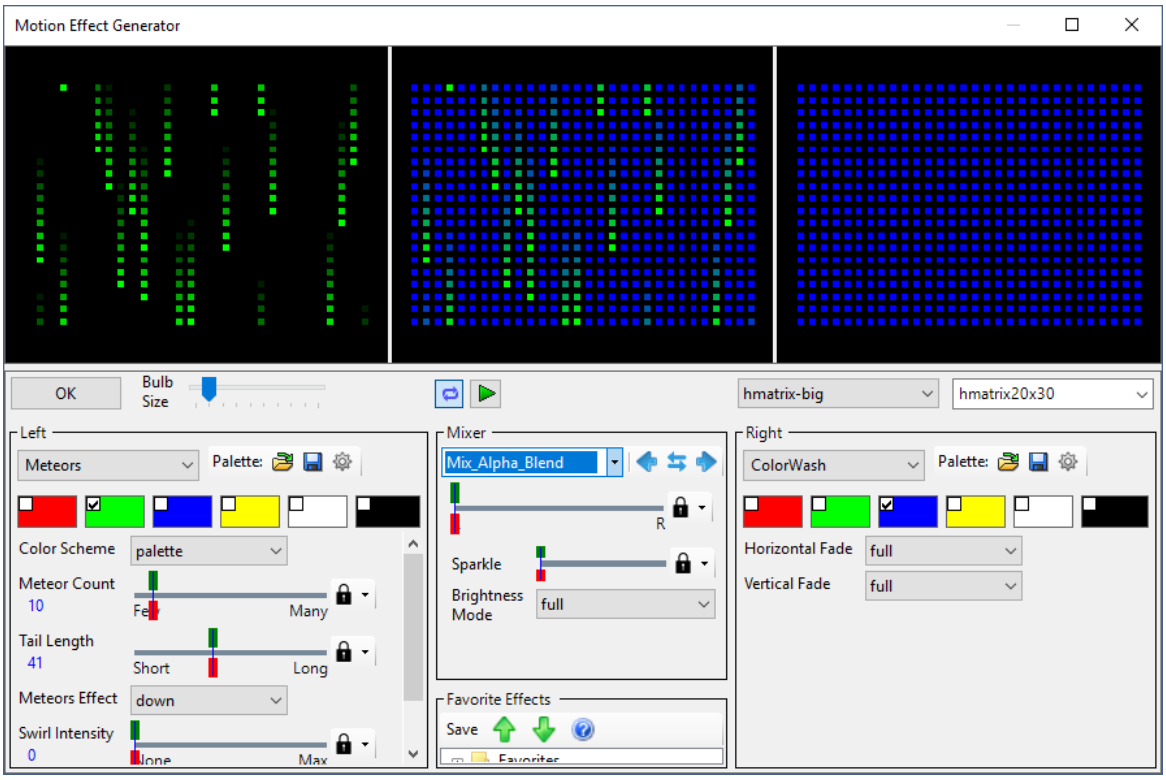

With Mix Alpha Blend, the tails of the green meteors are properly blended with the blue background.

Note that the Picture effect also supports transparency:

- GIF images can have a single color that is designated as the transparent color, and any pixels with that color are treated as transparent. Thus pixels in a GIF image are either fully transparent or fully opaque.
- PNG images support partial transparency -- any pixel in the image can be fully transparent, fully opaque, or somewhere in between.

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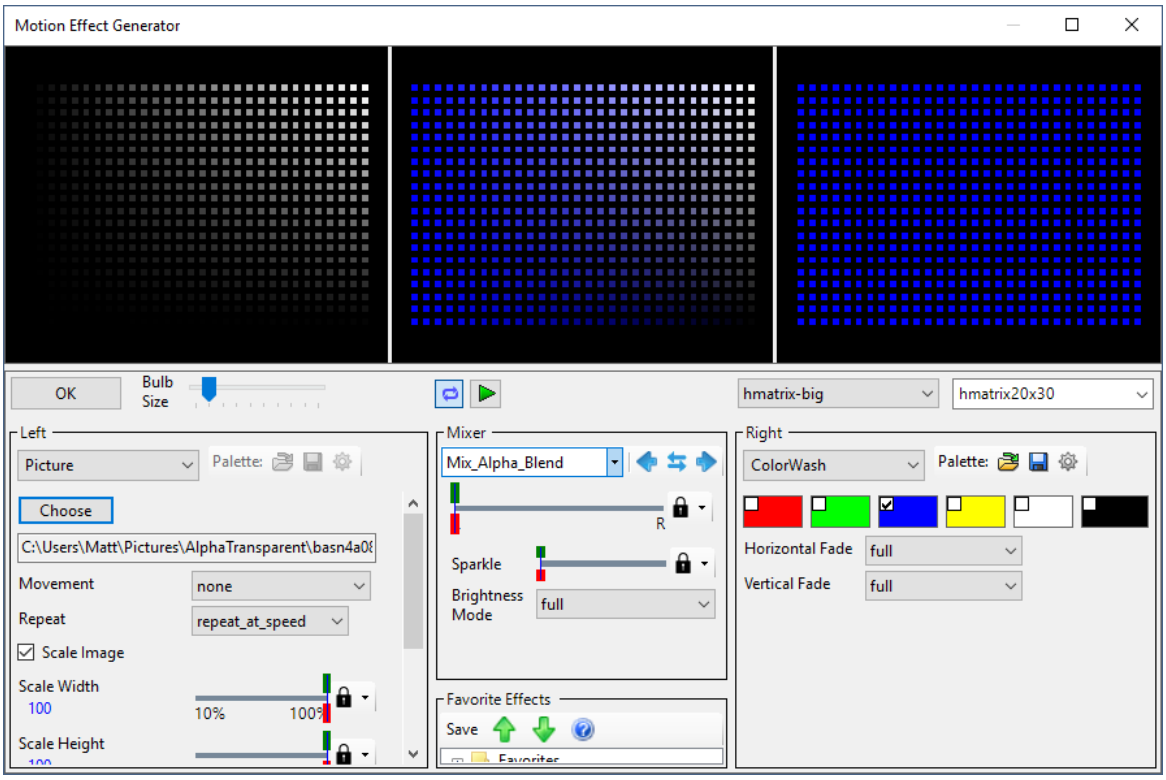

PNG image blended with a blue color wash. The picture on the left is white across the top and gradually fades out to black across the bottom; transparency goes from completely transparent on the left to completely opaque on the right.

Mix Maximum

For each pixel in the combined effect, the pixels from both sides are used to achieve maximum brightness. This is calculated as the maximum of the red values from each side, the maximum of the green values from each side, and the maximum of the blue values from each side.

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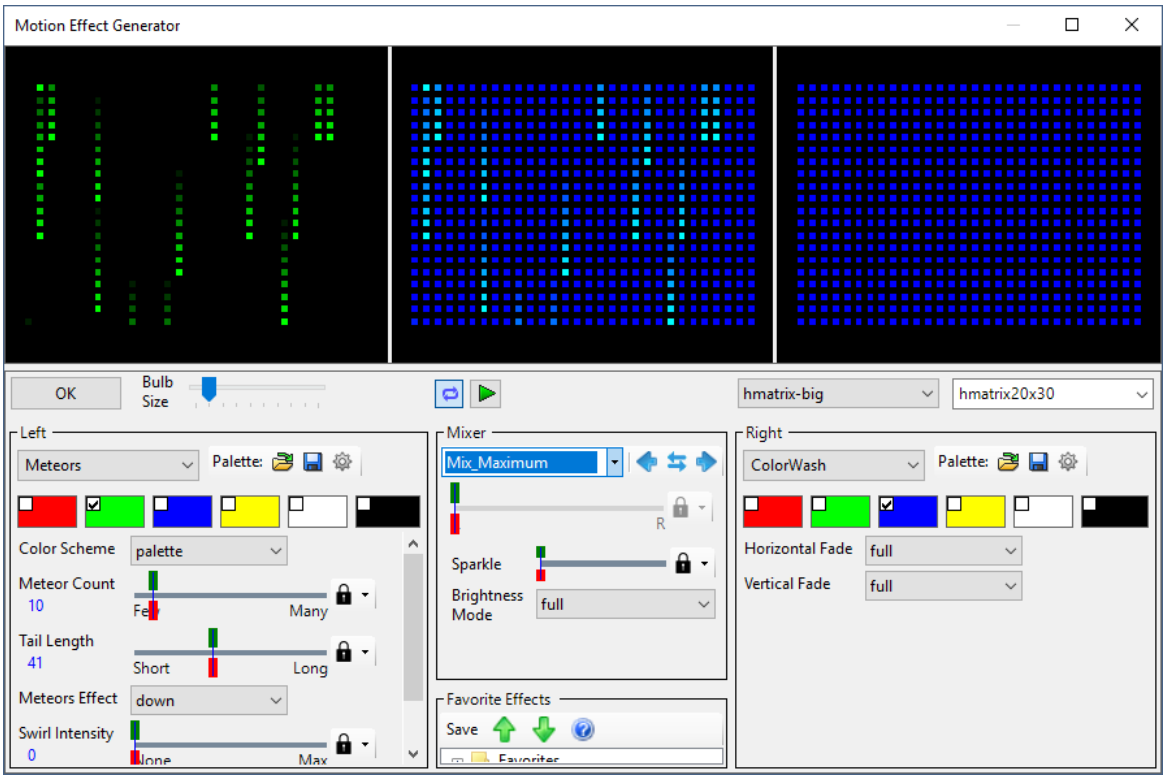

In Mix Maximum mode, the meteor tails get blended, but produce the wrong color (teal instead of green).

Mix Bottom / Top

The left effect is used on the bottom portion of the combined effect, and the right effect is used on the top portion. The split between bottom and top is controlled by the slider below the Mix Type selector.

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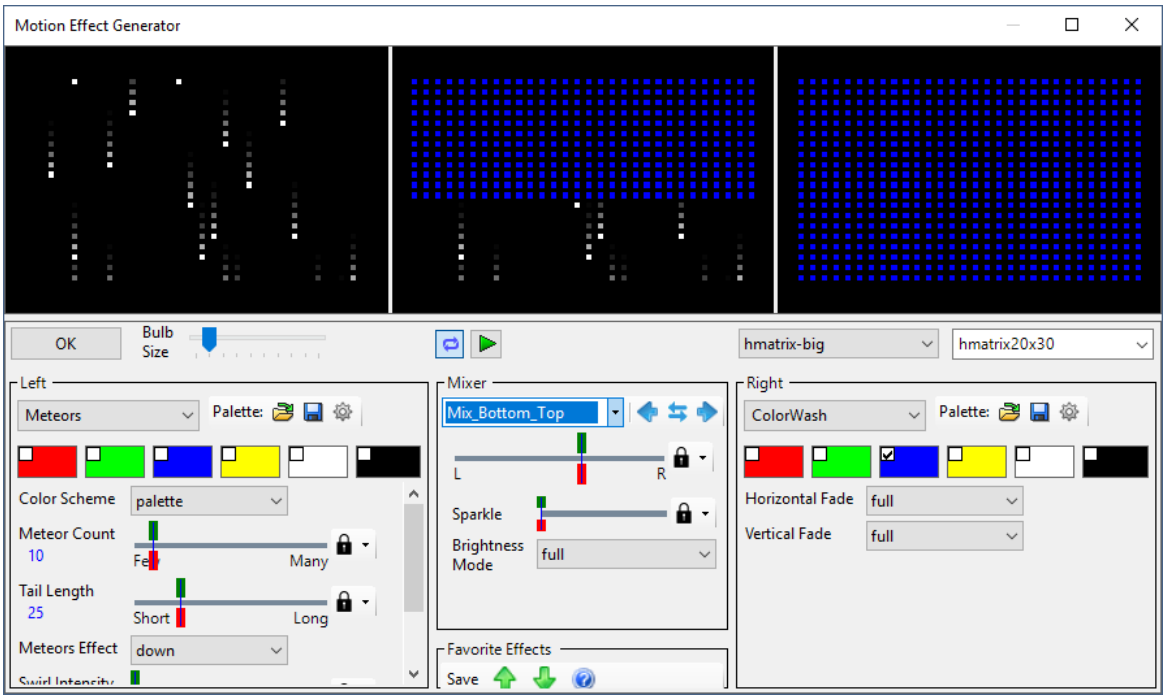
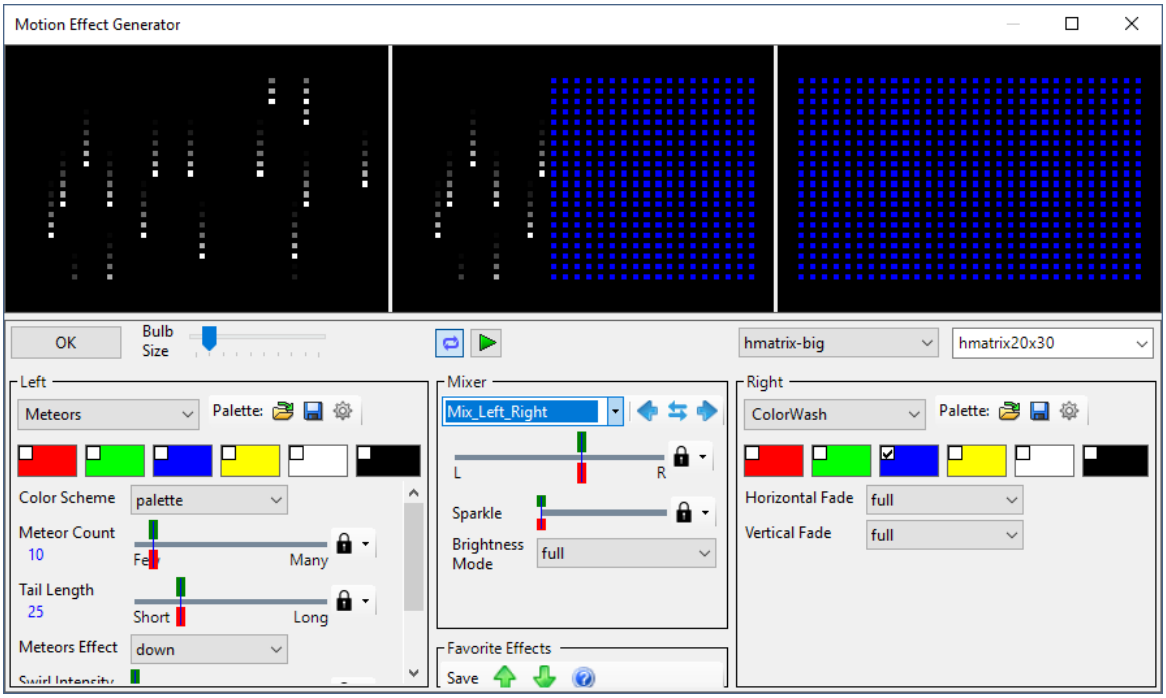


Mix Bottom / Top example

Mix Left / Right

The left effect is used on the left portion of the combined effect, and the right effect is used on the right portion. The split between left and right is controlled by the slider below the Mix Type selector.



Mix Left / Right example

Mix Right Hides Left

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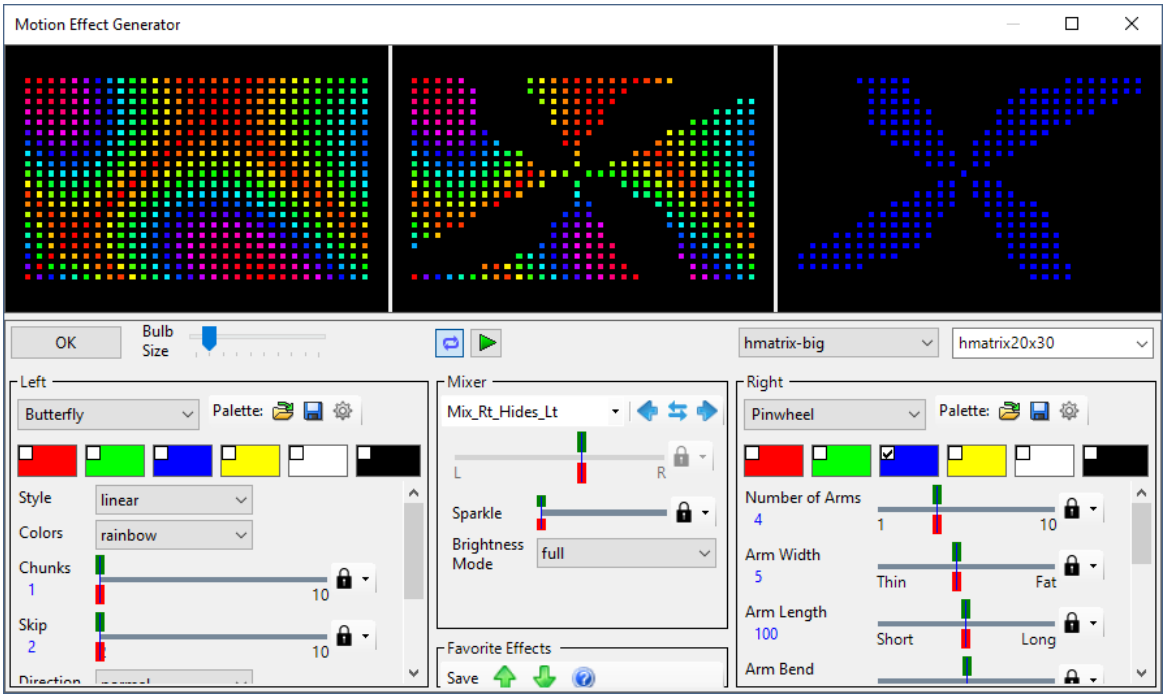
The combined effect is the left effect, except where there are non-black pixels on the right. In other words, the right side creates a hole in the left side.



Mix Right Hides Left example

Mix Right Reveals Left

The combined effect is the left effect, only where there are non-black pixels on the right.

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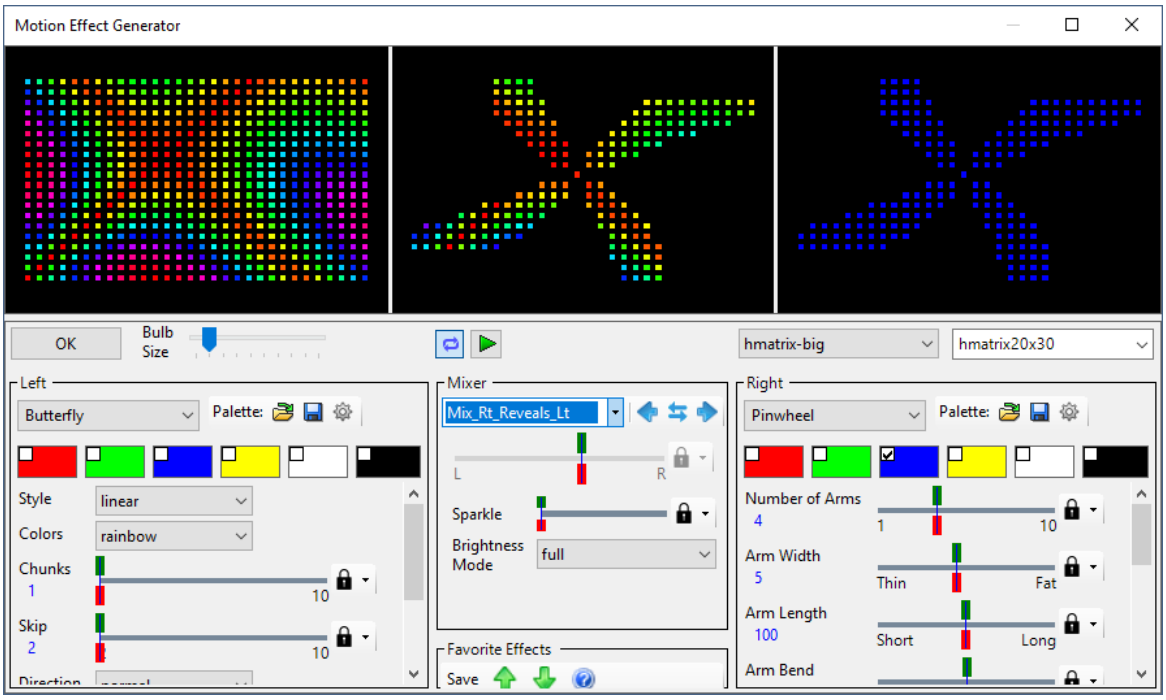
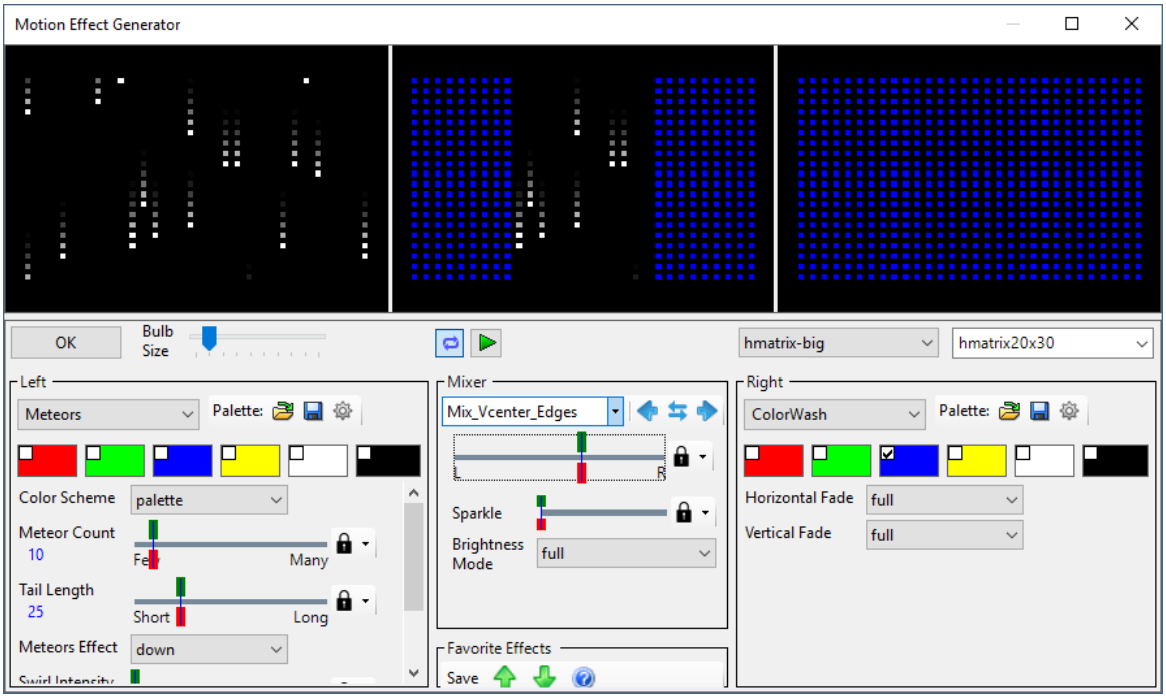


Mix Right Reveals Left example

Mix Vertical Center / Edges

The left effect is used on the center portion of the combined effect, and the right effect is used on the left and right edges. The split between the center and edges is controlled by the slider below the Mix Type selector.



Mix Vertical Center / Edges example

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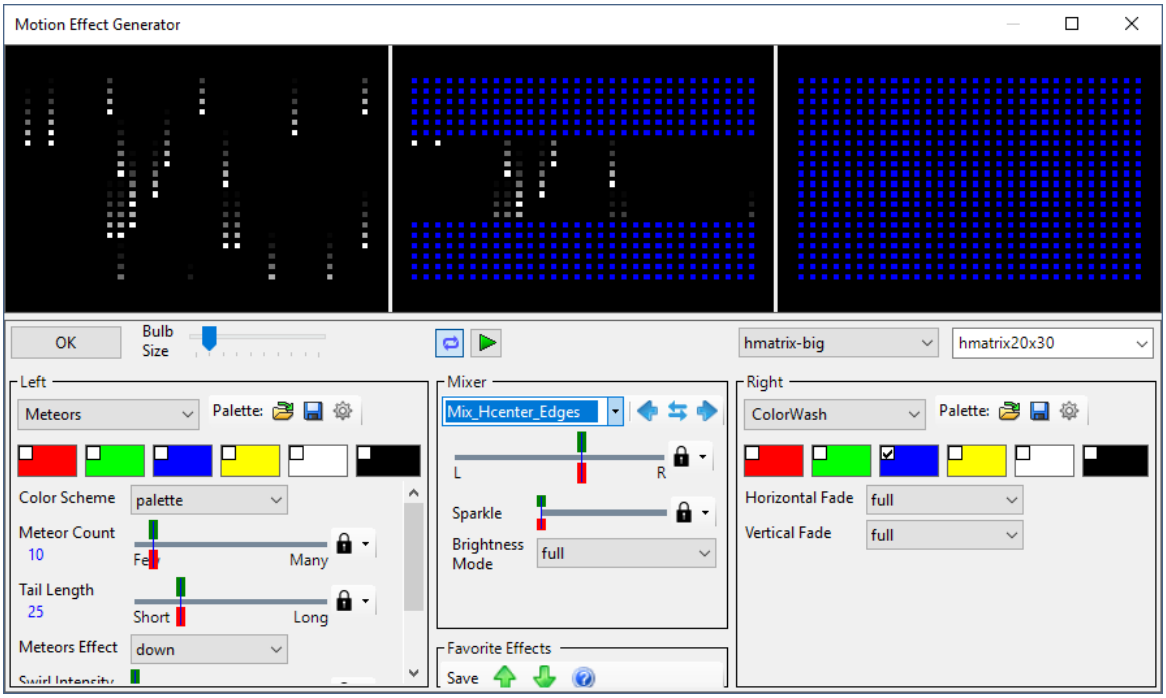
Mix Horizontal Center / Edges

The left effect is used on the middle portion of the combined effect, and the right effect is used on the top and bottom edges. The split between the middle and edges is controlled by the slider below the Mix Type selector.



Mix Horizontal Center / Edges example

Mix Center / Edges

The left effect is used on the center portion of the combined effect, and the right effect is used on all edges. The split between the center and edges is controlled by the slider below the Mix Type selector.

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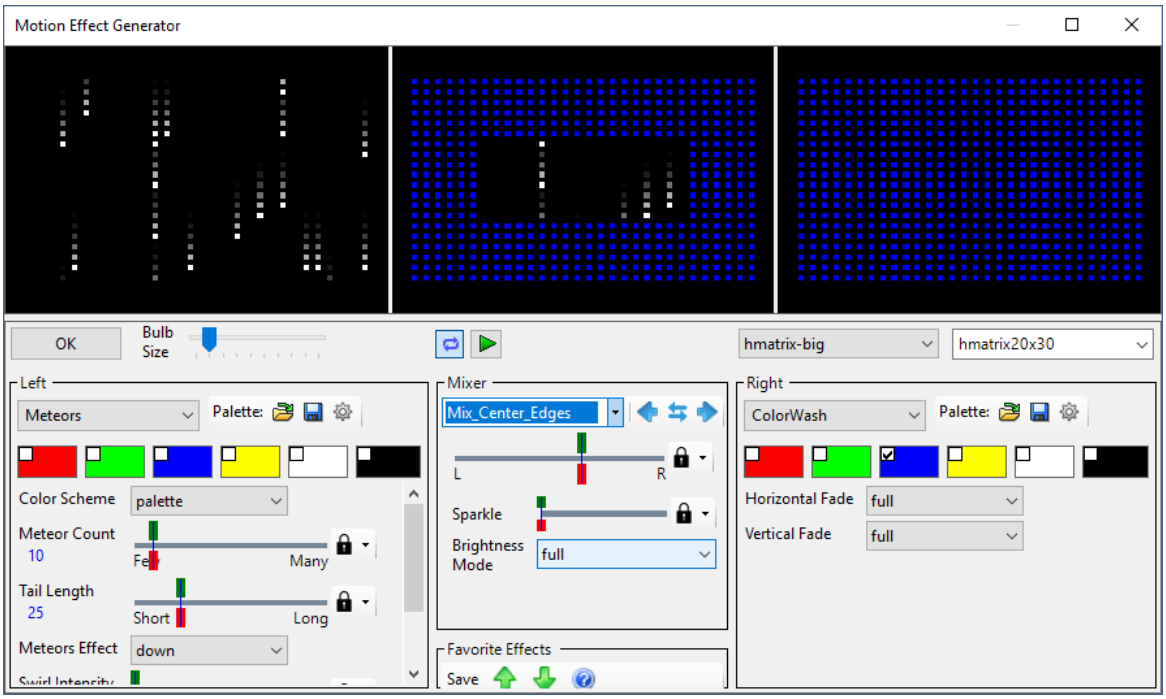

Mix Center / Edges example

Mix Odd / Even Columns

The left effect is used on odd-numbered columns of the combined effect, and the right effect is used on even-numbered columns.

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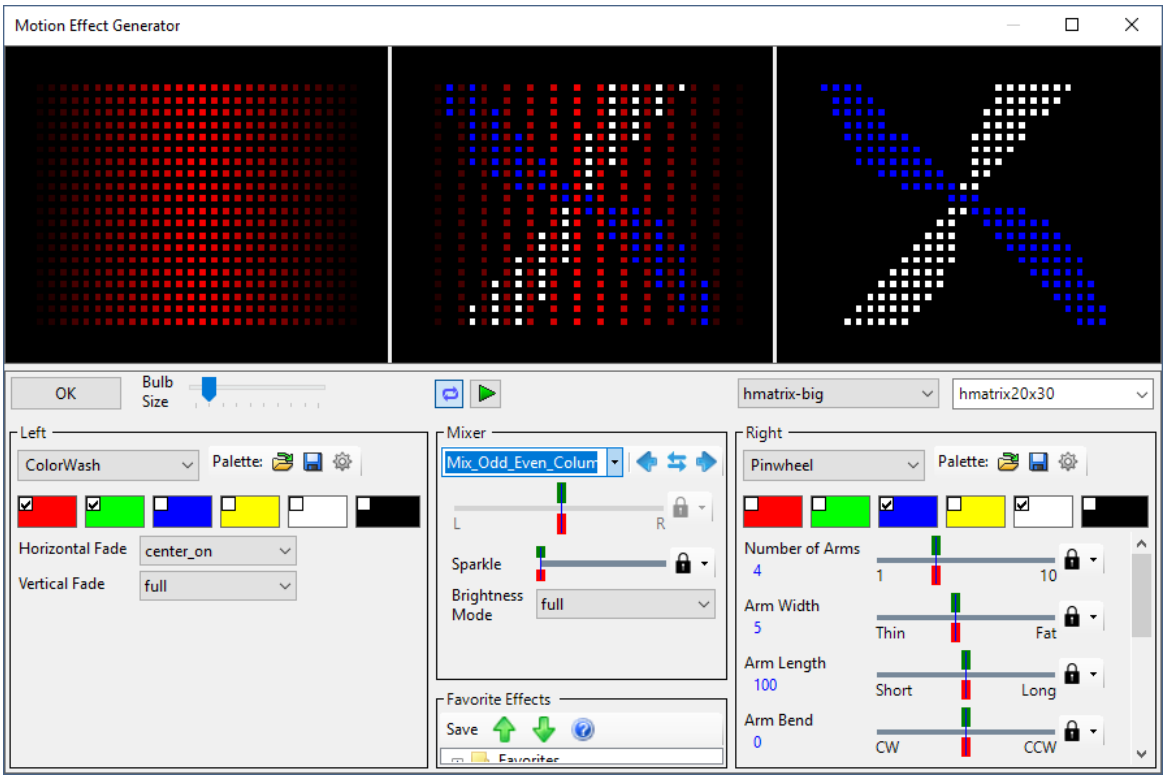

Mix Odd / Even Columns example

Mix Odd / Even Rows

The left effect is used on odd-numbered rows of the combined effect, and the right effect is used on even-numbered rows.

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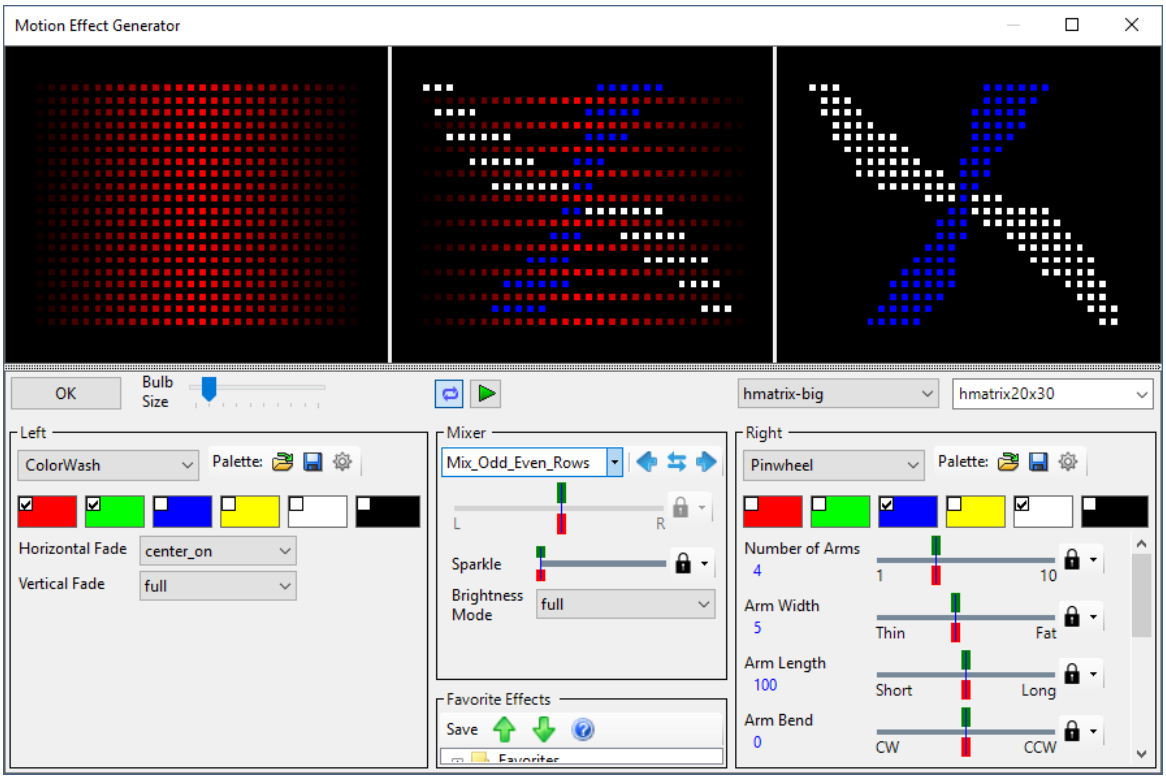

Mix Odd / Even Rows example

Overlay From Top

This does an alpha blend on the top and the right effect on the bottom. The split between bottom and top is controlled by the slider below the Mix Type selector.

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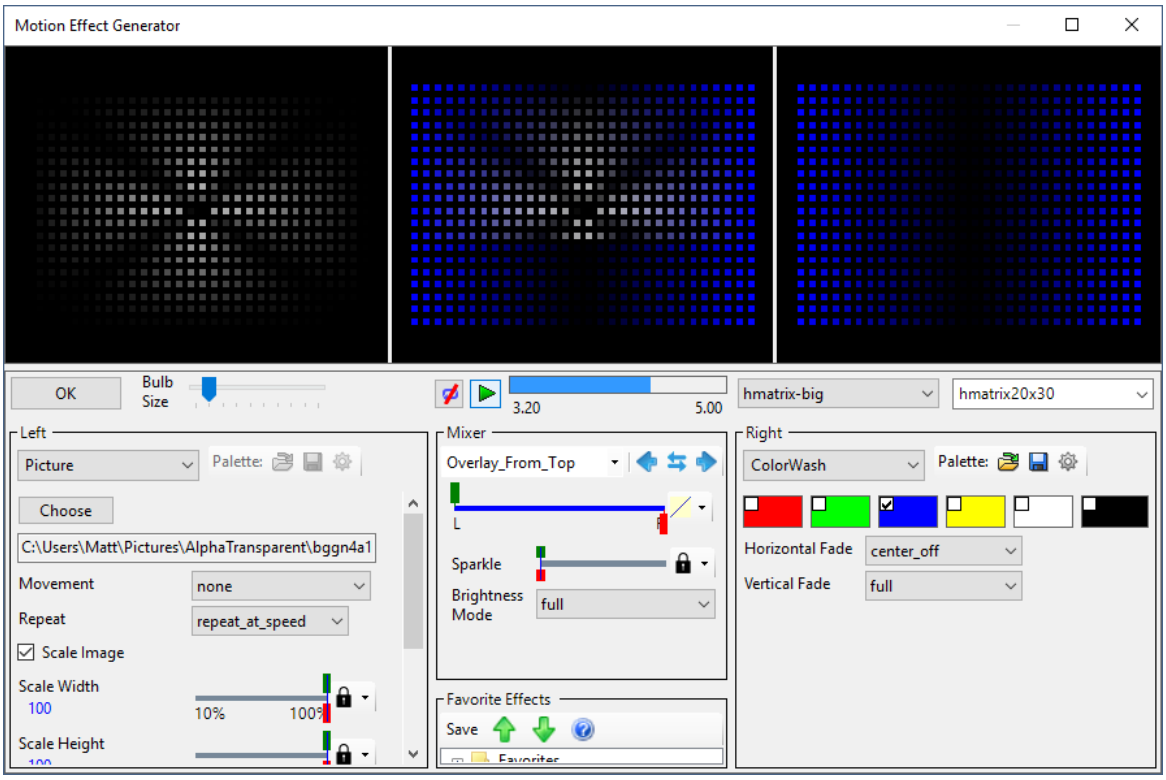

Overlay From Top example

Overlay From Bottom

This does an alpha blend on the bottom and the right effect on the top. The split between bottom and top is controlled by the slider below the Mix Type selector.

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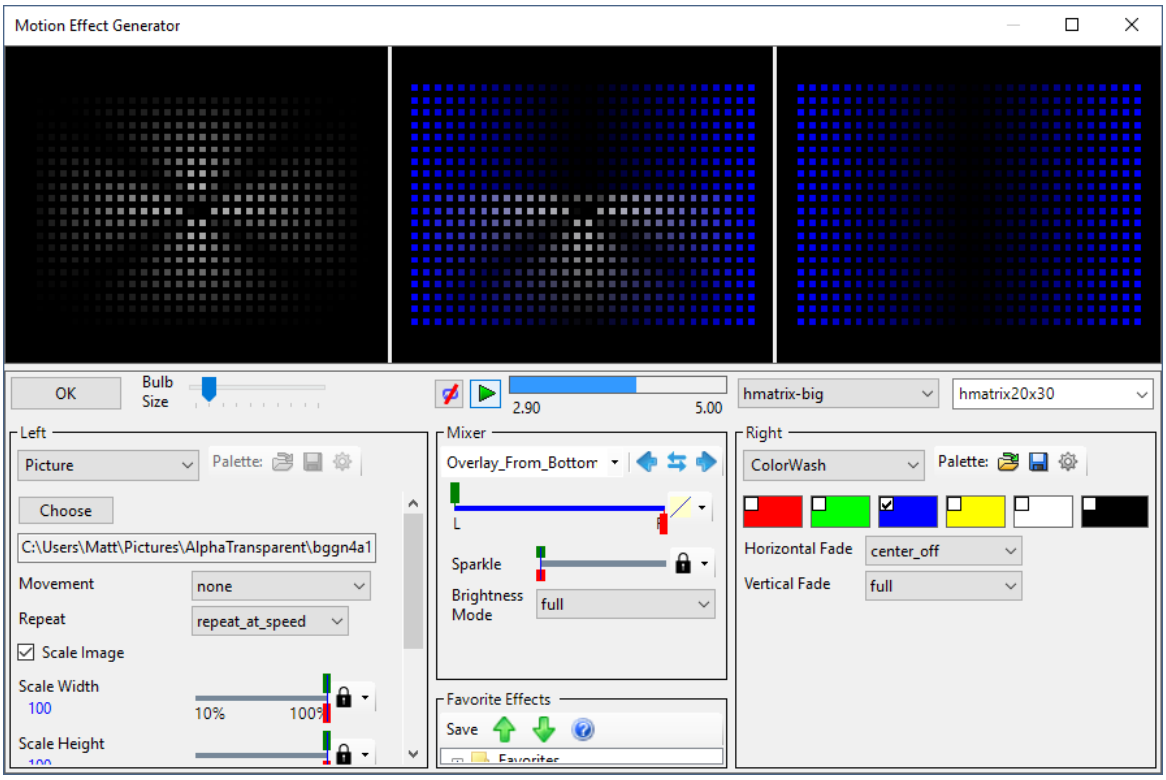

Overlay From Bottom example

Overlay From Left

This does an alpha blend on the left and the right effect on the right. The split between left and right is controlled by the slider below the Mix Type selector.

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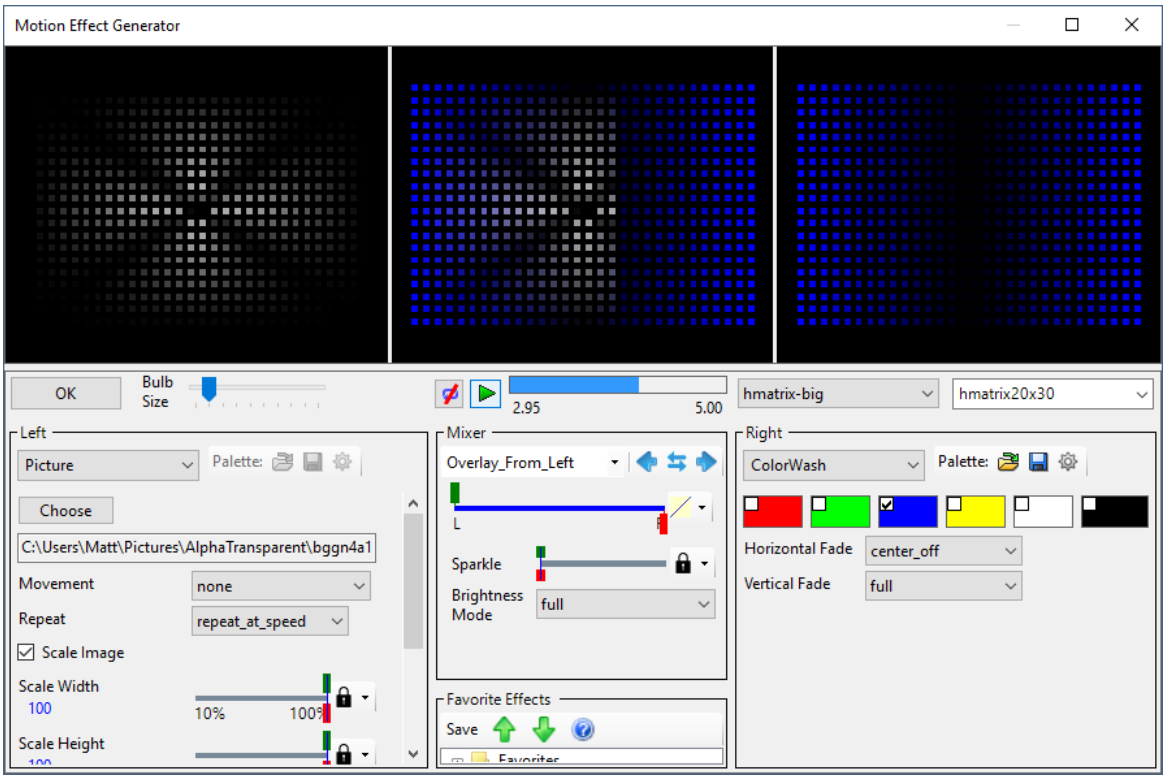

Overlay From Left example

Overlay From Right

This does an alpha blend on the right and the right effect on the left. The split between left and right is controlled by the slider below the Mix Type selector.

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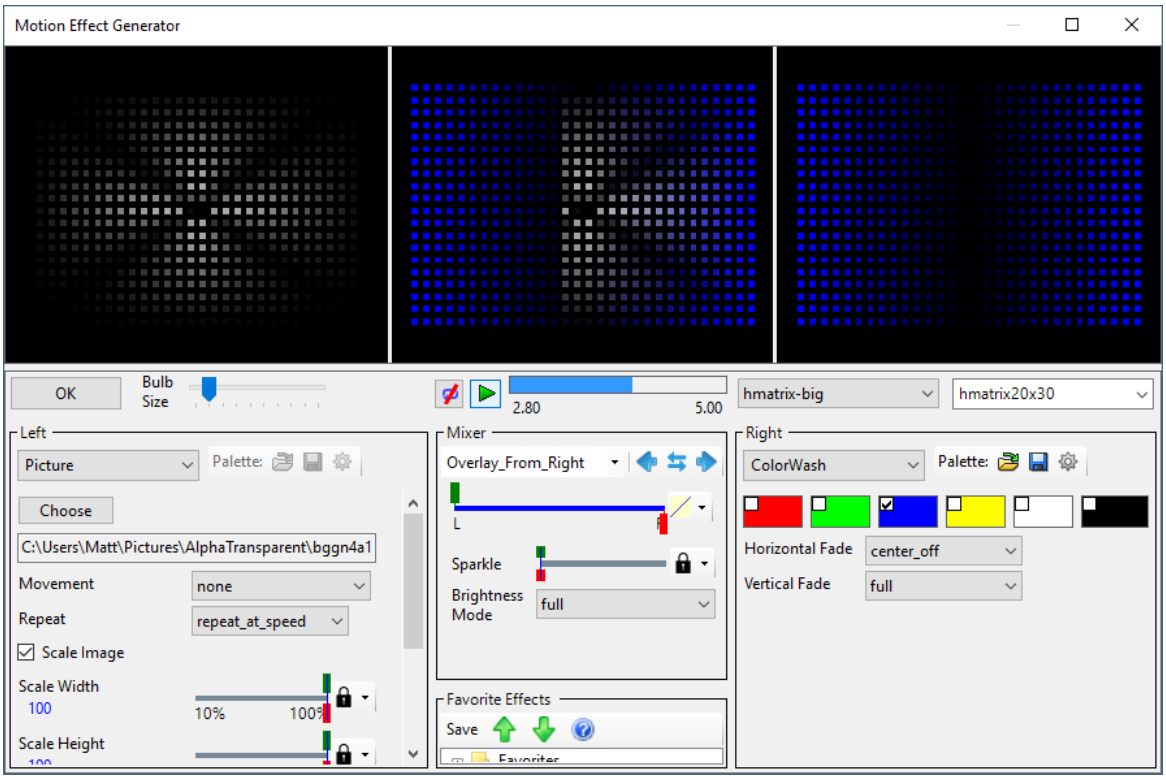

Overlay From Right example

Dissolve Bottom / Top

This is like Mix Bottom / Top, except that the transition area is blended.

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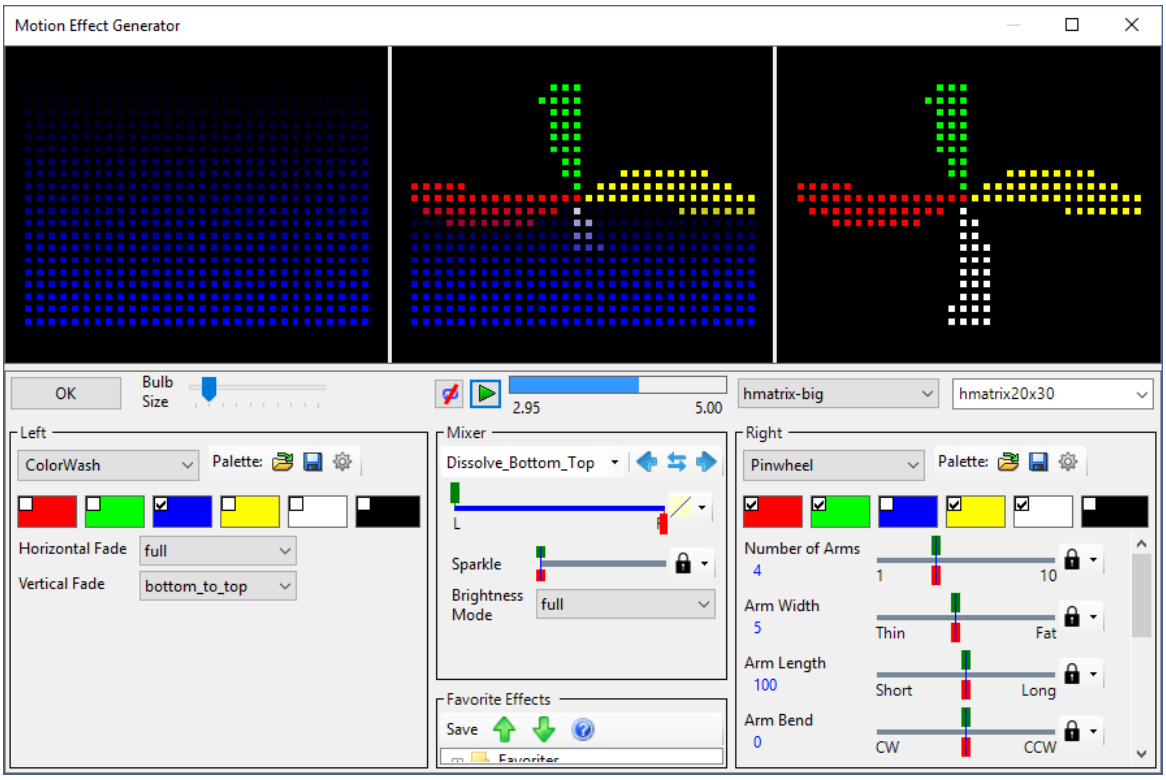

A transition from the left effect to the right effect, with a blended area in the middle.

Dissolve Left / Right

This is like Mix Left / Right, except that the transition area is blended.

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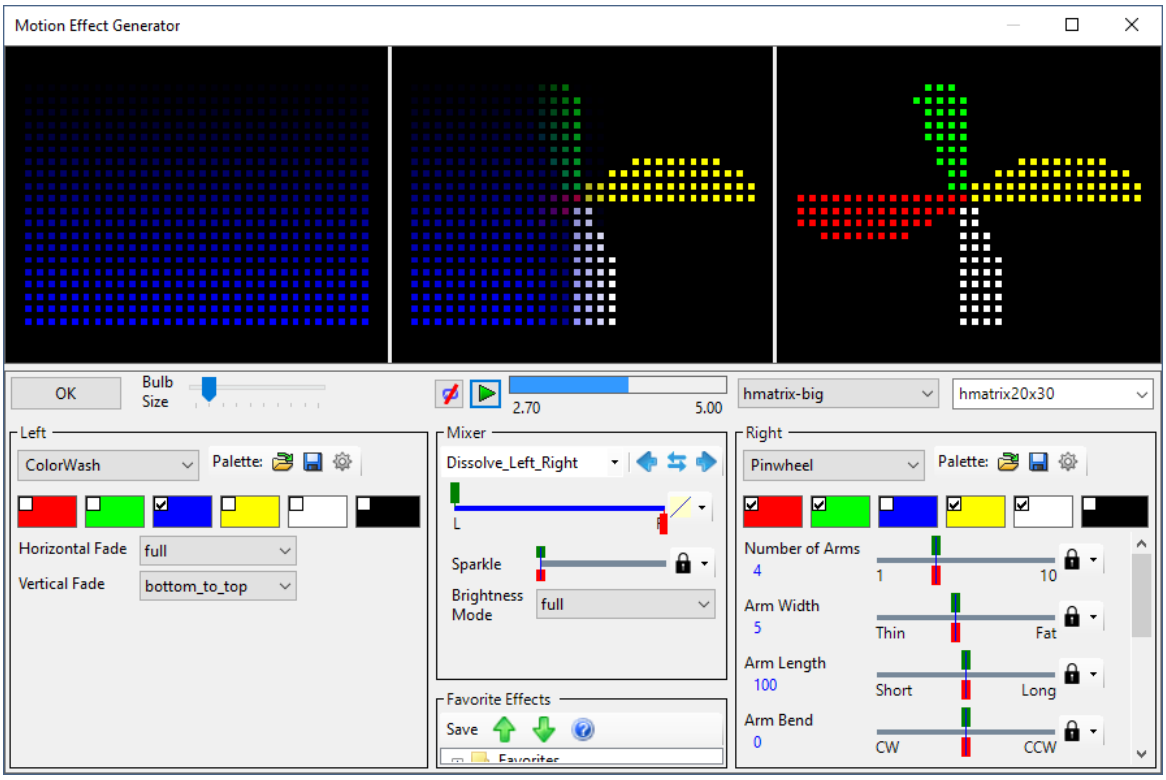

A transition from the left effect to the right effect, with a blended area in the center.

Dissolve Blocks

This divides the effect area into 9 sub-blocks (3 x 3) and transitions one block at a time.

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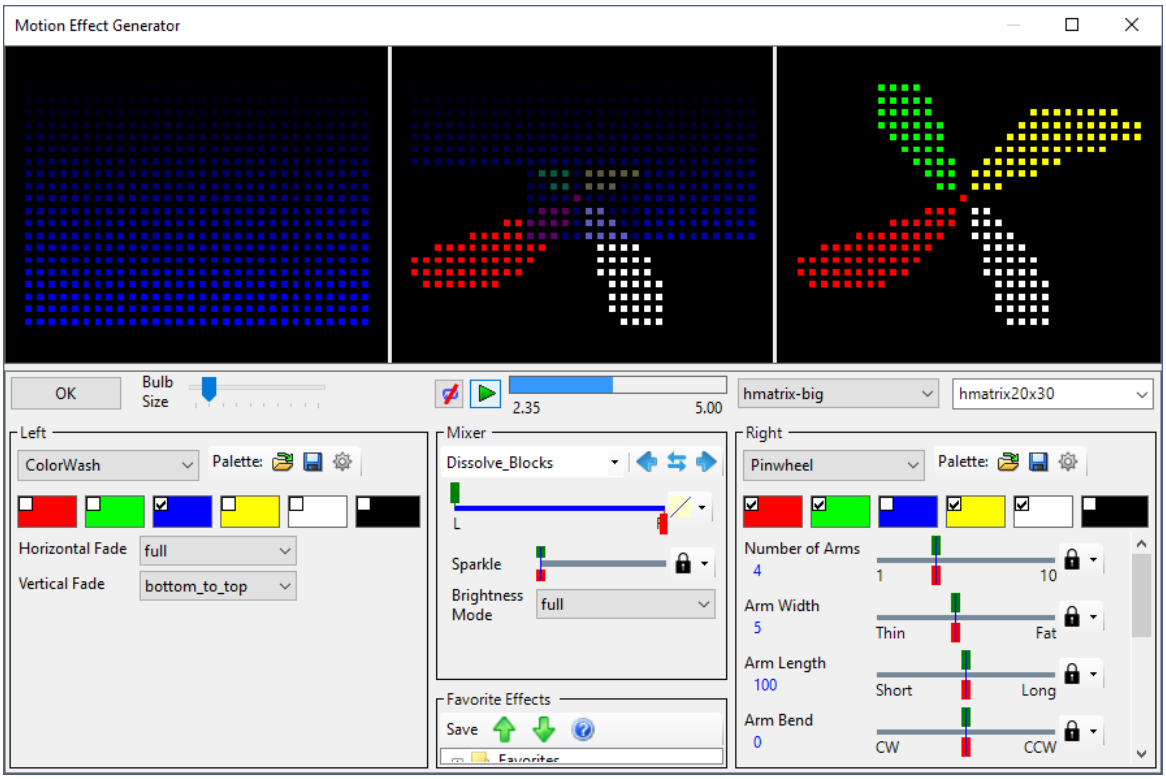

Here, 4 of the 9 blocks have completely transitioned, and the 5th block (center) is partially transitioned.

Copy/Swap Buttons

In some cases, you might want to copy an effect from one side to the other, or to swap them. This can be done using the buttons to the right of the mix type selector. If the buttons are not displayed, try making the Motion Effect dialog wider by dragging the left or right edge of the dialog.

Button	Action
	Copies the effect on the right side to the left side.
	Swaps the effects on the left and right sides.
	Copies the effect on the left side to the right side.

Sparkle

The Sparkle slider does what it says: move it to the right to add some sparkle to the combined effect. Move it farther to the right and sparkles will be created at a faster rate.

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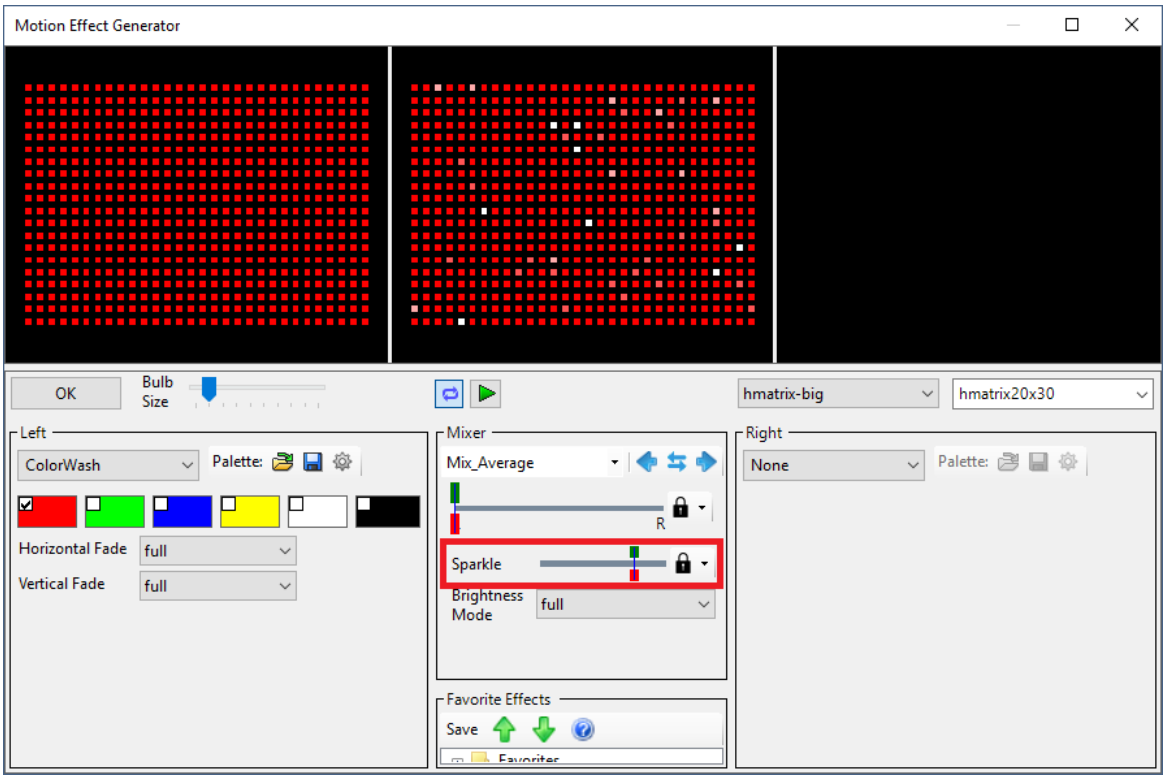
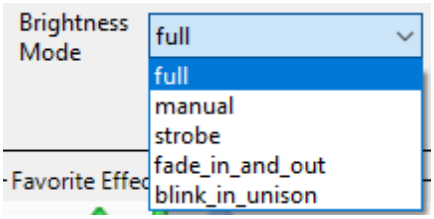


Sparkle applied to a red Color Wash effect

Brightness Modes



Brightness Modes

Full

The "Full" mode displays the effect at maximum brightness. Note that with the brightness mode set to "Full", the effect can still be dimmed by placing the effect in the sequence grid at less than 100% intensity.

Manual

Switching to "Manual" mode will display a slider below the Brightness Mode selector, allowing you to manually adjust the brightness of the combined effect. Move the slider to the left to make the effect dimmer; move it to the right to make it brighter.

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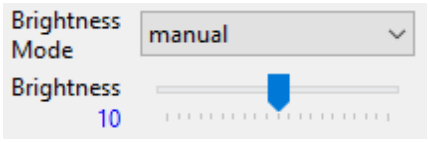
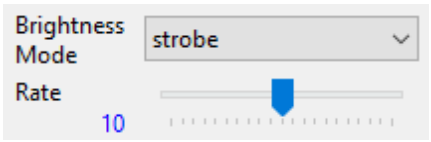


Manual brightness example

Strobe

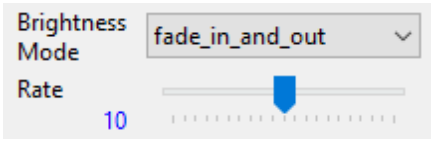
The "Strobe" mode will cause the combined effect to flash with a short "on" time and long "off" time. A slider below the Brightness Mode selector allows you to adjust the flash rate. Move the slider to the left to make the flash rate slower; move it to the right to make it faster.



Strobe example

Fade In And Out

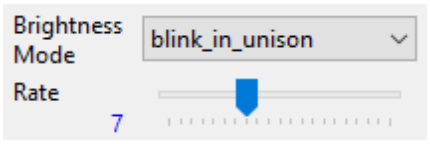
The "Fade In and Out" mode will cause the combined effect to smoothly fade in and out. A slider below the Brightness Mode selector allows you to adjust the fade rate. Move the slider to the left to make the fade rate slower; move it to the right to make it faster.



Fade In And Out example

Blink In Unison

The "Blink In Unison" mode will cause the combined effect to flash with equal on and off times. A slider below the Brightness Mode selector allows you to adjust the blink rate. Move the slider to the left to make the blink rate slower; move it to the right to make it faster. Effects with the same blink rate on multiple props will result in those props blinking in unison (i.e. the blinking will be synchronized).



Blink In Unison example

Masking Effects on One Side

If you just want effects displayed on the left or right side of your prop, set the mixer to "Mix_Left_Right". If you want an effect on the left side of your prop, use the effect selection on the left side of the Effect Generator and make sure the right side effect is set to "none". If you just want the effect on the right side of your prop, use the effect selection on the right side of the Effect Generator and make sure the left side effect is set to "none". Use the slider below the Mix selection to determine where the separation between left and right occurs.

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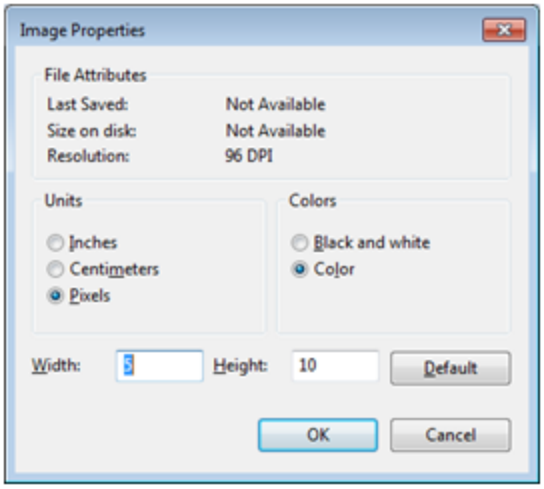
The same technique can be used if you want an effect only displayed at the top or bottom. Just set the mixer to "Mix_Bottom_Top".

Masking Effects on Arbitrary Rows or Columns

Sometimes you just want to light up certain rows or columns on your display element (e.g. a pixel tree or matrix). In this topic we show you how. Here are the steps:

1. Open Microsoft Paint (you can use other paint programs, but you will have to adapt these instructions for your preferred paint program).

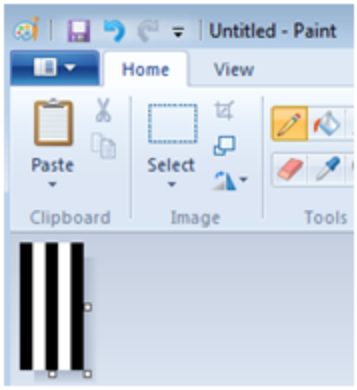
2. Type Ctrl-E to open the image properties. Set the units to "Pixels" and the Colors to "Color". Set the width and height to exactly match the dimensions of your prop. Click "OK" to save the changes.



3. Zoom in as much as possible to make it easier to see your new image.

4. Make the current color black. Use the fill tool (the paint can icon) to turn the entire image black.

5. Make the current color white. Use the pencil tool to draw white in the rows and/or columns where you will want effects displayed. The example shown below is 5 pixels wide by 10 pixels high. Columns 2 and 4 have been painted white. When used as a mask in the following steps, this will only allow effects to be displayed in those two columns.



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6. Save the result as a PNG image (BMP is OK too), and then close Microsoft Paint. Remember where you save it.

7. Open the Motion Effect Generator.

8. On the right side, select the prop you generated the mask for.

9. Change the right effect to "Picture". Click the "Choose" button and select the image file that was created above. Uncheck "Scale Image".

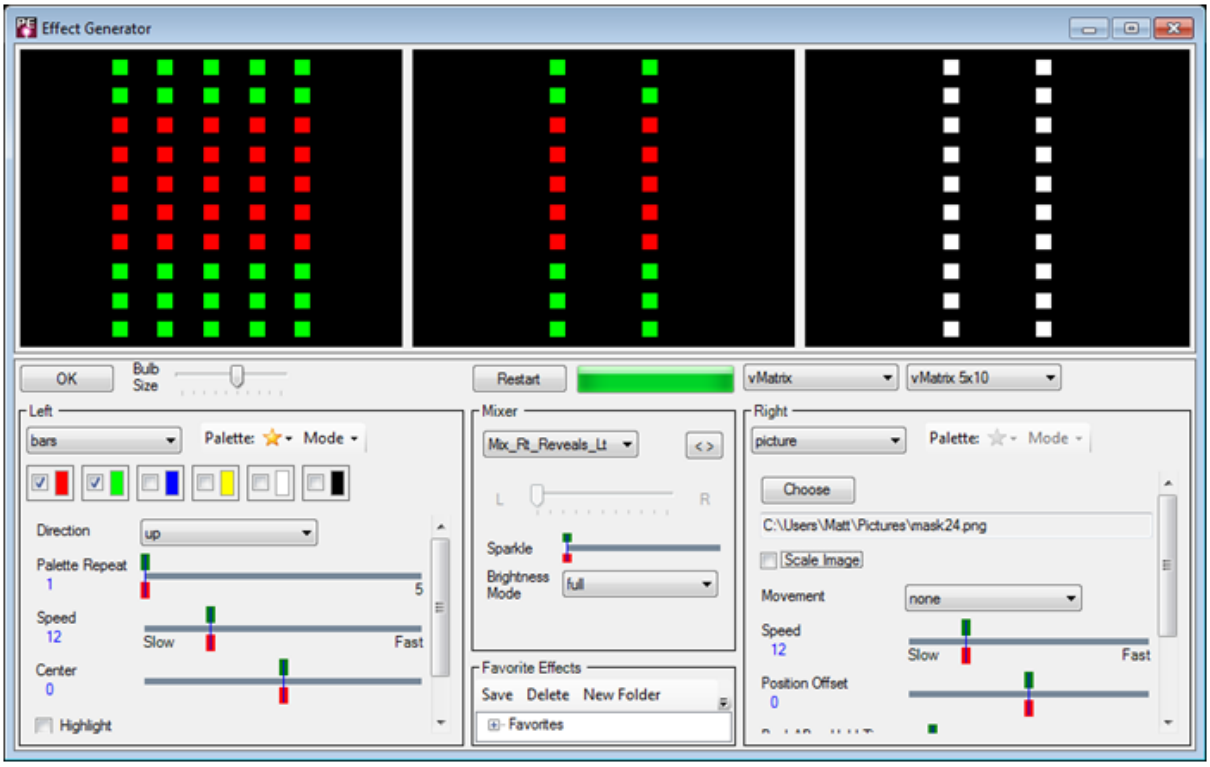
10. In the middle, set the mix to "Mix Rt. Reveals Lt."

11. Change the left effect to the desired effect. Only the rows or columns you enabled (turned white) in your image will light up in the middle (result) window.

12. You can enable the opposite columns by changing the mix to "Mix Rt. Hides Lt.".

13. You can make the mask move by changing the "Movement" setting on the picture effect.

Here is the result (the bars effect is shown, but the technique works with any effect selected on the left):



5.3.6.5 Favorites

In the Sequencer's Motion Effect Generator, if you create an effect and want to save it for later use, you can save it to the Favorite Effects area (bottom center). Motion effect favorites can also be viewed in the Effect Samples Window.

There are 2 main sections in the favorites "tree":

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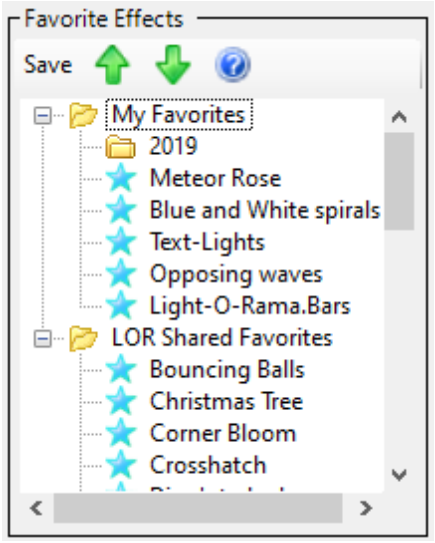
- Effects created by you. These are stored under "My Favorites" and you have full control over these.
- Effects created by Light-O-Rama. These are stored under "LOR Shared Favorites". You can double-click on these effects to load them into the Motion Effect Generator; however, you cannot save or import effects into this section. Light-O-Rama may occasionally update the shared favorites. Updates are downloaded automatically, so you could see additional effects appear here from time to time.



- To save the current Effect Generator settings as a favorite: first click a folder in the favorites tree where the effect should be saved (the first time click on “Favorites”), then click Save.
- To recall a favorite (i.e. load it into the Effect Generator), just double click on it.
- To move an entry up or down: select an entry by left-clicking on it, then use the up and/or down arrows on the toolbar to move it to the desired position. You may find dragging and dropping items in the tree a faster method to move items around.

Right-Click Menu

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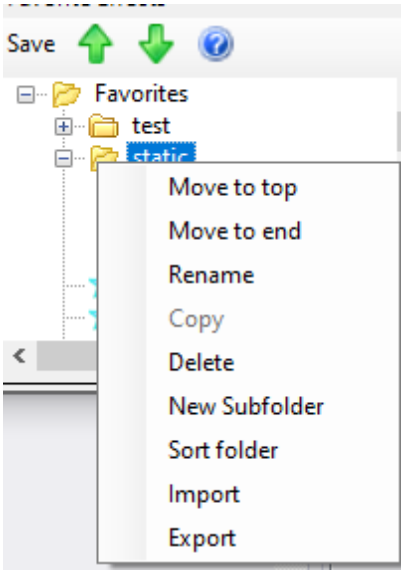

Right-click menu

Right-click on a folder or effect to view additional actions you can take. No menu will be displayed if you right-click on "LOR Shared Favorites" or any folder below it.

- **Move to top** - makes the selected item (effect or folder) the first one in its branch of the tree.
- **Move to end** - makes the selected item (effect or folder) the last one in its branch of the tree.
- **Rename** - used to rename an effect or folder. You will be prompted for the new name.
- **Copy** - used to make a copy of an exiting favorite effect. You will be prompted for the name of the copy.
- **Delete** - used to delete an effect or an entire branch of the tree.
- **New Subfolder** - used to add a new branch to the tree. You will be prompted for the name of the new folder.
- **Sort folder** - used to alphabetize the items in a folder.
- **Import** - used to import favorites from a file. You will be prompted for the file to import (must have an LPEFAV extension). Imported favorites will become children of the selected folder. Use this function to import favorites sent to you by another user.
- **Export** - used to export favorites to a file. You will be prompted for the directory and file name. All children of the selected folder will be exported. This file will have an LPEFAV extension. Use this function to send some of your favorites to another user.

Drag And Drop

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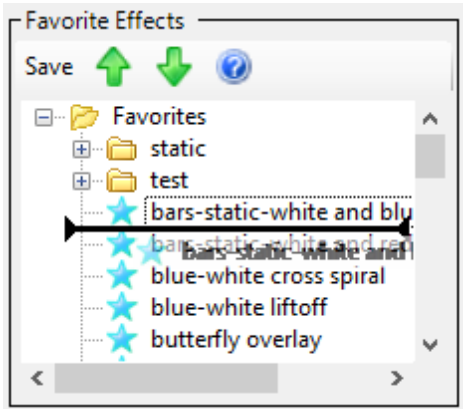


A drag operation in progress

- You can drag existing favorites up or down to reorder them. You can also drag them into another folder to reorganize your tree.
- You can drag folders up or down to reorder them. Or you can drop them onto another folder to reorganize your tree.
- You cannot drag anything under the "LOR Shared Favorites" folder.

5.3.6.6 Effect Length

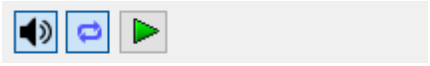
In the Sequencer, every effect on the sequence grid has a length. Even when you open the Motion Effect Generator with no sequence open, effects are displayed with a default length of 5 seconds. Over the course of the effect, palette colors and parameter values can change:

- You can set a color transition for a palette entry. The effect will begin with the starting color and smoothly transition to the ending color.
- For slider controls, you can set a starting and ending value or have the value change with the loudness of the music.

Playback Modes

There are 2 playback modes in the Motion Effect Generator: continuous and fixed. The mode is switched by clicking the button with the blue loop icon.

- Continuous Playback: playback never stops. After effect playback has reached the effect length, the ending value of color transitions and slider controls is used.



Continuous playback

- Fixed Playback: playback stops once the effect length is reached. A progress bar shows playback status.

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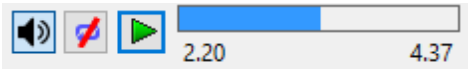
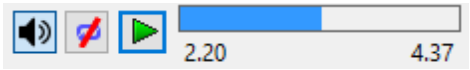


Fixed playback (loop button has a slash through it)

Restart Effect Button

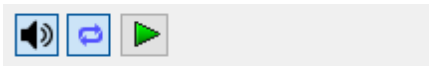
In both modes, a play button is available to restart the effect from the beginning.



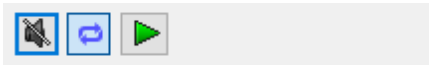
Play button (third from the left)

Mute Button

When editing effects in musical sequences, a mute button is displayed so you can choose to hear the music that goes with the effect, or not.



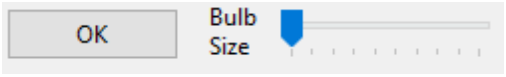
Sound enabled



Sound disabled

5.3.6.7 Bulb Size

The Sequencer's Motion Effect Generator has a bulb size setting that is separate from the preview bulb size. To change the bulb size for the prop currently displayed in the Motion Effect Generator, move the slider next to the OK/Cancel buttons.



5.3.6.8 Motion Effect Reference

Each effect in the Motion Effect Generator is listed here along with details about the effect's associated controls.

- Archimedes Spiral
- Audio
- Bars
- Blended Bars
- Butterfly
- Color Wash
- Countdown
- Curtain
- Fire
- Fireworks

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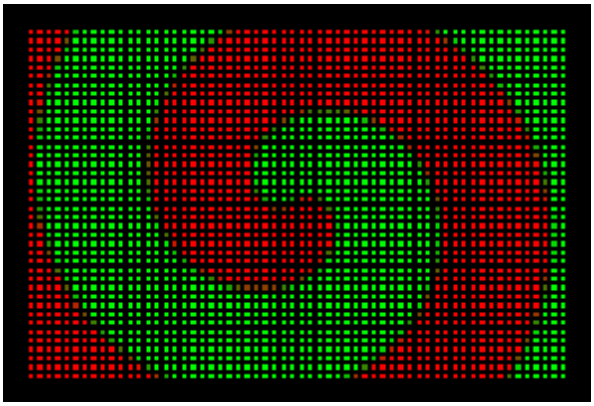
- Garland
- Hold
- Lightning
- Marquee
- Meteors
- Movie
- None
- Picture
- Picture XY
- Pinwheel
- Ripple
- Scanner
- Simple Shape
- Single Block
- Snowflakes
- Spin Fade
- Spinner
- Spirals
- Straight Lines
- Text
- Text PE
- Twinkle
- Wave

Archimedes Spiral



- **Palette Repeat** - If the value of this slider is 1, then one spiral arm will be drawn for each color selected. Setting this value to 2 doubles the number of arms, 3 triples the number of arms, etc.

- **Arm Width** - The value of this slider determines the thickness of each arm.

- **Arm Length** - The value of this slider controls the length of the spiral arms. A value of 100 will usually cover the entire drawing area.

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- **Speed** - The value of this slider determines how fast the spiral rotates. A negative value rotates in one direction and a positive value rotates in the opposite direction. A value of 0 will stop the rotation.

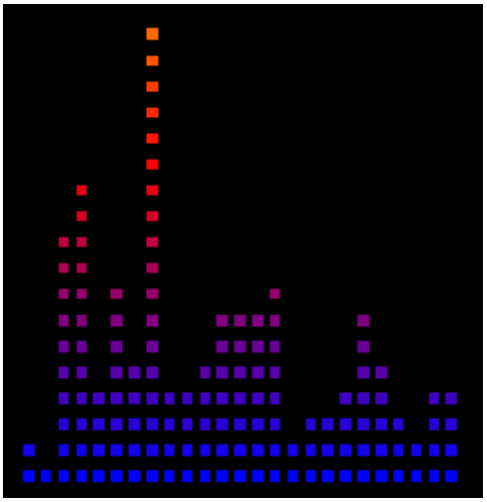
- **Reverse Spiral** - When this box is unchecked, the spirals are drawn in a clockwise direction from the center. When the box is checked, the spirals are drawn in a counter-clockwise direction.

- **Highlight** - if this box is checked, then a thin white line is drawn between each arm.

- **Left / Right** - The value of this slider controls the center of the spiral along the horizontal axis.

- **Top / Bottom** - The value of this slider controls the center of the spiral along the vertical axis.

Audio



- **Style** - This controls how the audio is displayed. "Spectrum" shows a spectrogram, similar to an audio equalizer display. "Wave Outline" displays a continuous outline of the waveform. "Wave Fill" is similar to "Wave Outline" except that the waveform is filled in. "Color Organ Freq" uses data from the spectrogram to control the intensity of rows or columns. "Color Organ Pitch" is similar, but uses data from the spectrogram with pitch detection. "Color Intensity" displays a color blend of the chosen palette colors and varies the intensity of the blend based on the intensity of sound in the selected frequency range. "Color Selector" displays a single color chosen from the range defined by the selected palette colors; the color choice is based on the intensity of sound in the selected frequency range.

- **Baseline** - This selects the orientation of the selected display style. Note that the baseline can be altered using the "Flip Vertical" and "Flip Horizontal" boxes.

- **Color varies** - When multiple colors are selected, this controls whether the resulting color blend runs horizontally or vertically.

- **Scale** - This controls how sensitive the display is to the music.

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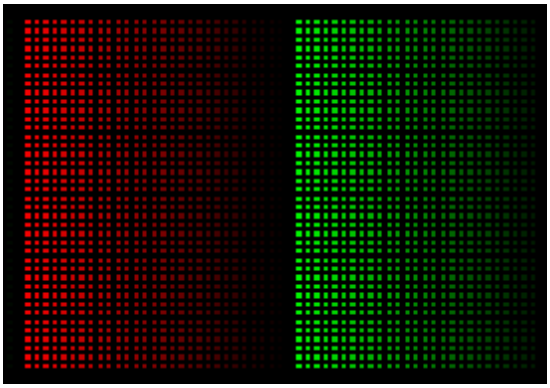
- **Freq Range (Hz)** - This controls the range of frequencies used in controlling the display. Many times you may want the full frequency range, which is the default. However, if you just want it to respond to percussion, change the range to 40-100 Hz or so.
- **Flip Vertical** - Checking this box flips the display top to bottom.
- **Flip Horizontal** - Checking this box flips the display left to right.

Bars



- **Direction** - This setting controls the direction of the bars. Selecting "default" moves the bars along the longest axis.
- **Palette Repeat** - If the value of this slider is 1, then one bar will be drawn for each color selected. Setting this value to 2 doubles the number of bars, 3 triples the number of bars, etc.
- **Speed** - The value of this slider determines how fast the bars move. A value of 0 will stop the movement.
- **Center** - If the direction is set to expand or compress, this slider controls the center of the expansion or compression. A value of 0 places the center in the middle of the prop.
- **Highlight** - If checked, then each bar is drawn with a leading white edge.
- **Show 3D** - If checked, then the trailing edge of each bar fades to black.

Blended Bars

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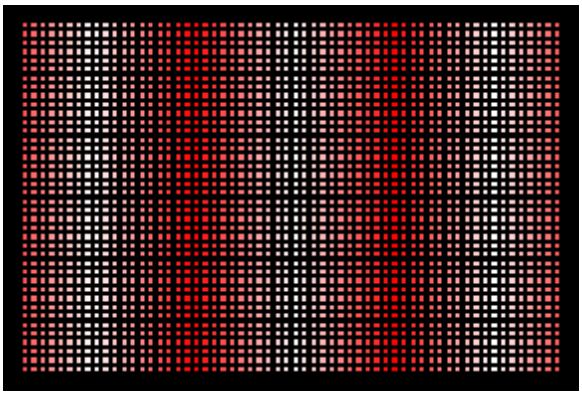
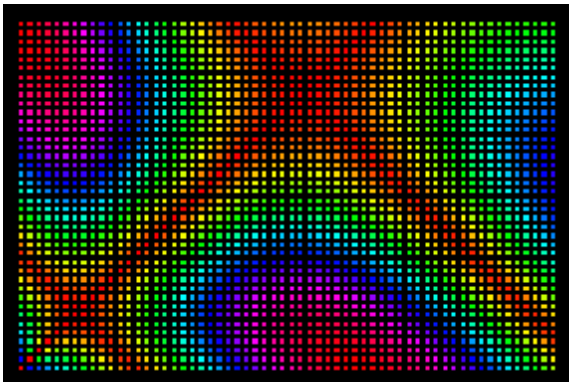


- **Direction** - This setting controls the direction of the bars. Selecting "default" moves the bars along the longest axis.
- **Bar Width** - The value of this slider controls the width of each bar.
- **Speed** - The value of this slider determines how fast the bars move. A value of 0 will stop the movement.
- **Center** - If the direction is set to expand or compress, this slider controls the center of the expansion or compression. A value of 0 places the center in the middle of the prop.

Butterfly



- **Style** - This selects the overall style of the effect: linear (shown above), radial, blocks, or corner.
- **Colors** - This selects whether colors should be generated automatically (rainbow), or chosen from the user-selected colors (palette).
- **Chunks** - When the value of this slider is greater than 1, empty areas are created in the patter. The greater the number, the more empty areas are created.
- **Skip** - When chunks is greater than 1, the value of this slider alters which areas are empty.

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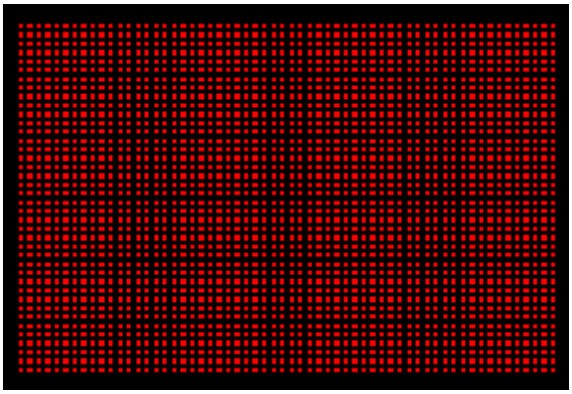
- **Direction** - When speed is greater than 0, you can use this setting to reverse the direction of motion.
- **Corner** - This setting controls the orientation of the effect.
- **Hue Shift** - The value of this slider will alter all colors displayed in the effect.
- **Speed** - The value of this slider determines how fast the effect moves. A value of 0 will stop the movement.

Color Wash



- **Mode** - This selects the overall style of the effect. The default value of "single_color" displays the first selected color on the palette across the entire prop.
- **Horizontal Fade** - This selects how the color fades out on the horizontal axis.
- **Vertical Fade** - This selects how the color fades out on the vertical axis.

Countdown

- **Seconds To Count** - The number of seconds to count down.

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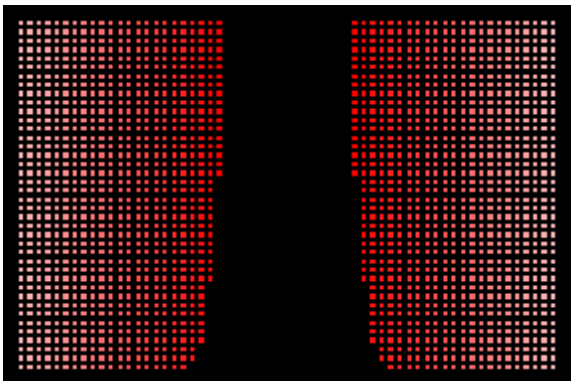
- **Time Format** - The format of the displayed numbers: either total seconds, or "mm:ss" (where "mm" is the number of minutes and "ss" is the number of seconds).
- **Font Name** - The font used to display the numbers. The fonts listed will depend on the fonts that are installed on your system.
- **Font Size** - The size of the font used to display the numbers. A value of 100 uses the full height of the prop.
- **Left / Right** - The value of this slider controls the center of the number along the horizontal axis.
- **Top / Bottom** - The value of this slider controls the center of the number along the vertical axis.

Curtain



- **Curtain Edge** - This specifies where the curtain edge is located. Values of Left, Center, and Right create horizontal movement. Values of Bottom, Middle, and Top create vertical movement.
- **Movement** - This specifies whether the curtain should open, close, open and then close, or close and then open.
- **Swag Width** - The value of this slider controls the size of the swag at the bottom. A value of 0 causes the curtain to be displayed with no swag.
- **Repeat Mode** - This setting determines whether the effect repeats. "Once fit to duration" means that the speed of the curtain movement is automatically calculated based on the length of the effect.
- **Speed** - If "Repeat Mode" is set to a value other than "Once fit to duration", then the value of this slider determines how fast the effect moves. A value of 0 will stop the movement.

Fire

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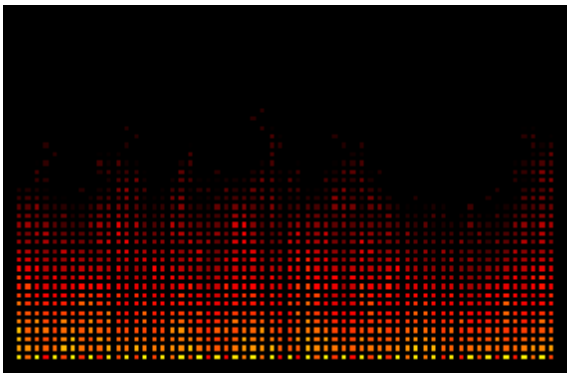
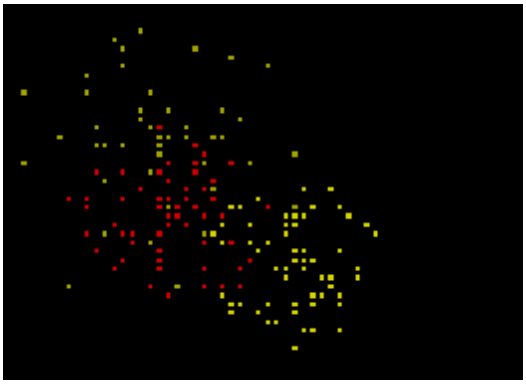


- **Height** - The value of this slider controls the height of the flames.
- **Hue Shift** - The value of this slider will alter all colors displayed in the effect.
- **Sides** - This controls which sides the flames emanate from.

Fireworks



- **Explosion Rate** - The value of this slider controls how fast explosions occur.
- **Rate Change** - This setting controls whether the explosions occur randomly or all at the beginning of the effect.
- **Particles In Explosion** - The value of this slider controls how many particles are in each explosion.
- **Particle Velocity** - The value of this slider controls how fast the particles move.
- **Particle Fade** - The value of this slider controls how fast the particles fade out.
- **Explosion Pattern** - This setting controls the pattern of the explosion - normal, cross, or ring.

Garland

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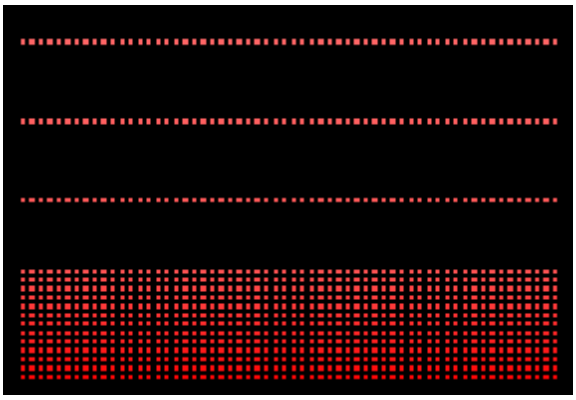

- **Garland Type** - The value of this slider selects the shape of the falling garland. A value of 0 specifies a straight line.
- **Garland Fill** - This specifies the direction from which the garlands fill the space.
- **Spacing** - The value of this slider controls the spacing between each falling garland.
- **Repeat Mode** - This setting determines whether the effect repeats. "Once fit to duration" means that the speed is automatically calculated based on the length of the effect.
- **Speed** - If "Repeat Mode" is set to a value other than "Once fit to duration", then the value of this slider determines how fast the garlands fall. A value of 0 will stop the movement.

Hold

- When used in the sequence grid, this effect freezes the effect that immediately precedes it. If the same effect precedes and follows the hold, the hold effect can appear to stop motion.

Lightning

- **Start Position** - The value of this slider controls where the bolt originates from (left to right).

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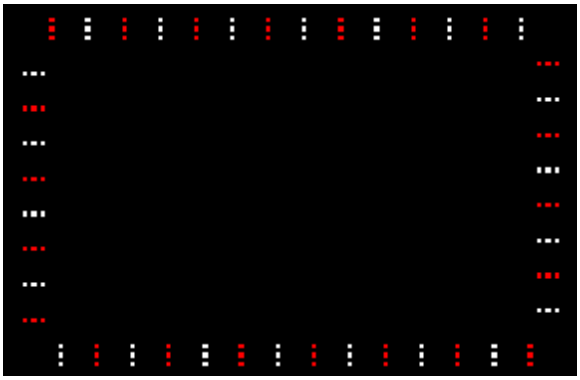
- **End Position** - The value of this slider controls where the bolt finishes (left to right).
- **Number Of Strikes** - The value of this slider controls the number of lightning strikes.
- **Strike Speed** - The value of this slider controls the amount of time it takes the bolt to travel from the top to the bottom of the prop.
- **Thickness** - The value of this slider controls the width of the lightning bolts.
- **Flash Brightness** - The value of this slider controls the brightness of the flash that occurs when the bolt reaches the bottom of the prop.

Marquee



- **Spacing** - The value of this slider controls the distance between lights in the marquee.
- **Filled Space** - The value of this slider controls how much of the space between marquee lights is filled in. A value of 100 means completely filled in.
- **Size** - The value of this slider controls the thickness of the marquee. It starts on the outside and grow towards the middle as the size increases.
- **Speed** - The value of this slider controls how fast the lights in the marquee move around the prop.
- **Sides** - This controls which sides of the marquee the lights appear on.
- **Fill Corners** - This controls whether lights are displayed in the corners of the marquee.

Meteors

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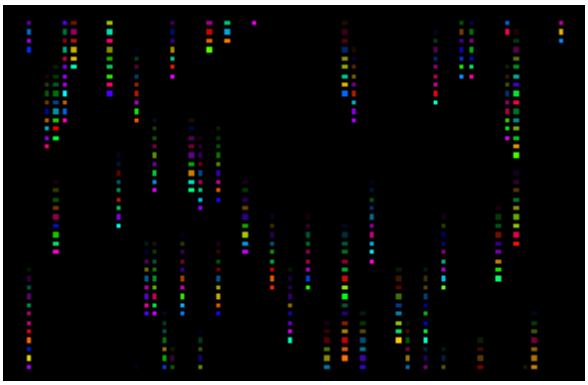

- **Color Scheme** - This selects whether colors should be generated automatically (rainbow), or to treat the user-selected colors as specifying the end-points of a range, or to only use the user-selected colors (palette).
- **Meteor Count** - The value of this slider controls the number of new meteors that get created.
- **Tail Length** - The value of this slider controls the length of each meteor's tail.
- **Meteors Effect** - This selection controls the direction the meteors move. Setting this to "Icicles" causes the body of the meteor to be gray, and only the head of the meteor takes on a color.
- **Drop Mode** - This selection controls the pattern of meteor drops.
- **Swirl Intensity** - The value of this slider controls how much the meteors swirl.
- **Speed** - The value of this slider controls the rate at which the meteors fall.
- **Speed Mode** - "Pixel Rate" means that, for a given speed, the meteor will fall across the same number of pixels over a given time regardless of prop size. "Scaled Rate" means that speed is relative to the size of the prop. "Scaled Rate" is recommended for effects that get applied to props of varying sizes, or in sequences that will be shared with others.

Movie

Image from https://pixabay.com/illustrations/grinch-character-christmas-5849048/

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- **Movie File** - Click the "Choose" button to select the movie file. AVI and WMV formats are supported, although certain variants cannot be read and you will receive a message if the file you have selected falls into this category.

  Movie files often have much higher resolution than needed and can cause slowdowns when using the Sequencer. For example, a full HD movie (1080p) has a resolution of 1920 x 1080, whereas a 16 strand ribbon tree is often just 16 x 50 pixels. There are many programs available (some free) that will reduce the resolution of a video. Using such a tool to reduce the resolution of your movie file to 320 x 240 or less will improve the performance of the Sequencer and not affect the look on your pixels. Finally, if your video conversion program has an option to change the frame rate, changing it to 20 frames per second (fps) will slightly improve how your video looks on your pixels.

- **Scale Image** - When enabled, this option scales the movie frames to fit the prop.

- **Repeat** - If this option is selected and the movie clip is shorter than the effect, the movie is repeated as necessary to fill the effect.

- **Movie Length Matches Sequence Length** - If this option is selected, then the timing of the movie will match the timing of the sequence. For example, if the movie effect starts at 10.0 seconds and ends at 20.0 seconds in the sequence, then the frames in the movie clip from 10 to 20 seconds will play in the effect. If you copy that effect and paste it such that the new movie effect starts at 40.0 seconds and ends at 50.0 seconds, then the frames in the movie clip from 40 to 50 seconds will play in the effect.

None

- This effect leaves all of the pixels off. When creating effects that use just one side of the Motion Effect Generator, the effect on the other side should be set to "None".

Picture

Files used by the Picture effect can exist as a stand-alone file, or can be stored within the sequence file (i.e. embedded). You can move picture files from stand-alone files to embedded, or vice versa by

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selecting Sequence > Manage Picture Effects from the menu. Storing them inside the sequence file makes sequences easier to move to another computer and share with other users.

- **Picture File** - Click the "Select File" button to select a picture file stored on your computer. PNG, BMP, JPG, GIF, and TIFF formats are supported. GIF files may contain a single image or an animation. Click "Embedded Picture" to select an image that is embedded in any sequence that is currently open.

- **Numbered Sequence** - Some programs can separate move files and GIF animations into their individual frames, resulting in an "image sequence". An image sequence has a separate file for each frame, and a numeric suffix in the file name to indicate the frame number. Enable this box if you are using the effect for an image sequence.

- **Movement** - This selection indicates whether the picture will move, and if so, in what direction. The "peek-a-boo" options designate from which side the image will enter, and the "Peek-A-Boo Hold Time" and "Peek-A-Boo Exit" parameters further refine that movement.

- **Repeat** - This setting determines whether the effect repeats. "Once fit to duration" means that the speed of the image movement is automatically calculated based on the length of the effect.

- **Pre-scale Image** - This setting determines whether an initial scaling operation is applied before Scale Width and Scale Height are applied. This is very useful with higher resolution pictures so that Scale Width and Scale Height give you finer grain control.

- **Scale Width** - The value of this slider adjusts the width of the image - after the Pre-scale setting has been applied. A value of 100 leaves the width unchanged.

- **Scale Height** - The value of this slider adjusts the height of the image - after the Pre-scale setting has been applied. A value of 100 leaves the height unchanged.

- **Speed** - If "Repeat" is set to a value other than "Once fit to duration", then the value of this slider determines how fast the effect moves. A value of 0 will stop the movement.

- **Position Offset** - The value of this slider controls the position of the picture orthogonal to the direction of movement.

- **Peek-A-Boo Hold Time** - If "Movement" is set to one of the peek-a-boo settings, then the value of this slider will control how long the picture remains in the center of the prop, and also how long it remains hidden.

- **Peek-A-Boo Exit** - If "Movement" is set to one of the peek-a-boo settings, then the value of this slider will control on which side the image will exit.

- **Red Level** - Adjusting this slider can increase or decrease the red tones in the picture. A value of 100 keeps the red tones at the same level they were in the original picture.

- **Green Level** - Adjusting this slider can increase or decrease the green tones in the picture. A value of 100 keeps the green tones at the same level they were in the original picture.

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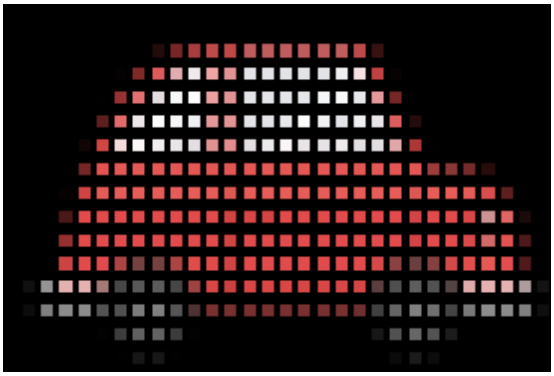
- **Blue Level** - Adjusting this slider can increase or decrease the blue tones in the picture. A value of 100 keeps the blue tones at the same level they were in the original picture.

- **Opacity** - The value of this slider adjusts the transparency of the picture. A value of 100 keeps the picture's original transparency. Moving the slider closer to 0 increases the transparency.

Picture XY



- **Picture File** - Click the "Select File" button to select a picture file stored on your computer. PNG, BMP, JPG, GIF, and TIFF formats are supported. GIF files may contain a single image or an animation. Click "Embedded Picture" to select an image that is embedded in any sequence that is currently open.

- **Width** - The value of this slider adjusts the width of the image. A value of 100 leaves the width unchanged.

- **Height** - The value of this slider adjusts the height of the image. A value of 100 leaves the height unchanged.

- **Left / Right** - The value of this slider controls the center of the picture along the horizontal axis. The meaning of the value depends on the Anchor setting.

- **Top / Bottom** - The value of this slider controls the center of the picture along the vertical axis. The meaning of the value depends on the Anchor setting.

- **Anchor** - This setting controls where the Left / Right and Top / Bottom settings of 0 are.

    - If "L" is checked but not "R", then the left edge of the picture is aligned to the left edge of the prop when Left / Right is 0.

    - If "L" is not checked but "R" is, then the right edge of the picture is aligned to the right edge of the prop when Left / Right is 0.

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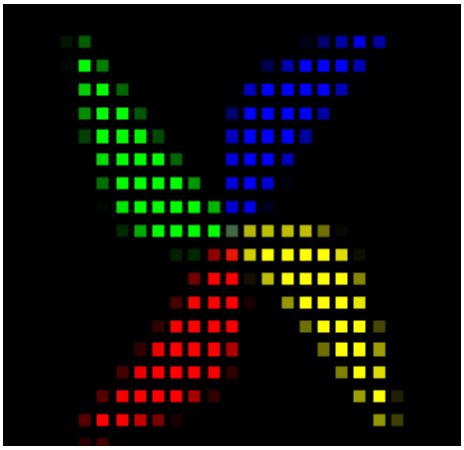
- If "L" and "R" are both checked or both unchecked, then the picture is centered horizontally on the prop when Left / Right is 0.
- If "Top" is checked but not "Bottom", then the top edge of the picture is aligned to the top edge of the prop when Top / Bottom is 0.
- If "Top" is not checked but "Bottom" is, then the bottom edge of the picture is aligned to the bottom edge of the prop when Top / Bottom is 0.
- If "Top" and "Bottom" are both checked or both unchecked, then the picture is centered vertically on the prop when Top / Bottom is 0.

- **Red Level** - Adjusting this slider can increase or decrease the red tones in the picture. A value of 100 keeps the red tones at the same level they were in the original picture.
- **Green Level** - Adjusting this slider can increase or decrease the green tones in the picture. A value of 100 keeps the green tones at the same level they were in the original picture.
- **Blue Level** - Adjusting this slider can increase or decrease the blue tones in the picture. A value of 100 keeps the blue tones at the same level they were in the original picture.
- **Opacity** - The value of this slider adjusts the transparency of the picture. A value of 100 keeps the picture's original transparency. Moving the slider closer to 0 increases the transparency.

Pinwheel



- **Number of Arms** - The value of this slider controls the number of arms in the pinwheel.
- **Arm Width** - The value of this slider controls the width of each arm.
- **Arm Length** - The value of this slider controls the length of each arm.
- **Arm Bend** - The value of this slider controls how much each arm bends.

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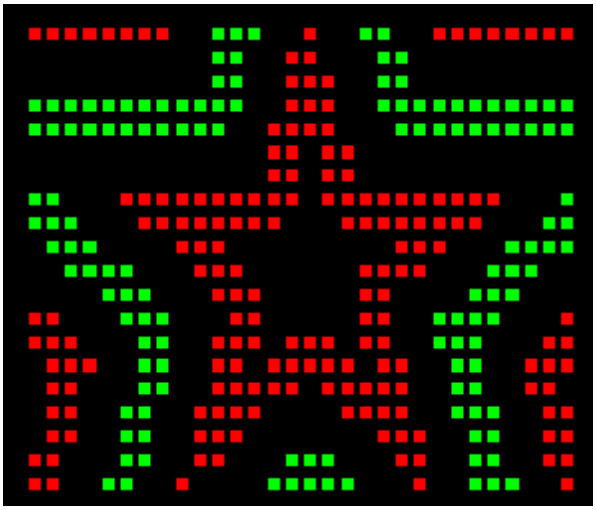
- **Curvature** - The value of this slider controls the sharpness of the arm bend.
- **Color Mode** - This select specifies how colors are to be used when drawing the pinwheel.
- **CCW** - When unchecked, the pinwheel spins in a clockwise direction. When checked, in spins in a counter-clockwise direction.
- **Speed** - The value of this slider controls the rate at which the pinwheel spins.
- **Left / Right** - The value of this slider controls the center of the pinwheel along the horizontal axis.
- **Top / Bottom** - The value of this slider controls the center of the pinwheel along the vertical axis.

Ripple



- **Shape** - This selects the shape of the ripple.
- **Repeat Count** - The value of this slider controls how many ripples are created during the course of the effect. Moving the slider all the way to the right will generate continuous ripples.
- **Ring Width** - The value of this slider controls the width of each ripple.
- **Spacing** - The value of this slider controls the spacing between each ripple.
- **Speed** - The value of this slider controls the rate at which the ripples move out from the center.
- **Left / Right** - The value of this slider controls the center of the ripple along the horizontal axis.
- **Top / Bottom** - The value of this slider controls the center of the ripple along the vertical axis.

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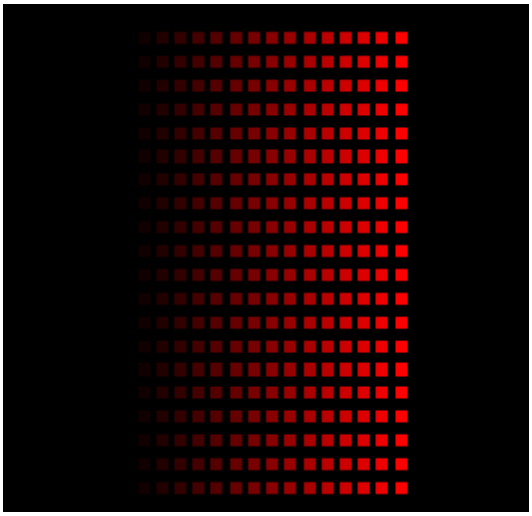
- **Highlight Angle** - The value of this slider controls the direction of a highlight across the ripples. A value of 0 turns off highlighting.
- **Outer Limit** - When the ripples move outward, the value of this slider controls where the ripples disappear. When moving inward, this controls where the ripples start. Note that this slider can be set well outside the visible bounds of the prop.
- **Inward** - This controls the direction of the ripples: outward or inward.

Scanner



- **Pattern** - This sets the scanner pattern.
- **Size** - The value of this slider controls the size of the bar (height when moving horizontally, width when moving vertically).
- **Offset** - The value of this slider controls the position of the bar orthogonal to its movement.
- **Tail Length** - The value of this slider controls the length of the bar's tail.
- **Speed** - The value of this slider controls the rate at which the bars move from side to side.
- **Solid Color** - If this box is checked, then the effect will be displayed as a solid color, rather than with a tail that fades out.

Simple Shape

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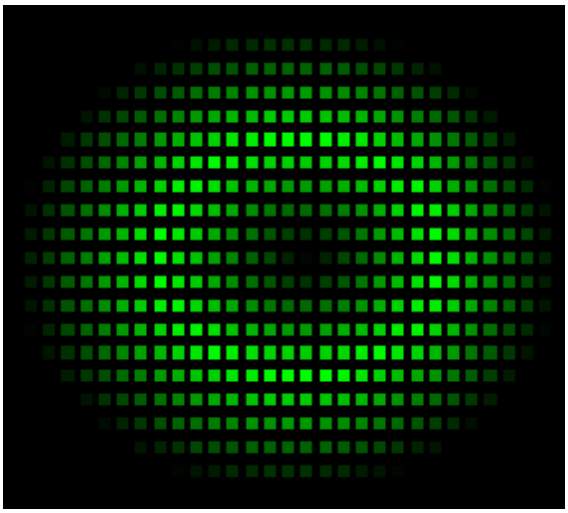

- **Shape** - This selects the shape that will be drawn.
- **Select File** - If Shape is set to "picture", then click the "Select File" button to select a picture file stored on your computer. PNG, BMP, JPG, GIF, and TIFF formats are supported. GIF files may contain a single image or an animation. Click "Embedded Picture" to select an image that is embedded in any sequence that is currently open.
- **Color Mode** - This controls how color is applied to the shape. "fade inner outer" is shown in the example above.
- **Width** - The value of this slider controls the width of the shape. A value of 100 should fill the prop.
- **Height** - The value of this slider controls the height of the shape. A value of 100 should fill the prop.
- **Rotation Mode** - This can be set to manual or continuous, and changes what the Rotation Angle/Speed setting does.
- **Rotation angle/speed** - When Rotation Mode is set to manual, the value of this slider controls the rotation angle of the shape. When Rotation Mode is set to continuous, the value of this slider controls the rotation speed of the shape.
- **Horiz Count** - The value of this slider controls the number times the shape will be repeated horizontally.
- **Vert Count** - The value of this slider controls the number times the shape will be repeated vertically.
- **Left / Right** - The value of this slider controls the center of the shape along the horizontal axis.
- **Top / Bottom** - The value of this slider controls the center of the shape along the vertical axis.

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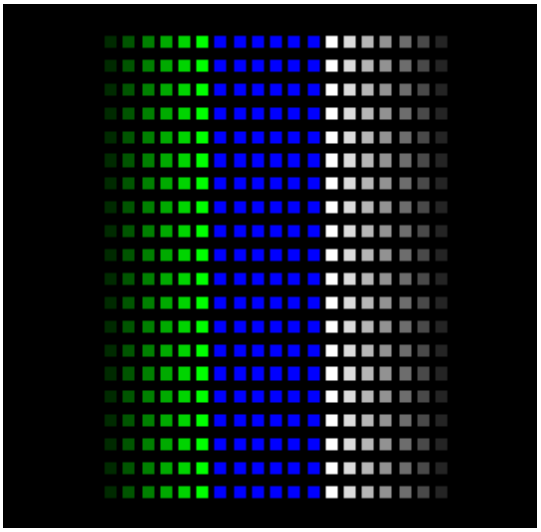
- **No Flicker** - If the shape moves during the effect (e.g. Left/Right transitions from one value to another), then in some cases flickering can occur during the movement. This is most pronounced when the Color Mode is set to outline. In this case, enabling the No Flicker option will solve the issue. It is best to leave No Flicker off unless you notice a problem.

Single Block

The single block effect draws a rectangle that is divided into 3 sections: head, body, and tail. The head is the leading section and its color fades in (green in the picture below). The body is the middle section and has a solid color (blue in the picture below). The tail is the trailing section and its color fades out (white in the picture below). You have control over the size of each section.

The speed of the block is always "fit to duration" - meaning that its speed is dependent on the length the effect. The block will reach its final position at exactly the time the effect ends.



- **Direction** - This setting controls the direction of the block. Selecting "default" moves the block along the longest axis.
- **Color Mode** - This setting controls how colors on the palette are applied to the block.
- **Head Length** - The value of this slider controls the size of the head section. A value of 0 eliminates the head section.
- **Body Length** - The value of this slider controls the size of the body section. A value of 0 eliminates the body section.
- **Tail Length** - The value of this slider controls the size of the tail section. A value of 0 eliminates the tail section.
- **Position** - If the Direction is set to "vertical" or "horizontal", then the value of this slider controls the movement of the block.

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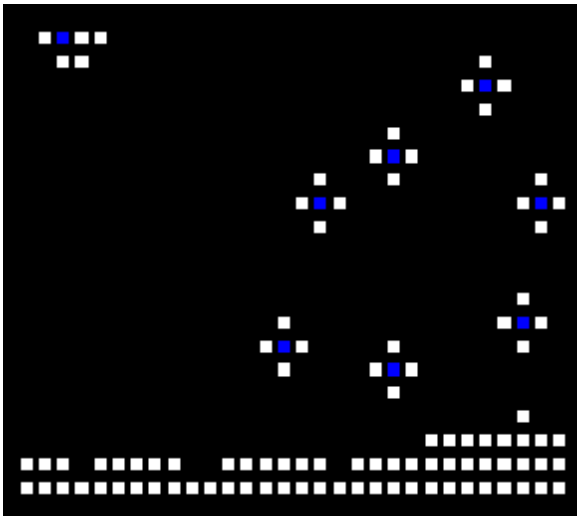
- **Size** - The value of this slider controls the size of the block (height when moving horizontally, width when moving vertically).

- **Offset** - The value of this slider controls the position of the block orthogonal to its movement.

Snowflakes

The Snowflake effect uses at most 2 colors: 1 for the inner part of the flake and 1 for the outer part.



- **Snowflake Count** - The value of this slider controls the number of snowflakes that fall.

- **Snowflake Type** - The value of this slider controls the shape of the snowflakes that fall. The last value creates a mix of all of the other types.

- **Direction** - The value of this slider controls the direction that snowflakes are blown: 0 is straight down (no wind), negative values blow to the left, and positive values blow to the right.

- **Speed** - The value of this slider controls how fast the snowflakes fall.

- **Accumulation** - The value of this slider controls how much snow is allowed to accumulate at the bottom. A value of 0 prevents any snow from accumulating.

Spin Fade

The number of arcs drawn to create the spinner is set by the number of colors selected on the palette. In the picture below, 2 colors have been selected (white and blue).

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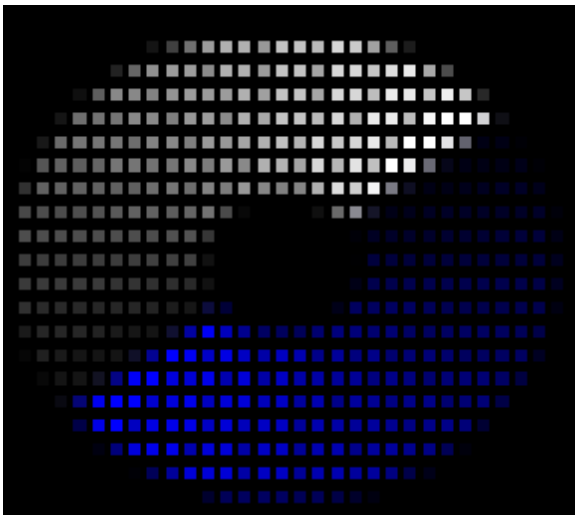

- **Style** - This selection determines how the spinner is drawn: with wedges, circles, or spheres.
- **Inner Radius** - The value of this slider controls the inner radius of the spinner.
- **Speed / Rotation** - The value of this slider controls the rate of rotation, unless Style is set to "sweep arc", in which case it sets the angle of rotation.
- **Arc Width** - The value of this slider controls the length of each arc used to draw the spinner.
- **Fade Steps** - The value of this slider controls how many steps are used to draw each arc.
- **Reverse Fade** - Enabling this option reverses the order of the fade steps.
- **Width** - The value of this slider controls the width of the shape. A value of 100 should fill the prop.
- **Height** - The value of this slider controls the height of the shape. A value of 100 should fill the prop.
- **Left / Right** - The value of this slider controls the center of the shape along the horizontal axis.
- **Top / Bottom** - The value of this slider controls the center of the shape along the vertical axis.

Spinner

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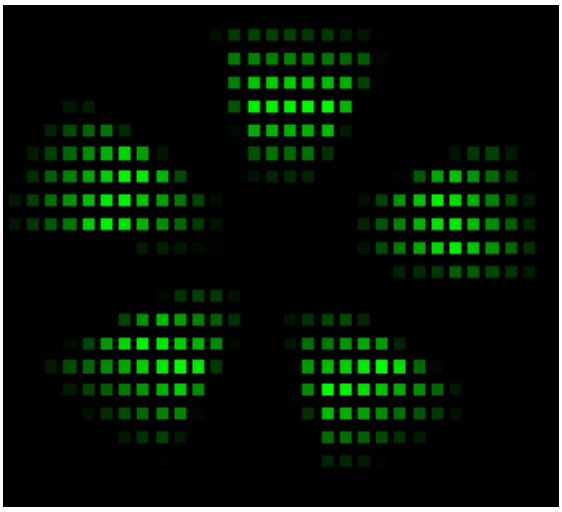

- **Style** - This selection determines how the spinner is drawn.
- **Color Mode** - This setting controls how colors on the palette are applied to the spinner.
- **Number of Arms** - The value of this slider controls the number of arms in the spinner.
- **Arm Width** - The value of this slider controls the width of each arm.
- **Inner Radius** - The value of this slider controls the inner radius of the spinner.
- **Arm Bend** - The value of this slider controls how much each arm bends. This setting only applies to the pinwheel styles.
- **Curvature** - The value of this slider controls the sharpness of the arm bend. This setting only applies to the pinwheel 1 and 2 styles.
- **Speed / Rotation** - The value of this slider controls the rate of rotation, unless Style is set to "sweep arc", in which case it sets the angle of rotation.
- **Width** - The value of this slider controls the width of the spinner. A value of 100 should fill the prop.
- **Height** - The value of this slider controls the height of the spinner. A value of 100 should fill the prop.
- **Left / Right** - The value of this slider controls the center of the spinner along the horizontal axis.
- **Top / Bottom** - The value of this slider controls the center of the spinner along the vertical axis.

Spirals

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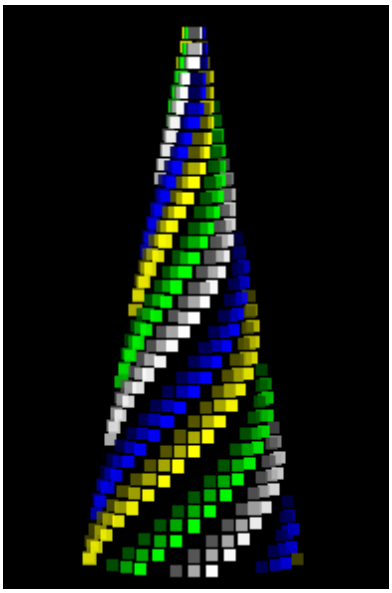

- **Palette Repeat** - If the value of this slider is 1, then one spiral arm will be drawn for each color selected. Setting this value to 2 doubles the number of arms, 3 triples the number of arms, etc.
- **Direction** - This sets the direction of spin.
- **Rotation** - The value of this slider controls the tightness of the spirals. When applied to a pixel tree, it controls how many times the spiral wraps around the tree.
- **Thickness** - The value of this slider controls the thickness of each arm.
- **Thickness Change** - The value of this slider controls variations in the thickness of each arm. A value of 0 creates no variation.
- **Speed** - The value of this slider controls the rate of rotation.
- **Show 3D** - This selects whether the arms fade out.
- **Blend** - If enabled, the selected colors will be blended vertically, rather than being applied to each arm of the spiral.

Straight Lines

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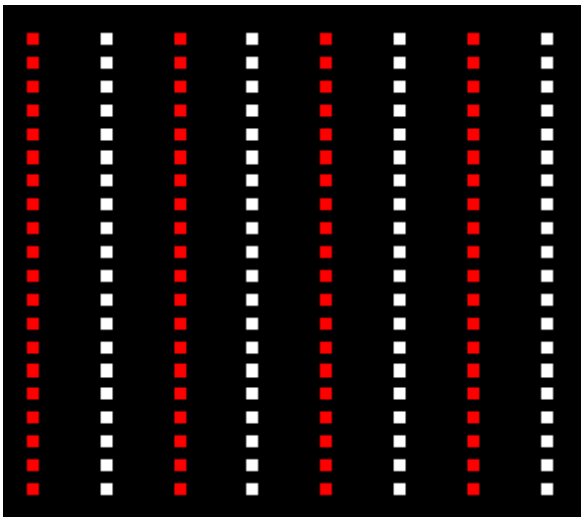

- **Direction** - This setting controls the direction of movement of the lines. Selecting "default" moves the lines along the longest axis.
- **Line Count** - The value of this slider controls how many lines are created during the course of the effect. Moving the slider all the way to the right will generate continuous lines.
- **Spacing** - The value of this slider controls the spacing between each line.
- **Filled Space** - The value of this slider controls how much of the space between lines is filled in. A value of 100 means completely filled in.
- **Speed** - The value of this slider controls how fast the lines move.

Text

- **Text** - The text to be displayed is entered into a box where you can control the font and color of each character. You can also make characters bold, underline, or italic.
- **Font Size** - The value of this slider controls the size of the text.

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- **Movement** - This selection indicates whether the text will move, and if so, in what direction. The "peek-a-boo" options designate from which side the text will enter, and the "Peek-A-Boo Hold Time" and "Peek-A-Boo Exit" parameters further refine that movement.
- **Speed** - If "Repeat" is set to a value other than "Once fit to duration", then the value of this slider determines how fast the text moves. A value of 0 will stop the movement.
- **Position Offset** - The value of this slider controls the position of the text orthogonal to the direction of movement.
- **Peek-A-Boo Hold Time** - If "Movement" is set to one of the peek-a-boo settings, then the value of this slider will control how long the text remains in the center of the prop, and also how long it remains hidden.
- **Peek-A-Boo Exit** - If "Movement" is set to one of the peek-a-boo settings, then the value of this slider will control on which side the text will exit.
- **Repeat** - This setting determines whether the effect repeats. "Once fit to duration" means that the speed of the text movement is automatically calculated based on the length of the effect.
- **Wrap Text** - If enabled and the text is wider than the prop, then the text is wrapped to fit the available width.
- **Smooth** - If enabled, then the text is drawn with some pixels partially on to make it look smoother (anti-aliased).

Text PE

This effect works exactly like the Text effect in the S4 Pixel Editor. It is included for backward compatibility.

- **Text** - The text to be displayed is entered into a box where you can control the font and color of each character. You can also make characters bold, underline, or italic.

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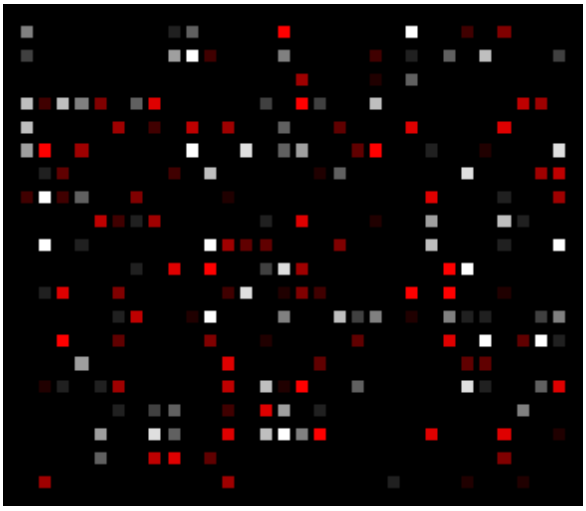
- **Font Size** - The value of this slider controls the size of the text.
- **Movement** - This selection indicates whether the text will move, and if so, in what direction. The "peek-a-boo" options designate from which side the text will enter and exit, and the "Peek-A-Boo Hold Time" further refines that movement.
- **Speed** - The value of this slider determines how fast the text moves. A value of 0 will stop the movement.
- **Position Offset** - The value of this slider controls the position of the text orthogonal to the direction of movement.
- **Peek-A-Boo Hold Time** - If "Movement" is set to one of the peek-a-boo settings, then the value of this slider will control how long the text remains in the center of the prop, and also how long it remains hidden.
- **Bounce** - The value of this slider controls how much the text bounces as it moves. A value of 0 prevents any bouncing.
- **Repeat** - If the enabled, the text repeats its movement until the effect ends.

Twinkle



- **Density** - The value of this slider controls how many pixels are twinkling at any given time.
- **Rate** - The value of this slider controls how fast the pixels turn on and off for each twinkle.
- **Mode** - This controls how the pixels twinkle or flash.
- **Layout** - This sets whether the pixels that twinkle are at random positions, or at fixed intervals.

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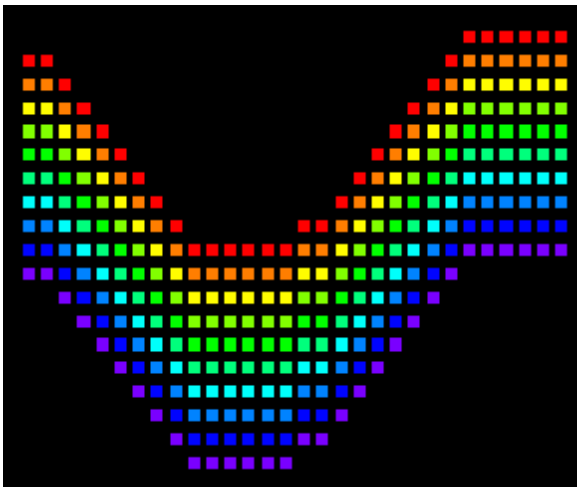
- **Min Intensity** - The value of this slider controls the minimum intensity of the twinkles.
- **Max Intensity** - The value of this slider controls the maximum intensity of the twinkles.

Wave



- **Direction** - This setting controls the direction the wave moves.
- **Change Colors** - This setting controls how colors are applied to the wave.
- **Color Mode** - This selects whether colors should be generated automatically (rainbow), or taken from the selected palette colors.
- **Wave Count** - This sets how many waves should be drawn.
- **Amplitude** - The value of this slider controls how tall the waves are.
- **Frequency** - The value of this slider controls how close together the wave peaks are.
- **Thickness** - The value of this slider controls the thickness of the waves.
- **Speed** - The value of this slider controls how fast the wave moves.

5.3.7 Playback Window

The "Playback" window is normally docked to the top of the main Light-O-Rama S5 Sequencer program window. It can also be dragged and dropped such that it "floats" outside of the main window.

The playback window has 2 purposes:

1. Display a simulation of your lights during sequence playback
2. Display a motion effect when one is selected in the sequence grid

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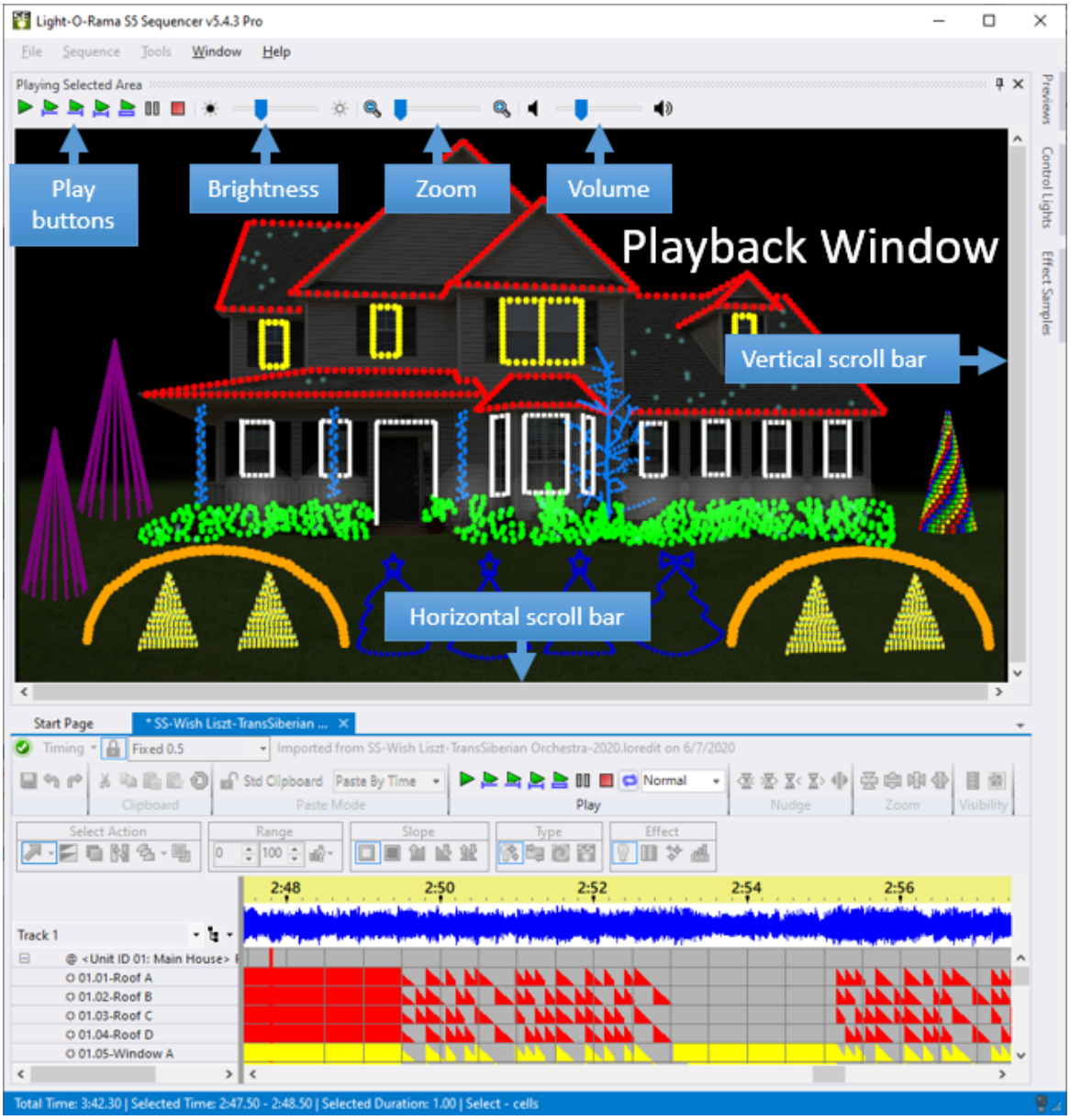
Sequence Playback

The primary purpose of the playback window is to display a simulation of your lights while the sequence is playing in the Sequencer. If you have a second display monitor, this is a good window to float and drag to the other monitor. That way you can sequence on one monitor and view playback on the other.

Note that there are certain items that are not displayed during sequence playback. These include:

- props with a shape of "hidden"
- archived props
- beat channels



The Playback Window displaying a simulation of the lights while the sequence is being played

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Toolbar

Playback Control

The Playback Window has a set of toolbar buttons that allow you to start and stop sequence playback. The Sequence Tab's toolbar also has a set of playback buttons -- you can control playback using either set.

	Playback Control
	Play the full sequence
	Play from the left edge of the visible sequence grid to the end of the sequence
	Play from the beginning of the sequence to the right edge of the visible sequence grid
	Play the visible portion of the sequence
	Play the current selection. If there is a freeform play range defined then that is played; otherwise the current grid selection (dashed yellow outline) is played.
	Pause playback. Press again to resume
	Stop playback

Background Image Brightness

If your preview has a background image, the first slider (and the buttons on either side) can be used to change the brightness of the image. If there is no background image, then this section will be disabled.

	Background Image Brightness
	Decrease brightness
	Increase brightness

Zoom

You can zoom in on the preview while playback is occurring in order to view it in more detail. Use the second slider on the toolbar (and the buttons on either side of it) to control the zoom level. Then use the scroll bars on the bottom and right side of the window to move to your area of interest.

	Zoom
	Zoom out
	Zoom in

You can also perform zoom and scroll actions using the mouse wheel. The mouse pointer must be positioned over the playback area in order for these to work.

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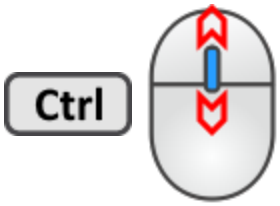
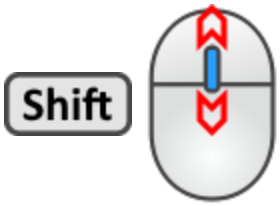
	Hold the Ctrl key down while using the mouse wheel to zoom in and out
	Use the mouse wheel by itself to scroll vertically
	Hold the Shift key down while using the mouse wheel to scroll horizontally

Volume

The right-most slider controls volume if you are playing a musical sequence. You can drag the slider directly, or use the buttons on either side of it to move the volume up or down a notch.

	Volume
	Decrease the volume
	Increase the volume

Displaying Motion Effects

If you have the Pro version and are using motion effects, the playback window has a second purpose: it displays the currently selected motion effect. So if you use a lot of motion effects, you will want to keep the playback window visible at all times. This allows you to click on any motion effect in the grid and have it play in the playback window. This makes it much faster to identify motion effects on the sequence grid.

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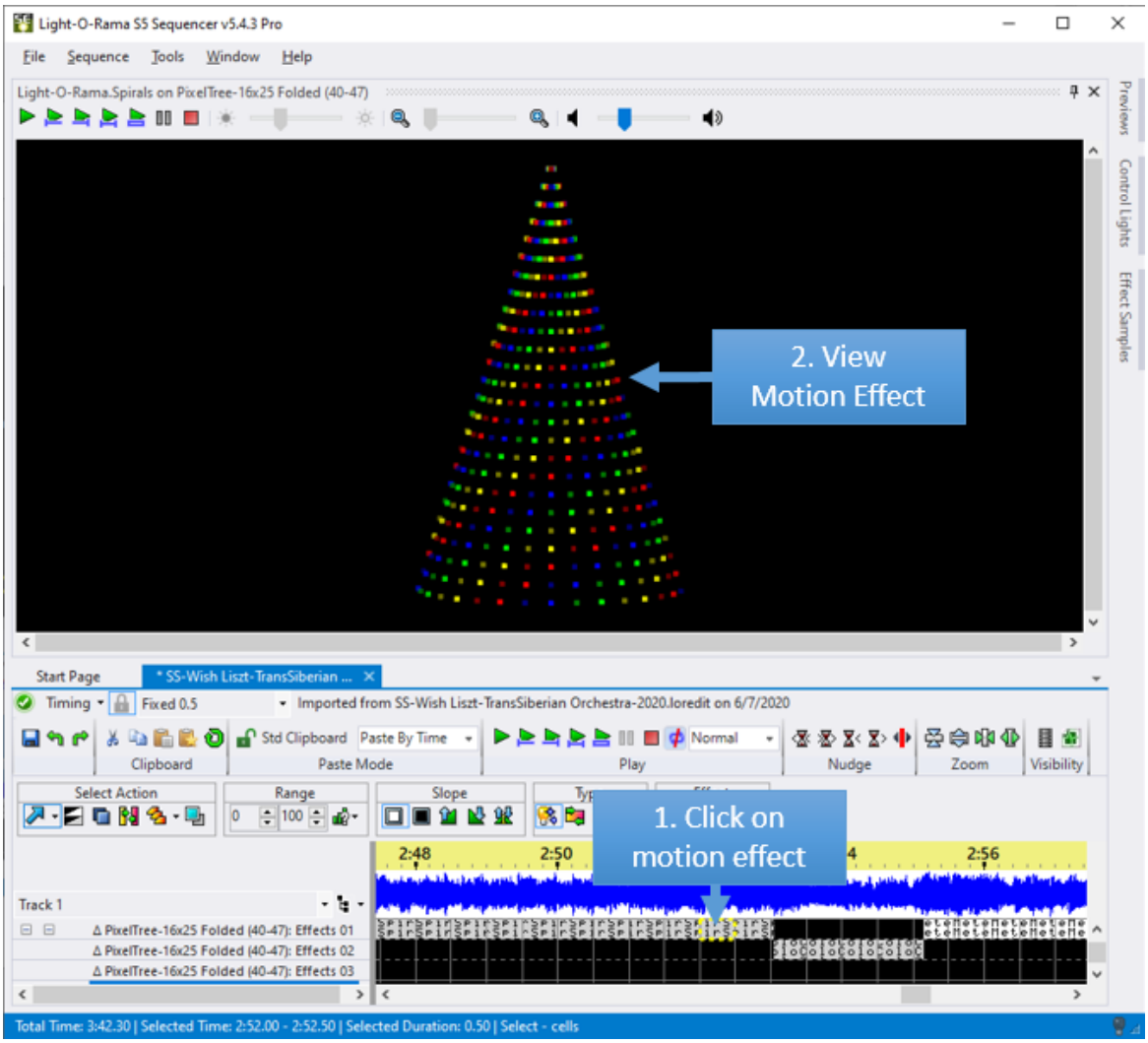

The Playback Window displaying a motion effect

5.3.8 Effect Samples Window

The "Effect Samples" window displays Color Fade favorites as well as thumbnails for motion effects. It is normally docked on the right side of the main Light-O-Rama S5 Sequencer program window. To keep the window open, click the pin icon in the upper right corner of the window. It can also be dragged and dropped such that it "floats" outside of the main window.

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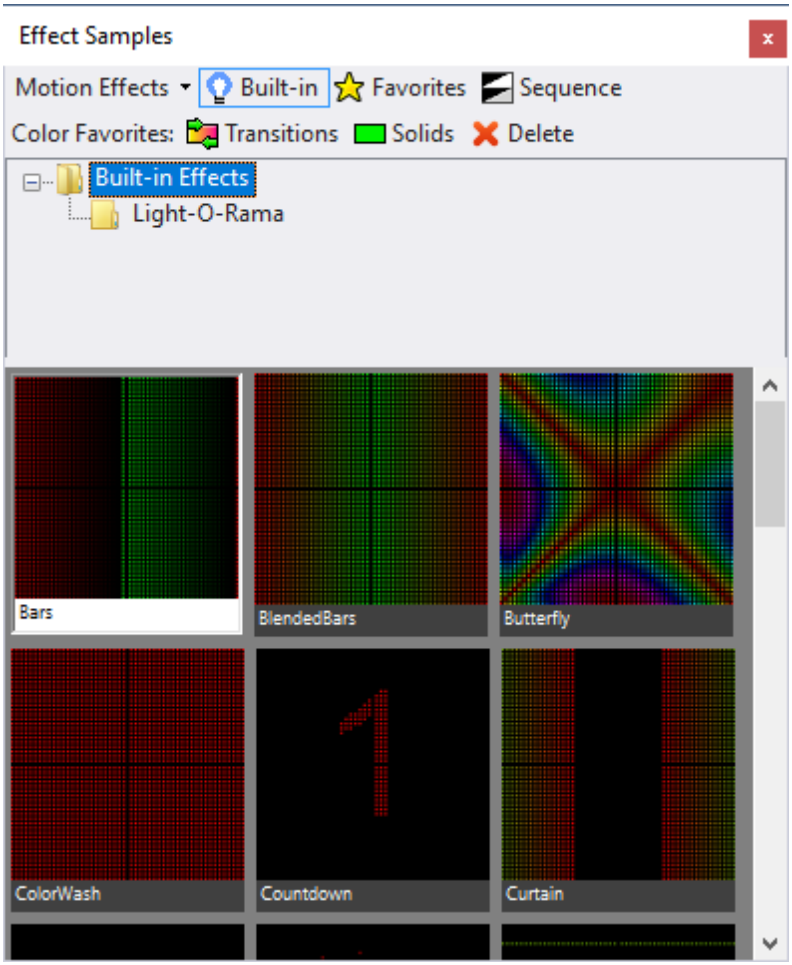
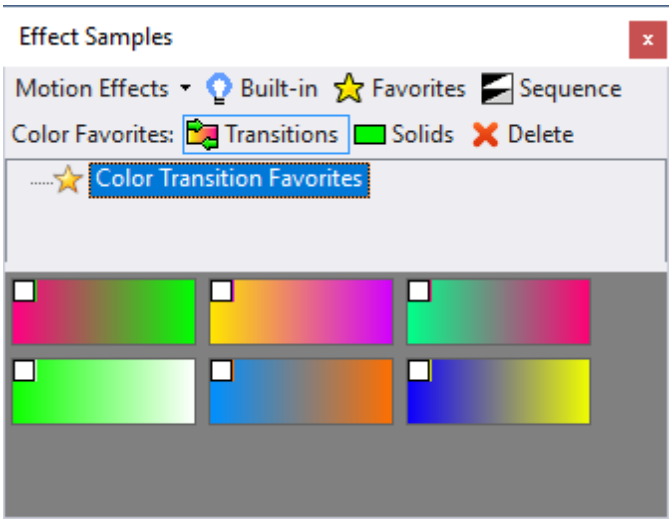


The Effect Samples window displaying motion effects



The Effect Samples window displaying color transition favorites

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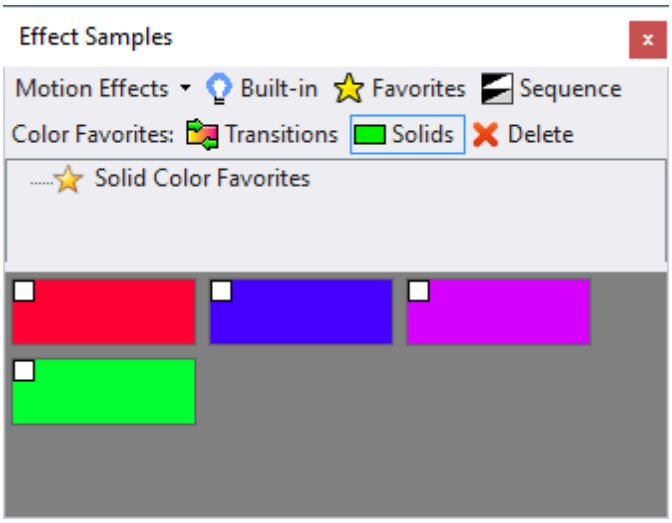

The Effect Samples window displaying solid color favorites

Choosing What Is Displayed

Select one of the 3 motion effect buttons to display:

- built-in effects
- favorites saved in the Motion Effect Generator
- motion effects used in the current sequence (perhaps you want to re-use one)

There may be a hierarchical tree of motion effects, in which case the tree will be displayed between the buttons on top and the effect samples below. You can click on any node in the tree to just display favorites under that section of the tree. The motion effect buttons are only displayed at the Pro license level.

Select one of the 2 color favorites buttons to display:

- Favorite color transitions
- Solid color favorites

Using A Sample In Your Sequence

This is the easy part: just click on a sample, then select a region on the sequence grid. The selected region will be filled in with the selected sample.

Removing Color Favorites

Perhaps you have some color favorites that you no longer need. To delete them, click the check-box in the upper left corner of each color sample to be removed, then click the "Delete" button up top. Be careful, this operation cannot be undone.

Motion Effect Options

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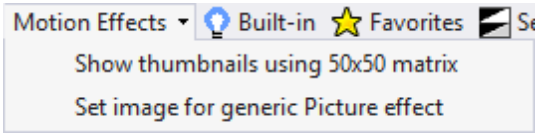
There are a couple of options that control how thumbnails are displayed. To access then, click the down arrow next to the word "Motion Effects"



Show thumbnails using 50x50 matrix

By default, thumbnails are displayed using a 50 by 50 matrix. However, this can be overridden by selecting "Use This Prop (or Group) For Thumbnails" from the pop-up menu when you right-click on an item in the item list. This menu item will restore the default.

Set image for generic Picture effect

When displaying "Basic Motion Effects", the Light-O-Rama Picture effect will be displayed as a blank. This option allows you to select a picture file to use for the thumbnail.

Motion Thumbnail Double-Click

When you double-click on a motion effect thumbnail, the Motion Effect Generator is opened and the selected motion effect is displayed.

This can be used to:

- Modify a motion effect favorite
- Create a new favorite based on an existing one
- Set the current effect based on one shown in the window

Modify a motion effect favorite

- Set the selection to Motion Effect: Favorites
- Double-click on a thumbnail of a favorite
- Modify the effect the in the Motion Effect Generator
- The name of the favorite should already be highlighted in the Favorites area of the Motion Effect Generator, so click the "Save" button on the Favorites toolbar to update it. You will be asked if you want to overwrite the existing favorite.

Create a new favorite based on an existing one

- Set the selection to Motion Effect: Favorites
- Double-click on a thumbnail of a favorite
- Modify the effect the in the Motion Effect Generator

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- Click on a folder name in the Favorites area of the Motion Effect Generator, then click the "Save" button on the Favorites toolbar.

Set the current effect based on one shown in the window

- Double-click on a thumbnail
- Modify the effect the in the Motion Effect Generator
- Click "OK" to close the Motion Effect Generator
- The new effect will start playing in the Playback window, the toolbar effect will be changed to "Motion Effect", the current tool on the toolbar will be changed to Max Intensity, and the mouse pointer will change to the edit cursor when it is moved over the sequence grid

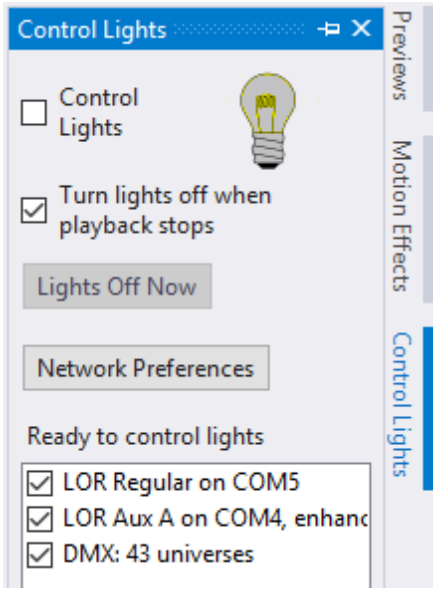
Now when you click and drag the edit cursor over some cells in a motion effect row, the new effect will be added to those cells.

5.3.9 Control Lights Window

The "Control Lights" window is normally docked on the right side of the main Light-O-Rama S5 Sequencer program window. To keep the window open, click the pin icon in the upper right corner of the window. It can also be dragged and dropped such that it "floats" outside of the main window.

From the Control Lights window you can:

- Control whether the effects in your sequence are sent to real lights
- Specify whether lights will be turned off when playback stops
- Turn all lights off immediately
- Access Light-O-Rama Network Preferences
- Specify which networks are enabled when controlling lights



Control Lights Check Box

If the Control Lights box is checked, then the Sequencer will control your lights. This setting applies to all open sequences.

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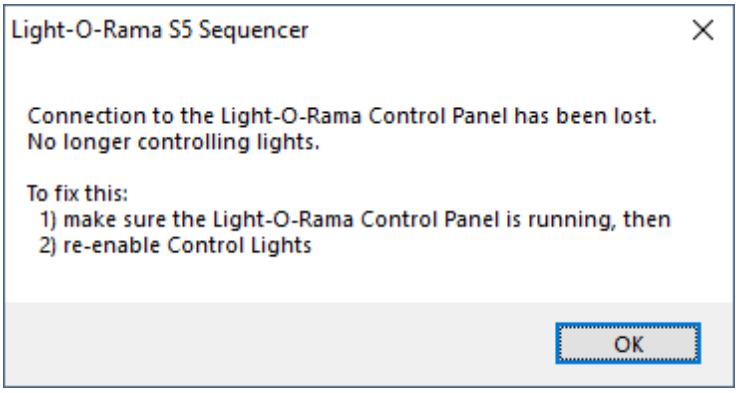
When the Control Lights box is checked, the Sequencer will send out data to:

- A prop when an effect for that prop is selected in the sequencing grid
- A prop when you double click on the prop's name (or right-click on the prop name and select one of the play options)
- All props when you click one of the play buttons above the sequencing grid.

If the Control Panel is not running and the "Control Lights" box is checked, you will get this message:



Turn Lights Off When Playback Stops

This check box specifies whether lights should be turned off whenever playback stops. This only affects playback in the sequencer; it does not affect playback in a scheduled show.

Lights Off Now

This will turn off all lights on the networks being controlled.

Networks Being Controlled

Check the boxes next to each network that you want to control. Each Light-O-Rama network will be listed separately. If you have DMX universes defined, they will be grouped together into a single line item.

Why Aren't My Lights Turning On?

Before trying to control your lights, make sure these steps are done first:

- Connect LOR and/or DMX USB adapters to the computer where the Sequencer is running.
- Make sure your light controllers are initialized correctly with the correct unit IDs (for the LOR protocol) and DMX universes (for the DMX protocol).

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- Make sure the firmware for your controllers is up-to-date.
- Define the LOR and DMX lighting networks in the Light-O-Rama Network Preferences tool.
- Motion Effects (including SuperStar effects) can only be sent to enhanced LOR networks and DMX networks.
- Connect your light controllers to the USB adapters (or to your Ethernet network in the case of E1.31 devices).
- Ensure all lights and controllers have power.
- Start the Light-O-Rama Control Panel if you haven't already done so. You should see the light bulb icon in the Windows notification area (also called the "system tray") in the lower right corner of your screen.
- No shows should be currently scheduled or playing. The light bulb icon in the Windows notification area should be red.
- The Hardware Utility should be closed while the Sequencer is running.
- Make sure the props you have created in your S5 preview have the correct network, unit IDs, and circuit numbers defined (they must match the hardware settings).

5.3.10 Audio Settings Window

The Audio Settings window gives you control over the content, colors, and filtering of the audio data displayed at the top of the sequence grid. It can give you valuable insight on how to align your lighting effects to the music.

The "Audio Settings" window is normally docked on the right side of the main Light-O-Rama S5 Sequencer program window. To keep the window open, click the pin icon in the upper right corner of the window. It can also be dragged and dropped such that it "floats" outside of the main window.

From the Audio Settings window you can:

- Choose the audio data to be displayed
- Alter the audio display area's height
- Choose the colors used to display the audio data
- Scale and filter the waveform
- Zoom in on the spectrogram and change its intensity

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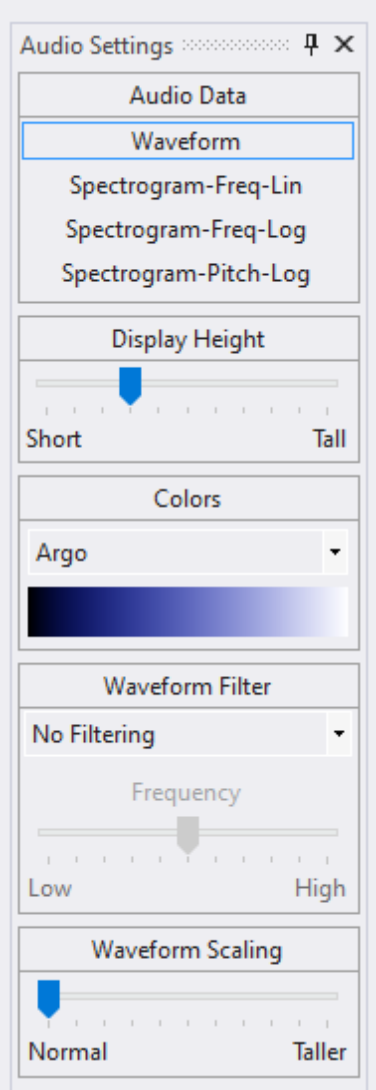

Choosing The Audio Data To Be Displayed

At any license level, including demo, the music for your sequence can be displayed as:

- a waveform

With a Pro license, you can also display the music for your sequence as:

- a spectrogram where the frequencies are shown using a linear scale. This format is useful because the frequency data has not been "stretched" or otherwise manipulated -- lines representing the notes being played will be clean and sharp. However, you will see a note's harmonics, and because the vertical scale is linear, the harmonics will be spaced more closely at the lower frequencies and farther apart at the higher frequencies.
- a spectrogram where the frequencies are shown using a logarithmic scale. In this format, harmonics are evenly spaced.
- a spectrogram with pitch detection applied. Pitch detection tries to find the actual notes being played in a song and eliminates many of the harmonics that clutter a typical spectrogram. Please

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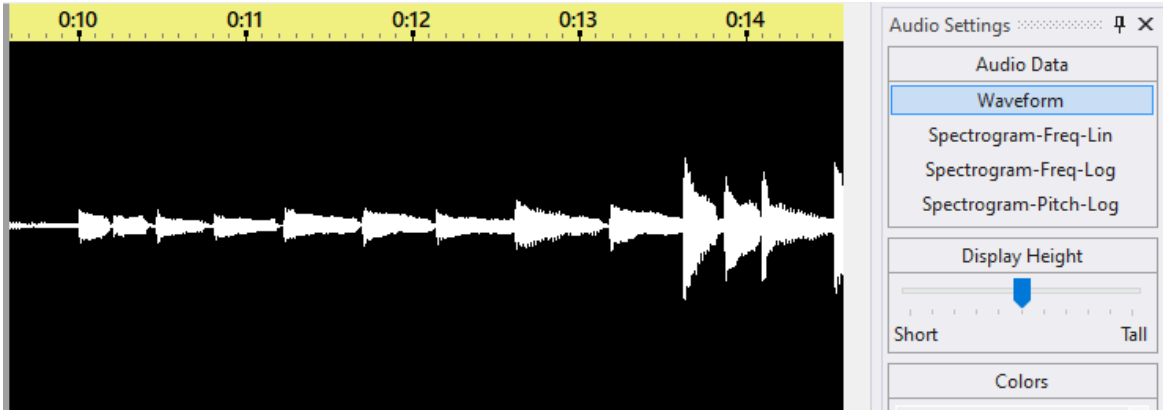
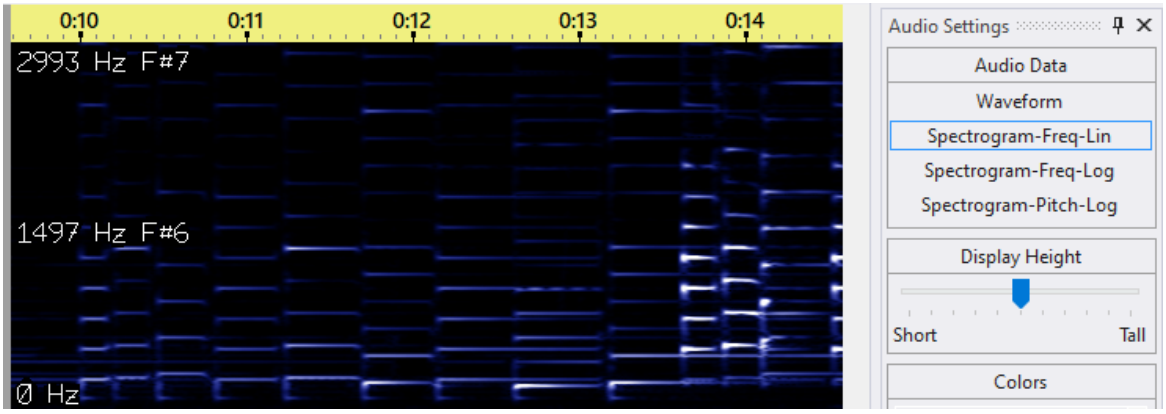
note however, that pitch detection is not perfect, and you may still end up with a cluttered spectrogram for music passages with lots of percussion or where many instruments and/or voices are playing at the same time.

All spectrograms are limited to a frequency of 3000 Hz at the high end. This should be satisfactory for all popular music; you would only miss the top 6 keys on a standard 88-key piano keyboard.

The screen-shots that follow show the same section of the song "Dueling Jingle Bells" displayed using each method. Color scheme is "Argo". In the spectrograms, the lower, middle, and upper frequencies are shown on the left side of the display along with the note that is closest to that frequency.



Audio displayed as waveform



Audio displayed as a spectrogram with a linear vertical scale (requires Pro license)

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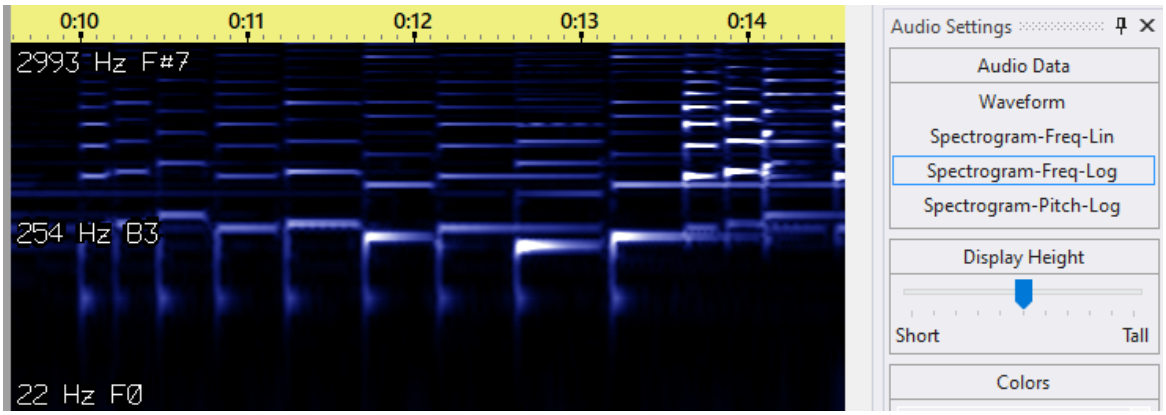
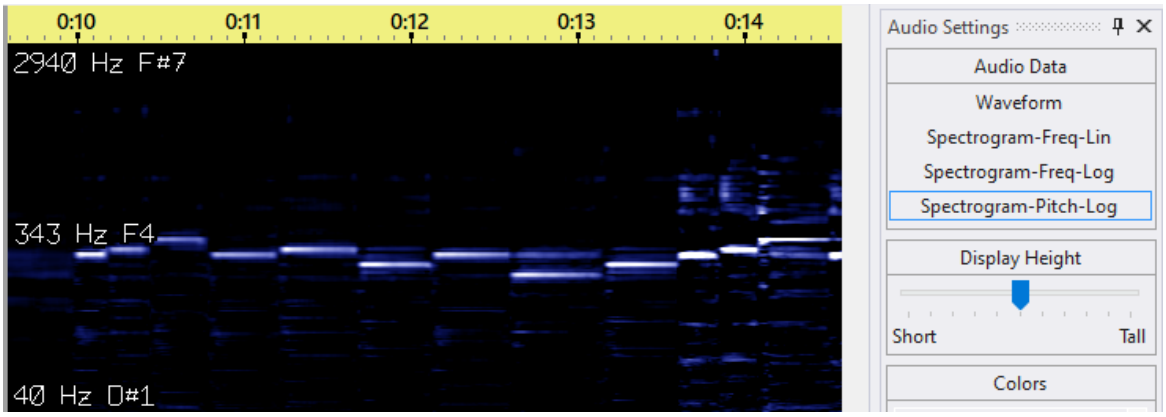


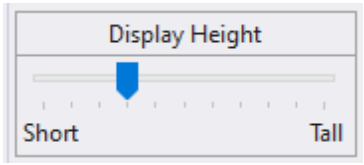
Audio displayed as a spectrogram with a logarithmic vertical scale (requires Pro license)



Audio displayed as a spectrogram with pitch detection applied (requires Pro license)

Altering The Display Area's Height

The height of the audio display area can be set to 0 (hidden) by dragging the "Display Height" slider all the way to the left. Move the slider to the right to make the display area taller. A taller audio display allows you to see more detail -- which is especially useful when viewing a spectrogram. Keeping the display height short allows you to see more channels in the sequence grid. The audio display height is stored with the sequence. Each sequence can have a separate audio display height.



You can also click on the waveform icon on the toolbar to hide or unhide the audio display area.

Choosing The Colors

You can choose your colors for the waveform and spectrograms in the "Colors" section. The first option in the drop-down allows you to select custom colors. The others are the built-in color

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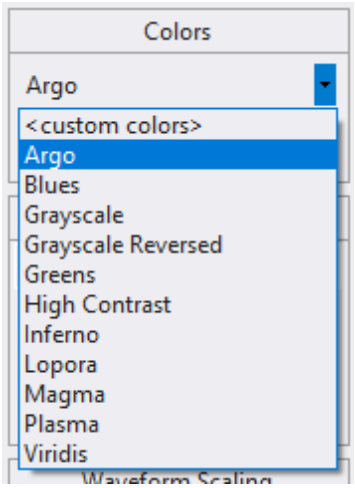
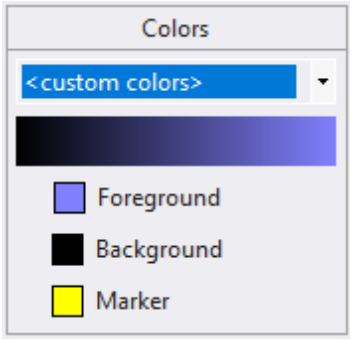
schemes. The color scheme you choose here is applied to all open sequences, and is remembered for the next time you open the Sequencer.

The built-in colors schemes do a great job of highlighting the detail in spectrograms.



Custom Colors



When you select "<custom colors>" from the drop-down, 3 additional color boxes are displayed. "Foreground" is the color of the waveform or spectrogram; "background" is the field that it is drawn behind it; "highlight" is the vertical bar showing the position of the mouse. Click a colored button on the left to set a color. As you change each color, the audio data will be redisplayed with the newly selected color.

The Sequencer will remember the colors that you chose so that waveforms in other sequences will automatically be displayed using those colors.

Built-in Color Schemes

A variety of built-in color schemes are available. Below the drop-down box is a color sample of your selection.

When viewing spectrograms, our favorites are "Argo" and "Grayscale Reversed". "High Contrast" is also useful at eliminating some of the clutter in the spectrogram when used in combination with the Brightness slider.

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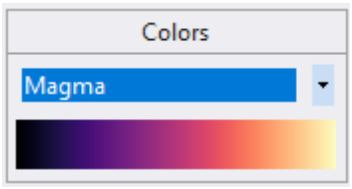
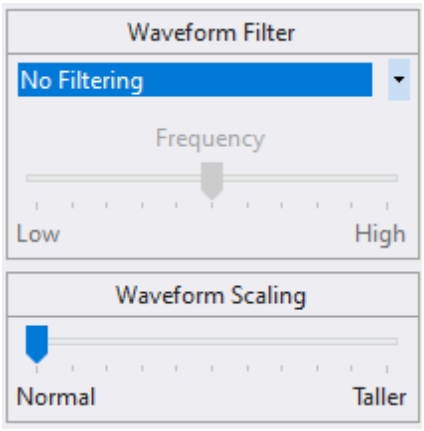


Scaling And Filtering The Waveform

The Sequencer will automatically scale the audio waveform vertically so that it fills the entire height of the waveform area. By default, all audio frequencies are displayed.

You can scale the waveform up or down, or apply a frequency filter using the controls in the lower part of the Audio Settings window. These controls are only visible when the Audio Data selection is set to "Waveform".



No Filter

The following screens are taken from a sequence that uses a specially constructed audio file. The audio consists of 5 tones, each 2 seconds long and each one an octave higher than the previous tone (10 seconds total). The first 2 seconds have a 110 Hz tone (A2), followed by 2 seconds at 220 Hz (A3), followed by 2 seconds at 440 Hz (A4), followed by 2 seconds at 880 Hz (A5), followed by 2 seconds at 1760 Hz (A6). Here is what the waveform looks like with no audio filtering:

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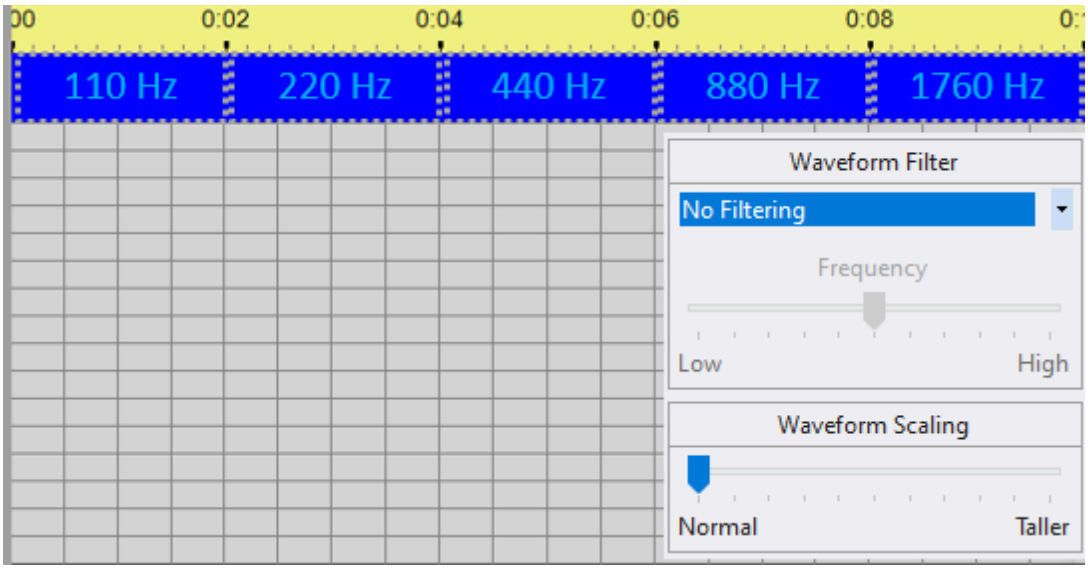
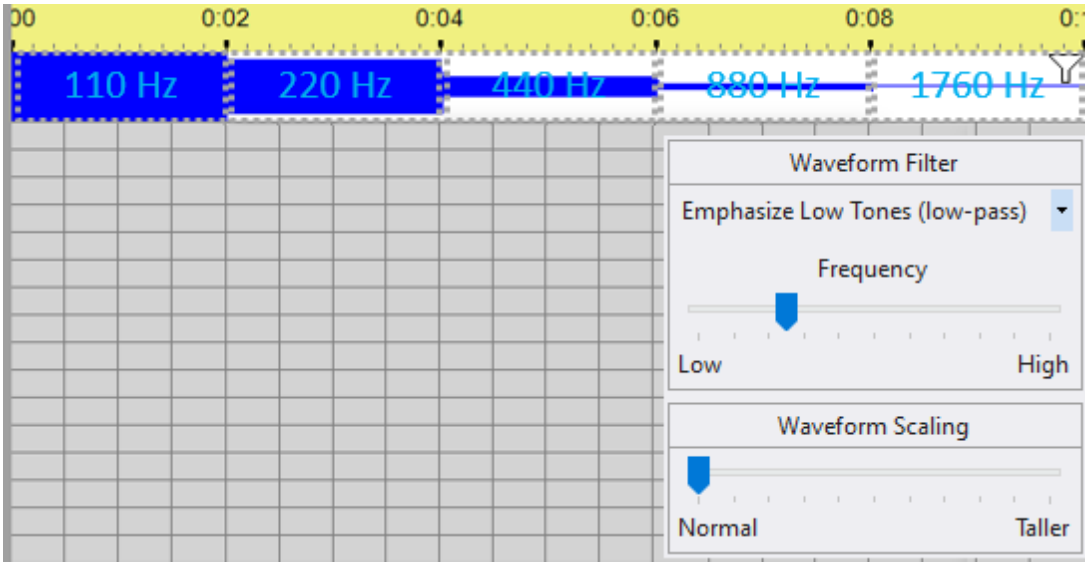


Emphasize Low Tones

Here is the same sequence with the low tones emphasized. Notice that the frequency cut-off for the filter is adjustable using the slider.



Emphasize Mid Tones

Here is the same sequence with the middle tones emphasized. Notice that the mid-point frequency for the filter is adjustable using the slider.

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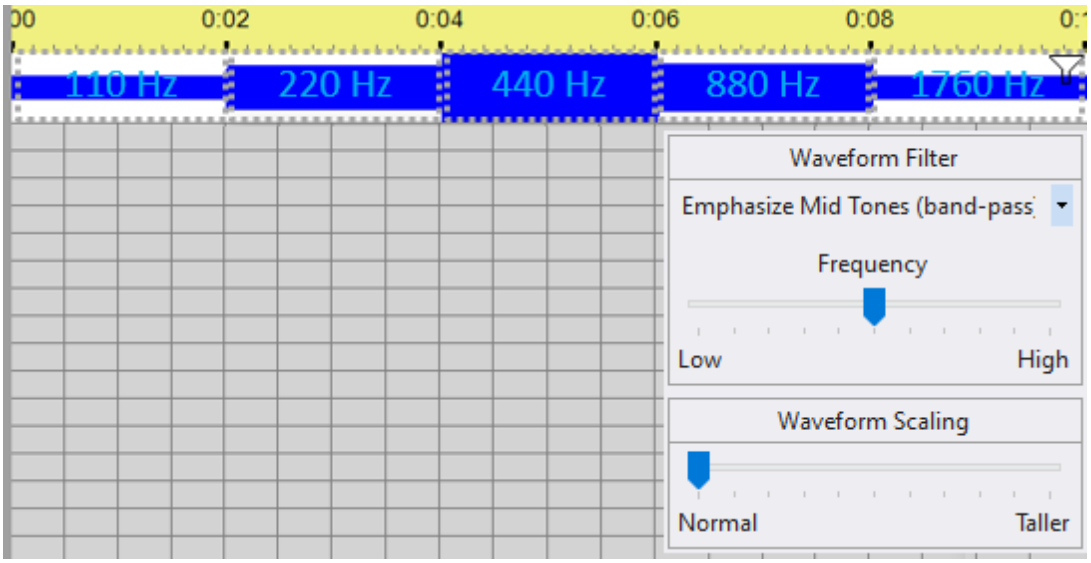
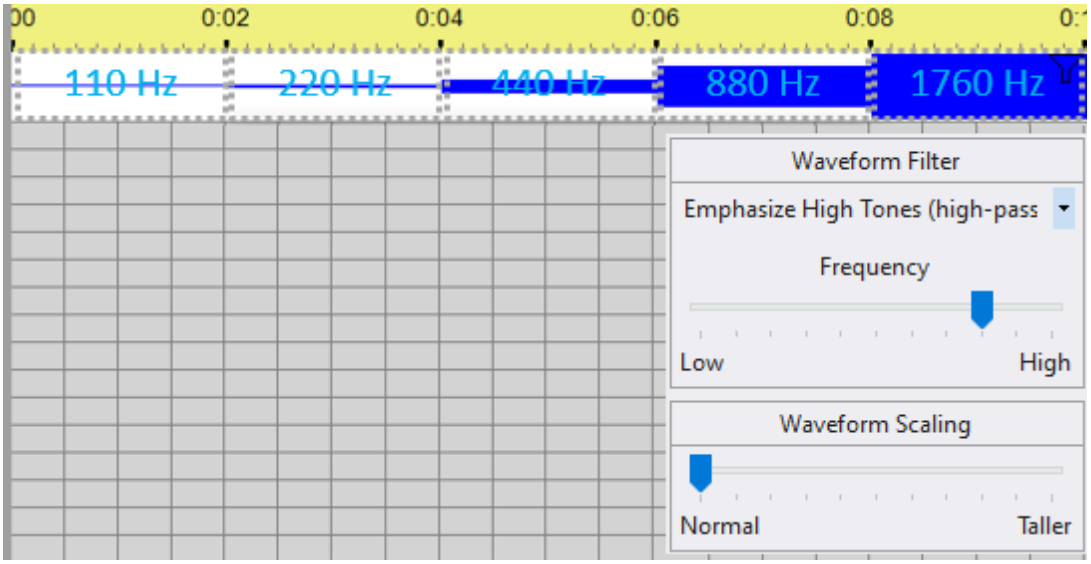


Emphasize High Tones

Here is the same sequence with the high tones emphasized. Notice that the frequency cut-off for the filter is adjustable using the slider.



Scaling the Waveform

You can use the "Waveform Scaling" section to scale up low level audio signals to see more detail. The following example shows how this can be used to see where the beats are more clearly.

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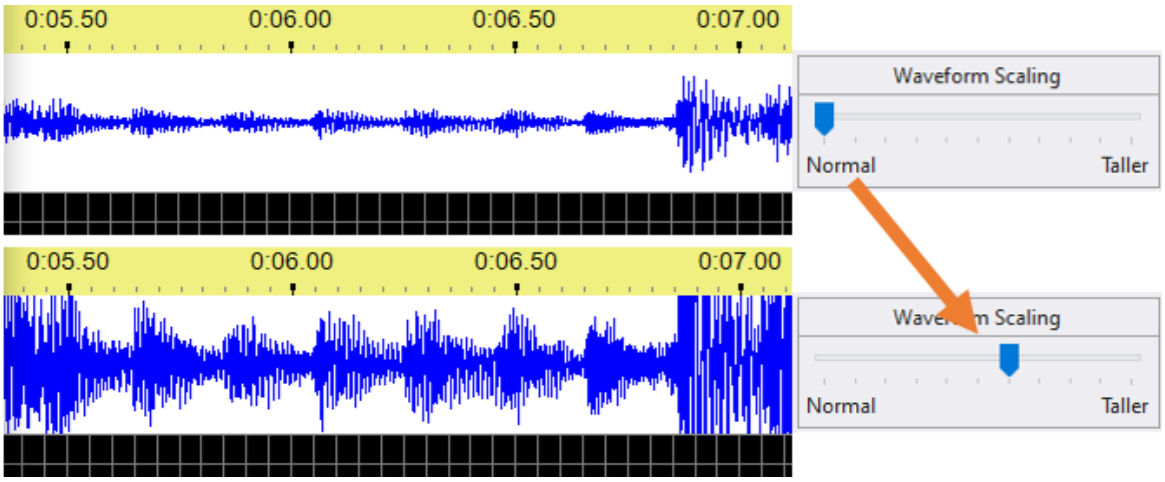
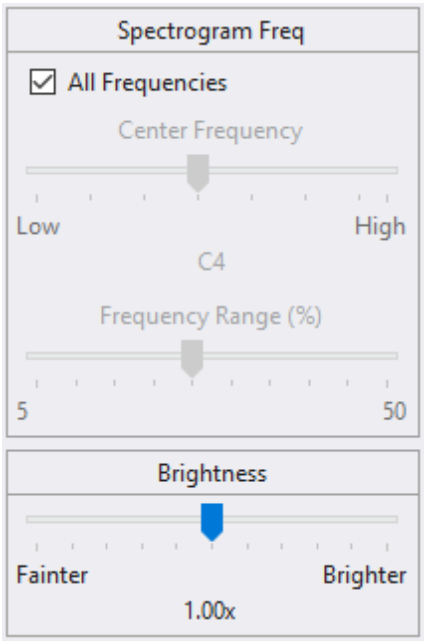


Increasing the vertical scale of the waveform

Controlling the Spectrogram Display

You can zoom in on the spectrogram, or change its brightness using the controls in the lower part of the Audio Settings window. These controls are only visible when the Audio Data selection is set to one of the "Spectrogram" options. By default, all frequencies are displayed.



Zooming In

To zoom in on a note, uncheck the "All Frequencies" box, then choose the note of interest using the "Center Frequency" slider. The selected note is shown below the slider, and also on the middle label of the spectrogram display. The level of vertical zoom is controlled using the "Frequency Range" slider. Move the slider to the left to zoom in, or to the right to zoom out.

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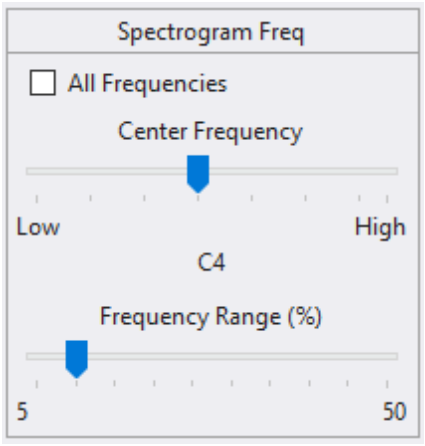
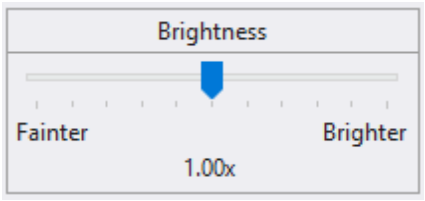
Once you have zoomed into your area of interest, you can switch among the 3 spectrogram types and the zoom settings will stay the same -- allowing you to easily compare the data shown in the 3 formats.



Adjusting Brightness

Sometimes the spectrogram will show too much information, perhaps overwhelmed with harmonics or percussion. Move the "Brightness" slider to the left to tone things down. Of if there are details that are faint and you want to see more clearly, then move the "Brightness" slider to the right.



5.3.11 Customizing Window Layouts

In the S5 Sequencer, you can customize the position, size and behavior of windows to create window layouts that work best for your computer setup. When you customize the layout, the Sequencer remembers it. For example, if you change the docking location of the Playback window and then close the Sequencer, the next time that you start, the Playback window will be docked in that same location.

Windows That Can Float

The Playback Window, Previews Window, Control Lights Window, Motion Effects Window, and Start Page can be docked in any position within the main program window, or they can float outside the program window. Note that the Motion Effects Window is only displayed when you have the a PRO license.

- Clicking the "X" in the upper right corner of one of these windows will hide it. Hidden windows will appear on the the Window menu. Selecting the name of a hidden window on the Windows menu will unhide it.

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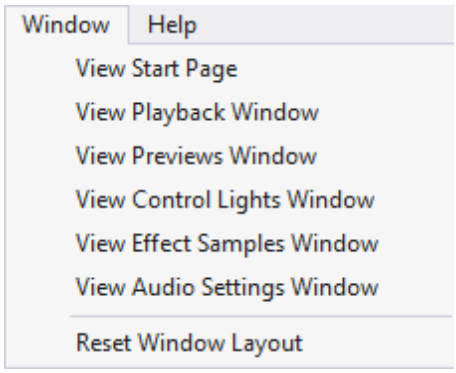

The Window menu with all options displayed

If a sequence is open, you can click on this toolbar icon to hide and unhide the Playback Window.

- Any of these windows that is docked inside the main windows can be pinned so that they stay open, or unpinned so that they automatically hide themselves after use.

Unpinned Window

Pinned Window

- These windows can float outside of the main program window. If you have multiple display monitors, the floating windows can be moved onto them, giving you lots of space to do your sequencing.

  There are several ways to float a window:
  - To float the current window (the one whose title bar is highlighted), select Window > Float Current Window from the main menu, or
  - Click on the title bar of a window and drag it away from the main window, or
  - Double-click on the title bar of a window

  Likewise, there are several ways to dock a window that is floating:
  - Click on the title bar of a floating window and drag it back over the main window. As you are dragging, landing spot icons will appear -- release the mouse button when the cursor is over one of the landing spots to finish the docking, or
  - Double-click on the title bar of a floating window, or
  - Select Window > Reset Window Layout from the main menu, which will dock all windows

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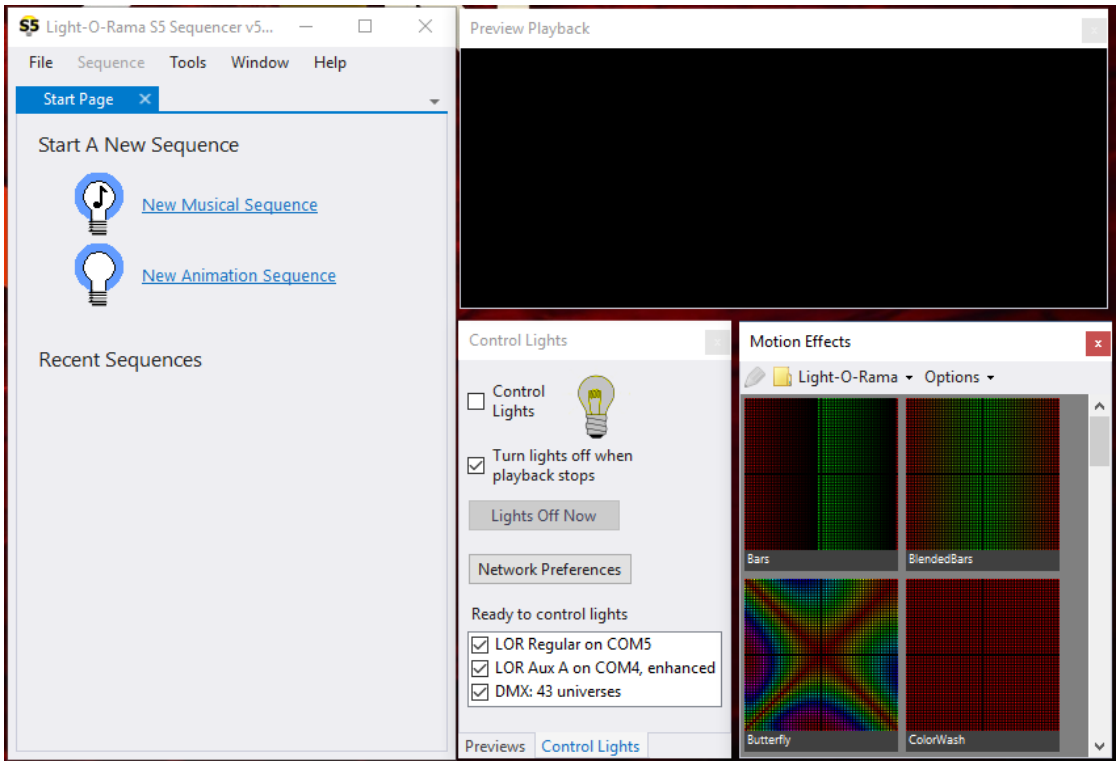

An example with 3 floating windows

Sequence Windows

Sequence windows can only be docked within the main program window; they cannot float or be hidden. Each sequence window has a tab at the top which displays the name of the sequence. Hovering your cursor over a tab will display a tool-tip with the full path to the sequence file.

- To the right of the name is an "X", which when clicked, will close the sequence. If you close the sequence and there are unsaved changes, you will be asked whether you want those changes saved or discarded.
- While sequence tabs cannot float outside of the main window, the tab can dragged and docked to other sequences. This allows for sequences to be viewed side by side or one below the other. Select Window > Reset Window Layout from the main menu to restore the sequence tabs and all other windows to their default locations.

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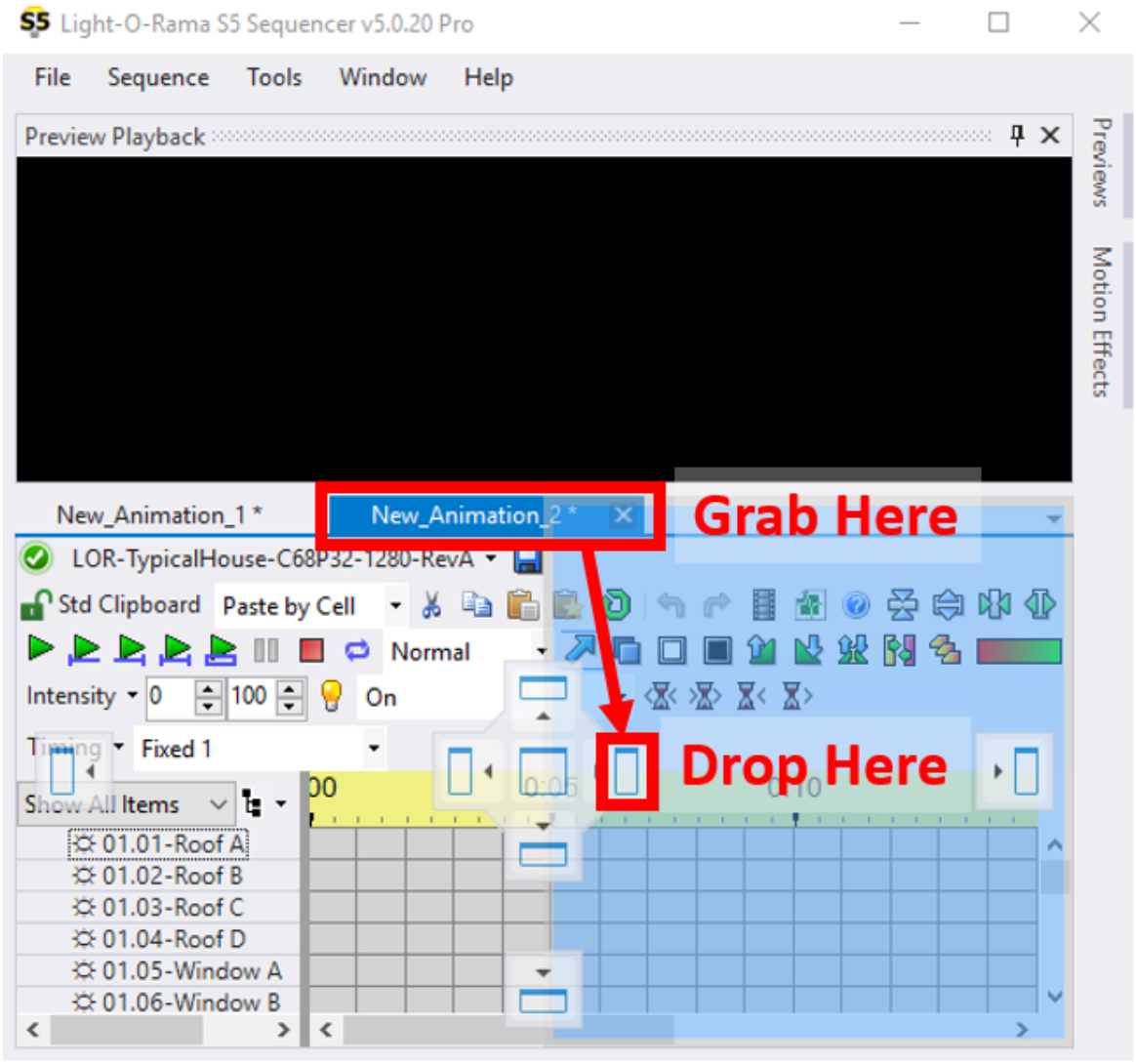

How to view sequences side by side

5.3.12 Background Image Brightness

If you have set a background image for your preview, you can change the image's brightness at any time to suit your needs (for example to simulate nighttime). Changing the brightness of the background image for a preview changes the image's brightness for all sequences that use that preview. There are 2 places where the background image brightness can be changed:

- in the Playback Window
- in Preview Design

Change Background Brightness in the Playback Window

Drag the Brightness slider to adjust the background image in the Playback window. You can also click the Darker and Lighter buttons on either end of the slider to make an incremental adjustment.

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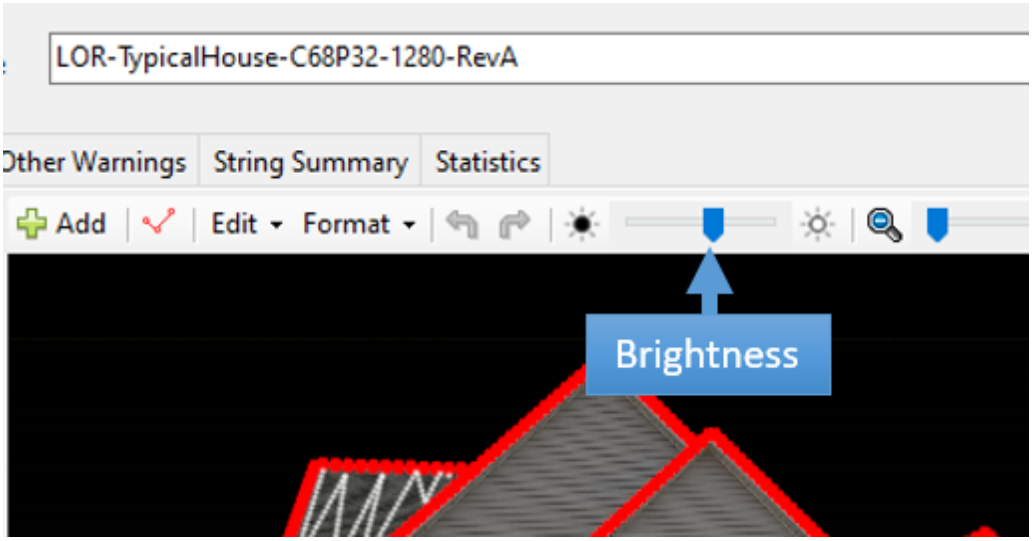
Change background image brightness from the Playback window

Change Background Brightness In Preview Design

Drag the Brightness slider to adjust the background image in the Preview Design window's Design tab. You can also click the Darker and Lighter buttons on either end of the slider to make an incremental adjustment.



Change background image brightness from Preview Design

5.3.13 Keyboard Shortcut Summary

There are separate lists of keyboard shortcuts for:

- Preview Design's Design tab
- Prop Definition's Custom Grid window

All keyboard shortcuts that can be used in the main Sequencer window are listed below. This is the default keyboard mapping. A custom mapping can be created in Keyboard Preferences.

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Main Menu

Key	Action
Alt F	Alt-F opens the File menu
Alt S	Alt-S opens the Sequence menu
Alt T	Alt-T opens the Tools menu
Alt W	Alt-W opens the Windows menu
Alt H	Alt-H opens the Help menu

Once the menu is opened, the arrow keys can be used to navigate around the menu and open sub-menus. Once you have reached the desired menu item, use the Enter key to activate it.

Sequence Open / Close / Save

Key	Action
Ctrl N	create a new musical sequence
Alt N	create a new animation sequence
Ctrl O	open existing sequence
Ctrl W	close the current sequence
Ctrl S	save the current sequence
Ctrl Shift S	save as (current sequence takes on the new name)
Ctrl Alt S	save a copy (make a backup)
F1	help

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Sequence Grid Navigation and Selection

Key	Action
↑ ← ↓ →	Use the arrow keys to move one cell in the direction of the arrow
Home	Move to the first cell in the current row
End	Move to the last cell in the current row
Pg Up	Move up 1 screen
Pg Dn	Move down 1 screen
Ctrl ←	Move left 1 screen
Ctrl →	Move right 1 screen
Shift	Expand the selection by holding down the shift key while using any of the keys listed above
E	If part of an effect is selected, then "E" will expand the selection to encompass the entire effect. If multiple rows are selected, then the selected area will expand to encompass the entire effect on every selected row.
C	"C" will expand the selection to the entire column
R	"R" will expand the selection to the entire row
Ctrl A	Ctrl-A will select the entire grid.
Ctrl +	zoom in on time scale
Ctrl -	zoom out on time scale
Ctrl Alt +	zoom in fully on time scale
Ctrl Alt -	zoom out fully on time scale

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Alt ↑	Make the height of each grid row shorter
Alt ↓	Make the height of each grid row taller
Alt Pg Up	Make the height of each grid row as short as possible
Alt Pg Dn	Make the height of each grid row as tall as possible

Sequence Modification

Key	Action
A	Set the selected cells to the current toolbar effect at MAX toolbar intensity
I	set selected cells to toolbar effect at MIN toolbar intensity
U	set selected cells to FADE UP using the current toolbar effect and intensity range (overwrites existing effects)
Ctrl U	modify existing effects in the selected cells to FADE UP using the toolbar intensity range
D	set selected cells to FADE DOWN using the current toolbar effect and intensity range (overwrites existing effects)
Ctrl D	modify existing effects in the selected cells to FADE DOWN using the toolbar intensity range
M	apply current settings to selected effects
Shift	SHIFT plus any of the keys above, will prompt for a new effect then fill the selection
F	fill selected cells
G	toggle selected cells
H	create chase in selected cells
Delete	clear selected cells
O	open the color fade selector
Enter	Use the currently selected tool (from the toolbar) on the grid selection
N	set selected cells to ON effect at max toolbar intensity

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T	set selected cells to TWINKLE effect at max toolbar intensity
S	set selected cells to SHIMMER effect at max toolbar intensity
L *or* Shift L	activate the Select Tool
Shift S	insert a SuperStar effect into the selected area (requires a Pro license)
+	the repeat function
Ctrl X	cut
Ctrl C	copy
Ctrl V	paste
Ctrl Alt V	paste special
Ctrl Z	undo last operation
Ctrl Y	redo

Sequence Playback

Key	Action
Spacebar	Start and stop playback
Shift Spacebar	Clear the freeform play range, then start playback
↓ ↑	During sequence playback, pressing the keyboard's down arrow will mark the current time as the start of a freeform play range. Later pressing the up arrow will mark the current time as the end of the freeform play range.
T	During playback, "T" inserts a timing mark

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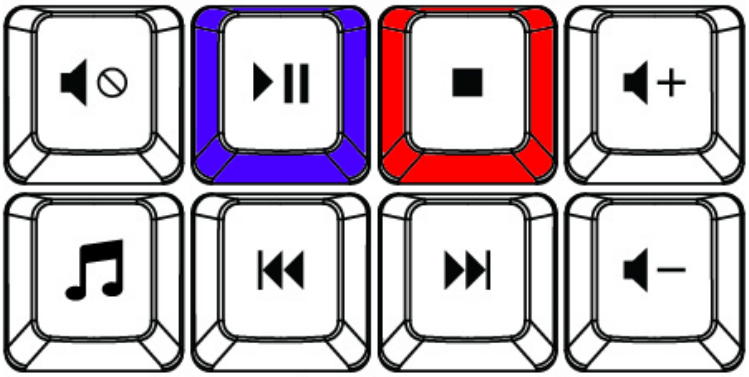

If you have media keys on your keyboard (like the ones shown above), then you can:

- Use the play/pause button (shown in blue) to start and pause playback. If there is a freeform play range, then this button will play that range; otherwise, it will play the visible portion of the sequence.
- Use the stop button (shown in red) to stop playback.
- Use the mute and volume keys to adjust the volume.

Other Shortcuts

Key	Action
Ctrl E	toggle the drag edges tool on and off
Ctrl R	toggle the view fades as ramps setting
P	display a sequence grid tooltip

5.3.14 Map Preview To Sequence Dialog

The "Map Preview To Sequence" dialog can appear in 2 instances:

1. If you modify a preview by adding and/or removing props or groups and then open a sequence that uses that preview, or
2. If you assign a different preview to your sequence

The dialog shows you what does **not** match between the items in the sequence and the items in the preview. It also gives you a chance to match up items manually if needed. The dialog features 4 lists. The lists on the left are for items in the sequence. The lists on the right are for items in the preview. Props are shown in the lists on top and groups are shown in the lists on the bottom.

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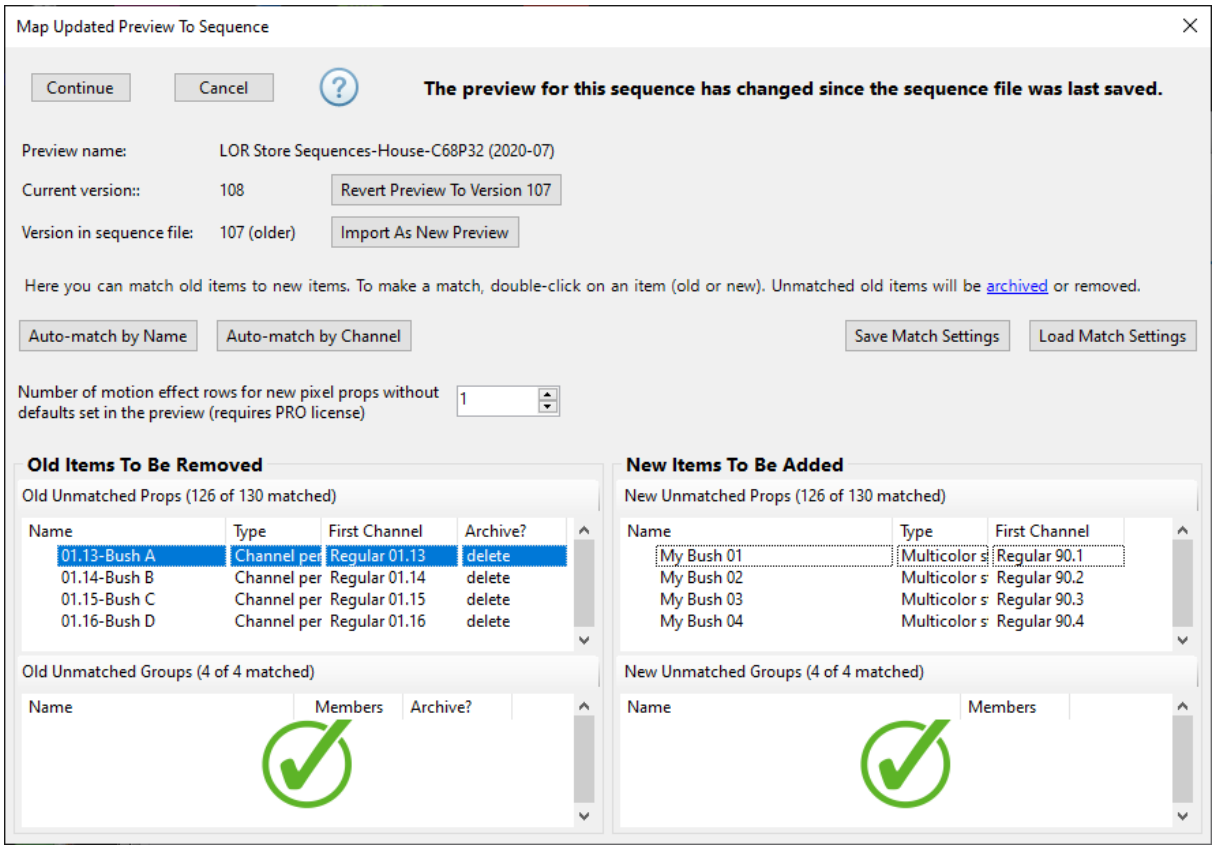

The Map Preview To Sequence dialog

In the example above, 4 props have been removed from the preview (Bush A, Bush B, Bush C, and Bush D) and replaced with 4 new ones (Bush 01, Bush 02, Bush 03, and Bush 04). The 4 old ones are shown in the list in the upper left, and the 4 new ones are shown in the list in the upper right.

Scenario 1

In this scenario:

- Bush 01 is meant as a replacement for Bush A
- Bush 02 is meant as a replacement for Bush B
- Bush 03 is meant as a replacement for Bush C
- Bush 04 is meant as a replacement for Bush D

If the user takes no action on this screen and clicks Continue, the 4 props on the left will be archived (sequencing preserved, but can no longer control lights) and the 4 props on the right will be added to the sequence with their channels empty (no sequencing). The user would need to copy the sequencing from each of the 4 archived props and paste it into the new props. At that point, the old props would no longer be needed and the user would have to open the Manage Archived Props screen to delete the 4 old props.

By matching the props manually in this dialog, the user can save some time. Manual matching is done by double-clicking on an item in any of the 4 lists and then selecting its match in the drop-down. In the picture below, we have double-clicked on Bush A and matched it to Bush 01. The Archive/Delete setting only matters for items that are unmatched; since we are matching in this case, the setting doesn't

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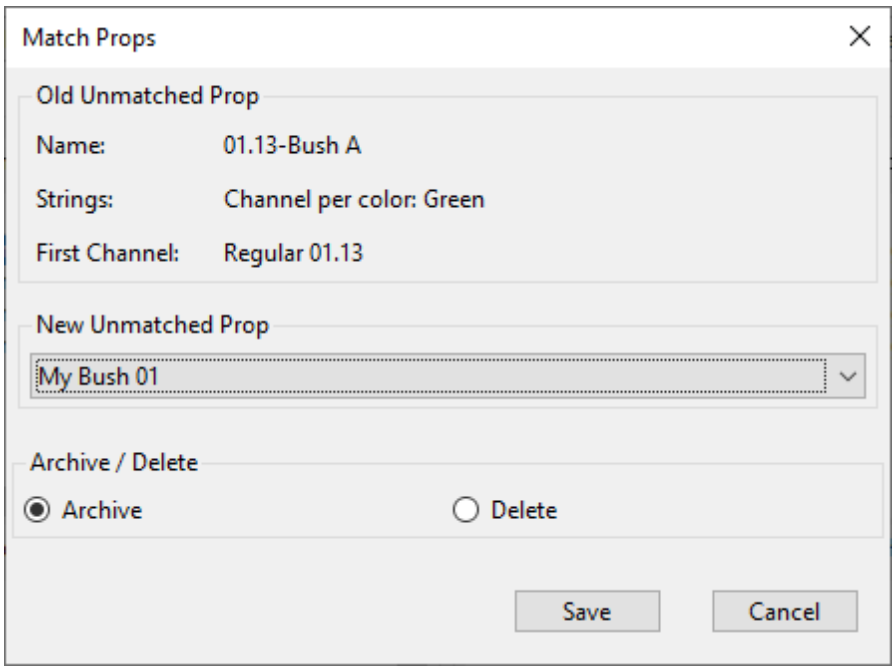
matter. After clicking Save, Bush A and Bush 01 are removed from their respective lists because they are now matched (remember the dialog only shows items that don't match).



Manual Match dialog

After using the same procedure to match Bush B to Bush 02, Bush C to Bush 03, and Bush D to Bush 04, green check marks will appear in the upper 2 boxes - indicating that there are no more items that need matching. The user can then click Continue and the 4 new bushes will replace the 4 old bushes. The sequencing will be preserved and nothing will be archived.

Scenario 2

In this scenario:
- The new bushes will have entirely new sequencing.
- The old bushes and their sequencing can be discarded.

If the user takes no action on this screen and clicks Continue, the 4 old props will be archived and they will need to be deleted using the Manage Archived Props screen.

To save a little time, the user can double click on each of the old bushes in the upper left list and change the archive setting to delete. In the picture below, Bush B has been marked for deletion. You would do the same thing for Bush A, Bush C, and Bush D. Clicking the Continue button would then result in Bush 01, Bush 02, Bush 03, and Bush 04 added to the sequence with empty sequencing rows; Bush A, Bush B, Bush C, and Bush D would be removed from the sequence. This may seem like a very small gain in efficiency, but consider what happens when you need to perform this same task on multiple sequences. Using this dialog, you can save your match settings for the first sequence, then you can simply load those settings for the rest of the sequences -- the time savings add up!

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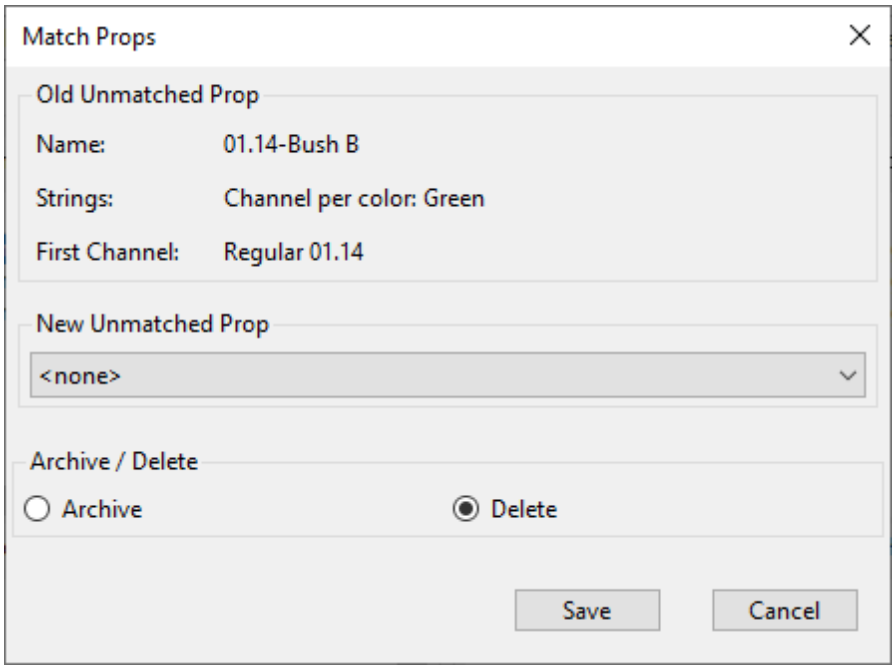

Bush B has been marked for deletion

Auto-Match By Name

Pressing this button will automatically match items with the exact same name. Case is ignored, so "My Prop" will match "MY PROP". However, this function will fail to match if an item has an extra space in its name, so "My□Prop" will not match "My□□Prop".

After the auto-match runs, the button will be disabled because there is no use in running this function more than once.

Auto-Match By Channel

Pressing this button will automatically match items with the exact same physical channel settings (device type, network, unit id, and circuit).

After the auto-match runs, the button will be disabled because there is no use in running this function more than once.

Save And Load Match Settings

Your show may consist of many sequences that share the same preview. To avoid having to create the same mapping over and over, you can simply save the mapping you create for the first sequence, then load those settings back in as you update subsequent sequences.

Number Of Motion Effect Rows For New Pixel Props

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If you have a Pro level license, then you can use motion effects to sequence your props that utilize RGB pixels. You can also have multiple motion effects playing on a prop at the same time. This setting specifies how many motion effect rows should be created for every new pixel-based prop or group (the new items listed on the right-hand side). Typically 1 or 2 is a good choice to start. And then you can add more rows to specific props as your sequencing needs dictate.

Version Numbers

The S5 software maintains a preview version number. The number is incremented by 1 every time the preview is saved. This screen shows the name of the preview and its version number. It also shows the version number of the preview stored with the sequence. You can view the current revision number for any preview on the Preview Design screen.

Import As New Preview

This function is used to import the preview stored in the sequence file as a new preview. The sequence you are opening will then be associated with the imported preview. After pressing the button, the screen will update with the name of the imported preview. The version numbers should then be the same and there should no unmatched props listed. Next, click the Continue button to open the sequence. This action has no effect on other sequences.

Revert (or Update) Preview

This function is used in the rare case where you have made changes to a preview but want to go back to the version stored in the sequence file. Using this function will cause you will lose the most recent changes to the preview, will affect any other sequences associated with that preview.

The button will be labeled "Revert" if the version in the sequence file is older. It will be labeled as "Update" if the version in the sequence file is newer.

5.3.15 Upgrading Sequences

Sequences in the S5 version are stored in a different format and have a different file extension than in prior versions.

	S5 Sequences	Prior Versions
Musical Sequences	LOREDIT	LMS
Animation Sequences	LOREDIT	LAS

Sequence File Extensions

Therefore, sequences created with prior versions must be upgraded. You do this by selecting File > Open from the main menu, and then selecting the LMS or LAS file you want to upgrade. After opening the file, you will be presented with the following dialog:

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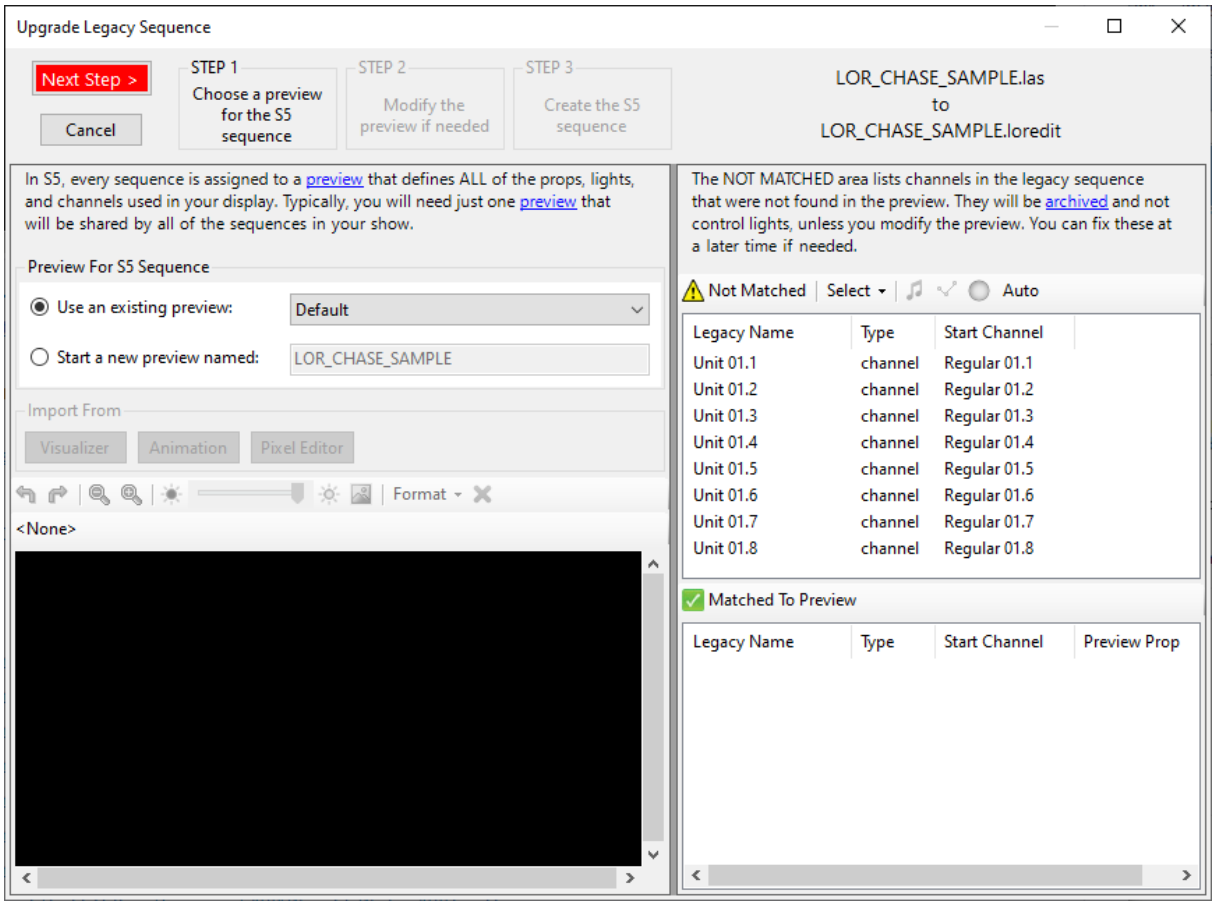

The Upgrade Legacy Sequence Dialog

The name of the sequence being upgraded is shown at the upper right. The 3 steps that make up the upgrade process are shown across the top of the dialog. The current step shown with regular text, and the other steps are grayed out. You move from one step to the next by clicking the red "Next Step" button. There is no "back" button -- if you need to return to a prior step, click the "Cancel" button and start over.

Your goal should be to end up with no items in the "Not Matched" list. You can do this by:

- choosing a preview in step 1 that matches all of the channels in the sequence being upgraded, or
- adding the unmatched channels to the preview in step 2

If there are still channels listed in the in the "Not Matched" list when you go to step 3, those channels will get "archived". Archived channels cannot control lights, but they preserve the effects that were in the original sequence. You will get a message at the end of the upgrade process listing any channels that were archived. For more information on archived props, see the Archived Props and Manage Archived Props Dialog topics.

The 3 steps are described in more detail below:

1. Choose a preview for the sequence
2. Modify the preview if needed
3. Create the S5 sequence. Moving to this step closes the Upgrade window, processes your inputs, and displays the upgraded sequence in a tab of the main program.

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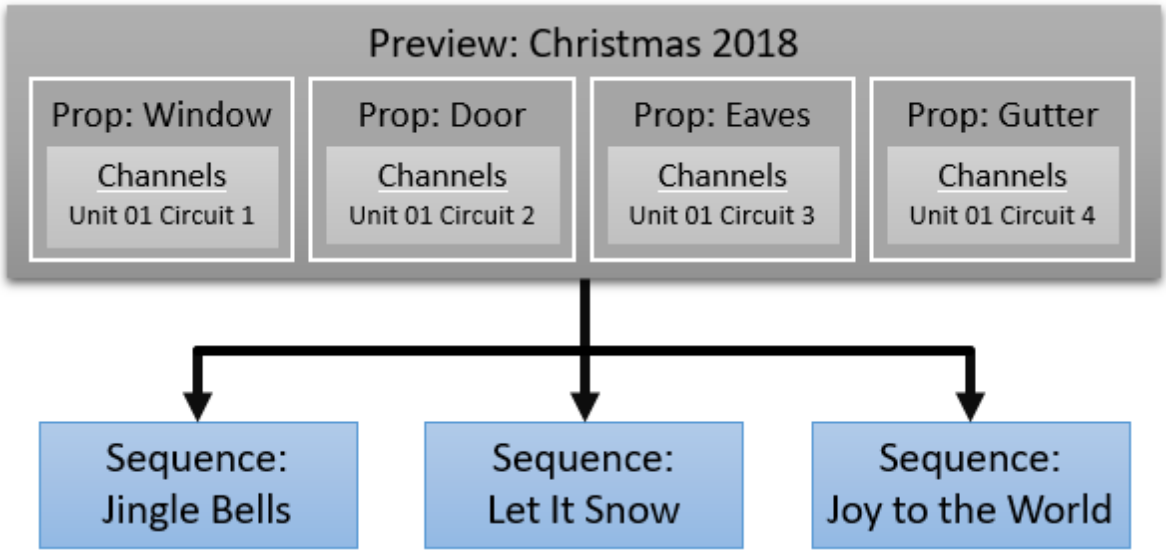
If the resulting S5 sequence doesn't turn out the way you expected, you can always go back and try upgrading the sequence again - adjusting the process to achieve a better result.

A Brief Word About Previews

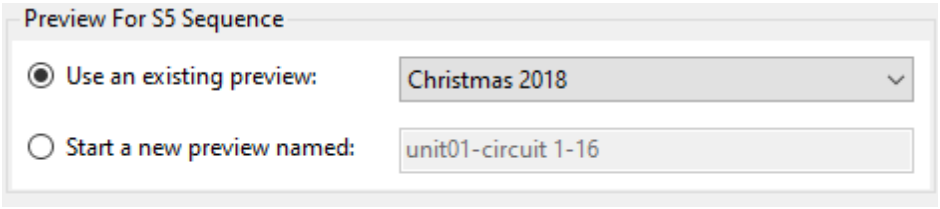
S5 sequences require a preview - this is new to S5. A preview specifies all of the channels that will be used in the sequence (among other things). You can create a preview during the upgrade process or you can create one ahead of time.

One preview can be associated with multiple sequences.



So if you had 3 sequences in your 2018 show that you are upgrading to S5, you only need one preview that will be shared with all 3 sequences.

Step 1: Choose a Preview for the Sequence



Step 1: Choose a preview

The first step is to decide whether you will upgrade the sequence using an existing preview, or start from scratch and create a new preview. If you decide to create a new preview, the preview name field defaults to the name of the sequence, but you can change this to anything you want.

Try selecting several different previews from the existing previews list. As each one is selected, the "Matched" and "Not Matched" lists will be automatically updated to show you how well the preview matches up to the sequence you are upgrading.

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If you choose to create a new preview, you don't have to start from scratch. You can easily import Visualizer files, an SE block-style animation, and/or a Pixel Editor preview into the new preview to help you get a quick start.

If you create a new preview during the upgrade process, you only need to do that for the first sequence you upgrade. Subsequent sequences will likely use the same set of channels, so you should select the preview you created while upgrading the first sequence.

Step 2: Modify The Preview If Needed

Your goal when modifying the preview should be to end up with an empty "Not Matched" list. You can shrink the "Not Matched" list by:

- Importing a Visualizer file, SE animation, and/or Pixel Editor preview that contains channels that match the sequence, or
- Selecting an unmatched channel and drawing it as a light string on the design canvas, or
- Selecting an unmatched channel and drawing it as a flood light on the design canvas, or
- Selecting one or more unmatched channels and designating them as beat channels
- Selecting one or more unmatched channels and having the tool auto-generate props for them

There are many tools on this screen to help you modify your preview. To help keep things organized, we've broken the down this topic into sections:

- Add a background image and adjust its brightness
- Importing
  - Import a Visualizer file
  - Import the block-style animation stored in the legacy sequence (if there is one)
  - Import the Pixel Editor preview (if there is one)
- Unmatched Channels
  - Select one or more channels
  - Sort the channel list
  - Draw a string for the selected channel
  - Draw a flood light for the selected channel
  - Auto-generate props for the selected channels
  - Designate channels as "beat channels" that don't control lights, but mark the beat of the music
- Using the Design Canvas
  - Select, move, and resize items on the Design Canvas
  - Zoom in and out
  - Align items using the Format menu
  - Delete items
  - Undo/Redo

After you have modified the preview here, you can always make further modifications later using the Preview Design tool.

Modify The Preview: Add a Background Image

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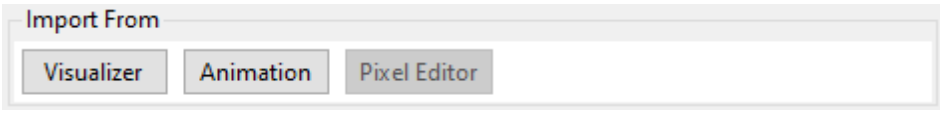
Click this button to add a background image to your preview. This can help with placement of your light strings and make your preview look more realistic.

If you have assigned a background image to your preview, you can use this slider to adjust the brightness of the image. Move the Brightness slider to the left to dim the background image, simulating the view of your display during nighttime. The buttons on the left and right will modify brightness up or down one step at a time. Image brightness can also be changed from other areas of the program.

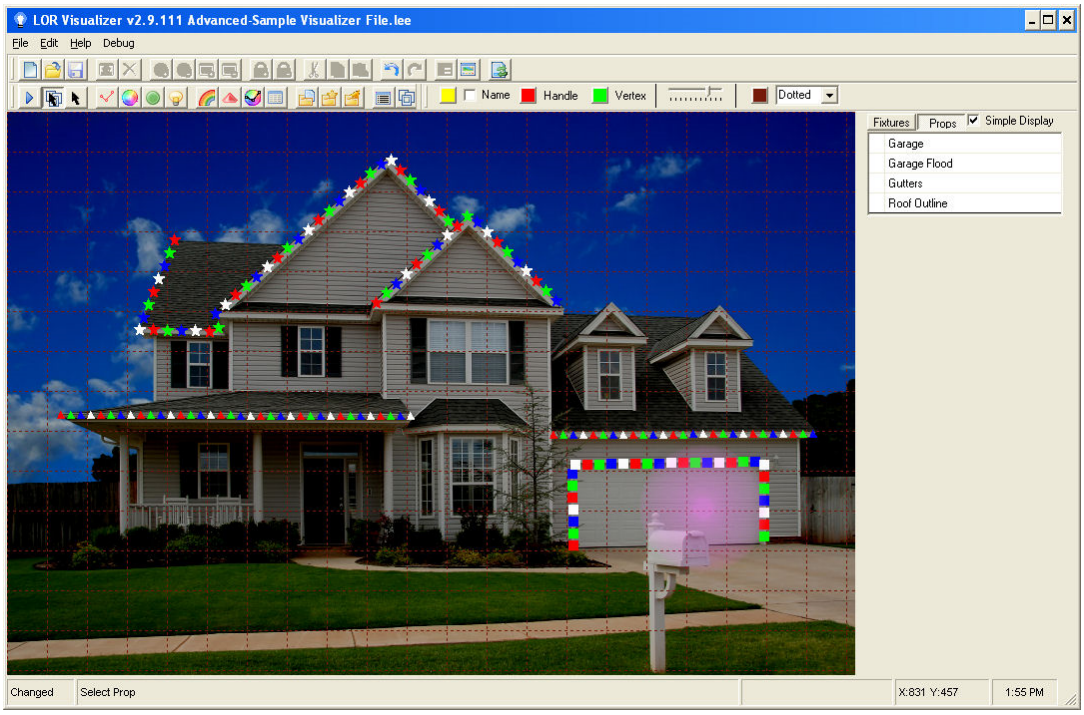
Modify The Preview: Importing



Click one of the buttons to start an import. If the sequence being upgraded doesn't have a block-style animation, the Animation button will be disabled. If the sequence doesn't have an associated Pixel Editor file, the Pixel Editor button will be disabled.

Import an S3 / S4 Visualizer file

If you have created a Visualizer file that defines all (or some) of the channels in the sequence being upgraded, you can select this option. You can also use this option to import Visualizer prop and fixture files.



A sample Visualizer file

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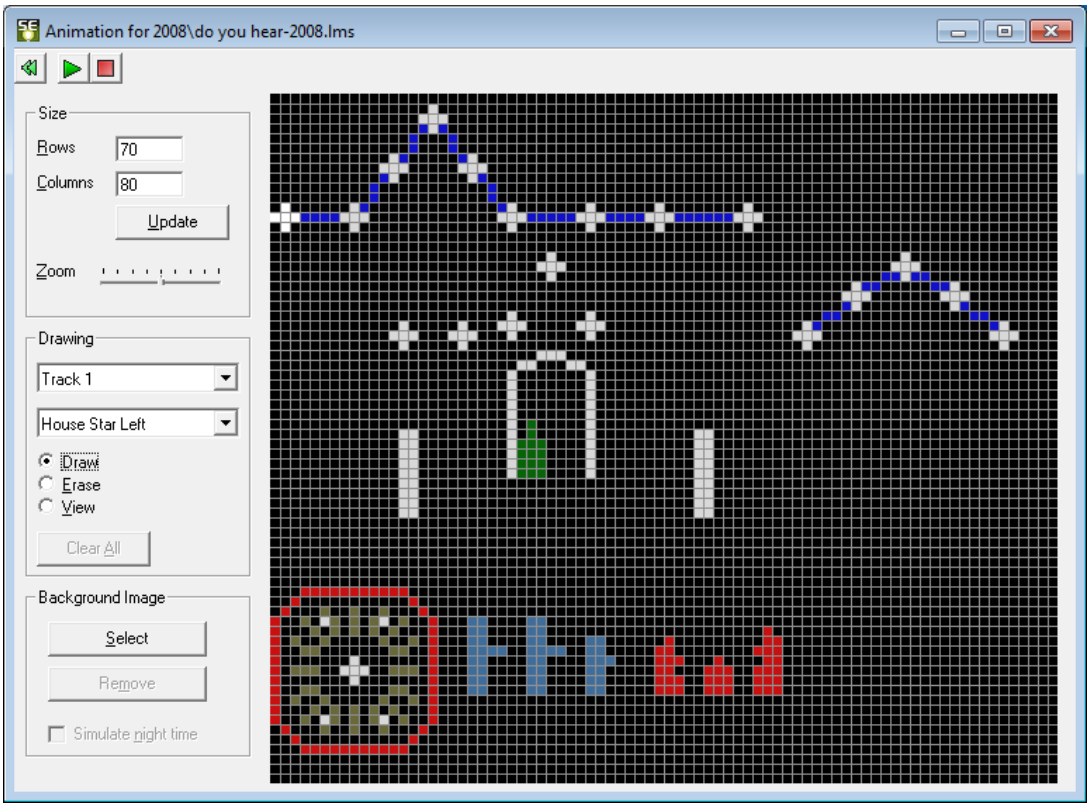
Import a block-style animation created with the Sequence Editor

If the sequence you are upgrading has an animation in it that you created with the Sequence Editor, it can be imported into the preview. If there is no animation in the sequence file, then this option will be grayed out.



A sample animation in the Sequence Editor

Import the Pixel Editor preview

If the sequence you are upgrading has an associated Pixel Editor file, you can import the Pixel Editor preview.

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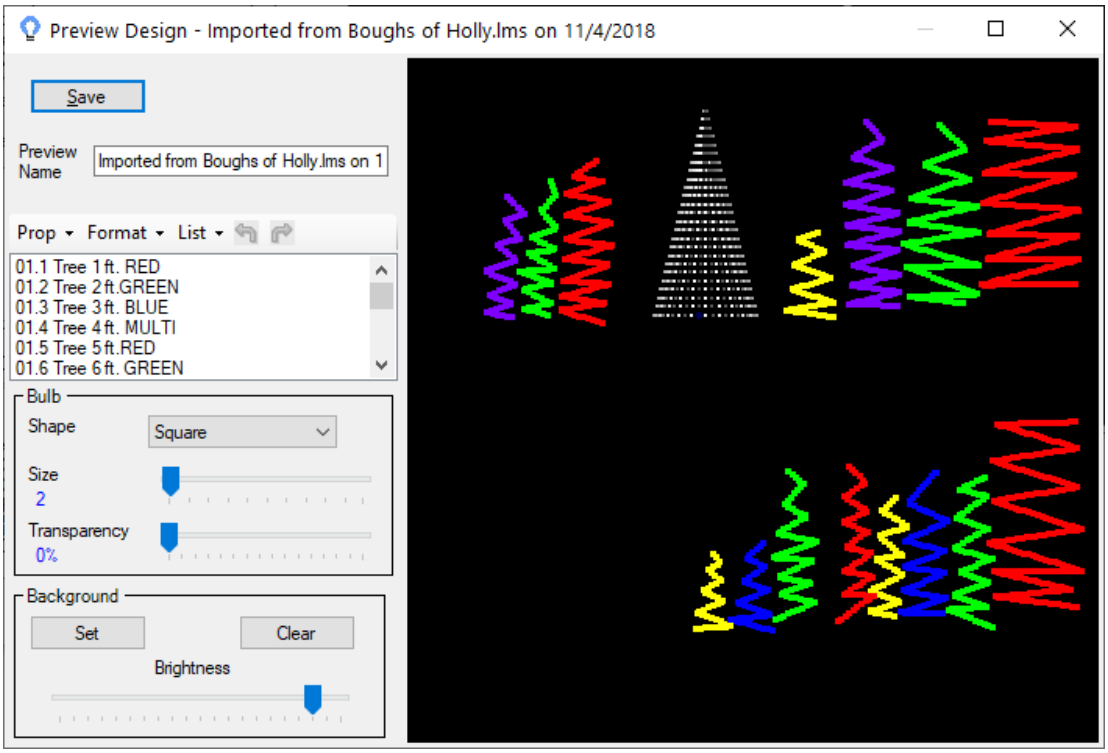
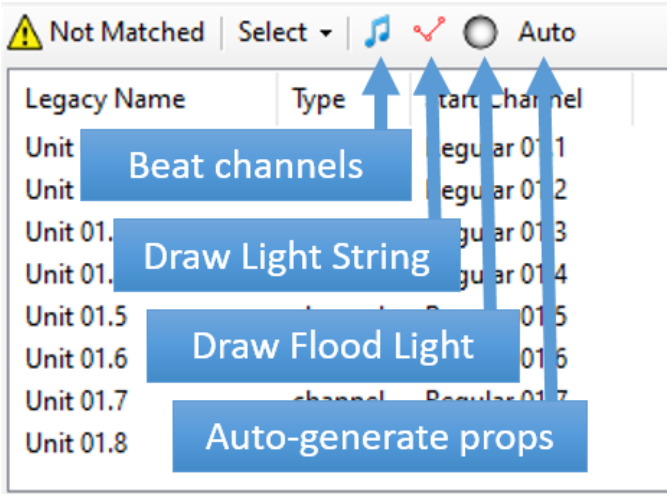


A sample Pixel Editor preview

Modify The Preview: Unmatched Channels



Toolbar for the Unmatched List

Select one or more channels

Click on an item in the Unmatched list to select it. Ctrl-click on addition channels to add them to the selection. Or you can use Shift-click to add a range.

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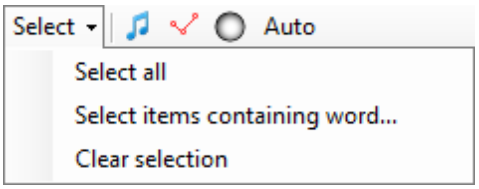


The Select Menu

From the Select menu you can:

- Select all items in the list
- Select channels with a particular word in their name. You will be prompted for the word.
- Clear the selection

Sort Channel List

Click the top of a heading to sort the items by the values in that column. Click the the column heading a second time to reverse the sort order.

Draw a string for the selected channel

Select a channel in the Unmatched list, then click this icon. Then move your mouse pointer over the design canvas and notice cursor change to the edit cursor. Click on the design canvas to start drawing your string. A single click of the left mouse button will insert a node (vertex) into the line and allow you to continue drawing the next segment. To stop drawing, double-click the left mouse button or use the ESC key. When you stop drawing, the Matched and Not Matched lists will update.

Select the string you have drawn by clicking on or near it, then you can drag the nodes (small red squares) around to change the shape of your string.

If you don't like the string you have drawn and want to start over, just click the Undo button.

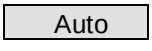
Draw a flood light for the selected channel

Select a channel in the Unmatched list, then click this icon. Then move your mouse pointer over the design canvas and notice cursor change to the edit cursor. Click once on the design canvas to place the flood light. The Matched and Not Matched lists will then update.

Select the flood light you have drawn by clicking near the center of it. Once selected, you can drag it around to adjust its position, or use the arrow keys to make finer adjustments.

If you don't like the flood light you have drawn and want to start over, just click the Undo button.

Auto-generate props for the selected channels



The fastest way to create a preview is to select all of the unmatched channels, then click the Auto button. The preview won't look like your house, but channel information will be set correctly and it will allow you to get started with your sequencing right away.

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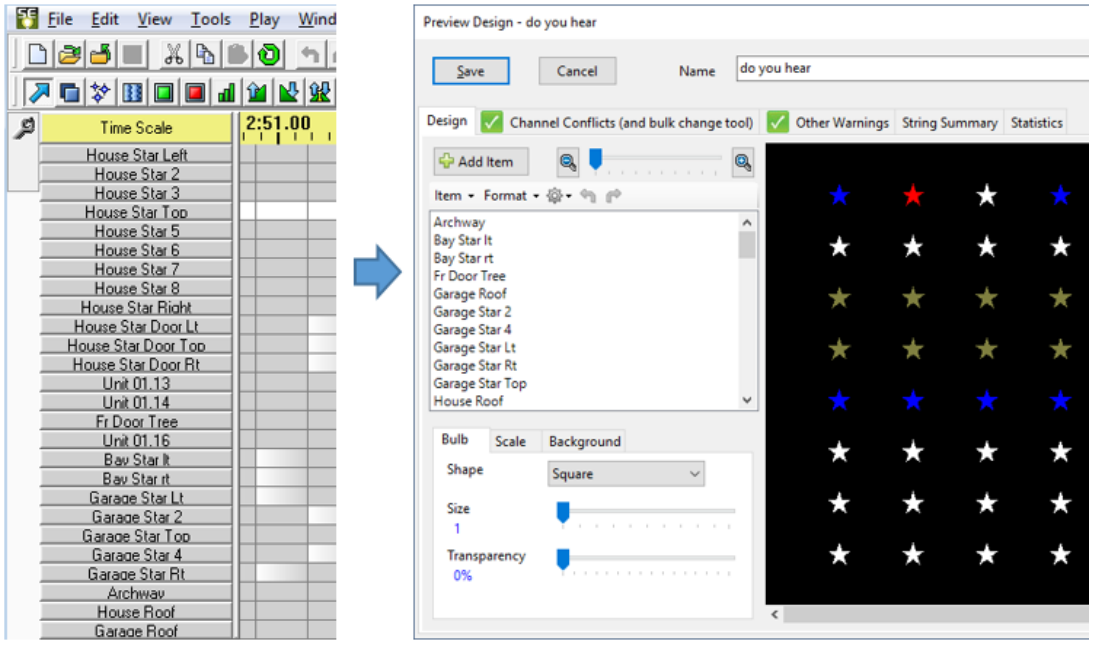
Note that you can auto-generate the preview for a subset of channels if needed. Just select the desired channels, then click the Auto button.



A sample Sequence Editor file (left), and the corresponding auto-generated preview (right)

Beat Channels

Beat channels are new to S5. In the S4 Sequence Editor, when you wanted to represent the musical beat, you just used a regular channel to do that. In S5, beat channels are a separate row type in the grid. They are intended to hold sequence effects related to the beat of the music; however, you can put any regular channel effect anywhere you want in a beat channel. Beat channels can only be added to musical sequences.

To designate one or more channels as beat channels, select them in the Unmatched list, then click the music note button. They will not be shown on the design canvas, but they will be listed in the "Matched To Preview" section with the Preview Prop column showing "<Beat Channels>".

Modify The Preview: Using the Design Canvas

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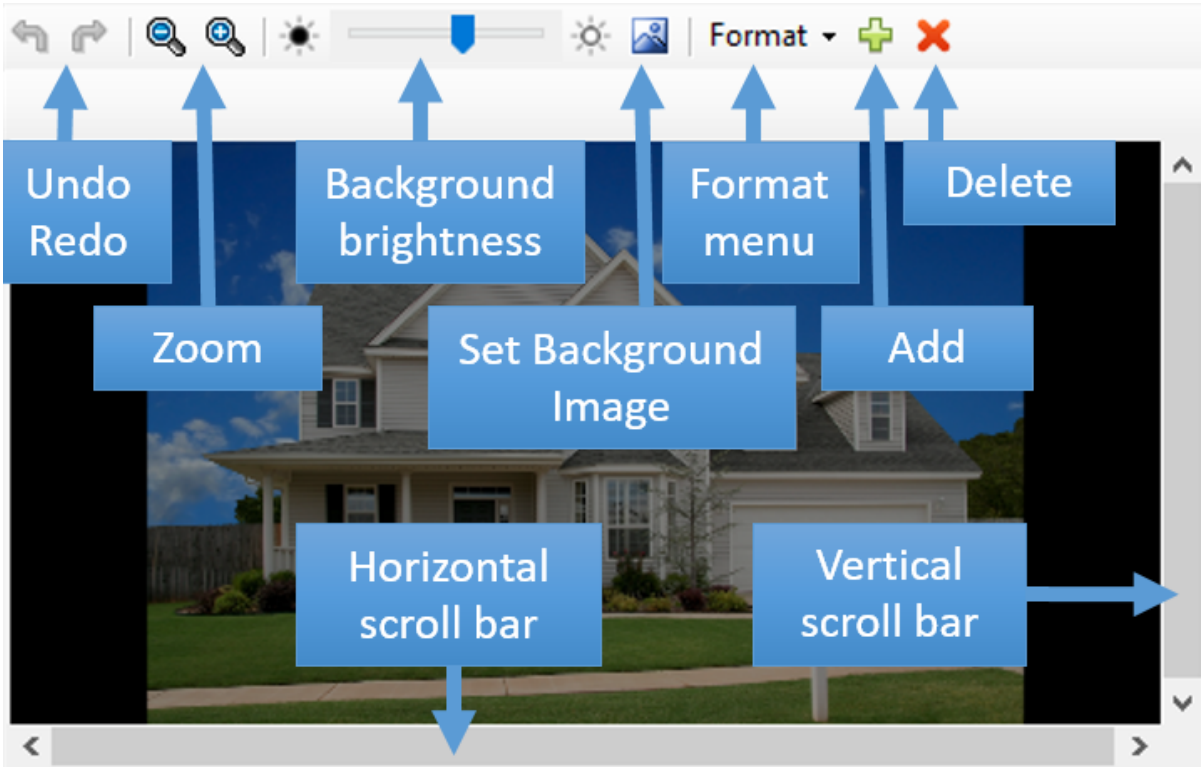
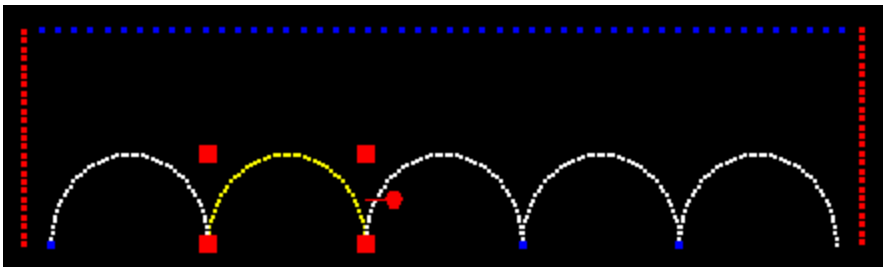


The Design Canvas and Toolbar

Select, move, and resize items on the Design Canvas



In the picture above, there is 1 blue string, 2 red strings, and 5 RGB arches. The second arch is selected.

In the preview design window, traditional strings (incandescents, LEDs, strobes) are displayed with the color of the string (e.g. a string of red LEDs will show as red). RGB pixels and dumb RGB strings are displayed in white. Any string that has been selected, traditional or RGB, is shown in yellow.

The selected item is always shown in yellow and has 4 red scaling “handles” at the corners (lines just have 2 handles) and a rotation handle to the right. You can select multiple props by holding the Shift key down while clicking additional items.

If a single prop is selected, its name will be displayed just above the design canvas. If multiple props are selected, this area will show "<Multiple>".

The selected prop(s) can be dragged around the design canvas using the mouse. They can be resized by dragging any one of the 4 red handles in the corners, or by using the Ctrl-UpArrow and

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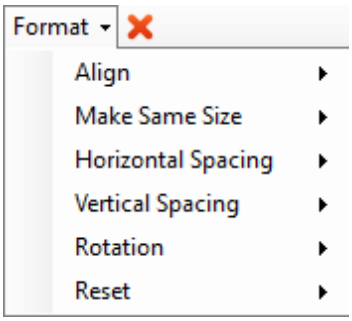
Ctrl-DownArrow keyboard shortcuts. You can rotate them by dragging the handle on the right side, by using the Format > Rotation menu, or by using the Ctrl-LeftArrow and Ctrl-RightArrow keyboard shortcuts. If you have multiple props selected, you can align them in many ways using the Format menu.

Any movement, scaling, or rotation action can be undone by clicking the undo button or using the Ctrl-Z keyboard shortcut.

Zoom in and out

You can zoom in on your props to make fine adjustments. When zoomed in, use the scroll bars to move around the preview.

Format Menu



Align - If multiple props are selected, the items on this sub-menu allow you to align those props in various ways.

Make same size - If multiple props are selected, the items on this sub-menu allow you to resize the selected items such that they all have the same width, height, or both.

Horizontal spacing - If multiple props are selected, the items on this sub-menu allow you to make the horizontal spacing between them equal, or to remove any space between them (so they abut one another).

Vertical spacing - If multiple props are selected, the items on this sub-menu allow you to make the vertical spacing between them equal, or to remove any space between them (so they abut one another).

Rotation - After selecting 1 or more props, the actions listed under the “Rotation” menu allow you to rotate the selected items back to their default orientation (0 degrees), to 90 degrees right, or 90 degrees left. Selected props can be rotated to any angle by dragging the rotation handle that is displayed when they are selected or using the keyboard shortcuts Ctrl-LeftArrow and Ctrl-RightArrow. Ctrl-0 (control key + zero key) is a shortcut for resetting rotation back to the default orientation (0 degrees). Note that freeform prop shapes do not have a default orientation, so the Rotation > 0 command has no effect on them.

Reset - After selecting 1 or more props, the actions listed under the “Reset” sub-menu allow you to reset the selected items back to their default position (centered), or default size (half of the canvas size), or both.

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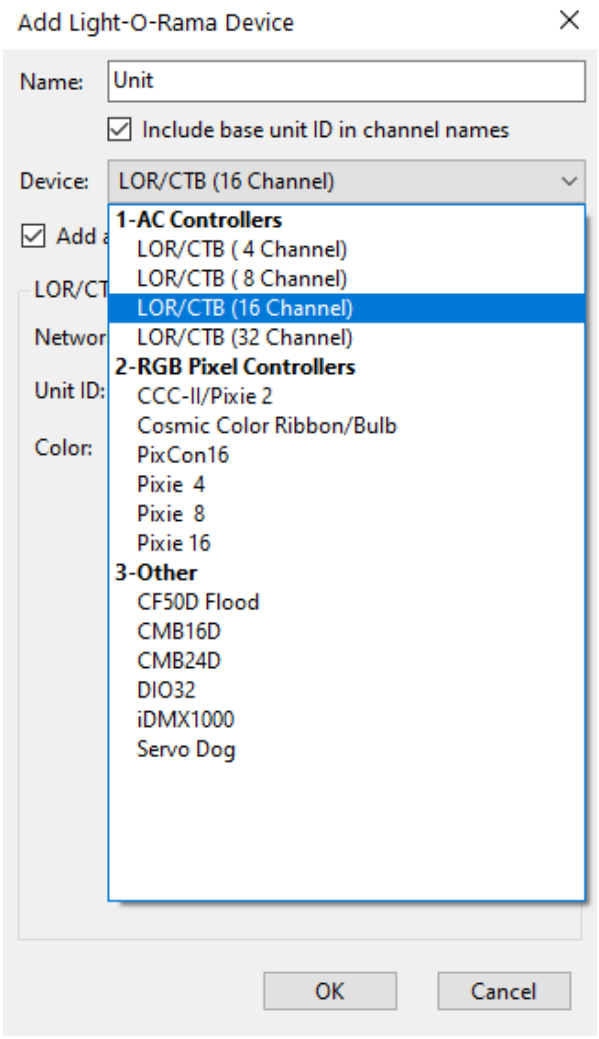
Add Items

Click on the plus icon to add a Light-O-Rama controller to the preview. After adding the controller, its channels will automatically be matched up with those in the sequence.



Delete items

You can delete one or more items by selecting them on the design canvas, and then clicking the delete button or pressing the Delete shortcut key. If you delete an item by mistake, you can always click the Undo button.

Undo/Redo

Adds, deletes, movement, scaling, and rotation can be undone and redone.

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clicking this icon undoes the last operation, and has the keyboard shortcut Ctrl-Z.

clicking this icon reapplies an operation that was previously undone, and has the keyboard shortcut Ctrl-Y.

5.4 SuperStar Sequencer

The Light-O-Rama SuperStar Sequencer can be used as a sort of front end to the Light-O-Rama Sequencer, to create sequences for Cosmic Color Ribbons or other lights visually instead of using a channels-versus-time grid. For more information, please see the following pages:

- Welcome
- Overview
- Instant Sequences
- Custom Sequences
- Summary of Commands and Keyboard Accelerators
- Purchased Sequences

5.4.1 Welcome

Launching SuperStar in S5

To launch SuperStar from the S5 Sequencer you must have the Pro license. Once you have the Pro license you can create motion effect rows. If you do not plan on purchasing the Pro license then it is recommended that you use S4. The version of SuperStar that is in S4 has all the same features as the version that is in S5.

Once you have the Pro license then the way to use SuperStar in S5 is to do the following:

1. Select some of all of a motion effect row (To select all of a row do right click on the row and select “Select” and then select “Row”).
2. Right click on the region you just selected and select Insert SuperStar Effect
3. Wait a few seconds and SuperStar will launch.
4. Do your sequencing. There are several ways to do your sequencing as listed below:

Load in a Purchased Sequence
Click on the “File” menu and select “Open” and open a .sup file that you have purchased. The effects will be loaded into the SuperStar screen and you can play them to the screen. Note that you should be using a preview that matches the layout that the sequence was designed for.

Instant Sequences
Create sequences in seconds using the “Instant Sequence” feature by simply doing the following:

- Press Ctrl+I to launch the Instant Sequence dialog box, use the 3 buttons in the lower left of the dialog box
- Click on the “Open Audio File” button to open your audio file
- Click on the “Sequence All” button
- Click on the “Play/Stop All” button

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Custom Sequences
Create Super Sequences like the ones at www.superstarlights.com
These sequences were created using scenes, morphs, images, and text actions. Learn more about how to do this in the Custom Sequences topic.

Auto Sequence
In the Scene, Morph, Smooth Effects, Image, and Text dialog boxes you can click on the button that has a car on it and add an Auto Sequence Effect. SuperStar will automatically move the effect with the music. It takes a little longer to learn to do Auto Sequence than Instant Sequence but it is more versatile and allows individual creativity in applying your effects. For complete instructions visit the Auto Sequence topic.

5. After doing your sequencing in any of the ways listed in step 4, simply shut down SuperStar by clicking on the Red X in the upper right of the program. You will be returned to the S5 Sequencer and the the sequencing that you did will automatically get saved into the S5 Sequencer. Click on the "Play" button in the S5 Sequencer and the sequencing will be played to the S5 computer screen.
6. If you wish to edit your sequencing, double click on the sequencing in the S5 Sequencer motion effect row, SuperStar will launch and the effects that you saved will be in SuperStar and you can edit the effects and then shut down superstar and those changes will automatically be saved.

5.4.2 Overview

This page gives an overview of the Light-O-Rama SuperStar Sequencer:

- Launching SuperStar in S5
- Exporting a sequence
- Exporting in the legacy format
- Exporting in the new intensity data format
- Playing a sequence exported as intensity data
- Floating windows

Launching SuperStar in S5

To launch SuperStar from the S5 Sequencer you must have the Pro license. Once you have the Pro license you can create motion effect rows. Then you do the following:

1. Select some of all of a motion effect row (to select an entire row, right click on the row, open the "Select" sub-menu, and then select "Row").
2. Right click on the region you just selected and select "Insert SuperStar Effect"
3. Wait a few seconds and SuperStar will launch.
4. Do your sequencing
5. Shut down SuperStar by clicking on the Red X in the upper right of the program. You will be returned to the S5 Sequencer and the the sequencing that you did will automatically get

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saved into the S5 Sequencer. Click on the “Play” button in the S5 Sequencer and the sequencing will be played to the S5 computer screen.

Note:
If you have the Demo version of SuperStar the sequence is still saved, but you will not be able to play the SuperStar Sequencing to the S5 Preview nor will you be able to play the SuperStar sequencing to your actual lights. But everything else in SuperStar will be fully functional.

Exporting a Sequence

In S5, “Export to Sequence Editor” is allowed but not recommended. The only reason you would use it would be to export the sequence so it can be played in the S4 Sequence Editor.

To export a sequence so you can play it in the S4 Sequencer, click on the File menu and select "Export to Sequence Editor". The "Export to Sequence Editor" dialog box will appear.

- "Export in Legacy Format": Legacy format is the format that was always used prior to the S4 release. Use this option to export in the same way that was always used prior to the release of S4.
- “Include Macro Channels for Cosmic Color Devices”. Light-O-Rama Cosmic Color Devices have seven macro channels. Superstar does not use the macro channels, but the default is to include them in the export. If you use copy/paste into a main sequence, the main sequence will have the macro channels and it is important for the source and destination of the copy/paste to match. If you are using RGB pixel devices not made by Light-O-Rama they will not have macro channels. If you are using copy/paste to get the exported sequence into the RGB pixels you will not want the macro channels in the export.
- "Export in New Format (as Intensity Data)": This option will export in the new format as intensity data. All of the exported data will appear as one line at the bottom of the sequence in the Sequencer. The new intensity data format is designed to better support large numbers of channels and pixels. The intensity data format is also very handy because it automatically gets merged in with your main sequence and will play alongside your main sequence. Please note that you must have a Pro level license in order to use intensity data.
- "Add Intensity Data to Existing Sequence": Choose this option if you already have a main sequence and you want to add the exported data to the existing main sequence.
- "Add Intensity Data to New Sequence": Choose this option if you want to add the intensity data to a new sequence. SuperStar will create a new Sequencer sequence with a main body that is empty and will add the intensity data to it. You can then play the sequence. This is a way to play the exported sequence as a "stand alone"sequence.

Exporting in the Legacy Format

If the name of your SuperStar sequence was “MyAwesomeSequence.sup” then the default name for the exported sequence will be “MyAwesomeSequence_sup.lms.” You can change the name if you wish.

When use the legacy format you can play it as a stand-alone sequence in the S4 Sequence Editor.

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Exporting in the New Intensity Data Format

Intensity data gets placed on a line at the bottom of an S4 Sequence Editor sequence. The intensity data is played alongside the rest of the sequence so it automatically gets merged with the rest of the sequence. Note that the intensity data should not send commands to any of the same channels that are in the main sequence.

Playing a Sequence Exported as Intensity Data

- Launch the Light-O-Rama S4 Sequence Editor
- Click on the “Existing Sequence” tab
- Select the file you exported
- Click on the “Ok” button
- Click on the “Play” button in the Light-O-Rama Sequence Editor

Floating Windows

When using a large number of CCRs, the sequencing grid and/or the visualization in SuperStar can become small. You can put the sequencing grid and the visualization each in their own window. That way you can place them where you want, and size them how you want. And if you have two monitors, you can put one of them in each monitor.

To activate floating windows, click on the "View" menu and select "Floating Windows".

5.4.3 Instant Sequences

Using the Light-O-Rama SuperStar Sequencer, you can now create a sequence in seconds using the "Instant Sequence" feature. This is a first for the home light show industry.

- Creating an instant sequence
- Timing map description
- Apply different sets of theme, color, and movement to different parts of the song

Creating an Instant Sequence

Click on the Tools menu and select "Instant Sequence..." (or you can press Ctrl+I), which will open the Instant Sequence dialog. In the lower left of the Instant Sequence dialog, click on the "Open Audio File" button. Then click on the "Sequence All" button. The effects for a sequence will appear in the time layers. Click on the "Play/Stop All" button.

Was that totally awesome or what! The timing marks were created by analyzing the audio file. The sequence was created using the timing marks and the theme, color and movement variations that you see in the dialog box. Now let's create another sequence:

Click on the "Roll Dice" button to get a random set of theme, color, and movement variations. Click on the "Sequence All" button; it will ask you if you want to erase the current sequence without saving (answer "Yes"). Click on the "Play/Stop All" button.

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"Roll Dice" is the easiest way to try different TCM ("theme, color, movement") settings, but you can set them manually also:

- **Theme:** The theme contains one or more effects. These effects are placed at each trigger. For example, "3 Segs" is made of three scenes that will place segments onto the ribbon, with segments having gaps between them. "1 Morph Full Length" has one morph in it which is always assigned to span the entire length of the ribbon. "Morphs colliding" is two morphs, each morph being half the length of the ribbon, with the two morphs coming towards each other and stopping when they meet each other. The best way to see what each morph is is to try it out and play it back.

- **Color:** This setting controls the colors assigned to the theme:

  - ***Native:*** The theme uses the colors that the effect was created in. Most themes were created using red. If the theme has more than one effect, then it may have other colors. For example, the three segments in "3 Segs" were created using red, green, and blue, and so using Native for "3 Segs" will result in all of the effects being red, greeen, and blue.

  - ***RGBW by group:*** This setting will take each group of effects in the theme and assign red, then green, then blue, then white to them. For example, if using the "3 Segs" theme, all three scenes in the theme will be red the first time the theme is triggered, green the second time, blue the third time, and white the fourth time. The fifth time, it will cycle back to red.

  - ***RGBW by effect:*** This setting will take each effect in the theme and assign red, then green, then blue, then white to them. For example, if using the "3 Segs" theme, the first time the theme is triggered, the first scene will be red, the second green, and the third blue. The second time the theme is triggered, the first scene will be white, the second red, and the third green. The end result is that RGBW by effect results in more colors than RGBW by group. Note that if the theme has only one effect in it, there will be no difference between RGBW by group and RGBW by effect.

  - ***Color wheel by group:*** This works similarly to RGBW by group, except it cycles through 21 different shades of colors in the color wheel when assigning a color to the group of effects in a theme.

  - ***Color wheel by effect:*** This works similar to RGBW by effect except it cycles through 21 different shades of colors in the color wheel when assigning a color to individual effects in a theme.

  - ***Custom Colors by group:*** This works similar to RGBW by group except it cycles through the custom colors chosen for this TCM. For example, to choose the custom colors for TCM 1 click on the “Set Custom Colors 1” button.

  - ***Custom Colors by effect:*** This works similar to RGBW by effect except it cycles through the custom colors chosen for this TCM. For example, to choose the custom colors for TCM 1 click on the “Set Custom Colors 1” button.

  - ***Red, Orange, Yellow, White, Green, Blue, Purple:*** Select any of these colors to make all effects in the theme be that color

- **Color by time:** This setting can only be used when color is set to RGBW by group, RGBW by effect, Color wheel by group, or Color wheel by effect. With this setting, you choose a length of time for all of the effects in the theme to change color. For example, if you select "every 4

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seconds", then instead of changing color at each trigger, the theme will change every four seconds.

- **Movement:** This setting controls the start and end point of the effects in the theme.The first drop-down list is the movement type. The second drop-down list is the movement speed:
  - ***None:*** The theme will start and end at the same location every time it is triggered. Note that "None" does not mean that the theme will have no movement; it just means that the start and end of its movement does not change.
  - ***Right same row:*** Move the start and end points of a theme to the right every time it is triggered. When a start or end point reaches the end of the ribbon it wraps around to the beginning. The themes that contain effects that span the entire length of the ribbon are special cases. For those effects assigning any movement other than “None” will make them alternate directions. “1 morph full length” is an example of a theme that always spans the entire length of the ribbon.
  - ***Left same row:*** Same as “Right same row” except the start and end points of the theme move to the left.
  - ***Up same column:*** Same as “Right same row” except the start and end points of the theme move up.
  - ***Down same column:*** Same as “Right same row” except the start and end points of the theme move down.
  - ***Pass by:*** The start: point is moved at a faster pace than the end point so that it “passes by” the end point.
  - ***Random same row:*** The start and end points are random on the same row
  - ***Right multi-row:*** The start and end points move to the right. When the end of a row is reached, the point moves down to the next row. When the end of the bottom row is reached it wraps back up to the top row.
  - ***Left multi-row:*** The start and end points move to the left. When the left end of the row is reached the point moves up to the next row. When the end of the top row is reach it wraps down to the bottom row.
  - ***Up multi-column:*** The start and end points move up. When the top column is reached it wraps to the next column to the right. When the top of the last column is reached it wraps to the first column on the left.
  - ***Dn multi-column:*** The start and end points move down. When the bottom column is reached it wraps to the next column to the left. When the bottom of the beginning column is reached it wraps to the last column on the right.
  - ***Snake up:*** The start and end points move to the right and then when the end of the row is reached it moves to the next row up, and then moves to the left until it reaches the beginning of that row and then moves up and starts moving to the right and so on.
  - ***Snake dn:*** The start and end points move to the right and then when the end of the row is reached it moves to the next row down, and then moves to the left until it reaches the

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beginning of that row and then moves down and starts moving to the right and so on.

- ***Random Rows:*** The start and end points move to random rows. In other words, the start and end points will always be on the same row, but the row they are on will be random.

- ***Random Points:*** The start point is at a random location, and the end point is at a random location.

- ***VU Meter:*** Makes the triggers behave like a VU Meter at the top of the ribbons. A VU Meter is a meter like what you might see on a stereo that has an equalizer. When using VU Meter as the movement, you should use “1 Pixel” as the Theme.

- **Movement Speed:** This is the number of pixels moved at every trigger. For example, a value of 1.0 will move 1 pixel every trigger. A value of 0.2 will move 0.2 pixels every trigger, but since fractional pixel movement cannot be seen on the screen, it will move 1 pixel for every 5 triggers.

- **Intensity:** This setting controls the intensity of the color assigned to the theme.

- **Trigger:** This is the trigger type.

  - ***Normal:*** This is the only trigger type that Instant Sequence originally had. It produces one trigger every time the strength of the sound at the Frequencies chosen go above and below a certain threshold.

  - ***Rapid Fire:*** Think of this trigger type as the “scoot along” trigger. This is a new trigger type that is designed to work better for visualization sequences, especially those with low numbers of channels. Rapid Fire produces a trigger for each of the Frequencies chosen. If there are many frequencies chosen for a ribbon in the timing map, then many triggers can get produced. The result is that the effects “scoot along” with the music. You should use “1 Pixel” as the Theme when using Rapid Fire. You can use other Themes but realize that since it produces so many triggers, you can end up with thousands of effects. It is recommended to use Rapid Fire on only one or two of the ribbons.

    To get "Rapid Fire" to respond to all frequencies in the song, click on the Timing Map button and set "All Freqs" for the row that corresponds to the row assignment of the TCM that is using "Rapid Fire". For example:

    - Set "Rapid Fire" for TCM 1.
    - In "Row Assignments to TCM (Theme/Color/Movement)", set TCM 1 to Row 1. Set all other rows to "None".
    - Click on the "Timing Map" button.
    - In the Timing Map dialog box, set "All Freqs" under Row 1.
    - In the Instant Sequence dialog box, click on the "Sequence All" button, then the "Play/Stop All" button.

Ribbon assignments to TCM: Across the top are the ribbon numbers. On the left is TCM1, TCM2, TCM3, TCM4, and None. By clicking on the grid of circles, you can assign a TCM to each ribbon. For example, if you have four ribbons, you could assign TCM1 to Ribbons 1 and Ribbons 2 by clicking on the two upper left circles. Then you could assign TCM2 to Ribbon 3 and Ribbon 4 by clicking on the circles in the second row that are underneath the numbers 3 and 4. You can choose "Non" to make no effects be assigned to a ribbon.

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To increase or reduce the number of effects being created, you can change the sensitivity. Do this by clicking on the "Timing Map" button and changing the Sensitivity setting in the upper left of the Timing Map dialog box. Click on the "Sequence All" button in the "Instant Sequence" dialog box to create a new sequence using the new sensitivity setting.

The sensitivity setting may be the only setting that you ever change in the Timing Map dialog box, but if you are adventuresome and want to experiment with the other Timing Map settings, read the next section.

Timing Map Description

Click on the "Timing Map" button in the Instant Sequence dialog box. A large dialog box entitled "Timing Map" will appear. This dialog box gives you control over the mapping of the frequency spectrum to the ribbons, which is how the timing marks get created:

- Freq 1 through Freq 32
- Beat, Both, Left, Right
- Sensitivity
- Length of Effects
- Extend Length of Effects
- Apply Sensitivity as
- Default Freq Settings
- Change the Timing Map

Freq 1 through Freq 32

Note that there are check marks showing that Freq 1 and Freq 2 are mapped to Ribbon 1. Freq 3 and Freq 4 are mapped to Ribbon 2, and so on. On the right side of the dialog box is a piano keyboard which shows which notes the Freqs map to. The default is to have the low frequencies assigned to ribbon 1 and asign higher frequencies to each ribbon thereafter, with the highest frequency assigned to the highest number ribbon that you have.

One reason you might want to change these settings is if your high number ribbons are not getting many effects assigned to them. This would happen if the song does not have many high notes in it. So, to get more action on the high number ribbons, you can assign more frequences to them.

Beat, Both, Left, Right

The default setting is "Both", meaning both the left and right channels of the stereo sound will be used when creating effects. You can also set "Left" or "right" to use the left or right channel of the stereo sound. Click on "Beat" to use the beat when creating effects.

Sensitivity

Sensitivity can be set to values from 1 to 10. The default is 5. Setting to a higher number will create more effects. Setting to a lower number will create fewer effects.

Length of Effects

Length of Effects can be set to values from 1 to 10. The default is 5. Setting to a higher number will make some of the effects last longer. Setting to a lower number will make some of the effects

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shorter. You can also think of this as the "Ritalin" setting, in that a higher number will sedate hyperactive sequences and make them more mellow.

Extend Length of Effects

This option extends the length of each effect. The length of each effect will extend up to the start of the next effect. This makes the instant sequence less "blinky".

Apply Sensitivity as

- **Volume Relative:** This is the default. With this setting, the sensitivity is applied by looking at the overall volume of the song. In essence, it raises and lowers the sensitivity to more nearly match the volume of the song at each point in the song. This helps even out the number of effects that are triggered even in the quieter parts of the song. Note, however, that the quieter parts of the song will still have fewer effects triggered than the louder parts of the song.

- **Freq Relative:** With this setting, the sensitivity is applied by looking at the volume for an individual frequency and adjusting the sensitivity for each frequency to more nearly match the volume of the song for that frequency at that point in the song. This helps even out the number of effects that are triggered for all frequencies. For example, if the song has a strong bass part in it and has some distinctive higher notes that are not as strong, this setting will help trigger those higher frequencies even though their volume is weaker. Note that it helps even out the number of effects in all frequencies, but the weaker frequencies will still have fewer effects triggered than the louder frequencies.

- **Absolute:** With this setting, the sensitivity is applied "as is". In other words, the louder parts of the song and the louder frequencies will get triggered more than the weaker parts of the song, and no attempt is made by the software to level out the number of effects that are triggered.

Default Freq Settings

There are seven default freq settings that you can use. For example, click on "Stereo Low to High" and then click on "Set Freq Spectrum", and you will see the check marks and radio buttons change in the timing map so that the left and right channels of the stereo sound are used.

You can choose to "Include Beat" in the generation of effects.

By default, "Set Theme, Color, and Movement" is selected, meaning that when you click on the "Set Freq Spectrum" it will also set some default values for the Theme, Color, and Movement. If you want to keep the Theme, Color, and Movement settings that you have, then you would uncheck "Set Theme, Color, and Movement".

Change the Timing Map

In the "Default Freq Settings" area, click on "Stereo Low to High", and then click on "Set Freq Spectrum". Go back to the "Instant Sequence" dialog box and click on "Sequence All". It will ask you if you want to overwrite your existing timings; answer "Yes". It will ask you if you want to erase the existing sequence without saving; answer "Yes". Click on "Play/Stop All".

Notice that the ribbons on the left half have effects applied based on the left stereo channel, and the ribbons on the right half have effects applied based on the right stereo channel.

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Apply Different Sets of Theme, Color and Movement to Different Parts of the Song

By default, you sequence the entire song each time you click on "Sequence All". To add more variation to your sequence, you can just do a portion of the song. To do this:

- Launch the "Instant Sequence" dialog box by pressing Ctrl+I.
- Near the top of the dialog box, click on the "Sequence the Selection Only" radio button.
- Use the Rewind or Forward buttons on the toolbar to scroll to the beginning of the region you want to sequence.
- Use a single left mouse click to mark the beginning of the region.
- Use the Forward or Fast Forward buttons on the toolbar to scroll to the end of the region you want to sequence.
- Use a single right mouse click to mark the end of the region.
- Before clearing the region, it is a good practice to click on "Unique Save As". This button is a quick way to save the current state of the sequence to a unique file name so that you can go back to it if you need to.
- If the region is not already cleared, click on "Clear Selection without Saving".
- Click on "Roll Dice", or set the theme, color, and move variations manually.
- Click on "Sequence Selection".

Note that "Clear Selection without Saving" uses the beginning of an effect to decide if it should be deleted. In other words, all effects whose start time falls within the selection region will be deleted.

5.4.4 Custom Sequences

What you won't see in the Light-O-Rama SuperStar Sequencer is the giant grid that the traditional Sequencer uses; instead, effects are added by:

1. Setting time ranges in the time scale.
2. Selecting squares in the Green Pixel grid (also referred to as the sequencing grid).
3. Using the Scenes, Morphs, Images, and Text dialog boxes in the Tools menu.

For more information, please refer to the following sections of this help file:

- Creating a Scene
- Creating a Morph
- Creating an Image Action
- Import Image
- Creating an Animation
- Creating Text
- Smooth Effects
- Groups of Effects
- Select One or More Rows
- Transfer Effects from One Sequence to Another
- Load/Save Clipboard
- Change to 10 Pixels per Ribbon
- "Star Rays", "Wide Grid", and "Thin Grid"
- The Layout Dialog Box
- The Preferences Dialog Box
- Configure Controller Unit IDs Using the Light-O-Rama Hardware Utility
- Configure Controller Unit IDs in the SuperStar Sequencer
- Select All, Select All Left, and Select All Right

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- Importing a Timing Grid and up to 3 Timing Channels

5.4.4.1 Creating a Scene

In the Light-O-Rama SuperStar Sequencer, a "scene" is a set of pixels that have the same start color, the same end color, a start time, and an end time.

- Initialize the Screen
- Launch the Scene Dialog Box
- Select Some Pixels in the Pixel Grid
- Add the Scene
- Play the Scene
- Create a Scene that Has an End Color
- Play the Scenes
- Change Some Settings
- Modify a Scene
- Play the Scenes Again
- Why Did the First Scene Go from Red to Purple to Blue?
- Undo and Redo Your Modification
- Group Select
- Group Modify
- Using Group Modify to Clone
- Pause and Freeze Frame
- Add Some More Scenes of Your Choosing
- Save the Scenes You Have Created

Initialize the Screen

Click on the toolbar button with a piece of paper on it. This will do three things: It will clear the pixel grid, set the Start color as red, and set the time duration to 1.00-2.00 seconds.

Launch the Scene Dialog Box

Click on the Tools menu and select "Scenes". The Scene dialog box will launch. Whenever the scene dialog box is launched, the "Monochrome" mode is automatically selected and the toolbar button with a black and red rectangle will depress.

Select Some Pixels in the Pixel grid

While in "Monochrome" mode, you can color pixels in the pixel grid using the left mouse button. You can use single click or click and drag. You can erase pixels in the pixel grid using the right mouse button. Ctrl + right mouse button will erase the entire grid. Since the Start color is already set to red, the pixels will become red as you select them.

Add the Scene

In the Scene dialog box, click on the "Add" button to add the scene.

Play the Scene

Click on the play button in the toolbar (the button with a triangle pointing to the right). Note that at 1.00 seconds, the group of pixels you selected will turn red.

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Create a Scene that Has an End Color

The default is for the "Start"and "End" color to both be red. Let's change that and create another scene:

- Set the start and end time to 2.00 to 3.00 seconds. You can select the time with the mouse by selecting a region in the time scale, or you can type into the fields in the dialog box.
- Color some pixels.
- The left red control is already at 100%; the selected pixels will turn red.
- Set the right red control to 0%; this represents the "End" color. When you set the "End" color it does not appear in the pixel grid, but it does appear as a number in the Scene dialog.
- Click on the "Add" button to add this scene.

Play the Scenes

Click on the Play button in the toolbar. At 1.00 seconds the first group of pixels will turn red and stay red. At 2.00 seconds, the second group of pixels will turn red and fade to black.

Change Some Settings

In the Scene dialog box, there is a list box listing the scenes you have added. They are listed chronologically by their start times. Select the first scene in the list. Note that the time, colors, and pixels for that scene appear in the main screen. The "End" color for this scene is black. Set 100% Blue for the end color. You can do this with the right Blue color control, or by manually typing 100 into the field in the Scene dialog box.

Note: Right click on the colored box above the color controls to bring up a "Color Picker" dialog.

Modify a Scene

Click on the "Modify" button. This will apply the new settings to the currently selected scene.

Play the Scenes Again

Click on the Play button. at 1.00 seconds, the pixels in the first scene will turn red, fade to purple, and then fade to blue by 2.00 seconds. At 2.00 - 3.00 seconds, the second scene will play, same as it did before.

Why Did the First Scene Go from Red to Purple to Blue?

You probably already figured this out: What you really did was set a red ramp that started at 100 and ended at 0. You also set a blue ramp that started at 0 and ended at 100. So in the middle, red was at 50 and blue was at 50, and the red and blue mix to make purple.

Undo and Redo Your Modification

Click on the Edit menu and select "Undo Scene Modify". Then click on the Edit menu and select "Redo Scene Modify".

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If you do an Add, Modify, or Delete, and change your mind, you can undo your change. You can undo up to ten actions. After undoing up to ten actions, you can also redo them.

Group Select

There are two ways to use the mouse to select both of the scenes:

1. Click and hold the left mouse button and drag the selection rectangle to contain both of the scenes in the time layer area.
2. Click on the first scene to select it, then press and hold the Ctrl key while clicking on the second scene.

Group Modify

Set the start color to yellow, by setting 100% red and 100% green (red and green mix to make yellow). Click on "Group Modify" in the Scene dialog box. A popup box will appear, entitled "Scene Group Modify".

Because you changed the start color, "Modify Start Color" will already be selected. Click on "OK". Note that the start color of both the scenes has changed to yellow.

Using Group Modify to Clone

Click on "Group Modify" again; because you have not changed anything, none of the boxes are selected. However, you can select any or all of the checkboxes to clone the attributes of the first scene onto all the selected scenes. For example, select "Modify End Color", then click "OK". The End color will be cloned onto the second scene.

Group Modify is a very powerful tool that can save a lot of time as you fine tune a sequence. It allows you to change an attribute across an entire group of effects just to see how it looks. As with other features, you can undo and redo a group modify.

Pause and Freeze Frame

To the left of the stop button on the toolbars is the pause button. When you press the pause button, a white line appears at the time selection point. While paused, the rewind and forward keys will step through the sequence in "freeze frame" manner. You can also click anywhere on the timeline to reposition the location of the freeze frame. This is very useful while developing sequences, to better see what each frame of the sequence will look like.

Unpause by clicking on the pause button again, or by clicking on the stop button.

Add Some More Scenes of Your Choosing

Go ahead and add some more scenes and play with the different settings. The times of the scenes can overlap. however, scenes that share the same time period should not share the same pixels. This creates a "pixel collision", and currently the results are not predictable (in the future, the SuperStar Sequencer will detect and prevent collisions).

Save the Scenes You Have Created

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Click on the File menu and select "Save As". Save the scenes you have created as a file named "MyScenes.sup".

5.4.4.2 Creating a Morph

In the Light-O-Rama SuperStar Sequencer, a "Morph" consists of the following:

- Layer: Defines priority if there are collisions (future)
- Acceleration: The morph can accelerate as it goes from "State 1" to "State 2"

State 1 and State 2 each consist of:

1. Start point and end point of a line
2. Head color
3. Time
4. Head length

Tail consists of:

1. Color, which can be determined in one of two ways:
   (a) Start Color and End Color
   (b) Use the Head Color
2. Time length

Here is an example of how to create a morph:

- Get a new screen
- Launch the Morph dialog box
- Observe the default settings
- Add first morph
- Play the morph
- Set a simple morph with a different start and end color
- Modify the morph
- Play the morph
- Add a trail length
- Modify the current morph
- Play the morph again
- Change the State 1 line to a vertical line
- Change the State 2 line to a vertical line
- Set color of the State 2 line to 100% green
- Set the time to 2.00 to 3.00
- Add a second morph
- Play the morph
- The morph twist
- Save your morph
- Morph summary
- The length of a morph

Get a new screen

Click on the toolbar button that has a picture of a piece of paper on it.

Launch the Morph dialog box

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Click on the Tools menu and select Morph. The Morph dialog box will launch, and the Scene dialog box will automatically be shut down. Whenever the Morph dialog box is launched, the "Morph" mode is automatically selected, and the black toolbar button with horizontal lines on it will be depressed.

Observe the default settings

By default, a red line for State 1 will be at the top of the pixel grid, and a red line for State 2 will be at the bottom of the pixel grid. The time duration will be 1.00 to 2.00 seconds. The Tail start color will be red, and the time length will be 1.00 seconds.

Add first morph

Press the "Add" button to add the morph.

Play the morph

On the toolbar, press the Play button. At 1.00 seconds, a red line will start from the top and go down to the bottom, leaving a trail that fades to black in one second.

Set a simple morph with a different start and end color

Leave the start color at red. Set the end color to blue. Set the Tail Time length to 0.00.

Modify the morph

Press the "Modify" button to modify the selected morph.

Play the morph

On the toolbar, press the Play button. At 1.00 seconds, a red line will start from the top and go down to the bottom. The line will change from red to purple and then to blue by the time it reaches the bottom at 2.00 seconds.

Add a trail length

The trail length defaults to 1. Make the morph leave a trail by typing in a number in the Trail Length field. For this exercise, change the State 1 Trail Length to 2, and change the State 2 Trail Length to 10.

Modify the current morph

Click on the "Modify" button. This applies your changes to the currently selected morph in the morph list.

Play the morph again

This time, the morph will leave a trail of two lines at the top, and will change to leaving a trail of 10 lines at the bottom.

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Change the State 1 line to a vertical line

The State 1 line is defined using a click and drag with the left mouse button. Note that one end of the State 1 line is labeled "1a"and the other end is labeled "1b". The start of the mouse drag will be "1a" and the end will be "1b". Make a vertical line by dragging on the left side of the pixel grid. Make your selection from top to bottom. When you are done, the top of the line should be labeled "1a", and the bottom of the line should be labeled "1b".

Change the State 2 line to a vertical line

The State 2 line is defined using a click and drag with the right mouse button. Note that one end of the State 2 line is labeled "2a" and the other end is labeled "2b". The start of the mouse drag will be "2a" and the end of the drag will be "2b". Make a vertical line by dragging on the right side of the pixel grid. Make your selection from top to bottom. When you are done, the top of the line should be labeled "2a" and the bottom of the line should be labeled "2b".

Set color of the State 2 line to 100% green

The color of the State 2 line is controlled by the right color controls. Set the right Blue control to 0% and the right Green control to 100%. This will change the State 2 line color from blue to green.

Set the time to 2.00 to 3.00

You can do this with the mouse on the time scale, or you can type the values into the dialog box. State 1 time is the start time, and State 2 time is the end time.

Add a second morph

Press the "Add" button to add the second morph.

Play the morph

On the toolbar, press the Play button. At 1.00 seconds, the first morph will play as it did before. At 2.00 seconds, the second morph will start from the left and end at the right.

The morph twist

Set the Tail Time Length back to 1.00 seconds. The Tail start color should be 100% red. Redefine the State 1 line by doing a mouse drag from bottom to top. Now "1a" will be on the bottom, and "1b" will be on the top. Click on the "Modify" button. Play the morph.

This time, the line will twist as it travels across. The effect will be that the line will become shorter in the middle and then get bigger. This is because as the morph progresses, point "1a" moves to point "2a", and point "1b" moves to point "2b".

Save your morph

Click on the File menu and select "Save As". Save the morphs you have created as a file named "MyMorphs.sup". Note that files can contain any combination of scenes and morphs. In this

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example, you saved them separately, but you could have saved your scenes and morphs together into a file of any name you choose.

Morph summary

Are morphs cool or what? You can do a lot with morphs. In the exercise, we morphed between two horizontal lines and between two vertical lines. You can also morph between diagonal lines.

Head Length and Tail Time Length can end up giving similar effects, but are applied differently. Head Length leaves a head that is a certain number of pixels long. Tail Time Length is applied after the Head effect, and is on for a certain amount of time. Experiment with different Head and Tail Time Length settings to get a feel for how they work.

Also, realize that when you specify a Tail Time Length to use the Head Color, it means to use the colors specified for the head. If the State 1 and State 2 head colors are different, then the Tail will use the appropriate intermediate color for the tail for the length of the tail. When you specify "Use Head Color", the intermediate color is determined by the location of the Tail along the morph, whereas when you specify a start and end color for the Tail in the Tail section, the intermediate color is determined by the time since the morph started.

Show Entire Head at Start

This setting allows you to start with the entire head being visible from the start. For example, if the morph travels 50 pixels, you can set State 1 Head Length to 50 and set State 2 Head Length to 0, and the morph will be 50 pixels long right from the start, and will get shorter and disappear at the end.

Acceleration

An acceleration of 0 means no acceleration. A positive number means accelerate from a slower speed to a faster speed. A negative number means decelerate from a faster speed to a slower speed. Try making a morph that travels downward and give it an Acceleration of 5. The morph will look like gravity is accelerating it downward. Try making a morph that travels upward and give it an Acceleration of -5. The morph will look like gravity is slowing the morph down as it travels upwards.

The length of a morph

Most people won't care about the details of the total length of a morph. But for those that really want to know, there are three parts to a morph:

1. **Root:** This is the time for the leading edge of the morph to travel from State 1 to State 2.
2. **Head Length:** The State 2 Head Length will add the length of the head at the end of the morph. This head will take some time to travel past the end location of the morph.
3. **Tail Length:** The tail length is in seconds, and is applied after the Root and Head.

The length of the Head and the Tail are displayed on the timeline as a narrow rectangle. Note that only the root can be selected. Clicking on the head or the tail will not do anything.

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5.4.4.3 Creating an Image Action

In the Light-O-Rama SuperStar Sequencer, an "image action" will move an image from a start point to an end point. At the end, a ramp can be applied. An image action consists of:

- Layer: Defines priority if there are collisions (future)
- Acceleration: The image can accelerate or decelerate as it goes from point A to point B (future)
- Image: A bitmap
- Start point
- End point
- Ramp

Ramp consists of:

- Time length
- Start color (future)
- End color (future)

Here is an example of how to create an image action:

- Get a new screen
- Launch the Image Action dialog box
- Observe the default settings
- Draw an image
- Add an image name
- Add the image
- Observe the default image action values
- Type an image action name
- Add the image action
- Play the image action
- Add another image action
- Play the image actions
- Stop at the right edge
- PreRamp and PostRamp
- View the image actions on a square grid
- Play it again

Get a new screen

Click on the toolbar button that has a picture of a piece of paper on it.

Launch the Image Action dialog box

Click on the Tools menu and select "Images". The Image Action dialog box will launch, and the Morph dialog box will automatically be shut down. Whenever the Image Action dialog box is launched, the "Draw" mode is automatically selected and the toolbar button with a pencil on it will be depressed.

Observe the default settings

By default, the left red color control will be set to 100%. The time duration will be 1.00 to 2.00 seconds. All pixels in the pixel grid will be black.

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Draw an image

Leave the left red color control at 100%. Set the left green color control to 100%. The start color will now be yellow. When drawing an image, only the start color is used; the end color is not used.

Click on the pixel grid to draw a smiley face at the top of the pixel grid. Single clicks will draw one pixel; click and drag will leave a trail of pixels. Right click erases pixels. Ctrl-right click will clear the entire grid.

Add an image name

At the top of the dialog box is the Image group. In the "Name" field of the Image group area, type "Smiley Face".

Add the image

In the Image group at the top of the dialog box, click on the Image "Add" button.

Observe the default image action values

The default start point (x,y) is (0,0), and the default end point (x,y) is (0,50). The default start and end times are 1.00 and 2.00. Leave these settings at their default values.

Type an image action name

In the Image Action group at the bottom of the dialog box, type "Smiley down".

Add the image action

In the Image Action group at the bottom of the dialog box, click on the Image Group "Add" button.

Play the image action

Play the image action. at 1.00 seconds, your image will start from the top and travel downward, disappearing off the bottom of the ribbons.

Add another image action

We will use the same image again, and this time move it horizontally.

For the time, select 2.00 to 3.00. For the start point, type (-12, 10) (enter minus twelve so that the start point and end point are different). For the end point, type (12, 10). For the Image Action name, type "Smiley right" in the bottom name field. Click on the bottom "Add" button.

Play the image actions

At 1.00 to 2.00 you will see the first image action, which goes from top to bottom. At 2.00 to 3.00, the second image action will move from left to right across the ribbons.

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Stop at the right edge

Select the image action that goes from left to right. Keep the start point at (-12, 10), but change the end point to (0, 10). At the bottom of the dialog box, enter a "Post Ramp Time" of 1.00. Click the Modify button.

Play the image actions and you will see the first image action go from top to bottom. The second image action will move from the left to the right edge and then fade for 1.00 seconds at the right edge.

PreRamp and PostRamp

"PreRamp Time" will fade the image in. Selecting "Make Brighter" with a "PreRampTime" will fade the image in brighter. It gives the effect of "poof" and the image appears.

"PostRamp Time" will fade the image out. Selecting "Make Brighter" with a "PostRamp Time" will make the image brighter and then fade to black. It gives the effect of "poof" and the image disappears.

View the image actions on a square grid

At the right end of the toolbar are three buttons. If you hover the mouse over the buttons you will see they are called "Star Rays", "Wide Grid", and "Thin Grid". Currently the "Star Rays" button is pressed. Click on the "Wide Grid" button.

Play it again

Play the image actions again and you will see how they look when the ribbons are parallel to each other and form a grid of pixels.

5.4.4.4 Import Image

On the right half of the Image Setup dialog box is the Import Image section. This section is used to import image files such as .jpg, .gif, .bmp, .png, and .ico files. To import an image file, do the following:

- Click on the Tools menu and select "Images..."
- In the Import Image section, click on the "Import image File (JPG, GIF, BMP, PNG, ICO, etc)" button
- If you are in CCR Mode, the sequencing grid will become larger and will be 64x50 pixels in size. This allows you to define a large image if you want. You can manipulate the image by using the following controls:
  - Move Origin X Y
  - Squish/Stretch X Y
  - Rotation Angle
  - Enlarge/Shrink
  - Clip Grid Bitmap
  - Images on a Small Grid
  - Images on a Grid Larger than Your Actual Lights

Move Origin X Y

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This control will move the origin of the image. Use the arrow buttons to move it left, right, up, or down.

Squish/Stretch X Y

This control will squish or stretch the image in the X or Y direction. Using this control will change the aspect ratio of the image.

Rotation Angle

Use this control to rotate the image. A positive angle will rotate the image clockwise; a negative angle will rotate it counterclockwise.

Enlarge/Shrink

Use this control to enlarge or shrink the image.

Clip Grid Bitmap

While manipulating the image, you can click on "Clip Grid Bitmap" and set a clipping rectangle on the sequencing grid using "Shift + Left Mouse Button". Then when you click on "Set Grid Bitmap from Image File", only the pixels within the clipping rectangle will get set.

After you have manipulated the image to the location, angle, and size that you want, click on the "Set Grid Bitmap from Image File" button. This will set the pixels on the sequencing grid to represent the original imported image. At this point you can manually edit the image if you wish. Note that you can set the color controls to the color of a pixel in the sequencing grid by moving the mouse to a pixel and then doing a Shift + Left mouse click. To set a pixel, set the color controls to the color you want and then click on one or more pixels.

After you have the image the way you want it, type in a name in the Image section and click on the "Add" button in the Image section.

Images on a Small Grid

For example, if you have 12 CCRs and you are in CCR mode, then you have a grid of 12x50 pixels to work with. However, when you import the image, the grid will become larger and will be 64x50 pixels in size. If you want your image to fit within your 12x50 pixels that you have, then you will need to shrink the imported image and move it to the left so that it will fit within the first 12 columns of pixels. Then you can click on the "Set Grid Bitmap from Image File" button. You can then set the Grid Mode to "Standard", and the sequencing grid will become the standard size of 12x50 pixels.

Images on a Grid Larger than Your Actual Lights

For example, if you have 12 CCRs and you are in CCR mode, then you have a grid of 12x50 pixels in your actual display. However, when you import the image, the Grid Mode will automatically be set to "Large" and the grid will become large and will be 64x50 pixels in size. Even though your actual lights are only 12x50 pixels in size, you can create a larger image and move the image through your 12x50 pixels. This allows you to display large images on a small grid. To do this, do the following:

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- In the Import Image section, click on the "Import Image File (JPG, GIF, BMP, PNG, ICO, etc)" button.
- The sequencing grid becomes larger and will be 64x50 pixels in size.
- Manipulate the image but keep it large so that it uses most or all of the 64x50 pixels.
- Click on the "Set Grid Bitmap from Image File" button.
- If you want, manually edit the pixels further.
- In the image section, type in a name and click on the "Add" button.

Now you want to add an image action that will move the image through your 12x50 pixels, so do the following:

- Set the Grid Mode to "Standard". This will change the grid to be the size of your actual display).
- In the time ruler at the top of the screen, set the time length to something long, such as 4 seconds.
- In the Image Action section, set Start x, y to 12, 0, and set End x, y to -64, 0.
- In the Image Action section, click on the "Add" button.
- Click on the "Play 8 seconds" button to play the Image Action. You should see the Image move through your 12 CCRs from right to left.
- To make the image move from left to right, set Start x, y to -64, 0, and set End x, y to 12, 0. Note that these values assume your image is 64 pixels wide. If it is not that wide, then you would use smaller values.

5.4.4.5 Creating an Animation

Using the Light-O-Rama SuperStar Sequencer, you can create an animation using a series of stationary images. Here is an example of how to create an animation:

- Load some pre-drawn images
- Launch the Image dialog box
- Select "Apply x,y in Preview (for animations)"
- Add the first image
- Add the second image
- Add the third image
- Add the fourth image
- What are those boxes under the timeline?
- Check your work
- How does cut/copy/paste work?
- Copy/paste four images
- Image group modify
- Copy/paste 8 images
- Image group modify
- Copy/paste 16 images
- Image group modify
- Copy/paste 13 images
- Image group modify
- Play the animation
- Nudge the animation to the left
- Play on "Wide grid" and "Narrow Grid"
- Save your animation
- Add an eye to Pac Man
- Play it again, Sam

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Load some pre-drawn images

Click on the File menu, select "Open...", and open the file "PacManImages.sup", located in the "Samples" directory of your SuperStar Sequences directory. Be sure to load PacManImages.sup, *not* PacManAnimation.sup.

Launch the Image dialog box

Click on the Tools menu and select "Images...". Click on each image in the image list box to view them.

Select "Apply x,y in Preview (for animations)"

Select the checkbox labeled "Apply x,y in Preview (for animations)". This applies the (x,y) coordinate in the preview of the image and it also disables the "End x" and "End y" edit fields (for animation images, the start (x,y) and end (x,y) are the same).

Add the first image

- In the image list box, select "01 Circle".
- In the Time Line, select from 1.00 to 1.10 seconds.
- In the Image Action x,y Start, type "0" and "44"
- In the Image Action name field, type "Mouth shut".
- In the Image Action section, click the "Add" button.

"1.00 Mouth shut" should appear in the Image Action list box.

Remember: If you make a mistake, you can always undo your mistake by clicking on the Edit menu and selecting Undo.

Add the second image

- In the image list box, select "02 Half open".
- In the timeline, select from 1.10 to 1.20 seconds.
- In the Image Action x,y Start, type "0" and "42".
- In the Image Action name field, type "Mouth half open".
- In the Image Action section, click the "Add" button.

"1.10 Mouth half open" should appear in the Image Action list box.

Add the third image

- In the image list box, select "03 Full open".
- In the timeline, select from 1.20 to 1.30 seconds.
- In the Image Action x,y Start, type "0" and "40".
- In the Image Action name field, type "Mouth full open".
- In the Image Action section, click the "Add" button.

"1.20 Mouth full open" should appear in the Image Action list box.

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Add the fourth image

- In the image list box, select "02 Half open".
- In the timeline, select from 1.30 to 1.40 seconds.
- In the Image Action x,y Start, type "0" and "38".
- In the Image Action name field, type "Mouth half shut".
- In the Image Action section, click the "Add" button.

"1.30 Mouth half shut" should appear in the Image Action list box.

What are those boxes under the timeline?

Under the yellow timeline, you should see four light gray boxes. These boxes are the four image actions you just added. Click on the first of the four boxes and it wil highlight the first image action, labeled "Mouth shut". Click on the second and it will highlight the second image action, "Mouth half open". You can also highlight the image action in the list box, and it will highlight the corresponding box under the timeline.

Check your work

It is easy to make a mistake while adding the image actions. Click on the first image action, labeled "Mouth shut", in the image action list box. Use the down arrow key to step through the image actions. The y coordinate should step through 44, 42, 40, and 38, and the top of the image should step up two pixels each time. If the image is not moving, make sure you have "Apply x,y in Preview (for animations)" selected.

How does cut/copy/paste work?

The fourth, fifth, and sixth buttons on the toolbar are the Cut, Coyp, and Paste buttons. By default, the objects you paste will be placed in the first open layer, so that effects do not end up on top of each other. if you wish the pasted objects to stay in their original layers, press the Shift key while clicking on the Paste button.

Copy/paste four images

- Select all four of the light gray boxes under the yellow timeline.
- Click on the "Copy" toolbar button. The selected effects will be copied to the clipboard.
- Click on the timeline just after the light gray boxes, which will be at 1.40 seconds.
- Click on the Paste toolbar button. The effects in the clipboard will be pasted starting at 1.40 seconds.

Remember, if you make a mistake you can click on the Edit menu and select Undo.

Image group modify

- You should now have eight image actions on the timeline. Select the last four.
- Click on "Group Modify"; the Image Group Modify dialog box should appear.
- Select "Modify x,y".
- "Add as Offsets to x,y Positions" should already be selected; leave it selected.
- Underneath "Start", type "0" into the left field, and type "-8" into the second field. Click on "OK". This will subtract 8 from the y coordinate in the selected image actions.

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- Click on each of the image actions, and you should see your animation move up the screen.

Copy/paste 8 images

Select all of the eight light gray boxes that you now have under the timeline. Click on the timeline just after the boxes that are already there. Click on Copy, and then Click on Paste.

Image group modify

- You should now have 16 image actions on the timeline. Select the last eight.
- Click on "Group Modify"; the Image Group Modify dialog box should appear.
- Select "Modify x,y".
- "Add as Offsets to x,y Positions" should already be selected; leave it selected.
- Underneath "Start", type "0" into the left field, and type "-16" into the second field. Click on "OK". This will subtract 16 from the y coordinate in the selected image actions.
- Click on each of the image actions, and you should see your animation move up the screen.

Copy/paste 16 images

Select all of the 16 light gray boxes that you now have under the timeline. Click on the timeline just after the boxes that are already there. Click on Copy, and then Click on Paste.

Image group modify

- You should now have 32 image actions on the timeline. Select the last 16.
- Click on "Group Modify"; the Image Group Modify dialog box should appear.
- Select "Modify x,y".
- "Add as Offsets to x,y Positions" should already be selected; leave it selected.
- Underneath "Start", type "0" into the left field, and type "-32" into the second field. Click on "OK". This will subtract 32 from the y coordinate in the selected image actions.
- Click on each of the image actions, and you should see your animation move up the screen.

Copy/paste 13 images

Select the first 13 light gray boxes that you now have under the timeline. Click on the timeline just after the boxes that are already there. Click on Copy, and then Click on Paste.

Image group modify

- You should now have 45 image actions on the timeline. Select the last 13.
- Click on "Group Modify"; the Image Group Modify dialog box should appear.
- Select "Modify x,y".
- "Add as Offsets to x,y Positions" should already be selected; leave it selected.
- Underneath "Start", type "0" into the left field, and type "-64" into the second field. Click on "OK". This will subtract 64 from the y coordinate in the selected image actions.
- Click on each of the image actions, and you should see your animation move up the screen.

Your animation is now complete.

Play the animation

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Click on the Play button. You should see Pac Man chase the red ghost up the ribbons.

Nudge the animation to the left

The chomping sound starts before you see the animation start. To synchronize the appearance of the animation with the start of the chomping sound, select all of the image actions under the timeline. Click on the "Nudge Left" toolbar button (the button with an hourglass and a left arrow on it). All the image actions should move left by 0.05 seconds. Nudge left three or four more times and the animation should be more in sync with the sound.

Play on "Wide Grid" and "Narrow Grid"

Click on the "Wide Grid" toolbar buton and play the animation.

Click on the "Narrow Grid" toolbar button and play the animation.

Save your animation

Click on the file menu, and select "Save As...". Save the file as "MyPacManAnimation.sup".

Note: There is already a file named PacManAnimation.sup in the Samples directory. You can compare your animation with this animation.

Well, it was a bit tedious, but it was worth the effort: You now have a cool Pac Man animation!

Add an eye to Pac Man

Even after the image actions are all defined, you can still modify the images that they use. For example, you could add an eye to the yellow Pac Man. Note that to change the images, you will be working in the upper Image section of the image dialog. Do not click on anything in the lower Image Action section.

- Select "01 Circle" in the Image list box.
- Use the right mouse button to erase some pixels on the yellow Pac Man to make an eye.
- Click on the Image "Modify" button in the upper Image section (not the lower Image Action "Modify" button).
- Repeat the same process for "02 Half open" from the Image list box.
- Repeat the same process for "03 Full open" from the Image list box.

Play it again, Sam

Play the animation again, and you will see the eye in the entire animation.

5.4.4.6 Creating Text

In the Light-O-Rama SuperStar Sequencer, text can be stationary or can move in any direction. At the end of the movement, the text can be stopped and displayed stationary for a specified period of time. Different size fonts can be used, and you can choose the text color or let the text be rainbow colored. Text can be treated as a positive mask or a negative mask. Let's get started!

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- Select Wide Grid or Thin Grid
- Set Layout to 24 ribbons
- Get a new screen
- Launch the Text dialog box
- Observe the default settings
- Add a text action
- Play the text action
- Change the color of the text
- Modify and play the text action
- Change Rotation to 0 degrees and set Direction of Motion to left
- Try different rotations and directions of motion
- Rainbow
- Rainbow start color
- Change the start color
- Try a different font and change the text
- Discussion on fonts
- Custom fonts
- PreRamp and PostRamp
- Discussion
- What is a text mask?
- Try some positive mask text
- Apply a background effect
- Understanding a positive text mask
- It works with morphs too!
- Move the morph to the foreground
- Negative text masks
- Discussion
- Applying normal text to the background of a text mask
- Summary

Select Wide Grid or Thin Grid

At the right end of the toolbar are three buttons that control how the ribbons are laid out. The text will be harder to read if you have "Star Rays" selected. Select "Wide Grid" or "Thin Grid" and the text will be easier to read.

Set Layout to 24 ribbons

Click on the Tools menu and select Layout. In the layout dialog box, set the Number of Ribbons to 24. We may not actually have 24 ribbons, but for the sake of this exercise, let's pretend we do!

Get a new screen

Click on the toolbar button that has a piece of a paper on it.

Launch the Text dialog box

Click on the Tools menu and select "Text". The Text Setup dialog box will launch. Whenever the Text Setup dialog box is launched, "Text" mode is automatically selected and the toolbar button with "ABC" on it will be depressed.

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Observe the default settings

By default, the color is white, font is "8-8x8 Thin - System", time duration is 1.00 - 5.00 seconds, text is "ABCDEF", text mode is Normal, rotation is 90 degrees, direction of motion is Up, and Stop at Edge is unselected.

Add a text action

In the Text Action group, click on the "Add" button.

Play the text action

Click on the Play button. You should see "ABCDEF" scroll like a marquee from the bottom to the top of the ribbons.

Change the color of the text

Currently, the text is white. Leave the red color control at 100, but change the green and blue color controls both to 0. The text preview will now be red.

Modify and play the text action

In the Text Action group, click on Modify, then play the text action again. Red text will scroll from the bottom to the top.

Change Rotation to 0 degrees and set Direction of Motion to left

Set Rotation to 0 degrees and set Direction of Motion to Left. Click on Modify, and play the text action. Red text will scroll from right to left across the ribbons.

Try different rotations and directions of motion

You can mix and match the rotation and direction of motion. Try some different combinations. Remember to always click on Modify and then to click on Play to see the results of your new settings. Also, try "Stop at Edge" to see what it does.

Rainbow

In the Color/Mask group, select Rainbow. Each character of the text now becomes a different color. Click on Modify, and play the text action with rainbow colors.

Rainbow start color

You can set the start color of the rainbow. For this exercise, use the following settings:

- Set Color to Rainbow
- Leave Mask at Normal
- Set Rotation to 90 Degrees
- Set Direction of Motion to Center
- Unselect Stop at Edge

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- Set Start time to 1.00 seconds and End time to 2.00 seconds

Click on Modify and play the text. The rainbow text will be centered on the ribbons and will not move.

Change the start color

- Set Start time to 2.00 seconds and End time to 3.00 seconds.
- Set the start color to orange.
- Click on Add. You will now have two text actions.
- Click on Play.

The rainbow colors will display with red as the start color from 1.00 to 2.00 seconds, and then the text will display with orange as the start color from 2.00 to 3.00 seconds.

By continuing to add text actions one after another with different start colors, you can make the colors move across the characters!

Try a different font and change the text

- Delete any text actions that you currently have. You can do this by clicking on Delete until all text actions in the Text Action list box are gone.
- In the Font list box, select "10-12x12 Bold - System". The text will become larger.
- In the Text field in the middle of the dialog box, change "ABCDEF" to "Merry Christmas!"
- Set the start time to 1.00 seconds and the end time to 5.00 seconds.
- Set Color to Rainbow.
- Set Start Color to whatever color you want.
- Set Rotation to 270 Degrees.
- Set Direction of Motion to Down.
- Unselect Stop at Edge.

Click on Add and play the text action. "Merry Christmas!" will scroll from top to bottom in rainbow characters.

Discussion on fonts

We just used the font "10-12x12 Bold - System". The first number in the name is the pixel height of a capital letter. The second and third numbers are the character cell width and height. In this font there are two pixels reserved for the lower case descenders (for example, the bottom tail of a "y"). This is why the height of the character cell, 12, is greater than the height of a capital letter, 10.

Note that in the smaller fonts, the cell height is the same as the capital letter height. This is because there are not enough pixels to reserve room for lower case descenders. In those fonts, the tail of a "y" does not go below the bas line.

As mentioned, the second number is the font character cell width, but realize that this is an average width. The width of any individual character may be different.

Custom fonts

In the font list, there are five system fonts and five custom fonts. The custom fonts are shipped identical to the system fonts. The only difference is that system fonts are not allowed to be

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modified, while the custom fonts are. If you wish to tweak some of the characters in a font, you can do so in any of the custom fonts. For example, let's say we want to make the exclamation point bigger in the "10-12x12 Bold - Custom" font. To do this, do the following:

- In the central area of the dialog box, select the radio button labeled "Font Character Entry".
- In the font list, select "10-12x12 Bold - Custom". It should be the second to last font in the list. The Modify button in the Chars group will become enabled.
- In the Char list, select the "!" character (the second character in the list.
- The char cell width is 4; change this to 6 and click on the Modify button immediately below the Char list. Note that the yellow line indicating the char cell width changed from 4 to 6.
- The current "!" character is two pixels wide. Redraw the pixels to make a fatter 4 pixel wide "!" character.
- Click on the Char List Modify button again.
- Now click on the Save button immediately below the Font list. This saves your change to a file.
- Click on the Text Action Entry radio button.
- Type the word "Merry!" as the text.
- In the font list, select "10-12x12 Bold - Custom". You should see the new exclamation point that you customized.

PreRamp and PostRamp

"PreRamp Time" will fade the text in. Selecting "Make Brighter" with a "PreRamp Time" will fade the text in brighter. It gives the effect of "poof" and the text appears.

"PostRamp Time" will fade the text out. Selecting "Make Brighter" with a "PostRamp Time" will make the text brighter and then fade to black. It gives the effect of "poof" and the text disappears.

Discussion

You now know how to control many features of a text action. You can move the text, have it stand still, rotate the text, change its color, change the font, and even customize the characters within a font. But there is more.

What is a text mask?

In the Color/Mask group, there are three radio buttons, labeled "Normal", "Pos Mask", and "Neg Mask". So far we have done everything with the "Normal" setting. Normal means that there is no mask applied, and the text will behave normally. "Pos Mask" and "Neg Mask" are advanced features that allow you to apply any effect to the background and/or foreground of text.

Try some positive mask text

- Delete any text actions that you have by clicking on the Delete button until all text actions are gone from the list.
- Set the start time to 1.00 seconds and the end time to 5.00 seconds.
- Type the word "Merry" as the text.
- Select font "10-12x12 Bold - System".
- Set Color/Mask to Choose Color.
- Set Color to red by setting red to 100, green to 0, and blue to 0.
- Set Pos Mask.
- Set Rotation to 270 Degrees.
- Click on Add.

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- Play the text action.

The word "Merry" appears in red in the center of the ribbons. Nothing special yet...

Apply a background effect

- Click on Tools and select Scenes.
- Set the start time to 2.00 seconds and the end time to 4.00 seconds.
- Set the start and end colors to blue.
- Set all the pixels in the pixel grid by pressing the Ctrl key and then clicking with the left mouse button on the pixel grid. All the pixels in the pixel grid should be blue.
- Click on Add.
- Play the text action.

You should first see the red "Merry", and then at 2.00 seconds the background should become blue.

Understanding a positive text mask

In the time layer area, there should be a red bar going from 1.00 seconds to 5.00 seconds. This bar is the Text mask. Click on this bar and the Text dialog should launch.

There is a box in the lower right area of the dialog box labeled "Mask Diagram". As the diagram shows, the effects above a text mask appear in the background, and the effects below a text mask appear in the foreground. So, let's try moving the scene from the background to the foreground.

- Select the blue bar in the time layers.
- Locate the "Move Effects Down" button in the toolbar. It is the fourth button from the right.
- The "Move Effects Down" button changes the layer of the effect. Click on it until the scene effect is below the mask.
- Click on Play.

This time the scene gets applied to the foreground and the text becomes purple from 2.00 to 4.00 seconds. Note: If the scene fails to get applied to the foreground, make sure the Positive Text Mask color is set to pure red - i.e. set red to 100, green to 0, and blue to 0.

It works with morphs too!

- Click on the scene and delete it.
- Click on the Tools menu and select Morphs. The Morph dialog box will launch.
- Set the start time to 2.00 seconds and the end time to 3.00 seconds.
- Set the start and end colors to green.
- Set the tail time length to 0.50 seconds.
- Set the ramp start color to green and leave the ramp end color as black.
- Click on Add and then Play.

The text should appear and then the morph will be applied to the background. Text masks are cool!

Move the morph to the foreground

Click on the green bar in the time layers and move it to the other side of the mask. Click on Play.

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This time the morph gets applied to the foreground of the text. Note: If the morph fails to get applied to the foreground, make sure the Positive Text Mask color is set to pure red - i.e. set red to 100, green to 0, and blue to 0.

Negative text masks

We started out using a positive text mask. Let's try a negative text mask.

- Leave the morph on the foreground side of the text mask.
- Click on the red bar in the time layers; the Text dialog box appears.
- Select "Neg Mask". A message box appears recommending that you set the text color to white when using negative masks. Answer "Yes" to the message box"; the text color will then be automatically set to white.
- Click on the Modify button and then Play. This time, you will see nothing until the morph gets applied to the text foreground.
- Move the morph to the background side of the text mask, and play. This time, you will see nothing until the morph is applied to the background.

Discussion

The weird thing about negative masks is that they are invisible until other effects are applied to their foreground and/or background. This seems weird at first, but it is the key to their power. You can apply multiple effects on either side of the mask. You can even apply image actions and normal text to the background or foreground. But you cannot apply a mask to a mask.

Applying normal text to the background of a text mask

- Move the morph to the foreground side of the mask.
- Set the morph start time to 1.00 and the end time to 2.00.
- Increase the tail time to 3.00.
- Click on Play. You should see the morph applied to the foreground of the text mask.
- Click on the white bar in the time layer area; the Text dialog box is launched.
- Type "Christmas" for the text.
- Leave Rotation at 270 degrees.
- Click on Normal.
- Set Direction of Motion to DownRt.
- Set the color of the text to red.
- Set the start time to 2.00 seconds and the end time to 5.00 seconds.
- Click on Add.
- The red bar in the time layers represents the normal text you just added. Move it to the background side of the text mask.
- Click on Play.

The morph should play across the word "Merry", and "Christmas" should move across the background.

This same sequence is stored as a sample file named "TextMaskMerryChristmas.sup".

Summary

Text masks take some time to learn, but are well worth the effort. With all the other effects, the time layers were just a way to view the effects. With text masks, the layers have a new meaning. This

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tutorial explored only a few of the variety of text effects that are now possible. Cosmic Color Ribbons have been taken to a whole new level!

5.4.4.7 Smooth Effects

Smooth Effects look best on a large matrix of RGB lights. They are designed to change large areas of lights in a smooth flowing manner. There are four types of smooth effects: Shockwave, Spiral, Fan, and Sine Wave.

Shockwave

After launching the Smooth Effects dialog box, click on the "Shockwave" tab.

- Center Point and Radius
- Angle
- Width
- Acceleration

Center Point and Radius (Shockwave)

In the green sequencing grid, there will be a small circle and a line ending with an arrow head. The small circle marks the center of the shockwave. The line ending with an arrow head marks the radius. Click on the "Add" button in the "Smooth Effects" dialog box, and then click on the "Play" button to see the shockwave. You should see a shockwave effect start from the center and end where the arrow head was.

To change the center point and radius, do a click and drag with the left mouse button. You can change the direction and length of the radius with the right mouse button. For example, do a click and drag with the right mouse button starting at the end of the arrow line and drag towards the center where the circle is. This will make the line start at the outside and go towards the middle with the arrow pointing towards the middle. Add another shockwave effect and play it, and you should see a shockwave start big and contract to a smaller size.

Angle (Shockwave)

The Start Angle and End Angle are grayed out, because Shockwave does not use them.

Width (Shockwave)

There is a Start Width and an End Width. The Start Width is the width of the "leading edge"of the shockwave. The End Width is the width of the "trailing edge" of the shockwave. Click on the Up or Down Arrow buttons next to the Start Width or End Width to change their values.

Acceleration (Shockwave)

Setting a positive number will make the shockwave start slowly and increase in speed as it travels. Setting a negative number will make the shockwave start quickly and slow down as it travels.

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Spiral

After launching the Smooth Effects dialog box, click on the "Spiral" tab.

- Center Point and Radius
- End Angle
- Width
- Tail Time Length
- Acceleration

Center Point and Radius (Spiral)

In the green sequencing grid, there will be a small circle and a line ending with an arrow head. The small circle marks the center of the spiral. The line ending with an arrow head marks the radius and start angle. Click on the "Add" button in the "Smooth Effects" dialog box, and then click on the "Play" button to see the spiral. You should see a spiral effect start from the center and end where the arrow head was.

To change the center point and radius, do a click and drag with the left mouse button. You can change the direction and length of the radius with the right mouse button. For example, do a click and drag with the right mouse button starting at the end of the arow line and drag towards the center where the circle is. This will make the line start at the outside and go towards the middle with the arrow pointing towards the middle. Add another spiral effect and play it. You should see a spiral start at the outside and spiral inward, ending where the arrow head was.

End Angle (Spiral)

The end angle of the spiral can be changed by changing the value in the End Angle field. Changing the value of the Revolutions field will also change the value in the End Angle field. The default is an end angle of 360 degrees and 1.00 revolutions. The default setting will make a spiral that travels clockwise from 0 degrees to 360 degrees. Set Revolutions to 2.00 to make the spiral go around two times. Setting a negative number for End Angle or Revolutions will make the spiral travel counterclockwise.

Width (Spiral)

There is a Start Width and an End Width. The Start Width is the pixel width at the start of the spiral. The End Width is the pixel width at the end of the spiral.

Tail Time Length (Spiral)

This is the time length the spiral will stay on screen before it erases itself.

Acceleration (Spiral)

Setting a positive number will make the spiral start slowly and increase in speed as it travels. Setting a negative number will make the spiral start quickly and slow down as it travels. Setting acceleration to zero means do not accelerate, but even with acceleration set to zero, spiral effects will have a natural acceleration if the start width is smaller than the end width, and a natural deceleration if the start width is bigger than the end width.

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Fan

After launching the Smooth Effects dialog box, click on the "Fan" tab. Fan uses a series of Spiral effects that can look like a fan.

- Center Point, Radius and Start Angle
- Width
- Blades
- Blade Width
- Revolutions Per Second
- Element Angle
- Element Step Angle
- Acceleration
- Show Entire Blade at Start

Center Point, Radius and Start Angle (Fan)

In the green sequencing grid, there will be a small circle and a line ending with an arrow head. The small circle marks the center of the fan. The line ending with an arrow head marks the radius and start angle. Click on the "Add" button in the "Smooth Effects" dialog box, and then click on the "Play" button to see the fan. You should see a fan effect start from the start angle and rotate at the default speed of 0.25 revolutions per second.

To change the center point and radius, do a click and drag with the left mouse button. You can change the direction and length of the radius with the right mouse button. For example, do a click and drag with the right mouse button, starting at the end of the arrow line, and drag towards the center where the circle is. This will make the line start at the outside and go towards the middle with the arrow pointing towards the middle. Add another fan effect and play it. The fan will start from the start angle and rotate at the default speed of 0.25 revolutions per second as it did before, except this time each element of the fan will travel inward instead of outward.

Width (Fan)

There is a start width and an end width. The start width is the pixel width of the start of each element of the fan. The end width is the pixel width at the end of each element of the fan.

Blades (Fan)

This is the number of blades in the fan. The default is two. You can set the number of blades from 1 to 16.

Blade Width (Fan)

This is the width of each blade in the fan. 50% means the blade width will be 50% of the distance to the next blade. Note that the blades start out being thin and get thicker as they rotate until they get to their Blade Width setting.

Revolutions Per Second (Fan)

This is the rotation speed of the fan. The default is 0.25 revolutions per second. This means it will rotate one quarter of a revolution in one second, meaning it will take four seconds to make one full

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revolution. Positive numbers will rotate clockwise; negative numbers will rotate counterclockwise. With a setting of 0, the fan will build from the center outward and will not rotate.

Element Angle (Fan)

The fan is built using a series of spirals. Each spiral is an element of the fan. Changing the element angle wil change the angle of each one of the spirals that make up the fan. Setting an angle of 0 will make straight elements. Setting a large angle will make the fan look sort of like a spinning galaxy.

Element Step Angle (Fan)

This is the spacing between each element of the fan. Each element is a spiral. An element step angle of 10 means that each spiral will be built at intervals of 10 degrees. Setting a large element step angle will add space between the spirals.

Acceleration (Fan)

Setting 0 means do not accelerate. Setting a positive number will make the fan start slow and increase in speed as it travels. Setting a negative number will make the fan start quickly and slow down as it travels. Note that if you use acceleration in a fan, the width of the fan will change as it accelerates or decelerates.

Show Entire Blade at Start (Fan)

This means build the entire width of the blade of the fan all at once, so that the entire blade width is seen from the start to the finish.

Sine Wave

After launching the Smooth Effects dialog box, click on the “Sine Wave” tab. Sine Wave produces a wiggly line that is known as a sine wave. It can be useful for creating a wiggly line across or down a tree that will look like tree garland.

- Start and End
- Height
- Cycle Angle and Cycles
- Width
- Tail Time Length
- Show Entire Sine Wave at Start
- Acceleration
- Stretch/Shrink X Y

Start and End (Sine Wave)

In the green sequencing grid will be a small circle and a line ending with an arrow head. The small circle marks the start of the sine wave. The tip of the arrow head marks the end of the sine wave. To change the start and end do a click and drag with the left mouse button.

Height (Sine Wave)

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There is a Start Height and an End Height. The height is also known as the amplitude of the sine wave. Note that you can make the sine wave be a straight line by setting the start and end height to 0.

Cycle Angle and Cycles (Sine Wave)

There is a Start Cycle Angle and an End Cycle Angle. The Start Cycle Angle sets how far into the sine wave you will be at the start of the sine wave. One cycle of a sine wave is 360 degrees. This means the “first top hump” is 0-180 degrees and the “second bottom hump” is 180-360 degrees. When you change the End Cycle Angle setting the Cycles setting will automatically change. Also, when you change the Cycles setting the End Cycle Angle setting will automatically change. In summary, increasing the number of cycles will increase the number of wiggles in the line.

Width (Sine Wave)

There is a Start Width and an End Width. The Start Width is the starting width of the line in pixels. The End Width is the ending width of the line in pixels. Increasing these values makes the line thicker.

Tail Time Length (Sine Wave)

The Tail Time Length is the number of seconds the sine wave stays on the screen.

Show Entire Sine Wave at Start (Sine Wave)

When this setting is unselected the sine wave will get drawn from the start point to the end point. After it is drawn the sine wave will stay still. When this setting is selected the entire sine wave will appear on the screen all at once and then it will wiggle for the duration of the Tail Time Length.

Acceleration (Sine Wave)

With Acceleration set to a positive number the sine wave will be drawn slowly at first and will be drawn faster as time goes on. With Acceleration set to a negative number the sine wave will be drawn fast at first and will be drawn slower as time goes on.

Stretch/Shrink X Y (Sine Wave)

These settings stretch or shrink in the X and Y direction. This could also be called the aspect ratio. Normally you will want to leave these set at 1.000. These settings will become something other than 1.000 if you use the Scale feature in the “Move or Scale Selected Effects” dialog box.

Modify Selected Effects

This dialog box is used to modify attributes that are shared by all types of effects. Currently it supports modification of the Clip Rectangle in all the effects that are selected. The “Undo” feature is not supported for this dialog box. So it is a good practice to rename your sequence before performing this function. That way you will keep the original file before you changed it. So the steps you want to follow are:

1. Click on the “File” menu and select “Save As” and rename your sequence

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2. Select the effects you want to modify. To select all effects, click on the “Edit” menu and select “Select All”
3. Click on the “Tools” menu and select “Modify Selected Effects…” or click on the “Modify Selected Effects” button on the Toolbar
4. In the “Modify Selected Effects” dialog box you can choose the types of effects you want modified. It defaults to all of them being modified.

- **Manual Clip Rectangle**

Select “No Clip” if you do not want the effects to have a clip rectangle
Select “Manual Clip” and then press the “Shft” key while doing a mouse drag on the sequencing grid. This will define the clip rectangle on the sequencing grid. Click on the “Modify Selected Effects” button.

5.4.4.8 Auto Sequence Effects

Auto Sequence effects are a cross between standard effects and Instant Sequence. You create the effect and then give it Auto Sequence settings and the effect moves and/or blinks with the music. In the lower left of each effect dialog box is and button with an image of an automobile in it. This is the “Auto Sequence” button. Click on the “Auto Sequence” button and the “Auto Sequence” dialog box will appear. Click on “Add” in the effect dialog box and you will see an Auto Sequence appear in the time layers. “Auto Sequence” effects have an image of an automobile on them.

Click on the “File” menu and select “Open Audio File”.

- Scenes
- Morphs
- Smooth Effects
- Image Actions
- Text Actions

Scenes

Bring up the “Scene Setup” dialog box.
Click on the squares in the green sequencing grid to create the scene pixels
Click on the “Auto Sequence” button in the lower left. The “Auto Sequence” dialog box will appear.
Select several seconds on the time ruler
Click on the “Add” button in the “Scene Setup” dialog box and an Auto Sequence Scene effect will be added to the time layers
Click on the “Play 8 Seconds” button. You will see the scene move with the music

Morphs

Bring up the “Morph Setup” dialog box.
Click on the squares in the green sequencing grid and create a small morph. It will be easier to see the movements of a small morph.
Click on the “Auto Sequence” button in the lower left. The “Auto Sequence” dialog box will appear.
Select several seconds on the time ruler
Click on the “Add” button in the “Morph Setup” dialog box and an Auto Sequence Scene effect will be added to the time layers
Click on the “Play 8 Seconds” button. You will see the morph move with the music

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Smooth Effects

Bring up the “Smooth Effects” dialog box.
Click on the “Auto Sequence” button in the lower left. The “Auto Sequence” dialog box will appear.
Select several seconds on the time ruler
Click on the “Add” button in the “Smooth Effects” dialog box and an Auto Sequence Scene effect will be added to the time layers
Click on the “Play 8 Seconds” button. You will see the smooth effect move with the music

Image Actions

Bring up the “Image Setup” dialog box.
Click on the “Auto Sequence” button in the lower left. The “Auto Sequence” dialog box will appear.
Select several seconds on the time ruler
Click on the “Add” button in the “Image Setup” dialog box and a message box will appear saying, “When adding an Auto Sequence Image Action it is recommended that the start point be 0,0 and end point be 0,0 and "Apply X,Y in Preview (for animations)" be selected. Set start point be 0,0 and end point be 0,0 and select "Apply X,Y in Preview (for animations)" ?”
Click on the “Yes” button in the message box and.an Auto Sequence Scene effect will be added to the time layers
Click on the “Play 8 Seconds” button. You will see the Image move with the music
If you want to change the starting position of the Image you can change to start point and end point. With “Apply X,Y in Preview (for animations)” selected the start point and end point will be forced to be the same. Having them be the same value is normally what you will want for Auto Sequence Image Actions, otherwise the movement will be “jerky” because every time Auto Sequence moves the Image Action it will also move from the start point and end point of the effect. If you want the movement to be “jerky” then deselect “Apply X,Y in Preview (for animations)” and make the start point and end point be just a few pixels different.

Text Actions

Bring up the “Text Setup” dialog box.
Click on the “Auto Sequence” button in the lower left. The “Auto Sequence” dialog box will appear.
Select several seconds on the time ruler
Click on the “Add” button in the “Text Setup” dialog box and a message box will appear saying, “When adding an Auto Sequence Text Action it is recommended that the text be set to the center and "Apply X,Y in Preview (for text that does not move)" be selected.
Set text to the center and select "Apply X,Y in Preview (for text that does not move)" ?”
Click on the “Yes” button in the message box and.an Auto Sequence Scene effect will be added to the time layers
Click on the “Play 8 Seconds” button. You will see the Text move with the music
If you want to change the starting position of the Text you can change to start point and end point. With “Apply X,Y in Preview (for text that does not move)” selected the start point and end point will be forced to be the same. Having them be the same value is normally what you will want for Auto Sequence Text Actions, otherwise the movement will be “jerky” because every time Auto Sequence moves the Text Action it will also move from the start point and end point of the effect. If you want the movement to be “jerky” then unselect “Apply X,Y inPreview (for text that does not move)” and make the start point and end point be just a few pixels different.

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5.4.4.9 Auto Sequence Dialog Box

The Auto Sequence dialog box is launched by clicking on the button with an automobile in it. The automobile button will be in the lower left of each of the effect dialog boxes. The Auto Sequence dialog box has settings that will control the movement and color of the effect as it is moved with the music. If the Auto Sequence dialog box is visible then when you click on the “Add” button of the effect dialog box then an Auto Sequence effect will be added to the time layers. The Auto Sequence effect will have a picture of an automobile in it. The following are the settings in the Auto Sequence dialog box.

- Settings
  - Sensitivity
  - Trigger Type
  - Movement
  - Direction Angle
  - Speed
  - Use Native Color of the Effect
  - Cycle Through Colors Below
  - Freqs (Frequencies)
- Creating A Sequence using Auto Sequence Effects

Sensitivity

This setting sets the sensitivity to the audio file. It is like a volume control. If you are not getting much movement from the song then try increasing the sensitivity. But if you set it too high it could also be less responsive. For most songs, setting the sensitivity to 4, 5, or 6 will work best.

Trigger Type

“Rapid Fire” is the default and is typically what you will want to use. The more Freqs you have selected in the Auto Sequence dialog box, the more triggers will be produced and the effect will move more
“Single Fire” is good if you want slower movement. Even with many Freqs selected only one trigger will fire. This can be good for effects that have a lot of movement in them such as smooth effects.

Average the Time Length of Effects – Select this option to smooth out the length of effects. Unselect this option and places where the music is strong to cause effects to linger.

Movement

This is the Movement pattern that will be done on the effects. The movement will happen within the clip rectangle for that effect.
Skip Inactive Grid Squares – Select this option to have the movement skip inactive squares on the green sequencing grid
No Movement – The effect will happen in the same location every time it is triggered
Wrap Around – The effect will move and will wrap around to the other side of the screen when it reaches the each of the clip rectangle for that effect.
Ricochet – The effect will move and will bounce off the edges of the clip rectangle for that effect. The movement is like a billiard ball bouncing off edges of a billiard table.
Folding Ricochet – Images will fold on themselves as they bounce off the edges of their clip rectangle.

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Bounce and Retrace – The effect will move and bounce off the edge of the clip rectangle and will return to its original position and will keep going back and forth along that path.
Burst and Return – The effect will move until the end of a trigger burst and then will return to its original position. If the movement goes beyond the edge of the clip rectangle before the end of the burst then it goes back to its original position.
Snake Up, Snake Down – The effect will move until it hits the edge of the clip rectangle for that effect, and then it will move up or down a pixel and reverse direction. This movement is best used with direction angles of 0, 90, 180, and 270 degrees. It will make the effect move in path as if it is a lawn mower going back and forth until all the region has been mowed and then it reverses direction and keeps mowing. Also, this movement is recommended for displays with traditional lights. For example you can make a scene made of one pixel automatically traverse the entire display.

Direction Angle

The setting controls the direction angle of the movement. The angle can be set in 5 degree increments. The angle is shown with an orange arrow at the center of the green sequencing grid. Note that this controls only the direction angle. The original location of the effect is controlled by the location of the native effect that you create.

Speed

This controls the speed of the movement in pixels. For example, with the speed set at 1.00 the effect will move one pixel each time it is triggered.

Use Native Color of the Effect

The effect will always be rendered using the native color of the effect.

Cycle Through Colors Below

Use this setting to cause the effect to change colors as it moves. You number of colors for it to cycle through can be set to 1-8. Click on a color square and a Color Picker dialog box will appear. Note that even though there are many colors you can choose from, it will always set the color to one of the 8 basic colors, red, orange, yellow, green, blue, purple, white and black. Also note that when setting black it is really a very dark gray.

Freqs (Frequencies)

This setting controls the frequencies that the effect will be responsive to. Click and drag with the mouse to set or erase multiple freqs. Note that when an instrument in a song plays a musical note, the frequencies are strongest at the note but there can be strong harmonics on either side of the note as well. The result is that any note played in a song can get “splattered” across the freq spectrum. The “splatter” will be wider with higher sensitivity.
These freqs are equivalent to the freqs in the Timing Map dialog box. If you click on the Tools menu and select “Timing Map” you will see the Timing Map dialog box which has a picture of a piano keyboard and shows how the freqs map to a piano keyboard.

Creating a Sequence using Auto Sequence Effects

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You can use different Auto Sequence effects throughout your song. The typical approach is to use the same set of Auto Sequence effect for 10-30 seconds of a song and change to another set of Auto Sequence effects at a point where the song changes.
In SuperStar you can only see 8 seconds of the song at a time, so if you want to add or modify Auto Sequence effects that are longer than 8 seconds then do the following:
Select the effects you want to change the time range of. Scroll to the start time that you want and mark it with a left click on the time ruler. Then scroll to the end time that you want and mark it with a right click on the time ruler. Then click on the “Set Group Time Range” button. The “Set Group Time Range” button is on the toolbar and looks like an hour glass with down arrows on either side of the hour glass.

5.4.4.10 Auto Sequence Singing Faces

This feature can automatically move the mouth of a singing face to match the singing in a song! To access this feature, either:

1. From the “Tools” menu, select “Auto Sequence Singing Faces…”; or
2. Click on the “Image Setup” button on the toolbar, then in the “Image Setup” dialog box click on the “Auto Sequence Singing Faces” button in the lower right of the dialog box

Singing Faces on a Pixel Matrix

In the “Singing Faces” dialog box there are settings for five mouth positions, closed, ¼ open, ½ open, ¾ open, and Full Open. The first time you launch the “Singing Face” dialog box default images will load and those images will appear in the mouth image settings. The images will default to a position at the top half of a 16x50 pixel matrix.

There is a field that shows the “Audio File to Use to Auto Sequence the Singing Face.” This will default to the audio file that is loaded for the sequence you are making. If the words to the song are prominent then you can use this song. Merely click on “Auto Sequence the Singing Face” and it will create image effects at the top of the image layers for the singing face. Click on the “Play All” button in the toolbar to play the effects that were created
But normally to get the best results you will want to record the words using your own voice.

Recording your own voice

For best results, make a recording of your own voice by doing the following:

- Plug in some earphones into your computer
- Plug in a microphone into your computer
- Click on “Start Voice Record”
- While listening to the song in the headphones sing or speak the words of the song into the microphone
- When the song reaches the end the recording will stop. The recording will automatically become the “Audio File to Use to Auto Sequence the Singing Face”
- Click on “Auto Sequence the Singing Face”
- Click on the “Play All” button in the toolbar to play the sequence

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More Singing Faces

- At the top of the “Singing Faces” dialog box is a setting labeled “Which Singing Face?” To sequence a second singing face set this setting to “2”
- The default images for face 2 will appear in the images for each mouth
- You can record your voice using words to a different singer in the song
- Click on “Auto Sequence the Singing Face” and effects will appear on the time layers. The effects for Face 2 will appear below the effects for Face 1.
- Click on the “Play All” button to play both faces

To use the default images for more than two faces, click on the “Tools” button and select “Layout.” Set the number of ribbons to 32. You can now do sequencing for face 3 and face 4.

If you want to use 6 singing faces using the default images then set the number of ribbons to 48.

Standard Singing Faces

Standard singing faces have a face with four channels for the mouth. One channel is for the closed mouth, another channel for the half open mouth, another channel for a full open mouth, and a channel for an “O” mouth.

How to use the S5 Sequencer to set up an S5 Preview of one or more Standard Singing Faces

- In Preview Design, click on the “Add Item” button
- In the list of items, select “Light-O-Rama Props (online)”
- Select one or more of the singing trees and click on “Import Checked Items”
- There should be a group for each tree. For example, there should be an “Elden the Tree (RGB)” group
- Double click on “Elden the Tree (RGB)” make sure “Vertical Stack” is selected for the “Arrangement,” click on “Save”
- If you have more than one singing tree, you can make a group containg all the trees. Click on “Add Item” and select “Create a new GROUP from existing props and groups”
- In the “Preview Group Definition” dialog box select each tree group. Then set “Horizontal Stack Align Bottoms” for the “Arrangement,” name the group something like “Singing Trees,” click on “Save”
- In the “Preview Design” dialog box click on “Save”
- In the main screen of the “Sequencer” find the “Singing Trees” group, expand it so you can see the motion effects row.
- Right click on the motion effects row and click on “Select,” then click on “Row”
- Right click on the motion effects row again and select “Insert SuperStar Effect”
- SuperStar will launch

Sequencing Standard Singing Faces in SuperStar

After creating a Preview in the S5 Sequencer and you have launched SuperStar do the following:

- Bring up the “Image Setup” dialog box and click on “Auto Sequence Singing Faces”

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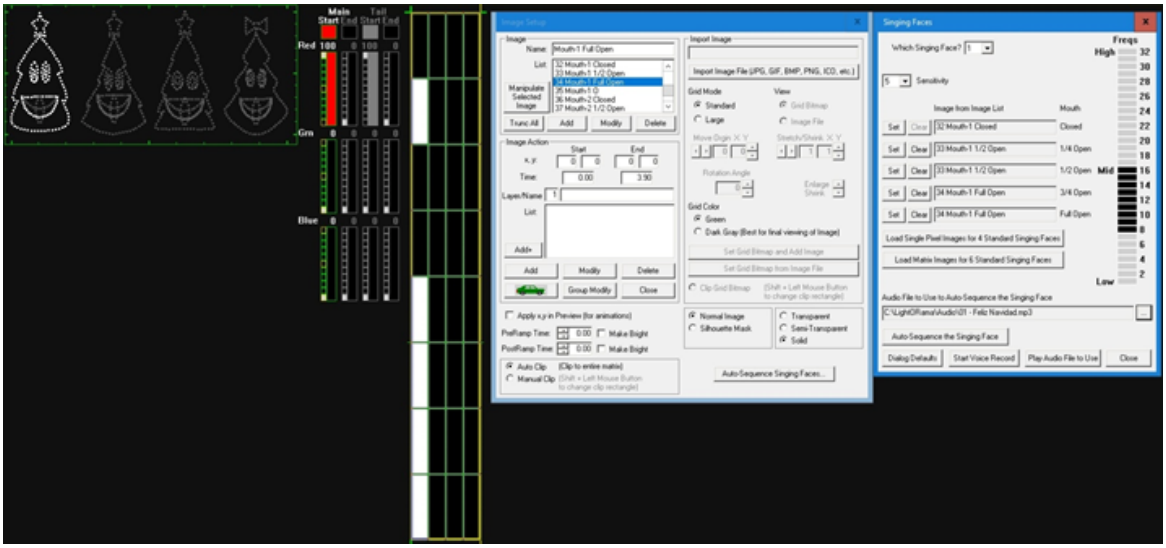
- Click on the “Load Single Pixel Images for 4 Standard Singing Faces” button.
- Sixteen images will load and be placed at the bottom of the Image List. Scroll to the end of the Image List and the last four images should be:
  - Mouth-4 Closed
  - Mouth-4 1/2 Open
  - Mouth-4 Full Open
  - Mouth-4 O

The images will have been automatically set into the “Singing Faces” dialog box. But if you were to enter them manually you would do the following:

- Scroll the list up until you see the four images that start with “Mouth-1”
- Select “Mouth-1 Closed” and then click on the top “Set” button in the “Singing Faces” dialog box
- Select “Mouth-1 1/2 Open” and then click on the second “Set” button in the “Singing Faces” dialog box
- Keep “Mouth-1 1/2 Open” selected and click on the third “Set” button in the “Singing Faces” dialog box
- Select “Mouth-1 Full Open” and click on the fourth “Set” button in the “Singing Faces” dialog box
- Keep “Mouth-1 Full Open” selected and click on the fourth “Set” button in the “Singing Faces” dialog box
- We will not be using “Mouth-1 O” because the O is intended for “oooo” sounds and the SuperStar code has nothing in it that detects “oooo” sounds. So it works best to not use it

Your screen should look like this



At this point if you want to see what is generated using the audio file you can click on “Auto Sequence the Singing Face” and effects will appear in the time layers. Click on the “Play All” button to play the sequence. If the voices in the song are prominent you may be happy with using what you see. But for best results you should record only the words of the song using your own voice using these steps:

- Plug in some earphones into your computer
- Plug in a microphone into your computer
- Click on “Start Voice Record”

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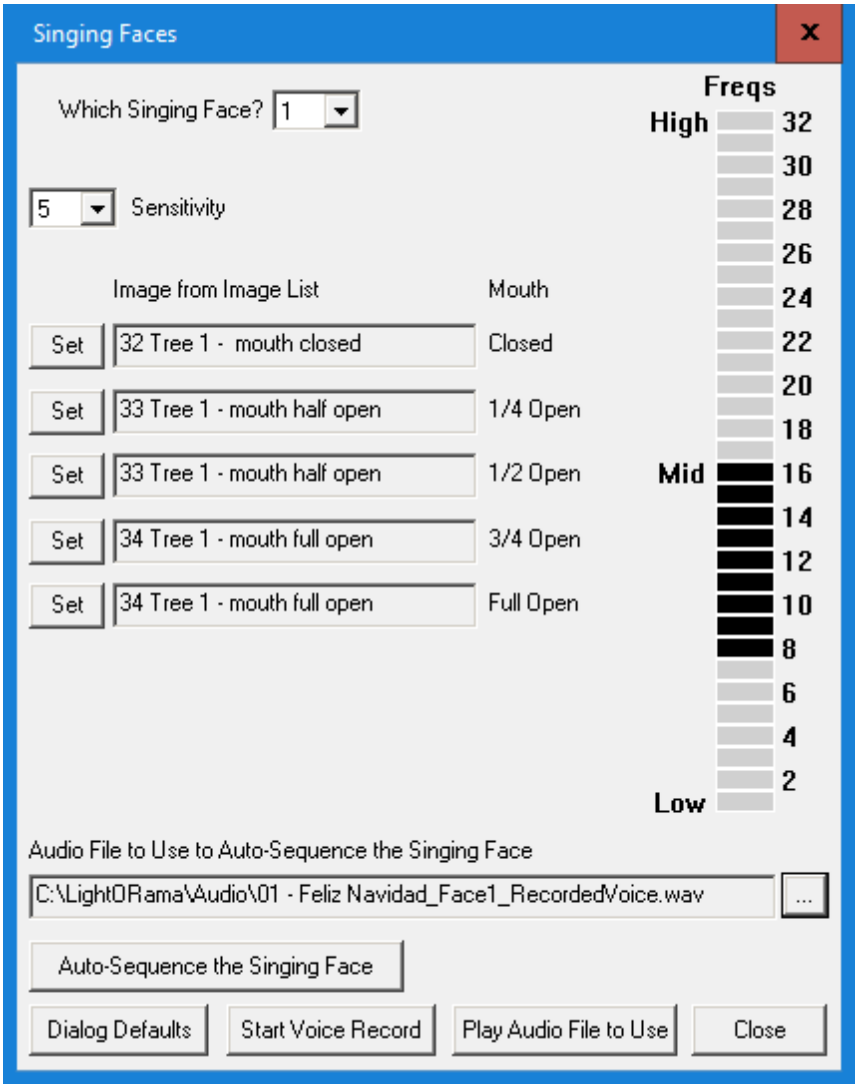
- While listening to the song in the headphones sing or speak the words of the song into the microphone
- When the song reaches the end the recording will stop. The recording will automatically become the “Audio File to Use to Auto Sequence the Singing Face”

The Singing Faces dialog box should look like this except the number at the beginning of the image may be different.



- Click on “Auto Sequence the Singing Face”
- Effects should appear in the first 5 layers of the time layers
- Click on the “Play All” button in the toolbar to play the effects that have been created for the singing face

If the mouth is not responding well to the voice, you can increase the sensitivity or increase the number of Freqs selected but normally you can leave Sensitivity set at 5, and Freqs 8-16 selected.

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Set Images for the next Singing Face

- In the Singing Faces dialog box set “Which Singing Face?” to “2”
- Using the same steps you used for Tree 1, you can add images to the image list for Tree 2 and set them into the “Singing Faces” dialog box.
- You can record your voice again and this time you can speak words that match a different singer in the song.
- Click on “Auto Sequence the Singing Face” and effects will appear on the time layers for Tree 2. The effects for Tree 2 will be below the effects for Tree 1
- Click on the “Play All” button on the toolbar and both singing faces will play

You can do the same for tree 3 and tree 4

5.4.4.11 Move or Scale Selected Effects

This feature is used to move or scale the selected effects according to the settings in the dialog box. Note that you cannot undo the changes done by this dialog box so it is recommended that you save the sequence to a new name prior to using this dialog box. For example if you are moving all the effects two pixels to the right you would do the following:

1. Click on the File menu and select “Save As” and save the sequence to something like “MySequence_movedRight2Pixels.sup”
2. Click on the Edit menu and select “Select All”
3. Leave “Move Origin” selected and set “Left/Right” = 2
4. Click on the OK button
5. Click on any effect and you should see that it has been moved to the right by 2 pixels

This feature is also useful for converting a sequence to different dimensions. For example, if you want to stretch a 12 CCR sequence to be a 16 CCR sequence you would do the following:

1. Click on the File menu and select “Save As” and save the sequence to something like “MySequence_16CCR.sup”
2. Click on the Edit menu and select “Select All”
3. Click on “Scale”
4. Set:

   Source Width = 12 Dest Width = 16

   Source Height = 50 Dest Height = 50

5. Click on the Ok button
6. Click on any effect and you should see that it has been stretched to fit onto a 16 CCR layout

Selected Effects to Modify

This defaults to all effect types being selected. But if, for example, you only want to modify the selected “Scenes” then you would uncheck all the effect types and leave “Scenes” selected

Move Origin

Select this if you want to move the effects left, right, up, or down, the number of pixels set in the Left/Right control and the Up/Down control

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Scale

Select this if you want to scale the effects. Scale means to stretch or squish. The “Source Width” and “Source Height” is the original width and height of the sequence. The “Dest Width” and “Dest Height” is the destination width and height, or in other words, the width and height that you want the sequence to become.

Do Scene Thinning

This setting is used when “Scale” is selected. It is easiest to explain this setting by using the example of a scene that is random pixels that look like stars in the sky. If you shrink the stars and have “Do Scene Thinning” selected then some of the stars will get removed or “thinned” out so that the density of stars in the shrunken sky stays the same. If you shrink the stars and have “Do Scene Thinning” unselected then all of the stars will be kept, and in the shrunken sky the density of stars will be greater. In the extreme case, if you shrunk the sky a lot then there would be no space between the stars anymore.

Change Intensity

Select this if you want to increase or decrease the intensity of the color of all selected effects. Note this change is always relative to the current intensities.

For example, if you set 50% then all color intensities will be reduced by 50%. If you then select the same effects and reduce the intensity by 50% again, then the intensities will be 25% of what they were before you did any changes.

As another example, if you set 200% then color intensities of 50 and lower will get doubled. All values 50 and greater will become 100. This means that increasing the color intensities by 200% and then decreasing them by 50% will not necessarily get you back to the original intensities.

Change Orientation

If the orientation of your visualization is different than the orientation of your sequence then you can change the orientation of the effects in the sequence by using “Change Orientation.”

For example, let us say you have a horizontal sequence designed for a 50 wide by 16 tall horizontal display where the strings of lights run horizontally. But you have a display that is 50 wide by 16 tall and the strings of lights run vertically.

The default is for SuperStar to see the display as a vertical display because the strings run vertically. And when the sequence is played, the sequence will look rotated by 90 degrees. So to get it to look right on the display you can change the orientation by doing the following:

1. Click on the “File” menu and select “Open” and open the sequence
2. Click on the “File” menu and select “Save As” and save the sequence to a name such as “MySequence_horizontal.sup”
3. Click on the “Edit” menu and select “Select All”
4. Click on the Tools menu and select “Move or Scale Selected Effects”
5. Select “Change Orientation”
6. Select “Rotate 90° Left (Vert to Horz)
7. Click on “OK”

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The effects in the sequence should now all be rotated to the right and should play properly to your display.

Note: Another way to address the problem of orientation of the grid being different than the orientation of the sequence is to change the orientation of the grid. To do this click on “Tools” menu and select “Preferences” and then change the orientation of the grid.

5.4.4.12 Groups of Effects

- Make a Group
- Ungroup
- Expand Group
- Compress Group

Make a Group

- Do a right mouse click and drag to select a group of effects (you can add or remove effects by doing Ctrl+Right mouse click).
- After doing a right mouse click and drag, a popup menu will appear.
- In the popup menu, choose "Grouping", and then choose "Group Selected Effects into a Group".
- The "Edit Name of Group" dialog box will appear, allowing you to name the group if you wish.
- After clicking on "Ok" in the "Edit Name of Group" dialog box, the selected effects will be compressed into one "Group" effect.

Ungroup

- Do a right mouse click on a group effect.
- In the popup menu, shoose "Grouping", and then choose "Ungroup Selected Group into Separate Effects".
- The "Group" effect will disappear, and the grouped effects will become separate effects.

Expand Group

- Do a right mouse click on a "Group" effect.
- In the popup menu, choose "Grouping" and then choose "Expand Selected Group". Alternatively, you can select a "Group"effect and hit the "+" key.
- All the other effects in the sequence will become hidden, and only the effects in the group will be displayed. You can now modify the existing effects, add new effects, or delete effects. Anything you do will become the new state of the group.

Compress Group

- While a group is expanded, do a right mouse click anywhere in the time layers.
- In the popup menu, choose "Compress Group". Alternatively, you can press the "-" key.
- All the effects currently displayed will be compressed back into the group. You will now see the "Group" effect displayed along with all the other effects in the sequence

5.4.4.13 Select One or More Rows

Open a sequence or create a bunch of effects. Do a right click on a row in the Time Layers. For example, you could do a right click on Row 3 in the Time Layers.

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In the popup menu that appears, select "Row 3" and then select "Select All", "Select All Left", or "Select All Right", and the selection will be applied only to Row 3.

You can also do a right mouse click and drag across more than one row. For example, you could do a right mouse click and drag across Rows 3-6.

In the popup menu that appears, select "Rows 3-6" and then select "Select All", "Select All Left", or "Select All Right", and the selection will be applied only to Rows 3-6.

5.4.4.14 Transfer Effects from One Sequence to Another

In the Light-O-Rama SuperStar Sequencer, using the clipboard, you can transfer effects from one sequence to another, as in this example:

- Open the file "JingleBellRock_24sec.sup", located in the Samples directory of the SuperStar Sequences directory.
- Scroll to the 16.00 second mark and you will see a stack of six white boxes in the time layers.
- Select the stack of boxes.
- Click on the Copy button.
- Click on the toolbar button with a piece of paper on it. This will do three things: It will clear the pixel grid, set the start color as red, and set the time duration to 1.00-2.00 seconds.
- Click on the Paste button, and the stack of boxes gets pasted to the new file.

5.4.4.15 Load/Save Clipboard

In the Light-O-Rama SuperStar Sequencer, there are 20 sample effects that can be loaded into the clipboard. Once the effects are loaded into the clipboard, you can paste them into your sequence. Anything that you copy to the clipboard can also be saved to a file.

- Start with a new sequence
- Launch the Load/Clip dialog box
- Load a sample file into the clipboard
- Paste the clipboard into your sequence
- Play the pasted effects
- Save your own clipboard effects
- Discussion

Start with a new sequence

Click on the "New" button on the toolbar, which looks like a piece of paper.

Launch the Load/Clip dialog box

Click on the Edit menu, then select Load/Save Clipboard. You can also launch the dialog using Ctrl+B.

Load a sample file into the clipboard

At the top of the dialog box is a list of the saved clip files ("clip" is short for "clipboard"). All of the sample files start with "Sys -", meaning they are a system file that can be loaded but not saved to. Select the "SharkFinForHorizontalRibbons.scb" file, then click on "Load Clipboard from File".

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Note that the lower half of the dialog box is now populated. In the description area are the description and instructions on how to modify the effects.

Paste the clipboard into your sequence

Once the clipboard is loaded, you can paste the effects into your sequence. There are four ways to do this:

1. Use the Paste button in the dialog box.
2. Use the Paste button on the toolbar.
3. Put the focus on the work area by clicking on the time layers area, and then press Ctrl-V.
4. Click on the Edit menu and select Paste.

Play the pasted effects

A shark fin will travel lengthwise across the ribbons, first one direction and then the other. The water underneath the shark fin will shimmer.

For demonstration purposes, the shimmering water is done in two different ways: The first time, it is done with scenes that fade between two intensities. The second time, it is an animation done with images. The description of this effect in the Load/Save dialog box describes how to modify the shark fin and the water.

Save your own clipboard effects

Any effects you have modified our created can be saved to file by doing the following:

- Select what you want to save.
- Click on the "Copy Effects" button on the toolbar.
- Press Ctrl-B to launch the Load/Save Clipboard dialog.
- In the Clipboard Name filed, type your filename (such as "MyAwesomeEffects").
- Click on the "Save Clipboard to File" button.

Note that your file is now in the list of saved clip files.

Discussion

The load/save of the clipboard is a powerful feature! You can now store and easily transfer effects from one file to another. The shark fin effect shows how a shaded object can be drawn as an image action. Artists will have fun with this, and non-artists will be grateful they can copy and paste these images!

Currently the SuperStar Sequencer does not support importing .gif or .jpg images. However, realize that even if you have twelve CCRs, you only have 12x50 pixels to work with. This is very low resolution by computer standards. Import of images would typically not look good at such low resolution. The best images will always be those that are carefully tailored to the low resolution that we must work with.

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5.4.4.16 Change to 10 Pixels per Ribbon

Cosmic Color Ribbons default to having 50 pixels per ribbon. Each pixel is actually a group of three LEDs with red, green, and blue elements. You will normally want to keep the ribbons in 50 pixel mode.

You can, however, change the number of pixels per ribbon to 25, 10, 5, or 1, using one of the macro commands built into the ribbons. The reason you may want to do this is to reduce the number of channel commands, making the effect more instantaneous. For example, a white morph that goes the full length of 12 ribbons will generate 12x50x3 = 1800 commands. If the morph is fast, and tries to do this in a short period of time, like 0.4 seconds or less, you may perceive some lag in the ribbons. In a fast effect, you will get better results by using 10 pixels per ribbon, because it will use 1/5 the number of channel commands and so will eliminate the lag, and since it travels fast, it will still look good in 10 pixel resolution.

Here is an example of how to use both 10 pixel and 50 pixel resolution in the Light-O-Rama SuperStar Sequencer:

- Initialize the screen
- Launch the Macro dialog box
- Add a "10 pixel per ribbon" macro
- Add a scene inside the macro region
- Add a morph inside the macro region
- Add a morph outside the macro region
- Try to add a morph that straddles the macro
- Discussion

Initialize the screen

Click on the toolbar button with a piece of paper on it. This will do three things: It will clear the pixel grid, set the start color to red, and set the time duration to 1.00 to 2.00 seconds.

Launch the Macro dialog box

Click on the Tools menu and select Macro.

Add a "10 pixel per ribbon" macro

- Set "Pixels Per Ribbon" to 10.
- Set the time duration to 1.00 to 3.00 seconds.
- Click on the Add button.

A bracket should appear in time layer 6.

Add a scene inside the macro region

- Click on the Tools menu and select Scene.
- Set the time duration to 1.00 to 2.00 seconds.
- Set some pixels at the top of the pixel grid.
- Click the Add button.

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A scene should appear in time layer 1. Note that the scene only has ten pixels per ribbon in the pixel grid. Also note that the ribbons still display as if they were in 50 pixel mode, but when playing the sequene to the real Cosmic Color Ribbons, they will be in 10 pixel mode.

Add a morph inside the macro region

- Click on the Tools menu and select Morph.
- Set the time duration to 2.00 to 3.00 seconds.
- Click on the Add button.

A morph should appear in time layer 2. Note that the morph has ten pixels per ribbon in the pixel grid.

Add a morph outside the macro region

- Set the time durationto 5.00 to 6.00 seconds.
- Click on the "Add" button.

Note that the morph has 50 pixels per ribbon in the pixel grid.

Try to add a morph that straddles the macro

- Set the time duration to 2.00 to 4.00 seconds.
- Click on the Add button.

An error message will appear.

Discussion

When playing the sequence to the Cosmic Color Ribbons, the ten pixel macro will send a command 1/100th of a second before the macro time duration to set each ribbon in 10 pixel mode. It will send a command 1/100th of a second after the macro time duration to set each ribbon back to 50 pixel mode. No effects should be active when these commands are sent.

Note that at 32.45 in the sample file CarolOfTheBells.sup, there is a morph that uses 10 pixel mode. In this morph, all the ribbons burst downward into a flash of white. In normal 50 pixel per ribbon mode, this would require 1800 channels to be turned on in a very short period of time. Using 10 pixel per ribbon mode requires only 360 channel commands, and can make the effect more instantaneous.

5.4.4.17 "Star Rays", "Wide Grid", and "Thin Grid"

In the Light-O-Rama SuperStar Sequencer, there are three buttons at the right end of the toolbar that will set the ribbons into "Star Rays", "Wide Grid", or "Thin Grid":

Star Rays

In this layout, morphs that come from the top to the bottom should accelerate, and the trail should get longer. Typical settings might be a start trail of 2 and an end trail of 12.

Scenes that come from the top to the bottom should get larger. The yellow perspective marks on the right side of the pixel grid are designed to help you do this.

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Wide Grid

This view spaces the ribbons to give square pixels. That is, the space between the ribbons is equal to the height of each pixel. If you are using the ribbons primarily for animations and text, you will probably use a layout like this.

Thin Grid

This view spaces the ribbons closer together. The quality of the animations will improve, but it will take more ribbons to cover the same amount of area.

5.4.4.18 The Layout Dialog Box

In the Light-O-Rama SuperStar Sequencer, the layout settings get saved into each .sup file. The layout you set also gets saved as a default layout. This default layout will be used for new sequences that you create.

- CCR Mode
- Number of Ribbons (1-24)
- Ribbon Orientation
- Ribbon Shape
- Ribbon Length
- Visualization Mode
- Visualization Files
- Pixel Extender

CCR Mode

In CCR mode, the screen will use the layout you have selected in the lower part of the Layout dialog box. The unit ID and configuration information will be obtained from the Configuration dialog box, and this information will be used when exporting the file to the Sequencer.

Number of Ribbons (1-24)

This will set the number of rows of ribbons if in horizontal view, or the number of columns of ribbons if in vertical view. Note that if you are using half ribbons, this setting is the number of rows, not the number of ribbons.

Ribbon Orientation

Setting "Vertical" will display the ribbons vertically in columns.

Setting "Horizontal" will display the ribbons horizontally in rows. Note that the star is not supported in the horizontal view.

Ribbon Shape

Setting "Straight" will display the ribbons in straight lines. This is the common way to display the ribbons.

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Setting "Circle" will display the ribbons in circles. The start of the ribbon will be at the left center of each circle. This allows for a variety of circular patterns. Sequencing circles can be a challenge, but the results can be amazing. An example can be seen on the Light-O-Rama website with Deck the Halls for 2 CCRs and for 4 CCRs.

Ribbon Length

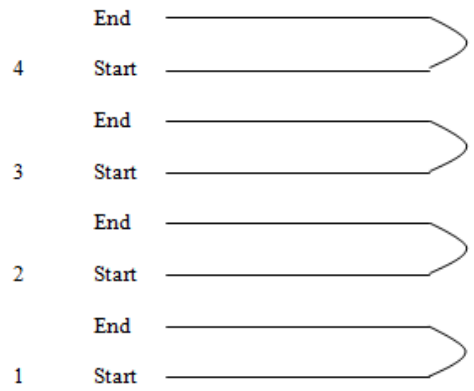
Setting "Full" will display the ribbons as a full length 50 pixel ribbon. This is the normal setting.

Setting "Half" will display the ribbons as a half length 25 pixel ribbon. The common use of this setting is to allow a matrix with fewer ribbons. For example, using 4 CCRs you can create a matrix of 8 rows with 25 pixels in each row. You can cut the ribbons per the instructions that come with the CCRs, but if you do this, you void the warranty. Another option is to loop the ribbons back without cutting them. You will lose some pixels in the loop, but you will not void the warranty.

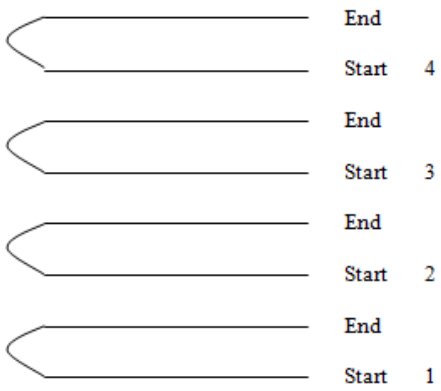
When using half ribbons you must lay out your ribbons as diagrammed below:

- Location of Ribbon Controllers when Ribbon Length is set to Half and Ribbon Orientation is set to Horizontal
- Location of Ribbon Controllers when Ribbon Length is set to Half and Ribbon Orientation is set to Vertical

Location of Ribbon Controllers when Ribbon Length is Set to Half and Ribbon Orientation is Set to Horizontal



Half Ribbons - Controllers on Left



Half Ribbons - Controllers on Right

- Set "Left" if your CCR controllers are on the left end of your ribbons.
- Set "Right" if your CCR controllers are on the right end of your ribbons.
- Note that for a horizontal layout, the first controller should be at the bottom, and the last controller at the top.

Location of Ribbon Controllers when Ribbon Length is Set to Half and Ribbon Orientation is Set to Horizontal

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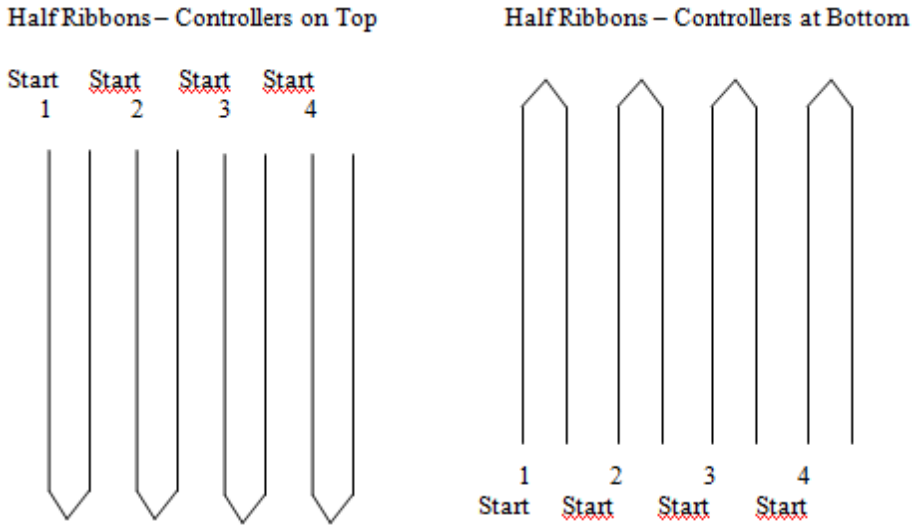

- Set "Top" if your CCR controllers are on the top of your ribbons.
- Set "Bottom" if your CCR controllers are on the bottom of your ribbons.
- Note that for a vertical layout, the first controller should be at the left, and the last controller should be at the right.

Visualization Mode

In visualization mode, the screen will use the row visualization file you have imported. All unit ID and configuration information is obtained from the real visualization file, and this information will be used when exporting the file to the Sequencer.

Visualization Files

This area shows the names of the row visualization and the real visualization. The row visualization should be laid out in rows, and is used when SuperStar maps the fixtures to the sequencing grid. The real visualization should be laid out the way your light display actually appears, and is used when playing the sequence and when exporting the sequence. Note that the row visualization and the real visualization will be the same file if you do "Import Visualization" in the File menu. If you do "Import Visualization Pair" in the File menu, then you can specify different files for the row visualization and the real visualization.

Pixel Extender

The Pixel Extender allows you to stretch or shrink the pixels in a region of a sequence done on a visualization. While you can stretch or shrink the pixels, the most common use is to stretch or extend the pixels. For example, it allows you to convert a sequence written for 25 or 50 pixels on strings that have 100 or 150 pixels.

- **Enable Pixel Extender:** Select this to enable the Pixel Extender.
- **X Origin:** The X origin of the region to be extended.
- **Y Origin:** The Y origin of the region to be extended.
- **Width:** The width of the region to be extended.
- **Length:** The length of the region to be extended.
- **Stretched/Shrunk Length:** The new length after the region has been stretched or shrunk.

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Pixel Extender Example

Make a visualization of your CCP Tree that has 50 pixels per strand.

Load the standard sequence made for a CCP Tree with 25 pixels per strand.

Import your visualization of your CCP Tree that has 50 pixels per strand.

Set the Pixel Extender as follows:

- **X Origin:** 0
- **Y Origin:** 16 (this is because the Globe is at the top of the sequencing grid and the CCP Tree starts at row 16)
- **Width:** 24
- **Length:** 25
- **Stretched/Shrunk Length:** 50

At this point, you can play the sequence to your visualization and see the stretched pixels play to your visualization.

5.4.4.19 The Preferences Dialog Box

The Light-O-Rama SuperStar Sequencer has the following choices in the Preferences dialog:

- Color Mode (Balanced vs. Full Range)
- Color Temperature (Cool White vs Warm White)
- Enable Time Layer Priority Feature
- Smooth Ramps
- Export Raw Color Values
- Grid Orientation
- Wrap Around
- Display Waveform
- Display First 3 Timing Lines

Color Mode (Balanced vs. Full Range)

If you use the Light-O-Rama Hardware Utility to try various setting for the RGB values of CCR pixels, you will find three important characteristics:

1. The brightness is not linear. For example, a setting of 100 is only a little brighter than a setting of 50, but 50 is significantly brighter than 25.
2. The red, green, and blue elements are not balanced. For example, on a computer screen, setting red to 100 and green to 100 will result in yellow, but on a CCR pixel, it will be more of a greenish yellow. This is because the CCR's green element is stronger than the red element. Setting red and blue to 100 will result in a bluish purple, because the blue element is stronger than the red element.
3. The LEDs are so bright that the perceived colors will not be as deep as what you see on the computer screen. This must be taken into account when comparing the colors on the computer screen with what you will get on the ribbons. For example, red 100 and green 50 will give a bright

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orange; red 60 and green 30 will give a dim orange that will show as a muddy orange on the computer screen, but on the Cosmic Color Ribbons it will still be a fairly bright orange.

Making the brightness linear

The Light-O-Rama SuperStar Sequencer automatically adjusts the start and end settings to make them linear. For example, a start setting of 50 in the SuperStar Sequencer will export to a setting of 25 in the Sequencer. This gives the proper intensity for the start and end color of an effect. But realize that a ramp that goes from 100 to 0 will not go from 100 to 0 smoothly: The hardware will bring the voltage down from 100% to 0% smoothly, but the brightness will go down slowly at first, then quickly at the end. The SuperStar Sequencer simulates this fast drop off when it plays the sequence onto the ribbons. Note that this fast drop off can be solved using the "Smooth Ramps" setting.

Balanced Color Mode

The SuperStar Sequencer defaults to "Balanced Color Mode". In this mode, the red element is used in its full range, but the green and blue elements are limited to less than full brightness. So, for example, if you set red to 100 and green to 100, you will get a true yellow on the ribbon.

Full Range Color Mode

To set this mode, go to the Tools menu and select Configuration. When in Full Range Color Mode, the color controls will have the following ranges:

- Red: 0-100
- Green: 0-120
- Blue: 0-130

In this mode, setting red, green, and blue all to 100 will give the same results as in Balanced Color Mode. Setting red to 100, green to 120, and blue to 130 will give a bluish white. The SuperStar Sequencer simulates this color shift, but to do so it must "dim down" the settings that are 100 and below in order to support simulation of the colors that are at 100 and above. Realize that even though the colors on the screen are dimmed down, the colors on the Cosmic Color Ribbon will not be.

Go Back to Balanced Color Mode

When going back to Balanced Color Mode, the SuperStar Sequencer advises that any settings greater than 100 will automatically be adjusted down to 100. Note that after going into Balanced Color Mode, the next time you click on a color control, a warning box may appear that says "Enter an Integer between 0 and 100." This is a bug which will be fixed in the future. Click "OK" on the warning box; if another warning immediately appears, click "OK" on that also. These warnings can be ignored.

Color Temperature (Cool White vs Warm White)

Most Cosmic Color Ribbons have “cool white” LEDs which means they are bluish white when Red, Green, and Blue are completely “on.” But some batches of Cosmic Color ribbons have “warm white” LEDs which means they are a true white when Red, Green and Blue are completely “on.” Although they are a true white, when held next to a “cool white” pixel that is completely “on” they will look yellowish.

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The same is true for DMX ribbons and strings. Some of them are “cool white” and some are “warm white.” Choose the setting that matches your particular lights and the colors on the lights will more nearly match the colors that you saw on the computer screen when you made the sequence.

Enable Time Layer Priority Feature

When this checkbox is not selected all effects are transparent. This means that effects that where effects of different colors overlap the colors will mix. For example, , if a red effect is place on top of a green effect, in the places where the effects overlap the red and green will mix and will be yellow.

When this checkbox is selected the effects on low time layers will render in front of effects on higher time layers. For example, if you place a morph on time layer 1 and you place a scene on time layer 3, then if the morph goes across the same area as the scene then the morph will render on top of the scene. In other words it will look like the morph is above the scene.

For backward compatibility sequences created before this feature was available will have this feature unselected.

Each of the effect dialog boxes has the options Transparent, Semi-Transparent, and Solid. Their behavior is as follows:

- **Transparent** – The effects are transparent. For example, if a red effect is place on top of a green effect, in the places where the effects overlap the red and green will mix and will be yellow.
- **Semi-Transparent** – The colors in an effect that are dim will be transparent, but the colors in the effect that are the full color of the effect will be solid. For example, if a green morph with a tail is placed above a red scene, then the green head of the morph will be solid but the tail will be transparent. This is probably the setting you will want to use for scenes, morphs, and smooth effects.
- **Solid** – All colors in the effect will appear solid. This is probably the setting you will want for use with images, and text.

Smooth Ramps

As discussed in the Color Mode (Balanced vs. Full Range) section, the start and end setting of each color is adjusted by the Light-O-Rama SuperStar Sequencer so that the brightness is linear. However, on a single fade, the SuperStar Sequencer cannot control the rate at which the brightness changes in between the start and the end. To get around this, the SuperStar Sequencer can use "smooth ramps". In smooth ramps mode, ramps that are one second long or longer are actually treated as ten short ramps. In this way, the SuperStar Sequencer gains control of the rate of change of the ramp.

The fast change of ramps is not easily perceived for short ramps, but with very long ramps you will notice it. To see the difference, try the following:

1. Set Smooth Ramps mode
    - Click on the Tools menu and select Configuration.
    - Select Smooth Ramps in the Configuration dialog box.
2. Add a non-smooth ramp

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- Launch the Scene dialog box.
- Select pixels 0-10 on the pixel grid.
- Set the time duration to 1.00 to 1.95 seconds.
- Set the start color to red = 100.
- Set the end color to red = 0.
- Click on the Add button.

The scene will be added to layer 1.

3. Add a smooth ramp

- Select pixels 11-20 in the pixel grid.
- In the scene dialog box, set the time duration to 1.00 to 2.00 seconds.
- Leave the start color at red = 100.
- Leave the end color at red = 0.
- Click on the Add button.

The scene should be added to layer 2 so that they both are stacked on top of each other.

4. What are we doing?

Both of the scenes cover almost the same time range. The two scenes should be stacked on top of each other. The pixels you selected should not collide (that is, each scene should turn on a different set of pixels).

5. Observe the difference

Click on the Play button. The first scene added is of a duration less than one second, so the ramp will not be smoothed. The second scene is a second long, and so the ramp will be smoothed.

Note that the top pixels (belonging to the first scene) will not drop in brightness as fast as the bottom pixels (belonging to the second scene).

6. Summary

When in Smooth Ramps mode, only ramps 1.00 second long and longer are smoothed. Even if you are in Smooth Ramps mode, smoothing is not done for ramps less than 1.00 second. This is because the smoothing of short ramps is not easily perceptible to the eye. Realize that any ramp that is smoothed gets chopped up into ten ramps, and thus the number of commands is ten times greater, and the length of the exported sequence file is ten times greater for that effect. This is why smoothing of short ramps is not done.

Smooth Ramps mode defaults to off, but you can turn it on, and then the setting gets stored in both your launch configuration file and in the .sup file. It affects the export of a Light-O-Rama .lms or .las file, and as mentioned, exported files using smoothed ramps will be larger.

Export Raw Color Values

When exporting a sequence, SuperStar will adjust the color values so they appear best on your lights. This is because LED lights require adjusted values in order to get them to best match the colors that you

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see on the computer screen. The result is that the colors you see in the exported file in the Sequencer may look a bit different than in SuperStar, but they will look good on your actual lights.

If you do not want SuperStar to adjust the exported values, then select “Export Raw Color Values.” This will make the colors in the exported file match what you saw on the computer screen in superstar, but the colors will not look as good on your actual lights.

Grid Orientation

Use this setting to change the orientation of the sequencing grid between Horizontal and Vertical

Wrap Around

Use this setting to change between Normal and Wrap Around. Wrap Around mode is designed for 360 degree trees. When in wrap around mode there will be two copies of the green sequencing grid side by side. This makes it easier to do effects that wrap around the tree.

Display Waveform

With this setting selected the audio waveform will be displayed below the time ruler.

Display First 3 Timing Lines

With this setting selected the first three timing lines of the timings will be displayed below the time ruler.

5.4.4.20 Configure Controller Unit IDs Using the Light-O-Rama Hardware Utility

After purchasing Cosmic Color Ribbons, you must configure them using the Light-O-Rama Hardware Utility. There are instructions on how to do this in the manual that comes with the ribbons. You will assign a unit ID to each controller, the same as you would with any other controller.

In addition, the Hardware Utility has a Cosmic Color Ribbon Configuration screen. Be sure to use the following settings on it:

- Unit ID Mode: Normal (single ID).
- Channel Mode: Triples (RGB, RGB, ...)
- Resolution: 50 pixels
- Strips: 1
- DMX Mode: Both macro and RGB channels

The "Standalone Speed" setting does not matter with respect to the Light-O-Rama SuperStar Sequencer.

5.4.4.21 Configure Controller Unit IDs in the SuperStar Sequencer

After setting the unit ID for each of your Cosmic Color Ribbons with the Light-O-Rama Hardware Utility, you then must let the Light-O-Rama SuperStar Sequencer know which unit IDs you assigned.

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Note that a Light-O-Rama unit ID is a hexadecimal number from 01 to F0. If they were decimal numbers, the ID would be from 1 to 240, but since they are hexidecimal, the IDs are 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B, 0C, 0D, 0E, 0F, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 1A, 1B, 1C, 1D, 1E, 1F, 20, and so on.

- Launch the Configuration dialog box
- Set the unit ID of the star controller
- Set the unit ID of the first ribbon controller
- Number of DMX pixels
- Network settings
- Examples
- Do I need more hardware to use more than one network?
- Setting more than one network in the Light-O-Rama Sequencer

Launch the Configuration dialog box

Launch the SuperStar Sequencer, click on the Tools menu, and select Configuration.

Set the unit ID of the star controller

If you are not using a star, select "No" underneath "Star in Use". The Unit ID field will be dimmed, indicating that no unit ID for a star controller will be used.

If you are using a star, select "Yes" underneath "Star in Use". Set the unit ID of the Light-O-Rama controller for the star using the dropdown list.

The typical Light-O-Rama controller has 16 channels. Note that if you use the star, you must use the first 6 channels of the controller for it. The remaining 10 channels will not be used by the SuperStar Sequencer, which means you can use them in your main sequence if you choose to do so.

Set the unit ID of the first ribbon controller

Set the unit ID of the first ribbon controller using the dropdown list. The remaining ribbon controllers must be assigned unit IDs that are in successive numeric order, keeping in mind that they are hexidecimal numbers. For example, if you have four ribbons, and the first ribbon has unit ID 18, then the next three ribbons must have unit IDs 19, 1A, and 1B.

If you have DMX pixels then select "DMX" and set the Universe and Channel of the first pixel of your first ribbon/string. There are three DMX addressing options to choose from:

- **Tightly Packed:** All 170 pixels are used in each Universe. After all pixels in the first string are assigned, the first pixel of the second ribbon/string will use the next available DMX channel. When all the available channels of a Universe are used then the addressing moves to channel 1 of the next Universe. This is done until all pixels of all ribbons/strings are defined.
- **Semi-Packed:** As many full strings as possible are put into each Universe. For example, if each string has 50 pixels, then 3 strings will fit into the 170 pixels available in one Universe. So the first 3 strings will use the first Universe; strings 4, 5, and 6 will use the Universe after that. With Semi-Packed, a transition to another Universe will never happen in the middle of a string.

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- **Not Packed:** Each string has its own universe. This means that each string will start with pixel one of a Universe.

Number of DMX Pixels (10-170)

Set the number of DMX pixels that are in each of your DMX pixel strings. For example, if your strings have 150 pixels in each string, set 150, and when the sequence is exported it will expand the 50 pixel sequence into 150 pixels. This is an important feature! It makes sequences written for 50 pixels transportable to DMX strings of any length between 10 and 170.

Network settings

Generally speaking, Light-O-Rama supports up to 16 Light-O-Rama networks, but the SuperStar Sequencer currently only supports up to four of them. The default setting for the SuperStar Sequencer is to use one network (the Standard network), with the other three networks (Auxiliary Networks A, B, and C) disabled. When using one network (the Standard network), you must set the first and last unit IDs that are controlled by the network.

If using more than one network, enable the auxiliary networks you are using and set the first and last unit IDs controlled by each auxiliary network.

Examples

- Setting up one network for the star and 12 ribbons
- Setting up one network for the star, 8 ribbons, and other lights
- Setting up four networks with no star, 24 ribbons, and other lights

Setting up one network for the star and 12 ribbons

Let's say we have a star, 12 ribbons, and no other lights. We are controlling the star with a standard 16 channel Light-O-Rama controller that has unit ID 01, and the twelve ribbons are controlled by their respective controllers with unit IDs 02 through 0D. Then we would use the following settings:

- Star in Use: Yes
- Unit ID of Star Controller: "01"
- Unit ID of First Ribbon Controller: "02"
- Standard Network: Enabled
- Standard Network, Unit ID of First and Last Controller: "01" "0D"
- Auxilliary Networks: Disabled

Setting up one network for the star, 8 ribbons, and other lights

Let's say we have a star and 8 ribbons, and will be running them alongside other lights. We are controlling the star with a standard 16 channel Light-O-Rama controller that has unit ID 01. We also have three other 16 channel Light-O-Rama controllers, with unit IDs 02, 03, and 04. The eight ribbons are controlled by their respective controllers with unit IDs 05 through 0C. Then we would use the following settings:

- Star in Use: Yes
- Unit ID of Star Controller: "01"
- Unit ID of First Ribbon Controller: "05"
- Standard Network: Enabled

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- Standard Network, Unit ID of First and Last Controller: "01" "0C"
- Auxiliary Networks: Disabled

Setting up four networks with no star, 24 ribbons, and other lights

Let's say we have no star, but 24 ribbons, and will be running them alongside other lights. We have 256 channels for other lights, which are controlled by 16 standard 16 channel Light-O-Rama controllers with unit IDs 01 through 10. We have 24 ribbons controlled by their respective controllers, with unit IDs 11 through 28. We want to run the various ribbons on four different networks. Then we could use the following settings:

- Star in Use: No
- Unit ID of Star Controller: Disabled
- Unit ID of First Ribbon Controller: "11"
- Standard Network: Enabled
- Standard Network, Unit ID of First and Last Controller: "01" "10"
- Auxiliary Network A: Enabled
- Auxiliary Network A, Unit ID of First and Last Controller: "11" "18"
- Auxiliary Network B: Enabled
- Auxiliary Network B, Unit ID of First and Last Controller: "19" "20"
- Auxiliary Network C: Enabled
- Auxiliary Network C, Unit ID of First and Last Controller: "21" "28"

Do I need more hardware to use more than one network?

If you have one USB485 connector plugged into one USB port of your computer, then you are using one network. To use more than one network, you must first purchase other USB485 connectors (one for each additional network). Plug in each USB485 connector to a different USB port on your computer. Then plug in the Cat 5 cable coming from each USB485 connector into the first controller of the network group you are going to control with that network.

Setting more than one network in the Light-O-Rama Sequencer

- Launch the Light-O-Rama Network Preferences program.
- Select a comm port for each network that you plan to use.

5.4.4.22 Select All, Select All Left, and Select All Right

In the Light-O-Rama SuperStar Sequencer, you will find these actions in the Edit menu. "Select All" will select all effects in the SuperStar sequence; "Select All Left" will select all that are left of the time selected in the time scale; "Select All Right" will select all to the right of the time selected in the time scale.

Select All is useful for adding some blank space to your SuperStar sequence: If you needed to create a small amount of blank space at the beginning of a sequence, you could Select All, then use the Nudge Right button. To create a large amount of space, you could Select All, press the Cut button, select a time on the time scale, and then press the Paste button.

Similarly, Select All Right is useful for creating some blank space in the middle of your SuperStar sequence: You could Select All Right, Cut, then Paste at the desired new location.

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5.4.4.23 Importing a Timing Grid and up to 3 Timing Channels

In the Light-O-Rama SuperStar Sequencer, you can create a timing grid and timing marks by clicking on the Tools menu and selecting "Create Timings". However, if you already have a timing grid and some timing channels that you have created in the Light-O-Rama Sequencer, you can import one timing grid and up to three timing channels from a sequence file:

- Launch the SuperStar Sequencer.
- Click on the Tools menu, select Layout, and set the number of CCRs that you have.
- Click on the File menu, and select Import Timings.
- Uncheck "Import First Freeform Timing Grid".
- Type the name of the timing grid to import.
- Type the name of the first timing channel to import.
- Type the name of the second timing channel to import.
- Type the name of the third timing channel to import.
- Click on the "..." button and select the sequence file that you wish to import timings from.
- Click on OK.

The timing grid and timing marks will appear at the top of the time layers.

5.4.5 Summary of Commands and Keyboard Accelerators

The following pages in this help file summarize various commands and keyboard accelerators in the Light-O-Rama SuperStar Sequencer:

- Toolbar Summary
- Toolbar Buttons that have Keyboard Modifiers
- Timeline and Effect Object Selection
- Top Part of Color Controls
- Color Picker Dialog Box
- Bottom Part of Color Controls
- Sequencing Grid Commands for Scenes
- Selection Grid Commands for Morphs
- Sequencing Grid Command for Images

5.4.5.1 Toolbar Summary

The following is a summary of the various buttons in the toolbar of the Light-O-Rama SuperStar Sequencer:

New Sequence, Open Sequence, Save Sequence, Cut, Copy, Paste

Delete a selected group, Fast Rewind, Rewind, Pause or Freeze Frame, Stop, Play 8 seconds, Forward, Fast Forward, Play All
Note: The space bar is an accelerator for "Play All".

Scene Mode, Morph Mode, Smooth Effect Mode, Image Mode, Text Mode

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Set Group Time Range, Nudge Left, Nudge Right, Nudge Length Left, Nudge Length Right, Move Effects up, Move Effects Down

Star Rays, Wide Grid, Narrow Grid

Select Props, Select Fixtures

Time Line

To create a selection on the Time Line of 8 seconds or less – Do a click and drag to select a region on the time line.

To create a selection on the Time Line that is longer than 8 seconds - Scroll to where you want the selection to start and mark the start of the selection with a left mouse click. Scroll to the region where you want the selection to end and mark the end of the selection with a right mouse click.

Set Group Time Range – Create a selection on the Time Line, Select a group of effects, and then click on the “Set Group Time Range” button. All the selected effects will be set to the time range on the Time Line.

See also Toolbar Buttons that have Keyboard Modifiers.

5.4.5.2 Toolbar Buttons that have Keyboard Modifiers

The following is a summary of toolbar buttons that have keyboard modifiers in the Light-O-Rama SuperStar Sequencer:

Shift + = Paste and keep all effects in their original locations

Ctrl + = Fast rewind to beginning

Ctrl + = Fast forward to end

= Freeze frame mode: Use the left and right arrow keys to step through the sequence.

Ctrl + = Big nudge left

Ctrl + = Big nudge right

Ctrl + = Big nudge length left

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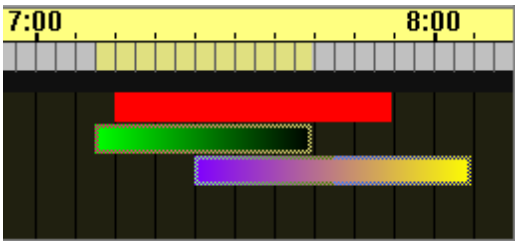
Ctrl + = Big nudge length right

See also Toolbar Summary.

5.4.5.3 Timeline and Effect Object Selection

The timeline and selecting effect objects in the Light-O-Rama SuperStar Sequencer:



Timeline and Effect Object Selection

Dragging the mouse on the gray area of the timeline will select the time duration. Selecting an object will also set the time duration in the timeline.

To set a timeline selection longer than eight seconds, mark the beginning of the timeline selection with a left mouse click, scroll the timeline as necessary, and then mark the end of the timeline selection with a right mouse click.

Ctrl+mouse click on an unselected object will add that object to the selection group.

Ctrl+mouse click on a selected object will remove that object from the selection group.

Ctrl+mouse drag on unselected objects will add those objects to the selection group.

Ctrl+mouse drag on selected objects will remove those objects from the selection group.

5.4.5.4 Top Part of Color Controls

The top part of color controls in the Light-O-Rama SuperStar Sequencer:

Top part of color controls

Left click on a color box, or on "Main" or "Tail" = Step through the 8 basic color wheel colors.

Right click on a color box, or on "Main" or "Tail" = Launch the Color Picker dialog box.

5.4.5.5 Color Picker Dialog Box

The Color Picker dialog box of the Light-O-Rama SuperStar Sequencer:

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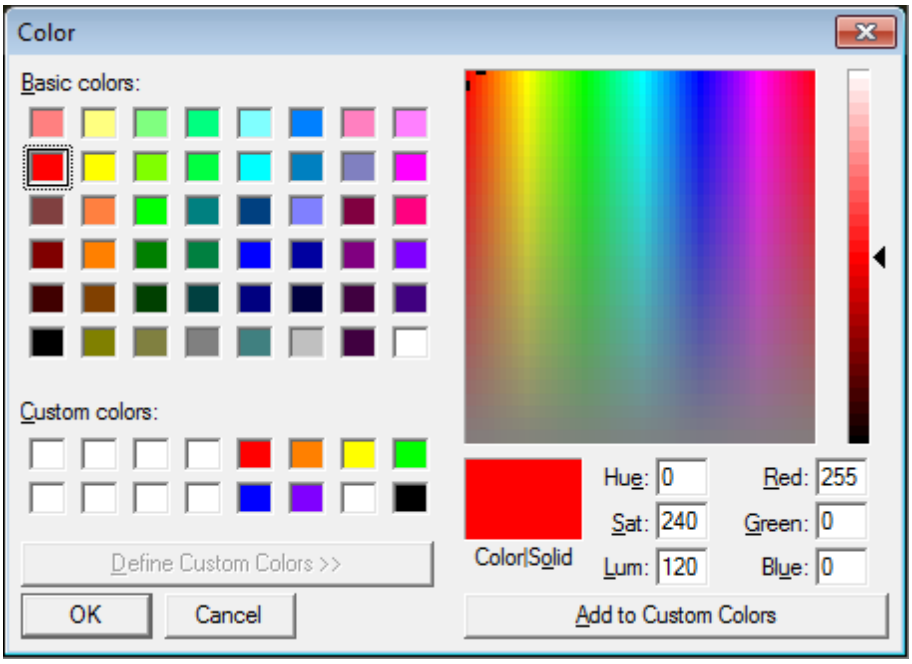


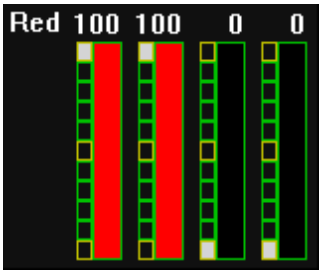
The Color Picker dialog box

Select a color and click OK to set the color.

Note that the eight basic colors of the color wheel are already among the custom colors.

5.4.5.6 Bottom Part of Color Controls

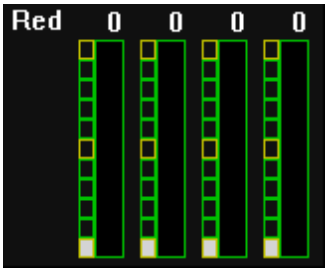
The bottom part of color controls in the Light-O-Rama SuperStar Sequencer:



Bottom part of color controls

Mouse click on the control to set the intensity. Mouse drag will also set the intensity.

Double click on the first color to set the second and third colors also. For example:



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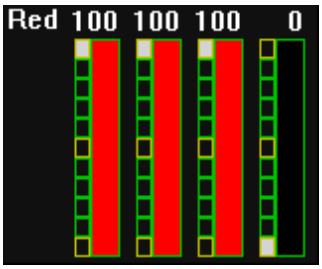
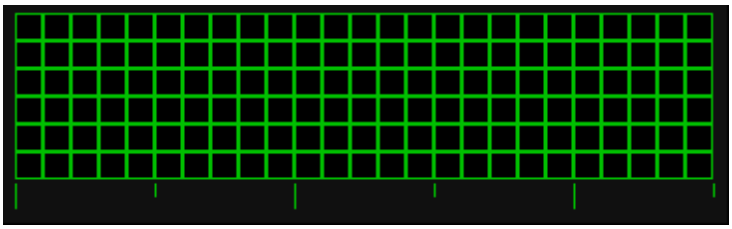
Before a double click on the first color



After a double click on the first color

5.4.5.7 Sequencing Grid Commands for Scenes

Sequencing grid commands for scenes in the Light-O-Rama SuperStar Sequencer:

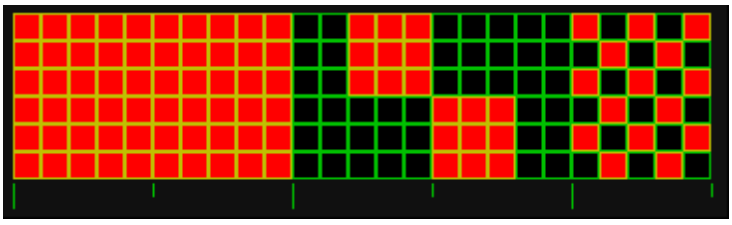


Sequencing grid for scenes

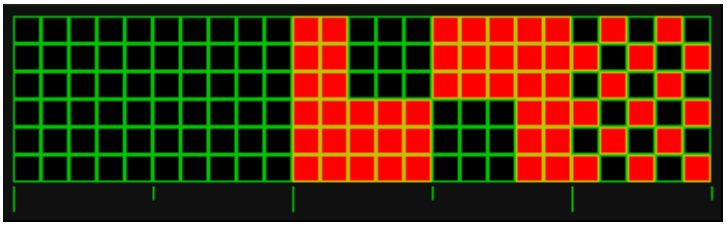
- Left mouse click = Set a pixel.
- Right mouse click = Clear a pixel.
- Left mouse drag = Set pixels.
- Right mouse drag = Clear pixels.

- Shift + left mouse click = Toggle pixel.
- Shift + left mouse drag = Toggle pixels.

Example of a toggle:



Before Shift+left mouse drag



After Shift+left mouse drag

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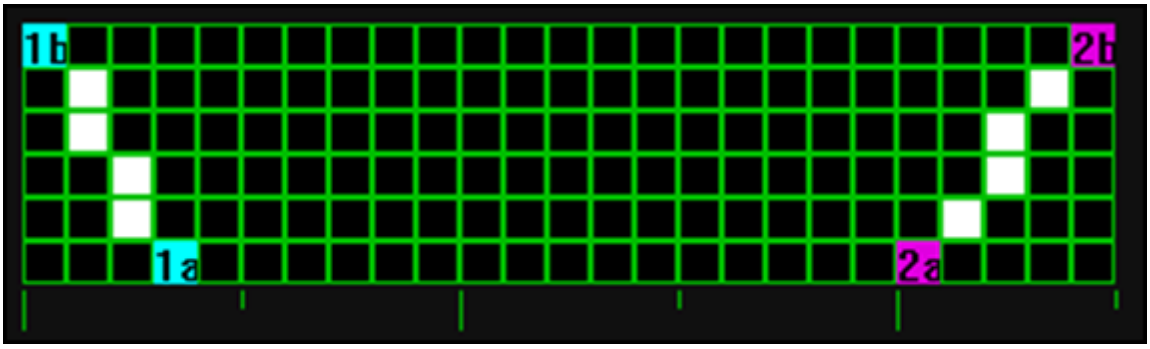
5.4.5.8 Selection Grid Commands for Morphs

Selection grid commands for morphs in the Light-O-Rama SuperStar Sequencer:



Selection grid for morphs

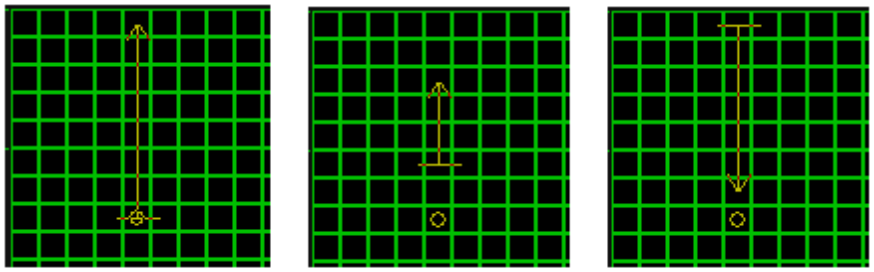
Left mouse drag to set the State 1 line: "1a" marks the beginning of the left mouse drag; "1b" marks the end.

Right mouse drag to set the State 2 line: "2a" marks the beginning of the right mouse drag; "2b" marks the end.

When the morph is performed, "1a" morphs to "2a", and "1b" morphs to "2b".

5.4.5.9 Sequencing Grid Commands for Smooth Effects (Shockwave, Spiral and Fan)

Sequencing Grid commands for Smooth Effects (Shockwave, Spiral, Fan, and Sine Wave) in the Light-O-Rama SuperStar Sequencer:



Screen Shot A Screen Shot B Screen Shot C

Use left mouse drag to set the center point and start angle. For example, Screen Shot A was created with a left mouse drag that started at the circle and ended at the arrow head.

Use right mouse drag to modify the radius. For example, Screen Shot B was created with a right mouse drag that started at the base of the line and ended at the arrow head of the line.

Use right mouse drag to modify the direction of the radius. For example, Screen Shot C was created with a right mouse drag that started at the base of the line and ended at the arrow head of the line.

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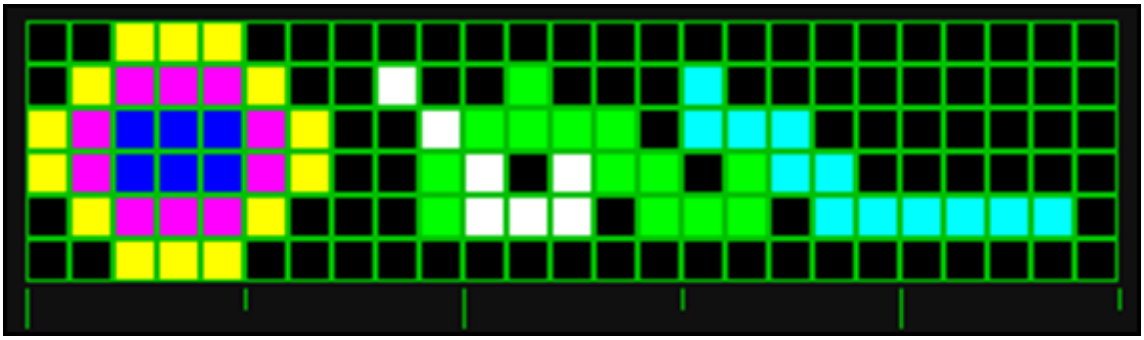
5.4.5.10 Sequencing Grid Command for Images

Sequencing grid commands for images in the Light-O-Rama SuperStar Sequencer:



Sequencing grid for images

- Left mouse click = Set a pixel
- Right mouse click = Clear a pixel
- Left mouse drag = Set pixels (draws like a pencil)
- Right mouse drag = Clear pixels (clears like an eraser)

- Ctrl + left mouse drag = Set pixels
- Ctrl + right mouse drag = Clear pixels

- Shift + left mouse click = Set the color control to the color of the pixel
- Shift + left mouse drag = No action performed

5.4.6 Purchased Sequences

Sequences purchased from SuperStar lights are archive files and will have the word "archive" at the end of the file name. For example:

WizardsInWinter_12CCRs_archive.sup

Archive files can be exported by any license level of the SuperStar Sequencer, including the free demo version. However, if you add, delete, or modify any of the effects in the file, then it is no longer an archive file and will only export if you have the appropriate license level.

Note that you can change the following in an archive file and it will still export with any license level:

- You can open an audio file
- You can set unit ID information and any other information in the Configuration dialog box
- You can set the location of the controllers and any other information in the Layout dialog box

5.5 Show Editor

The Light-O-Rama Show Editor is used to create shows. Shows are groups of sequences to be played as a group. They can be scheduled to play at certain times using the Schedule Editor, and will then be played using the Show Player.

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To start the Show Editor, you can run it from your computer's Start Menu by selecting "All Programs" -> "Light-O-Rama" -> "Light-O-Rama Show Editor". Alternatively, if the Light-O-Rama Control Panel is already running, you can right-click its icon in your computer's system tray, and select "Show Editor" from the popup menu that will open.

Shows consist of several sections. Each section serves a different purpose - for example, the "startup section" is a list of sequences that will be played when the show begins, while the "animation section" is a list of animation sequences that will be played throughout most of the show's duration (after startup and before shutdown). All sections are optional.

For details on each of the sections, please refer to the following:

- The Background Section
- The Startup Section
- The Animation Section
- The Musical Section
- The Interactive Section
- The Shutdown Section

The Show Editor consists of six main tabs, and a toolbar at their top. Each of the tabs is associated with one of the six sections of the show (such as "background" and "animation"), while the toolbar has buttons to create, open, and save shows.

To add a sequence to a section, click on that section's tab, and then on the large "+" button. This will prompt you for the name of the sequence that you want to add. Similarly, to remove one, select the sequence from the section's list by clicking on its name, and then click the large "-" button.

A sequence can be moved up or down in a section's list by clicking on its name and then on the large up arrow or down arrow buttons. This generally affects the order that the sequences will be played in, but not always: For example, in the musical section, you can select that the sequences will be played in the order listed, or in a random shuffle; if you choose the latter, it doesn't matter what order they are listed in. Similarly, in the animation section, you can select that the sequences be played simultaneously (as opposed to sequentially); if you do, their listed order does not matter.

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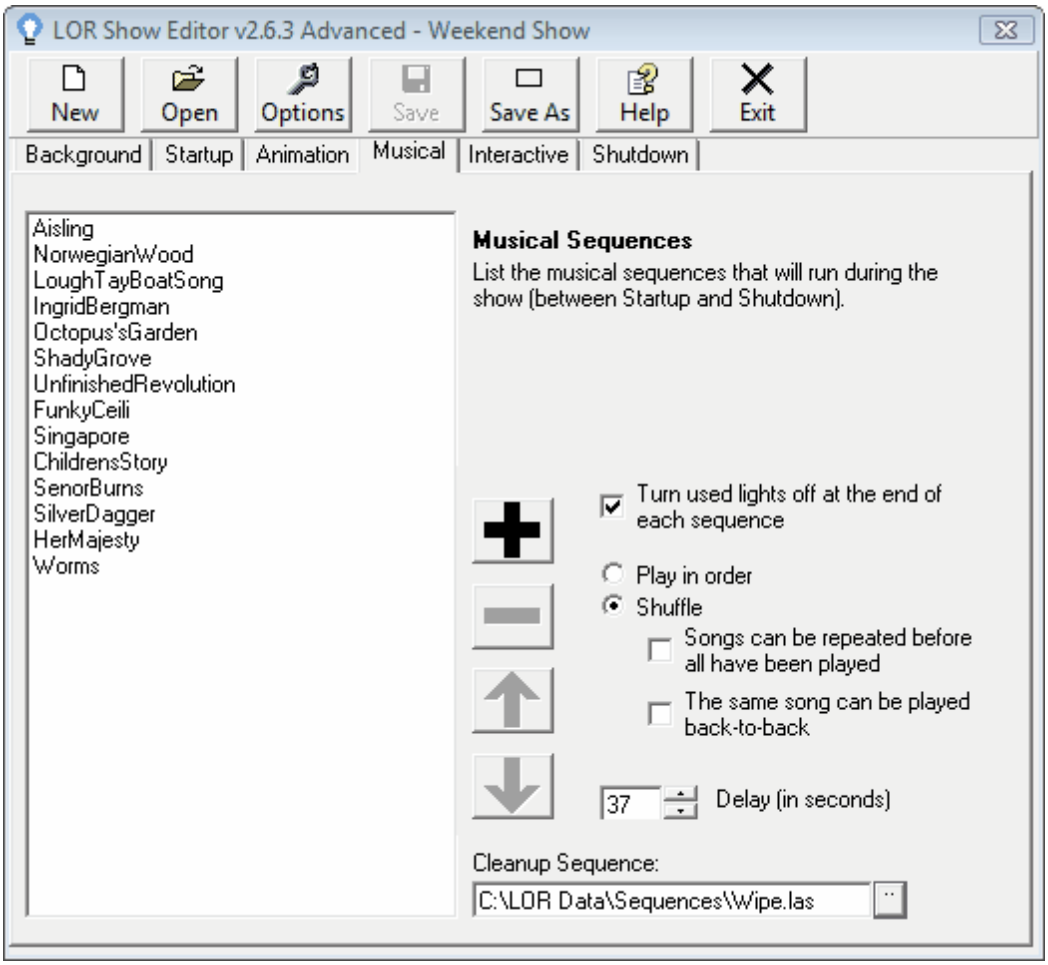

The Show Editor's tab for the musical section of a show

The Background Section

When a show is started (at a time determined by the schedule), all of the sequences in the show's background section will start playing, simultaneously. When such a sequence reaches its end, it will simply loop back to its beginning and keep playing. All of these sequences will continue playing in this way until the show ends (also at a time determined by the schedule).

If your Light-O-Rama software license is for the Advanced feature level, you additionally have control over whether this section (and/or the rest of your show) starts immediately at its scheduled time, or upon an input trigger (for example, when someone hits a "start" button). See "Show Startup Options" for details.

Only animation sequences can be used in the background section of a show.

Channels controlled by a background sequence should be separate from the channels used by other sequences. This means that sequences in the background section should use a different preview than sequences in the other sections.

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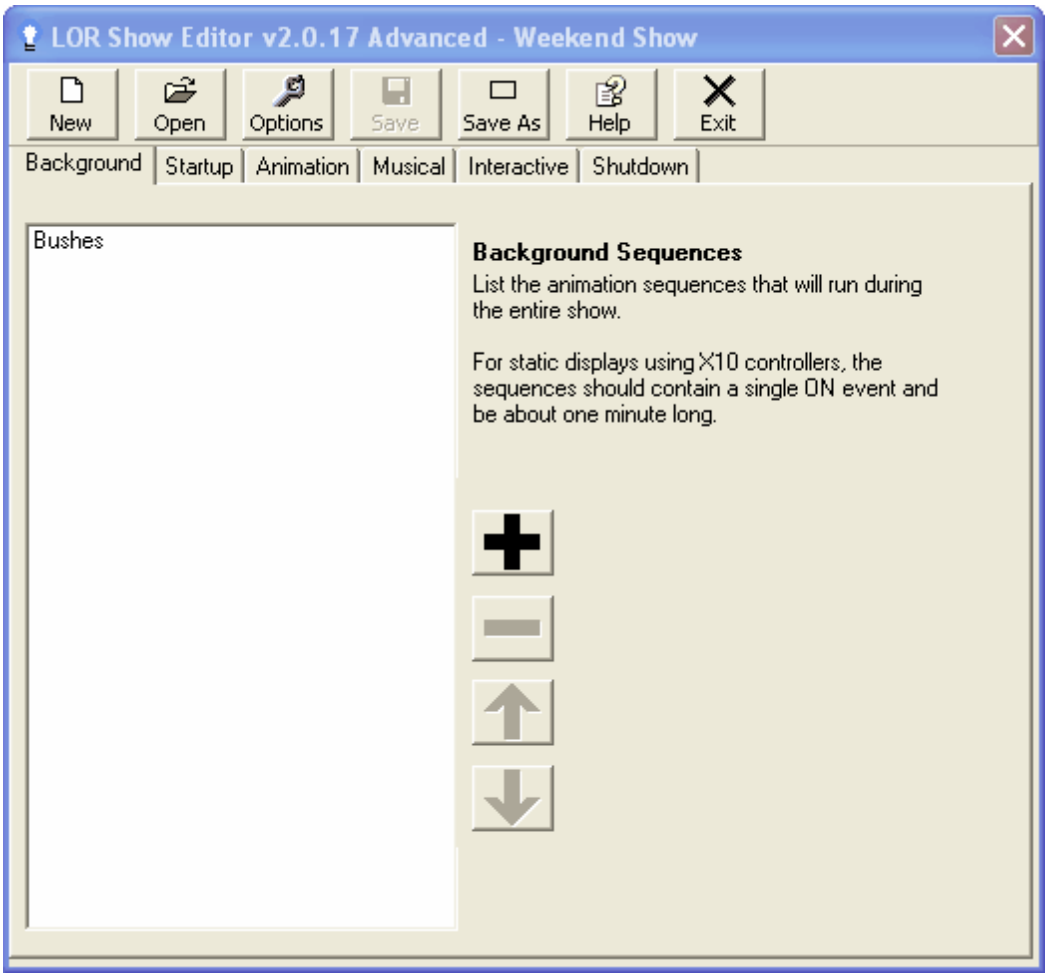

The Show Editor's tab for the background section of a show, with one sequence

The Startup Section

When a show is started (at a time determined by the schedule), the sequences in its startup section will be played, one at a time, in order. After they all have finished, the main portion of the show will begin, consisting of the animation section and the musical section.

You can control whether or not sequences in this section will automatically turn their lights off when they reach their end by setting the "Turn used lights off at the end of each sequence" checkbox.

If your Light-O-Rama software license is for the Advanced feature level, you additionally have control over whether this section (and the rest of your show) starts immediately at its scheduled time, or upon an input trigger (for example, when someone hits a "start" button). See "Show Startup Options" for details.

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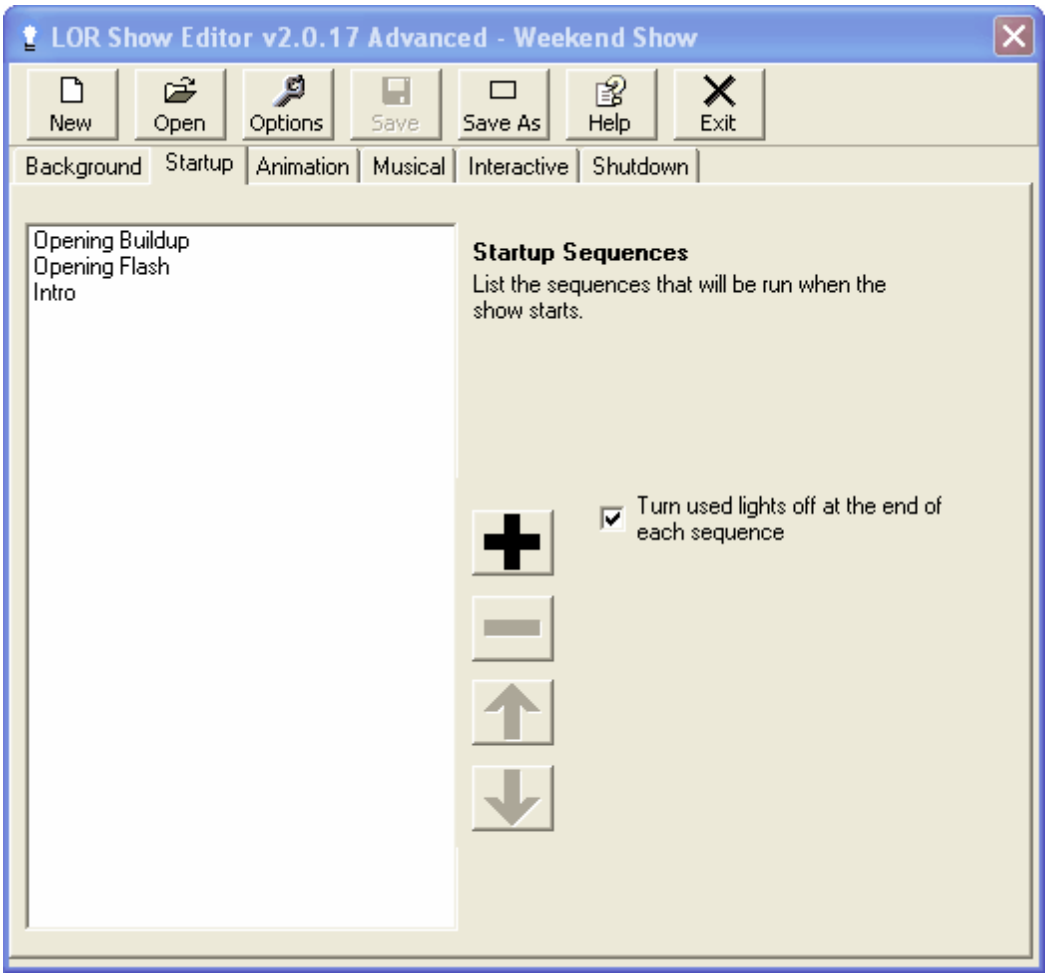

The startup section in the Show Editor, with three sequences

The Animation Section

After a show's startup section has completed, its animation section will begin (as will its musical section).

Sequences in the animation section can be played concurrently or sequentially. If you choose to play them sequentially, the first in the list (as displayed in the Show Editor) will be played, and when it finishes, the next will be played, and so forth. After all of them have been played, the first in the list will be played again. This pattern will continue until the show is shut down (at a time determined by the schedule).

If they are played concurrently, all of them will be played at once, and whenever one reaches its end, it will simply loop back to its beginning and keep playing. Again, this will continue until the show is shut down.

You can control whether or not sequences in this section will automatically turn their lights off when they reach their end by setting the "Turn used lights off at the end of each sequence" checkbox.

Only animation sequences can be used in the animation section of a show.

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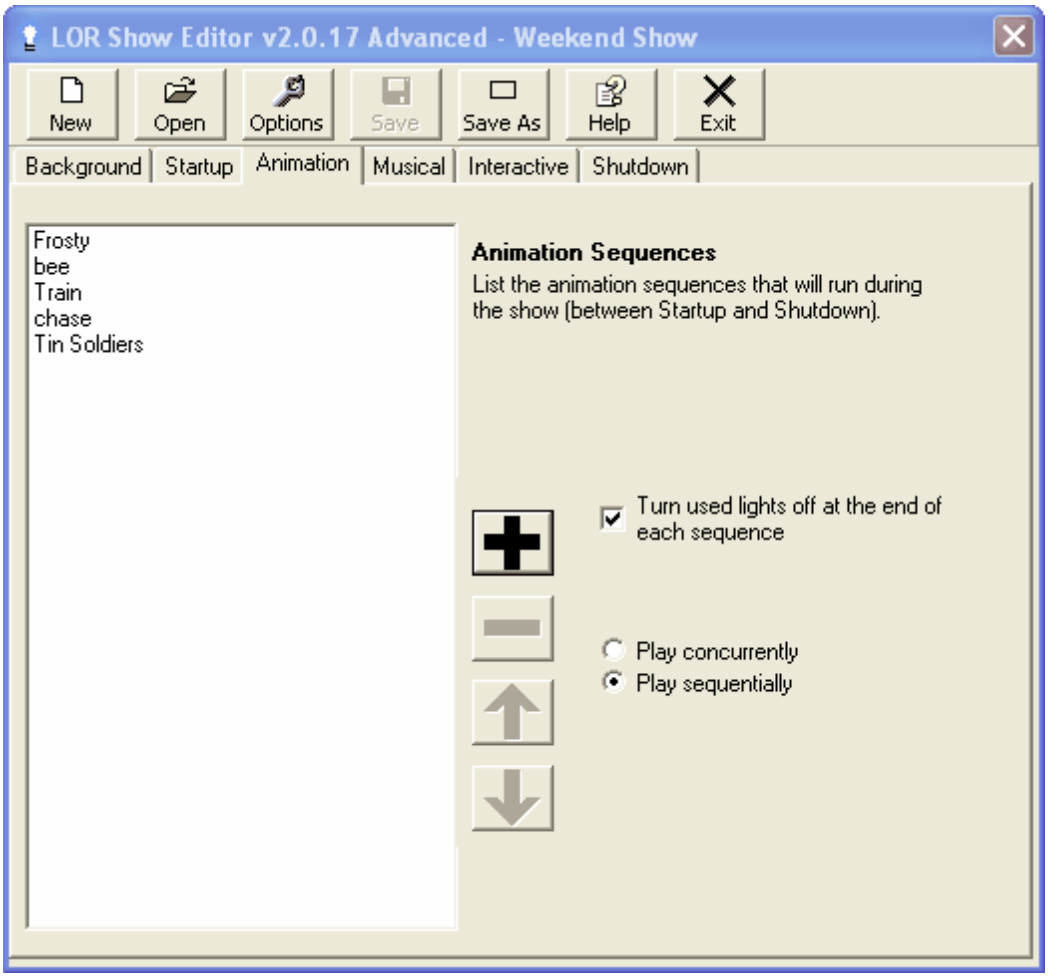

The animation section in the Show Editor, with five sequences, played sequentially

The Musical Section

After a show's startup section has completed, its musical section will begin (as will its animation section).

Only one sequence from the musical section will play at a time. They can be played in the order listed in the Show Editor, or shuffled randomly. If shuffled randomly, you can also control two different aspects of how shuffling is done: Whether or not a sequence is allowed to be played a second time before all sequences have played once, and whether or not a sequence is allowed to play twice in a row (this latter does not apply if you have only one sequence in the musical section - it will definitely be played back-to-back).

Play will continue until the show is shut down (at a time determined by the schedule). If the sequences are to be played in the order listed, and the end of the list is reached before the show is to shut down, play will loop back to the first sequence in the list.

Optionally, a "cleanup sequence" can also be specified in the musical section. If so, that sequence will be played immediately after the completion of any sequence in the musical section, before the next one begins. Also optionally, a delay can be specified between songs.

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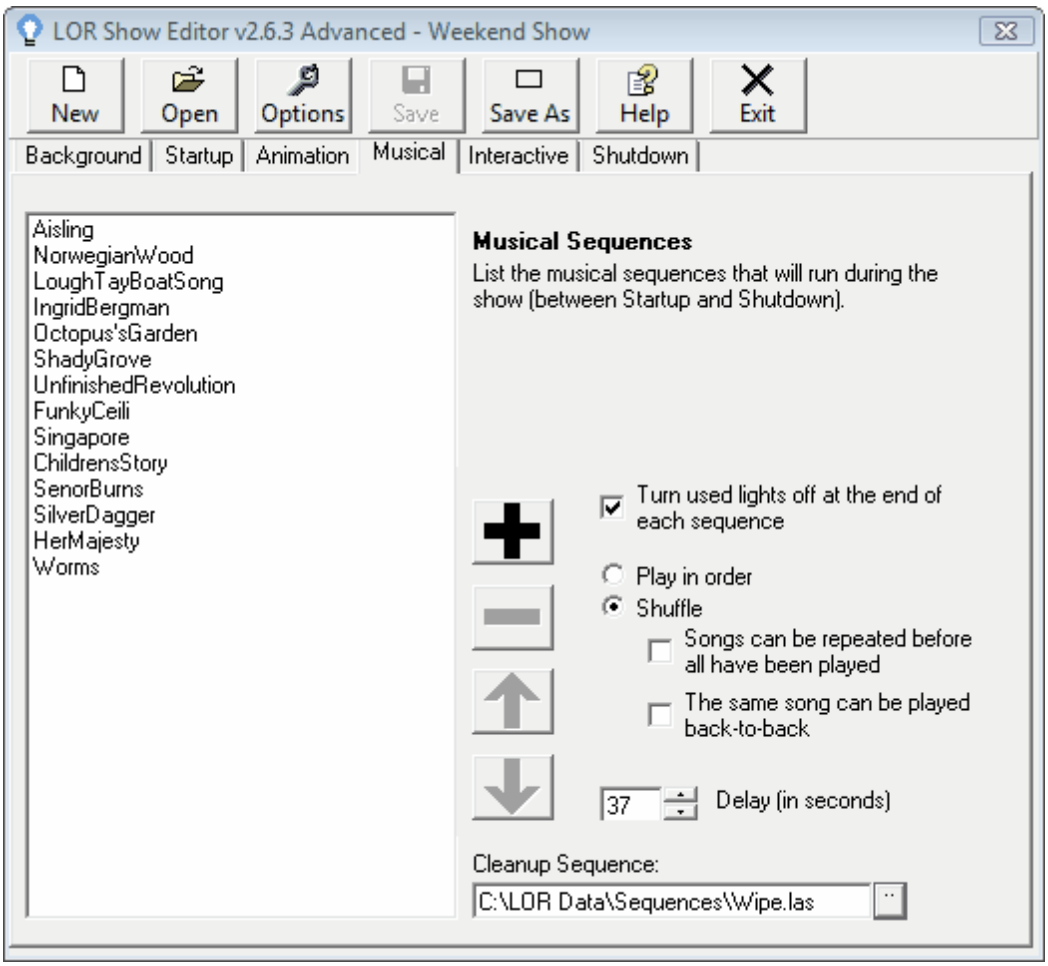
You can control whether or not sequences in this section will automatically turn their lights off when they reach their end by setting the "Turn used lights off at the end of each sequence" checkbox.



The musical section in the Show Editor, with several sequences, shuffled, with a delay and a cleanup sequence

The Interactive Section

Some Light-O-Rama controllers can be used not only to control lights, but also to accept input from people, causing Light-O-Rama to play sequences on demand. For example, you could have a big red button as part of your display, which, when pressed, will cause Light-O-Rama to start playing a particular song or songs.

This is controlled through the interactive section of the show. You can use this tab in the Show Editor to specify what sequences are to be played when which inputs are triggered. Please see the separate page on interactive groups for details.

Note that, unlike for the other sections of the show, the Show Editor's "Interactive" tab actually lists groups of sequences, rather than directly listing sequences. Again, please see the page on interactive groups for details on how to create and modify these groups of sequences.

You can control whether or not sequences in this section will automatically turn their lights off when they reach their end by setting the "Turn used lights off at the end of each sequence" checkbox, but

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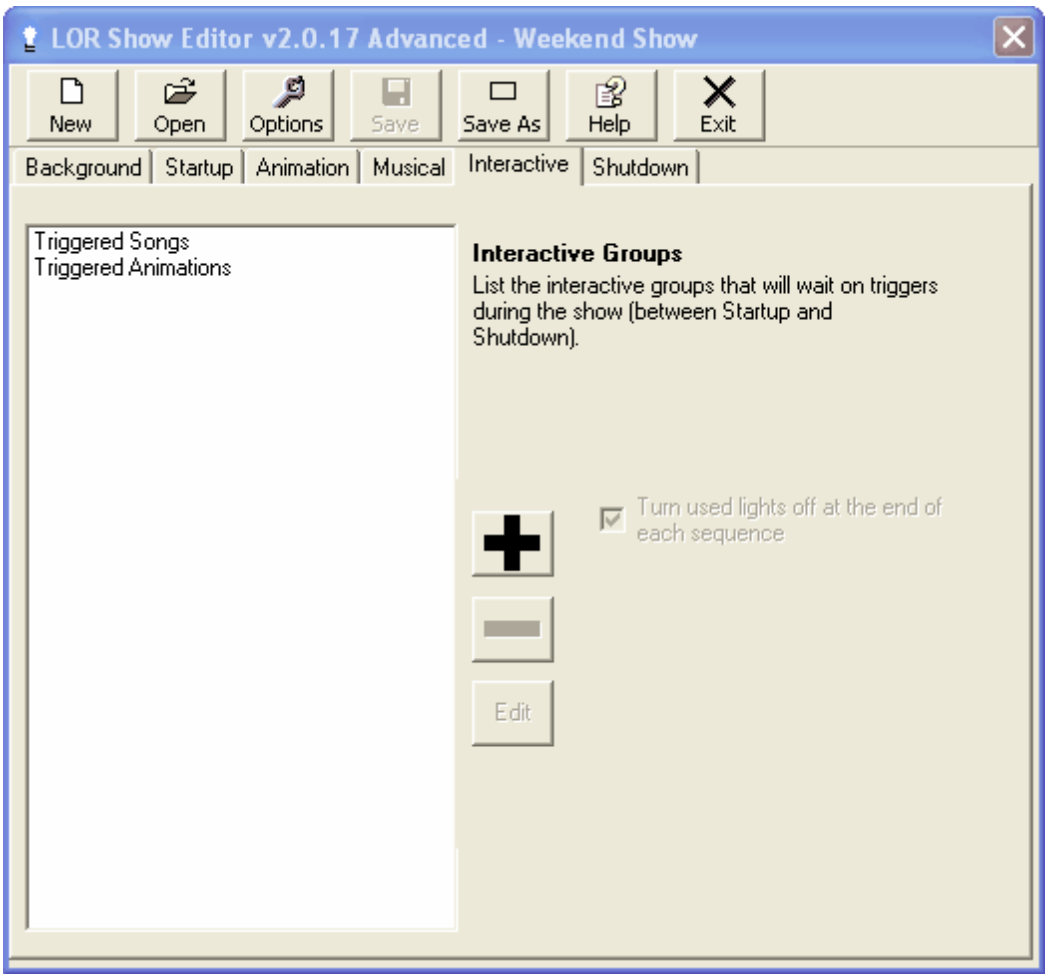
unlike in other sections of the show, this setting is controlled individually for each interactive group, rather than for the section as a whole.



The interactive section in the Show Editor, with two groups of sequences

The Shutdown Section

When the end of a show is reached (at a time determined by the schedule), its animation section and musical section will end, and its shutdown section will begin. Sequences in the shutdown section will play, one at a time, in the order listed in the Show Editor. After they all have completed, the show is truly finished.

You can control whether or not sequences in this section will automatically turn their lights off when they reach their end by setting the "Turn used lights off at the end of each sequence" checkbox.

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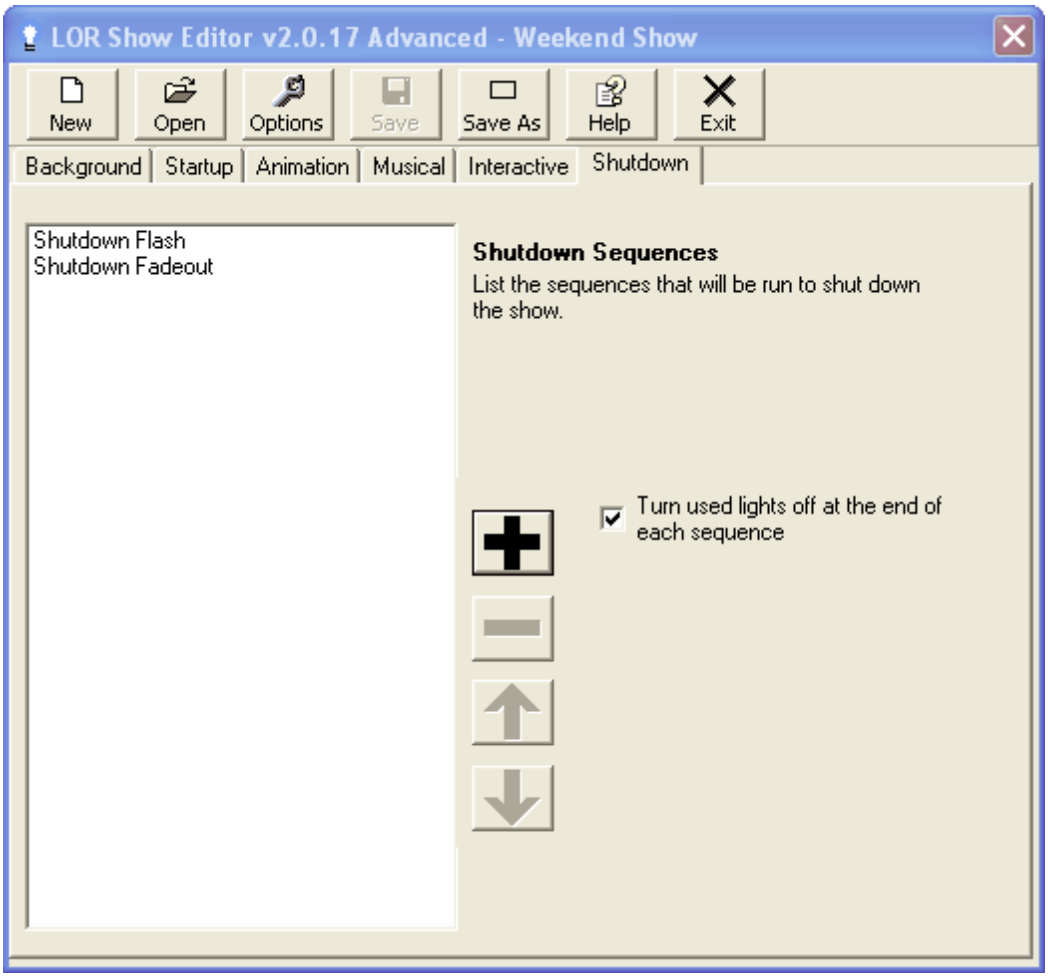

The shutdown section in the Show Editor, with two sequences

Show Startup Options

If your Light-O-Rama software license is for the Advanced feature level, you have more control over exactly how your show will start up:

- Immediate startup
- Triggered startup
- Immediate background startup

To choose which way you want your show to start, select the "Options" button at the top of the Show Editor. This will bring up the following dialog, which has a "Startup Type" section where you can choose which way the show will start:

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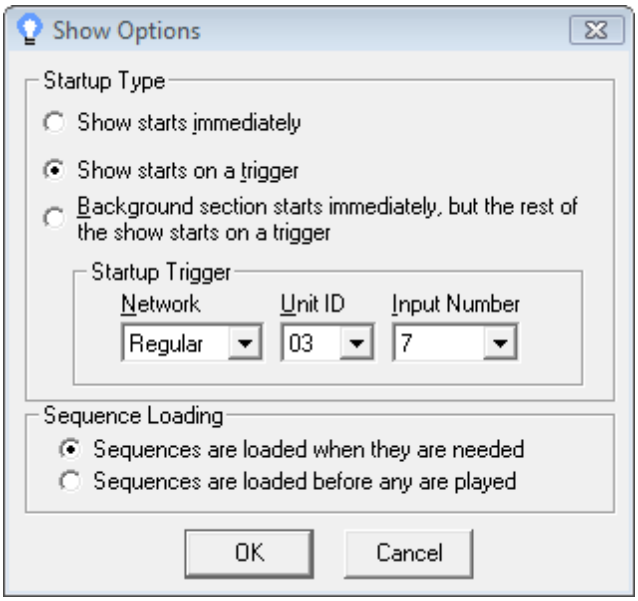

The Show Options dialog, with triggered startup selected

Immediate Startup

In immediate startup mode, your show will begin immediately at its scheduled start time.

This is equivalent to the same way that shows always started in earlier releases of Light-O-Rama.

Triggered Startup

In triggered startup mode, your show will start when a specified circuit on a specified Light-O-Rama controller is triggered (as long as it is triggered during the show's scheduled run time). For example, you could hook up a big red button labeled "Start the Show" to a controller. Please note that triggers are not supported on LOR Enhanced networks.

Immediate Background Startup

In immediate background startup mode, your show's Background section will start immediately at the show's scheduled start time, but the rest of the show will not start until a specified circuit on a specified Light-O-Rama controller is triggered (as long as it is triggered during the show's scheduled run time). Please note that triggers are not supported on LOR Enhanced networks.

Sequence Loading Options

By default, when a show is being played in the Show Player, any given sequence in the show will not be loaded until when it is about to be played for the first time. Depending upon the size of the sequence and the power of the computer, it may take a human-noticeable amount of time to load a sequence; if so, this may cause an undesired delay between sequences, the first time they are played. So, optionally, you can choose to preload all sequences before any of them are played. To do so, click on the "Options" button in the Show Editor's toolbar, and then select "Sequences are loaded before any are played" from the "Sequence Loading" section of the options dialog:

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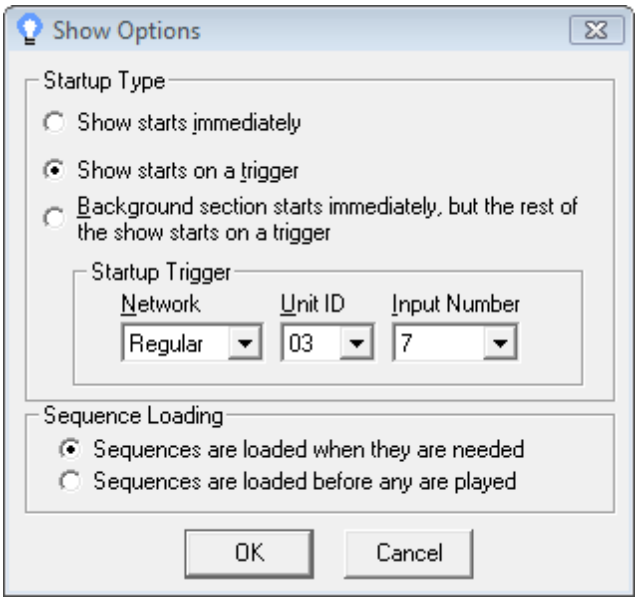

The Show Options dialog

5.5.1 Interactive Groups

Some Light-O-Rama controllers can be used not only to control lights, but also to accept input that can be used to trigger a sequence or sequences. For example, your display might have several buttons for people to press, each of which will cause Light-O-Rama to play some particular song on demand.

This is controlled through the Interactive Section of a show. Unlike the other sections of a show, the Show Editor's "Interactive" tab displays not sequences, but groups of sequences, known as "interactive groups". Each group matches individual circuits on individual controllers with individual sequences to be played when those circuits are triggered.

Only one musical sequence can be playing at any given time. Therefore, if a musical sequence from an interactive group is triggered, any musical sequence that happens to already be playing will be stopped (for one exception to this, see the "Jukebox" type of interactive group, below).

Interactive groups cannot be used on LOR Enhanced networks. If you want to use an interactive group, in order to function during your show, it must be defined on a non-enhanced LOR network.

- Types of Interactive Groups
  - Jukebox
  - Soundboard
  - Magic Toy
- Choosing Sequences for a Group

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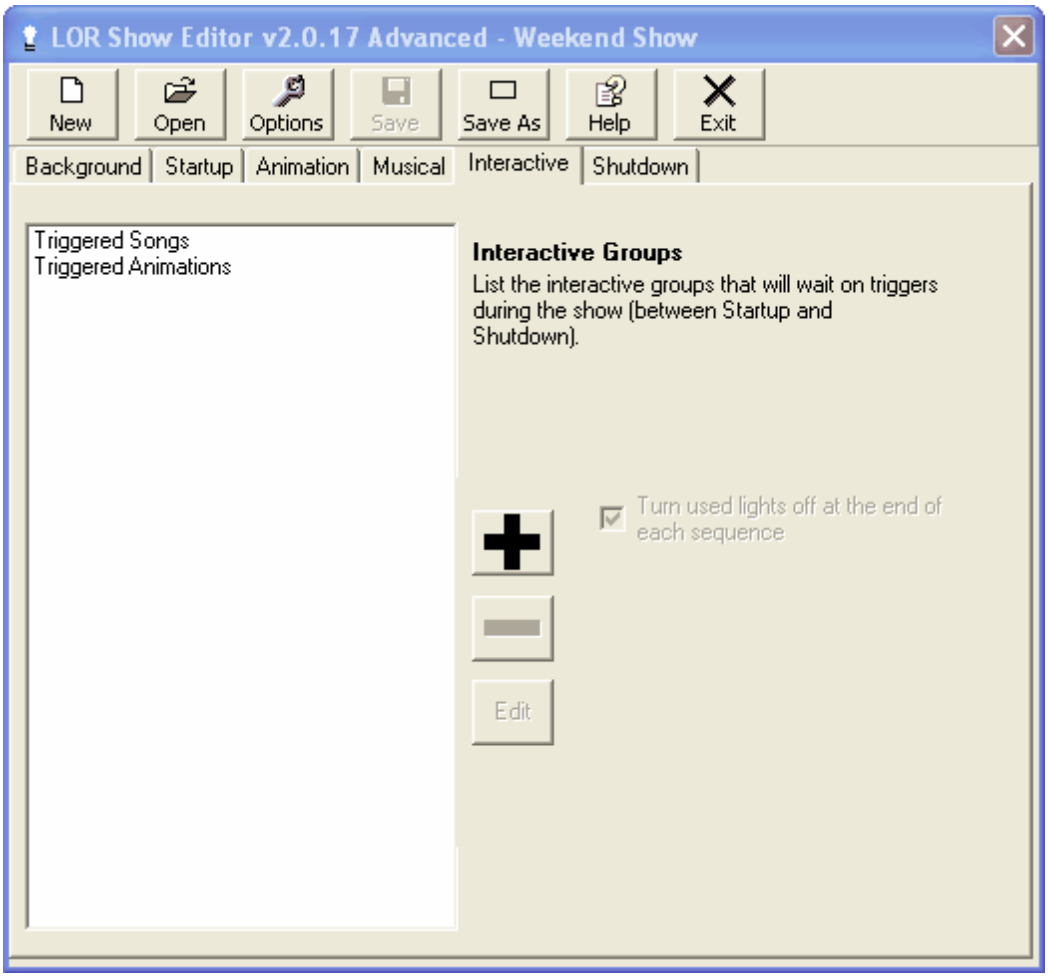

The Show Editor's Interactive tab

Types of Interactive Groups

When you click the large "+" button, to add a new interactive group to the show, you will then be prompted to choose the type of interactive group to add:

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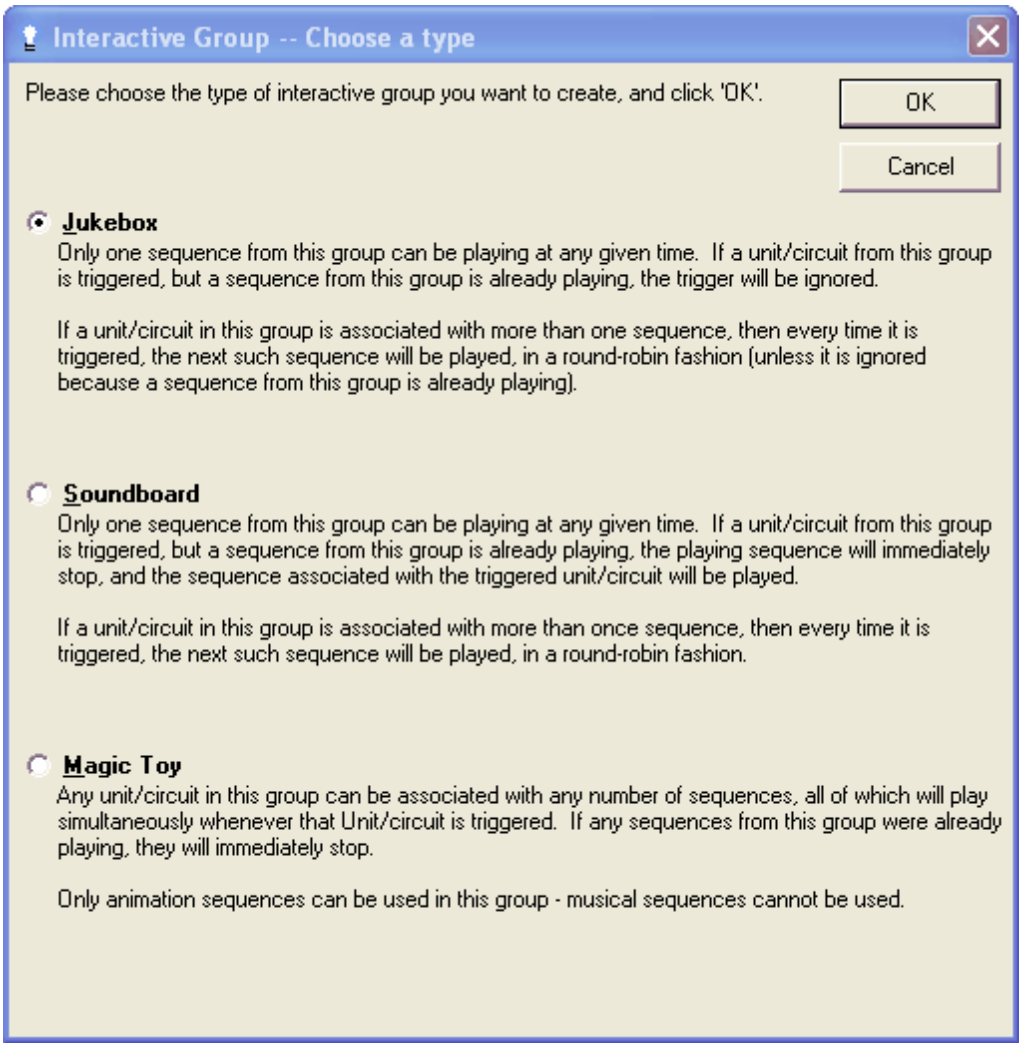

Choosing the type of a new interactive group

There are three types of interactive groups:

- Jukebox
- Soundboard
- Magic Toy

After choosing which type of interactive group you want, you will be given a choice of which sequences to put in the group.

Jukebox

"Jukebox" interactive groups allow you to define a group of sequences, each hooked up to be triggered by an individual circuit on some LOR controller, such that only one sequence in the group can be playing at any given time, and if one already is playing when another is triggered, the first will continue playing uninterrupted, and the trigger will be ignored.

If you assign more than one sequence to a single circuit in a single jukebox, then whenever that circuit is triggered, the "next" sequence in the list, round-robin, will be played.

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Both musical sequences and animation sequences can be placed into a jukebox interactive group.

Soundboard

"Soundboard" interactive groups are similar to jukebox interactive groups in that only one sequence in the group can be playing at any given time. However, unlike jukebox interactive groups, triggering a sequence while another sequence from the group is currently playing will cause the playing sequence to stop, and the triggered sequence to start.

If you assign more than one sequence to a single circuit in a single soundboard, then whenever that circuit is triggered, the "next" sequence in the list, round-robin, will be played.

Both musical sequences and animation sequences can be placed into a soundboard interactive group.

Magic Toy

"Magic toy" interactive groups allow you to set up a group of sequences such that many of them can be started simultaneously by a single trigger. Any sequences already playing from the group will be stopped when the new set is started.

Only animation sequences (as opposed to musical sequences) can be placed into a magic toy interactive group.

Choosing Sequences for a Group

After you choose the type of your new interactive group, or upon editing an existing group, you will be shown a list of the triggers for the group:

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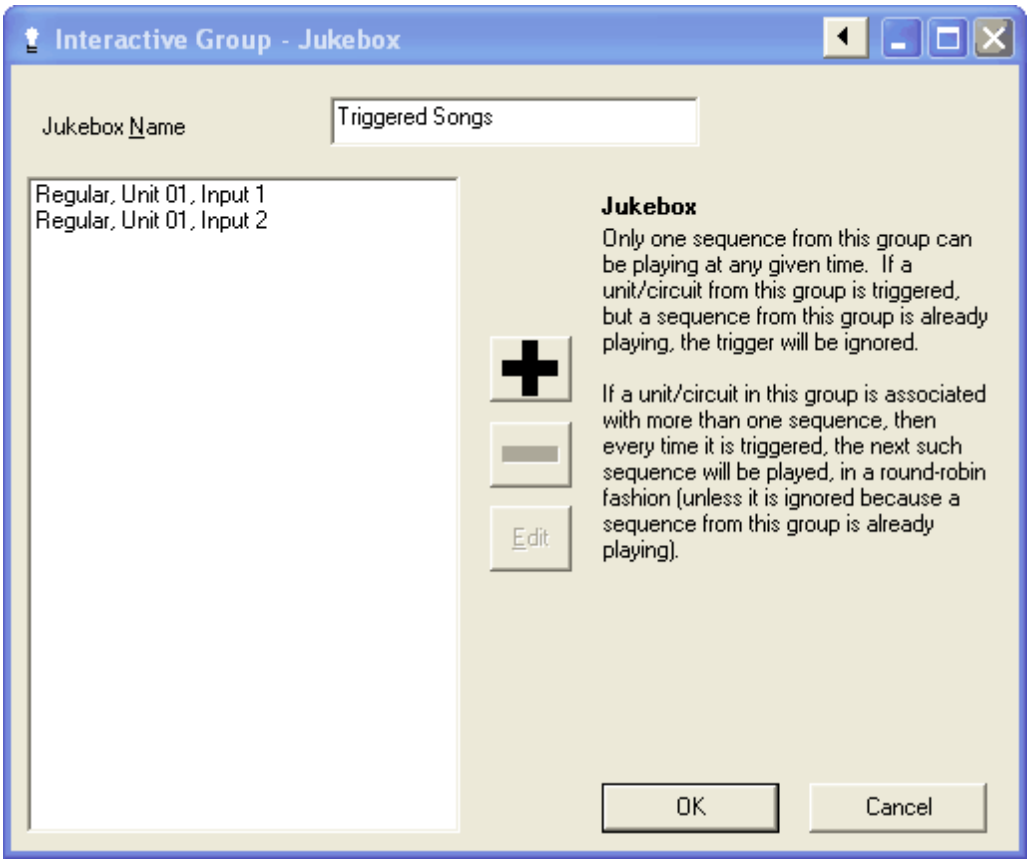

The triggers in an interactive group

When you add a new trigger to this list (by clicking the large "+" button) or edit an existing trigger, you will be given a choice of which sequences are assigned to the trigger, and which circuit on which unit of which network triggers them (please note that triggers are not supported on LOR Enhanced networks). You can also assign a name to the trigger:

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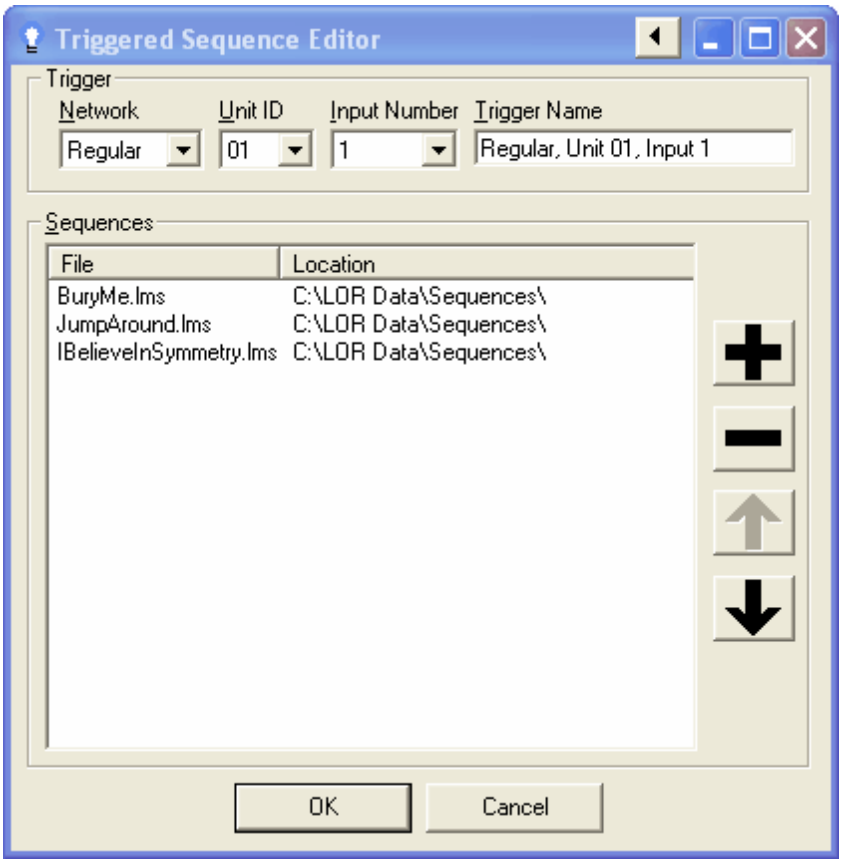

Choosing the sequences assigned to a trigger in an interactive group

5.6 Schedule Editor

The Light-O-Rama Schedule Editor is used to schedule shows to be played at certain times. Shows are created using the Light-O-Rama Show Editor, and consist of sequences, which are created using the Light-O-Rama Sequencer. Scheduled shows are then played by the Light-O-Rama Show Player.

To start the Schedule Editor, you can run it from your computer's Start Menu by selecting "All Programs" -> "Light-O-Rama" -> "Light-O-Rama Schedule Editor". Alternatively, if the Light-O-Rama Control Panel is already running, you can right-click its icon in your computer's system tray, and select "Schedule Editor" from the popup menu that will open.

For an overview of schedules, please refer to:

- Schedules
  - The Weekly Schedule
  - The Calendar Schedule

For help on the Schedule Editor, please refer to:

- Opening, Saving, and Reverting
- Switching between the Weekly and Calendar Schedules
- Adding a Show to the Weekly Schedule

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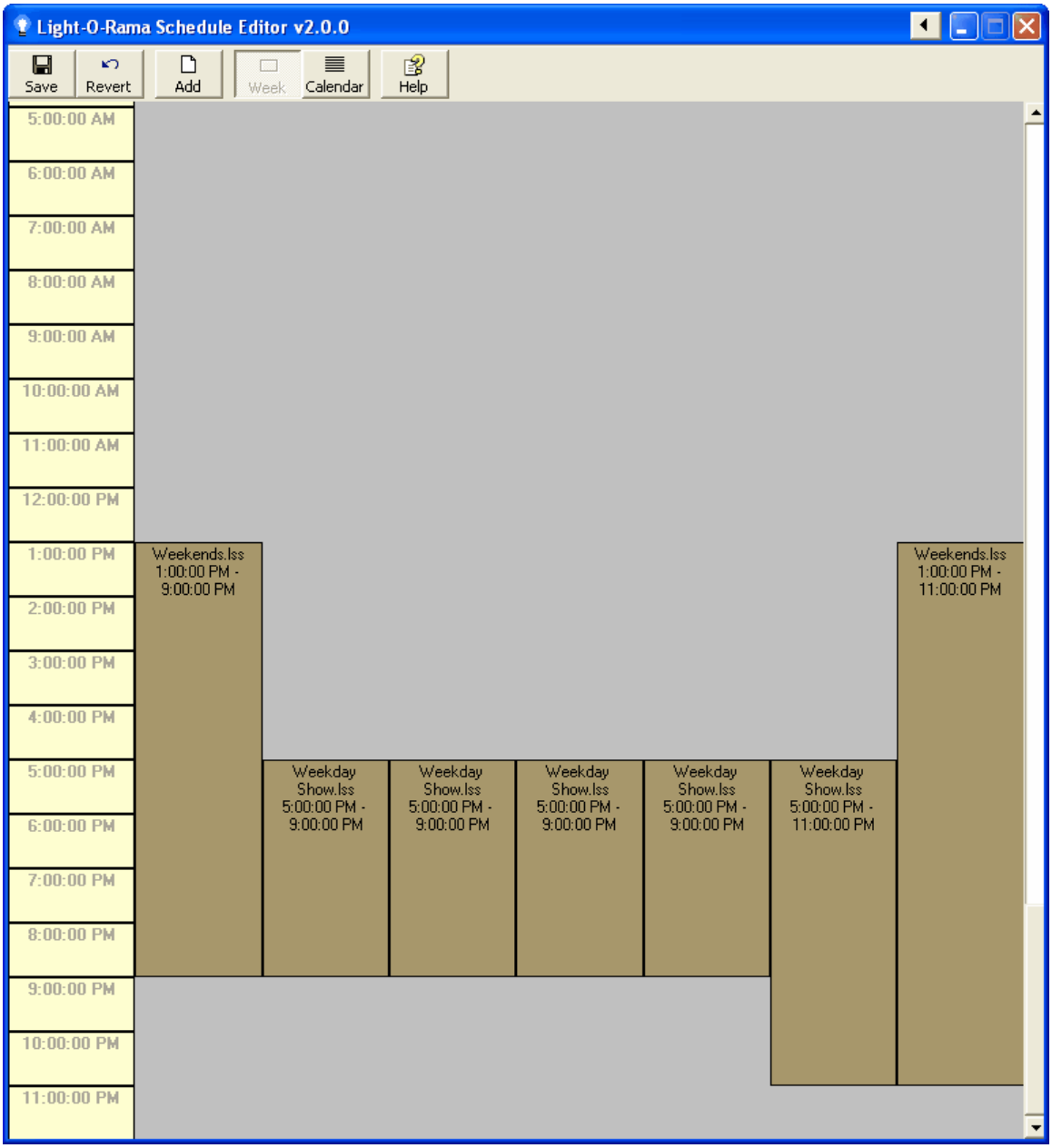
- Adding a Show to the Calendar Schedule
- Editing a Scheduled Show
- Deleting a Scheduled Show



The Schedule Editor, showing the weekly schedule

Opening, Saving, and Reverting

Light-O-Rama maintains just a single schedule (with two parts - the weekly schedule and the calendar schedule), so when the Schedule Editor starts, it automatically opens and displays the current schedule. Once you start editing it, however, the displayed schedule may differ from the saved schedule. So, after you have edited the schedule and are satisfied with the changes you made, click the toolbar's Save button to save your changes.

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On the other hand, if you wish to discard your changes without saving them, click the toolbar's Revert button instead. Only the changes made since the last time that you saved will be discarded.

In order for the changes that you have made to the schedule to take effect, you must first save the schedule.

Switching between the Weekly and Calendar Schedules

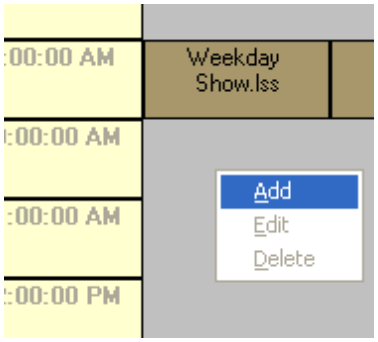
The schedule consists of two parts - the weekly schedule and the calendar schedule. The Schedule Editor only displays one of these two at a time, although both are always in effect.

When the Schedule Editor starts, it displays the weekly schedule. You can switch to the calendar schedule by pressing the toolbar's Calendar button, and you can switch back to the weekly schedule by pressing its Week button.

Adding a Show to the Weekly Schedule

With the weekly schedule displayed, there are two ways to add a show to it:

- Click the toolbar's Add button.
- Click on an unscheduled area of the schedule and select "Add" from the popup menu.



Adding a new show to the weekly schedule

In either case, the Add Show dialog will open:

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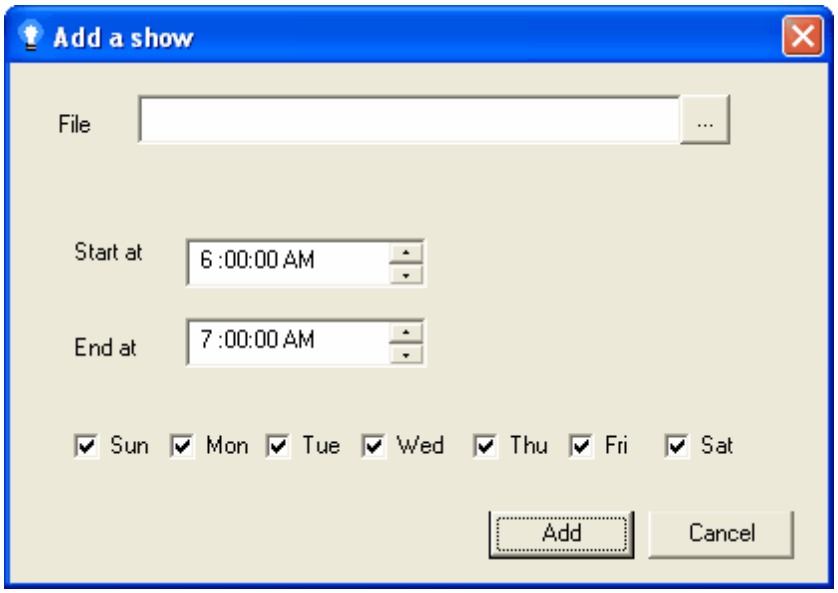

The Add Show dialog for the weekly schedule

Opening the Add Show dialog by clicking on an unscheduled area, rather than by using the Add button, has a couple advantages: First, it will automatically be populated with a start time and an end time based on where you had clicked. In the above example, the click was made at approximately 6:30 AM, and so the start and end times were automatically set to 6:00 AM and 7:00 AM.

Second, it automatically takes into account conflicts between the new show and any existing shows. For example, if there were already a show scheduled starting at 6:45, the end time of the new show would have automatically been set to 6:45 rather than 7:00. Similarly, if a show had already been scheduled at this time on Sunday, the "Sun" checkbox for the new show would have automatically been unchecked.

To add a new show using this dialog, first select the name of the show file; it is easiest to do this using the "..." button next to the File box, which will open up a dialog allowing you to choose among the existing show files.

Next, choose the start and end time for the show, and then select the day or days of the week that you wish this show to run.

Close the dialog by pressing "Add" (or "Cancel" if you no longer wish to add the new show), and save your changes by pressing the toolbar's "Save" button (or "Revert" if you wish to get rid of your changes).

Adding a Show to the Calendar Schedule

With the calendar schedule displayed, there are two ways to add a new show. In either case, first select the day that you want to schedule the show for (by clicking that day in the calendar), and then either:

- Click the toolbar's Add button, or
- Click on an unscheduled area of the schedule and select "Add" from the popup menu.

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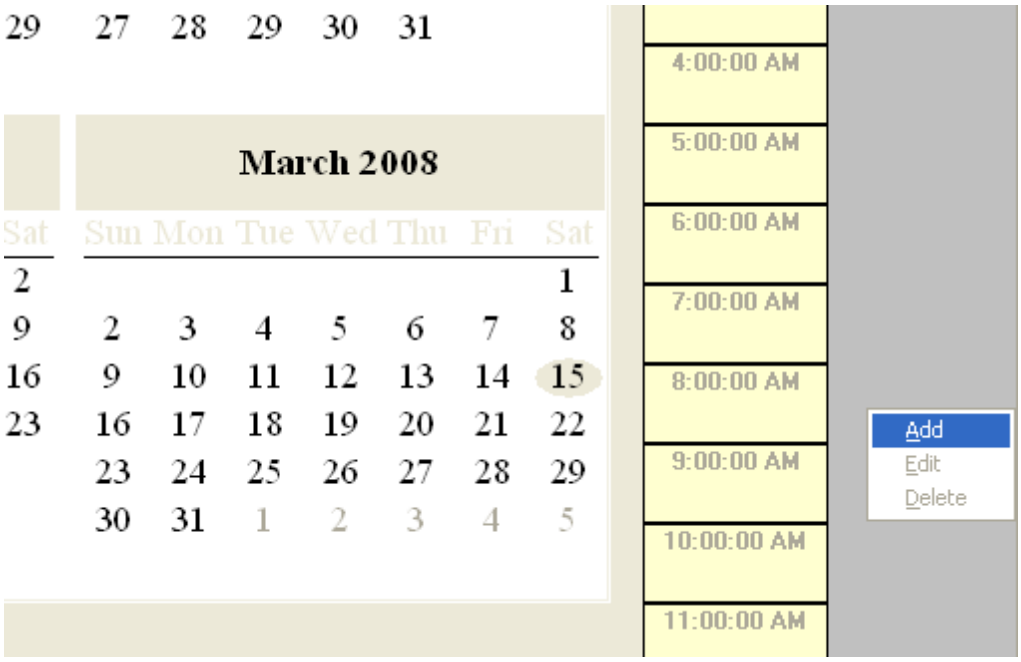
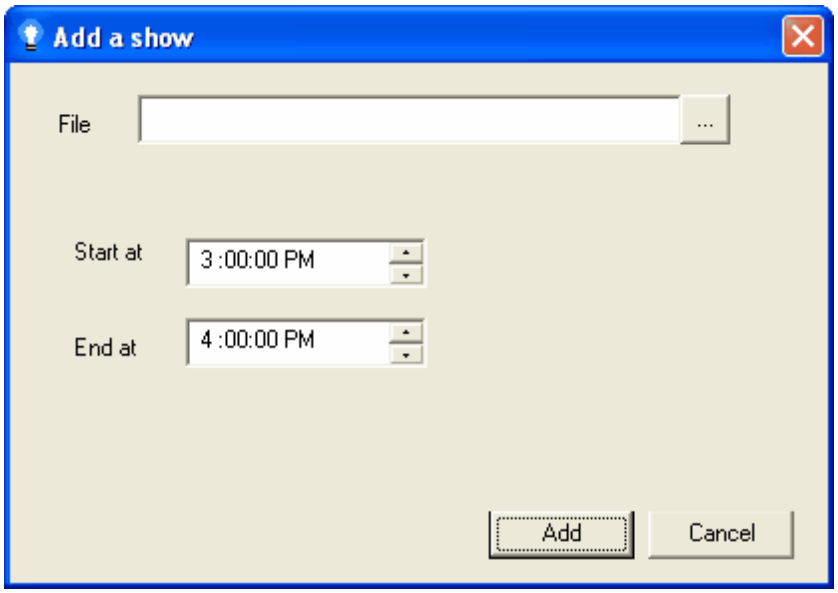


Adding a show to the calendar schedule for March 15, 2008

In either case, the Add Show dialog will open:



The Add Show dialog for the calendar schedule

Opening the Add Show dialog by clicking on an unscheduled area, rather than by using the Add button, has a couple advantages: First, it will automatically be populated with a start time and an end time based on where you had clicked. In the above example, the right-click was made at approximately 3:30 PM, and so the start and end times were automatically set to 3:00 PM and 4:00 PM.

Second, it automatically takes into account conflicts between the new show and any existing shows. For example, if a show had already been scheduled to start at 3:45 PM, the end time in the above dialog would have automatically been set to 3:45 rather than 4:00. Note that this conflict

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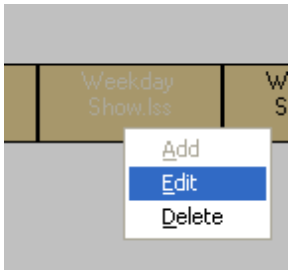
checking is only done for other shows in the calendar schedule, not for shows in the weekly schedule; this is because the purpose of the calendar schedule is to easily override the weekly schedule for specific dates and times.

To add a new show using this dialog, simply select the show's filename (this is easiest using the "..." button, which will let you choose from the list of existing shows), select the start and end times, and "Add" (or "Cancel" if you wish to discard the new show).

Finally, remember to save your changes using the toolbar's "Save" button (or, if you with to discard your changes, "Revert" instead).

Editing a Scheduled Show

No matter whether the weekly schedule or the calendar schedule is currently displayed, you can edit a scheduled show by clicking on that show in the schedule, and selecting "Edit" from the popup menu:



Editing an existing show

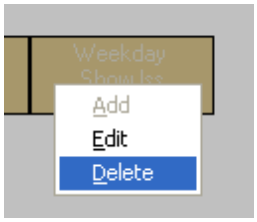
This will open a dialog very similar to the one you originally used to add the show. It will allow you to modify the name of the show file to be used, the start and end time, and, in the weekly schedule, the days of the week that the show will run on.

Finally, remember to save your changes using the toolbar's "Save" button (or, if you with to discard your changes, "Revert" instead).

You cannot edit the contents of a show - such as the sequences it uses - from the Schedule Editor. In order to do that, you need to use the Show Editor.

Deleting a Scheduled Show

No matter whether the weekly schedule or the calendar schedule is currently displayed, you can delete a scheduled show by clicking on that show in the schedule, and selecting "Delete" from the popup menu:



Deleting an existing show

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Note that this does not actually delete the show - it only deletes it from the schedule. The show will still be available for editing with the Show Editor, or for scheduling at some other time.

Finally, remember to save your changes using the toolbar's "Save" button (or, if you with to discard your changes, "Revert" instead).

5.6.1 The Weekly Schedule

The weekly schedule is part of the schedule, saying which shows should be played when. The other part of the schedule is the calendar schedule.

The difference between these two parts of the schedule is that the weekly schedule allows you to specify shows that should be played by the Light-O-Rama Show Player on a recurring, weekly basis, while the calendar schedule allows you to specify shows that should be played by the Show Player once, at a specific date and time. For example, the weekly schedule would be used to have a show run every Thursday between 5:00 PM and 10:00 PM, while the calendar schedule would be used to have a show playing specifically on Christmas Eve.

Both parts of the schedule are created and modified using the Light-O-Rama Schedule Editor, and shows in them are played at the scheduled times by the Light-O-Rama Show Player (assuming that "Enable Schedule" has been turned on in the Light-O-Rama Control Panel). The Show Player, when deciding whether a show should be played, will first check the calendar schedule, and only play a show from the weekly schedule if none is scheduled for the current date and time in the calendar schedule.

The following picture shows the weekly schedule, as displayed in the Schedule Editor, with two different shows scheduled:

- "Weekday Show.lss", run Mondays to Thursdays from 5:00 PM to 9:00 PM, and Fridays 5:00 PM to 11:00 PM;
- "Weekends.lss", run Saturdays from 1:00 PM to 11:00 PM, and Sundays from 1:00 PM to 9:00 PM.

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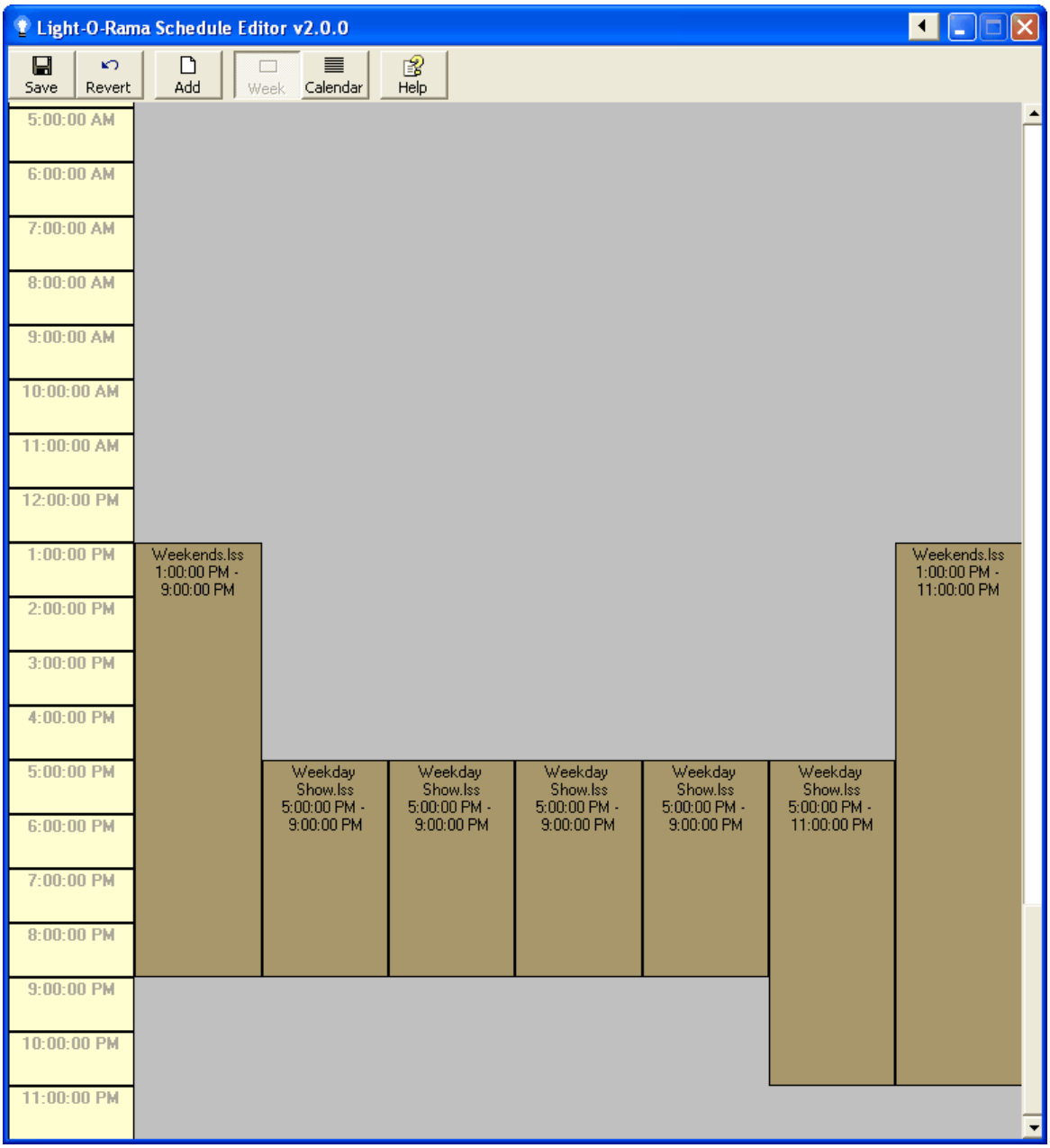

The weekly schedule, as displayed in the Schedule Editor, with some scheduled shows

For details on creating and modifying the weekly schedule, please see the Schedule Editor.

5.6.2 The Calendar Schedule

The calendar schedule is part of the schedule, saying which shows should be played when. The other part of the schedule is the weekly schedule.

The difference between these two parts of the schedule is that the weekly schedule allows you to specify shows that should be played by the Light-O-Rama Show Player on a recurring, weekly basis, while the calendar schedule allows you to specify shows that should be played by the Show Player once, at a specific date and time. For example, the weekly schedule would be used to have a show run every

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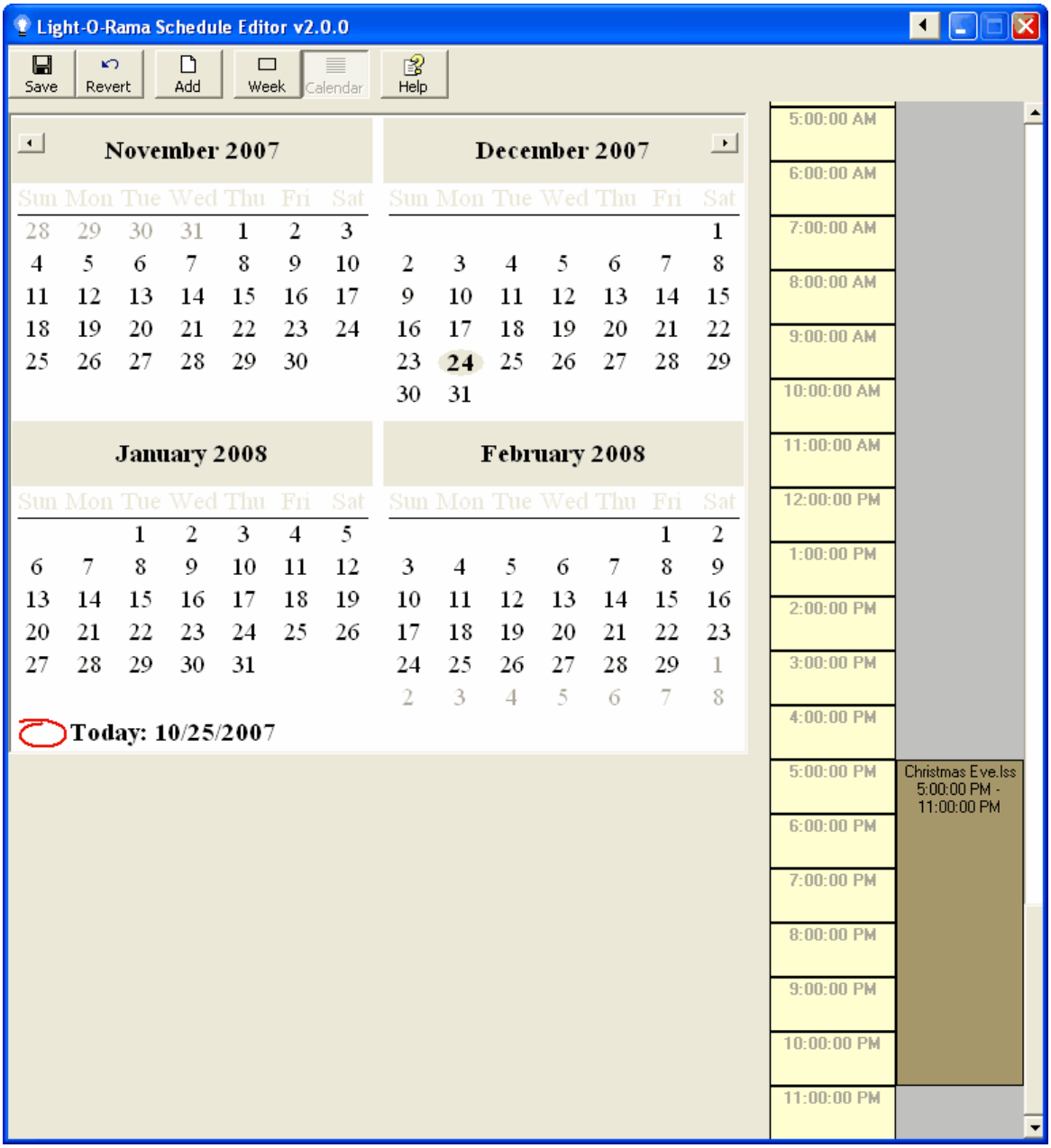
Thursday between 5:00 PM and 10:00 PM, while the calendar schedule would be used to have a show playing specifically on Christmas Eve.

Both parts of the schedule are created and modified using the Light-O-Rama Schedule Editor, and shows in them are played at the scheduled times by the Light-O-Rama Show Player (assuming that "Enable Schedule" has been turned on in the Light-O-Rama Control Panel). The Show Player, when deciding whether a show should be played, will first check the calendar schedule, and only play a show from the weekly schedule if none is scheduled for the current date and time in the calendar schedule.

The following picture shows the calendar schedule, with a show named "Christmas Eve.lss" scheduled to be run on December 24, 2007 from 5:00 PM to 11:00 PM:



The calendar schedule, displayed in the Schedule Editor, with a show scheduled on December 24 at 5:00 PM

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For details on creating and modifying the calendar schedule, please see the Schedule Editor.

5.7 LOR Hub

Light-O-Rama Hub (or just Hub for short) is the new location in the LOR Software for all things Show Related. LOR Hub will eventually take over all functions of the LOR Show Player, LOR Show Scheduler, Simple Show Builder, and SD Card creation - both simple and advanced.

Hub also enables our new 'MotionPak' technology. When purchasing sequences from the LOR Sequence Store, you'll also be able to purchase optional additional programming for things like Singing Faces, Pixel Trees, and a host of other LOR Created props. LORHub will then combine the MotionPak with your sequence to automatically customize it.

Hub is also one of the first fully internet integrated programs from LOR. Hub can help you find sequences and MotionPaks, as well as be dynamically updated to support new props in the future.

Hub is going to be continuously updated for the next several release cycles. Currently LOR Hub supports the following: All Simple Show Builder functionality (Simple Show Builder has been removed), MotionPak Functionality, new SD Card show functionality.

Hub is not just a replacement for existing LOR programs as it also aims to improve on their functionality and ease of use. For example in this release is the ability to now EDIT SD cards without the need to re-create an entire show. This allows you to move sequences around on an SD card show, remove some, add new, and update existing ones from the computer. Cards must have been created with Hub or a newer version of Hardware Utility to be edited - not all Hardware Utility MP3 functions are currently supported.

Where possible, we try to make things simple and familiar. For example if you have been creating shows that run from a computer and now wish to start using an MP3 director, you will already be familiar with how to add sequences and schedule the show.

5.7.1 Creating Shows and SD Cards

Hub is your your one-stop-shop for creating and scheduling all shows - computer and MP3 Director based. Currently Hub has replaced all the functionality of the old Simple Show Builder as well as the MP3 tab of the Hardware Utility. If you have previously used SSB or Hardware Utility to create your show, you should begin using Hub.

5.7.1.1 Run from Your Computer

For building simple Computer based shows, like the ones that were previously created by Simple Show Builder, use the HUB Computer Show Builder. For complex computer-based shows, continue to use the LOR Show Editor and LOR Show Sceduler (which can be accessed from buttons within Hub). In a future release, Hub will incorporate all functions of Show Editor and Show Scheduler.

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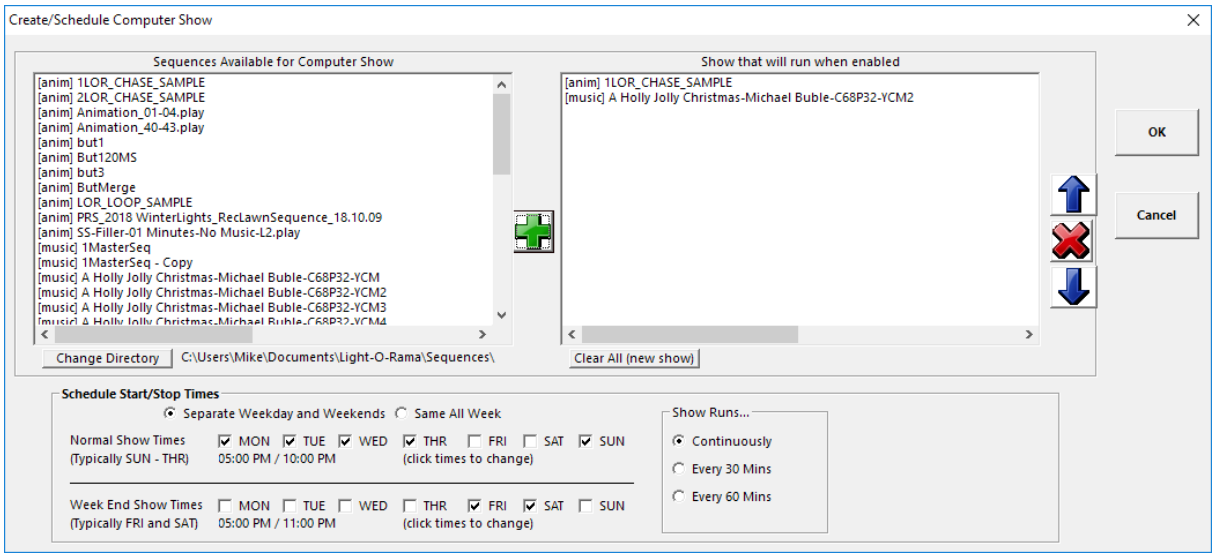

Please remember that if you have an existing show or schedule, they will be replaced by what you create here. If you have used the Show Editor or Schedule Editor programs, you should continue to use them instead.

On the left side are all of the sequences that are available on your computer in the specified directory. If your sequences are not located in your Light-O-Rama data directory, you can press the 'Change Directory' button to move to another folder on your computer.

Sequences are displayed with either [anim] or [music]. Anim are ANIMATION (.las) sequences. Music are of course MUSICAL (.lms) sequences.

Select one or more sequences on the left and press the "+" button. The sequences will then be added to the show you are creating on the right side.

To remove a sequence from the show, select it on the right side and press the "X" button. This removes the sequence from the show, but does not delete the sequence from your computer.

To change the order of sequences that are played in your show, select a sequence on the right and use the UP or DOWN arrow buttons.

You can schedule this show to run at up to 2 different times. If you want the same schedule all 7 days a week, select 'Same All Week' and set the time.

If you would like to have 2 different show start/stop times, select 'Separate Weekday and Weekends'. You can then select which days are considered 'Normal' and what days are considered 'Weekend' and set different times for both. Please note that even though we say 'weekday and weekend', you can select any days for either schedule. to change the time for a schedule, click the times. You will then be able to change the schedule times:

Next, choose whether you want the show to run continuously, or once every hour or every half hour. If you select "continuously", then after all of its sequences have been played, the show will automatically start over with the first sequence; this will continue until the end time is reached. If, instead, you select "once every hour" or "once every half hour", the show will stop after its last sequence, and start again once every hour (or half hour), until its end time is reached.

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If you select Every 30 or Every 60 minutes, you can also choose what happens between shows. 'Lights On', 'Lights Off', or 'Slowly changing'. Please note that these options will only control a limited number of controllers, so not all of your lights may come on.

Pressing OK will create your show as well as schedule it for the times you selected. Please do not forget that you will need to load the LOR Control Panel and 'Enable Shows' for your show to start.

5.7.1.2 Run from an MP3 Director

LOR Hub can create SD cards for all types of Director Based shows. This includes all generations of MP3 Directors, including the new G4 Link directors.

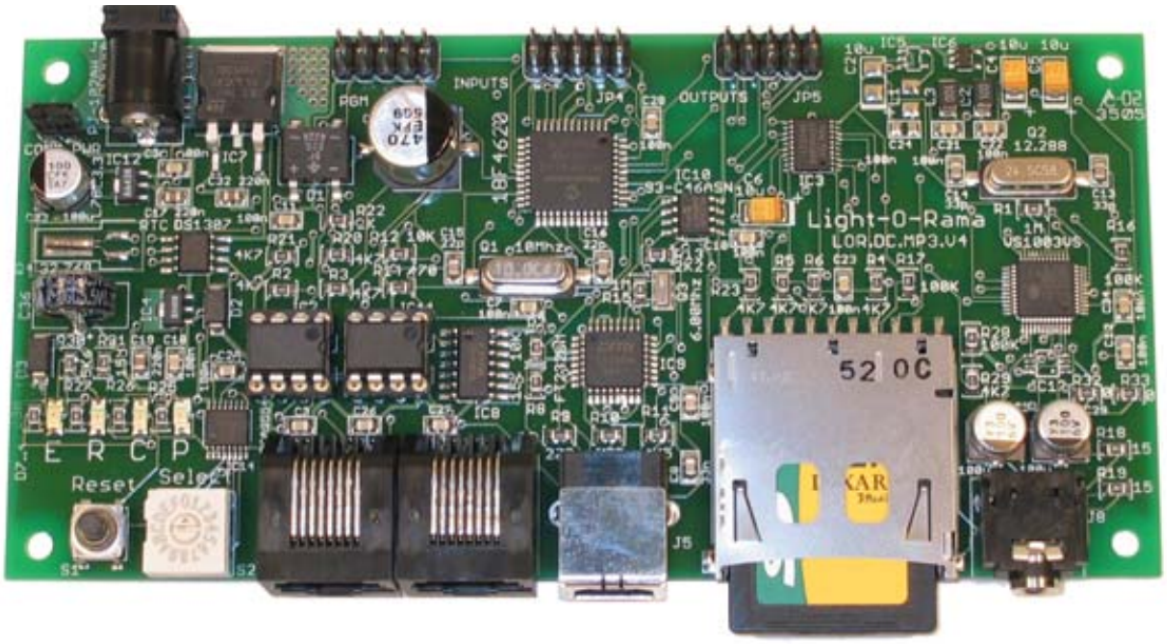
5.7.1.2.1 Differences Between MP3 Directors

Over the years, Light-O-Rama has released several different versions of MP3 directors. Here are some pictures and descriptions to help you determine which MP3 director you have and what it's functionality:

Generation 1 LOR MP3 Directors

Generation 1 MP3 directors include the DC-MP3 and the original mDM-MP3 director.

Your DC-MP3 director may be just a plain circuit board, in a metal case that only contains the director, or as par of an LOR1602 controller:



DC-MP3 Board

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DC-MP3 in Case. Some cases were labeled DC-MP3 rather than LOR1602MP3.

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DC-MP3 as part of an LOR1602

The mDM-MP3 Mini Director is in a black plastic case. The mDM-MP3 and the uMP3g3 look similar. Be sure you carefully check the front of the unit. the uMP3g3 will explicitly say it is a uMP3g3, while the older mDM-MP3 will not. The uMP3g3 also has a power input connector that the mDM-MP3 does not.

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The Front and Back of an mDM-MP3 Mini Director. Carefully compare these pictures to the uMP3g3 to ensure you have identified the correct version that you have.

Generation 3 LOR MP3 Directors

Light-O-Rama did not manufacture any Generation 2 MP3 directors. Generation 3 MP3 directors include the G3-MP3 and the uMP3g3 Mini Director

The G3 MP3 director was sold in a metal case, or as part of an LOR160xMP3g3 controller.

Stand Alone G3MP3 Director

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G3 MP3 Director as part of an LOR1602MP3g3. LOR1600MP3g3 similar. Note: the LOR160xg3 looks similar but does NOT have an MP3 Director

This is an LOR160xG3 that does not have an MP3 director.

The uMP3g3 was sold in a black plastic case. It looks similar to the older mDM-MP3 director but has significant differences.

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The Front and Back of the uMP3g3 Mini Director. To identify if you have a uMP3g3 or a mDM-MP3: the front of the uMP3g3 identifies it as such. On the back of the uMP3g3 there is a power socket, while on the mDM-MP3 there is none.

Generation 4 LOR MP3 Directors

G4 MP3 Directors come in several variants, including the N4-G4-MP3 a metal case 4 port MP3 director with Director Link, 1 and 2 port black plastic directors without Director Link, and a 2 port adapter with Director Link will be available in the future.

Summary of Differences Between Directors

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Director Name	Generation	Real Time Clock (Can have schedules)	Number of Ports	Supports LOR Enhanced Protocol	Supports LOR 500K/1000K speed	Supports Director Link	Has Display
DCMP3/LOR1602MP3	1	Yes	1	No	No	No	No
mDM-MP3 (Mini)	1	No	1	No	No	No	No
G3MP3/LOR160xMP3g3	3	Yes	2	Yes	Yes	No	Yes
uMP3-G3 (Mini)	3	No	1	Yes	Yes	No	No
N1uMP3G4 (mini)	4	No	1	Yes	Yes	No	No
N4-G4-MP3	4	Yes	4	Yes	Yes	Yes	Yes

5.7.1.2.2 How to Use Director-Link

Some Directors have the ability to link up and control many more networks or DMX universes. These directors have a feature called 'Director Link'. To use Director Link you need:

1. Two or more directors that support Director Link. Only directors that specifically say they support director link can be used. No exceptions.
2. CAT 5/6 wired connections between all directors
3. A show that was created specifically for Linked Directors using multiple SD cards

In a Multi-Director setup, the first director is considered the 'Master' director. In this director is placed the first card of the multi-card set. All other directors are considered secondary directors and while they can be connected in any order we strongly recommend you have a logical system in place. It can become very confusing remembering which director needs which SD card. The best way to do this would be to sketch out all your directors and all the networks you want attached to them. Label everything to reduce the confusion.

Linking up directors physically is very simple: They daisy-chain the same way that LOR lighting controllers do with a CAT 5 cable. From your first (master) director, run a cat 5 from Net 1 (Labeled G4 Link or just Link) to the next (secondary) MP3 director 's port 1. For a third director, connect to the OTHER jack on the secondary director labeled 'Link' or 'Net 1' to the third controller's Net 1/Link port. Continue on that way for any additional directors.

When using MP3 Directors in Link mode remember that NET 1 is reserverd ONLY for linking directors together. You can only attach other linkable directors to the link port, not lighting controllers. If you do attach a lighting controller while the director is being used in link mode, the controller will not work or will light random channels.

The connection between 2 directors' link ports can use ELLs. Please ensure that the ELLs that you use are on a different channel than any other ELL that may be in use for your show.

To create the SD cards needed for multi-link directors, you must use the Advanced SD Card Wizard.

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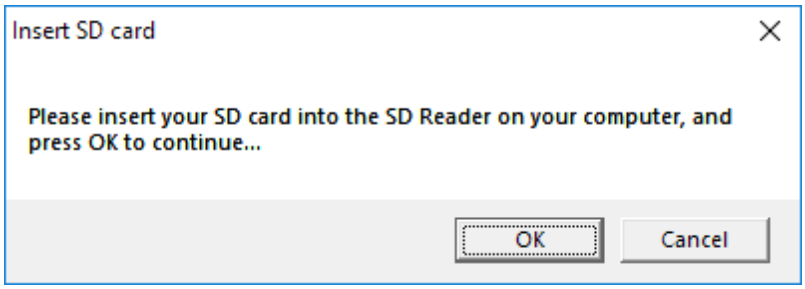
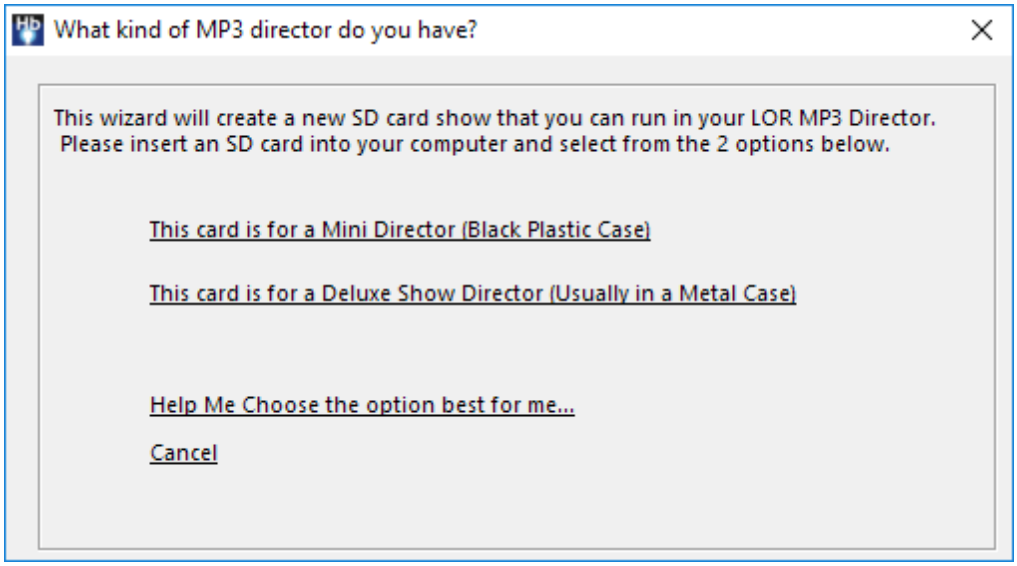
5.7.1.2.3 Creating a new SD Card Show

Before starting to create a new SD card show, please first insert the SD card you would like to use into your computer's SD card reader/writer. This will allow Hub to search for the card and correctly identify the drive. If you forget to insert the SD card, Hub will remind you:



When creating a new SD card show, the first thing you will be asked is which type of MP3 director you are using:



You should select the option for the MP3 director you own. LOR Showtime Central controllers all use the Mini Director, so you should select that. If you are unsure of which director you have, select 'Help Me Choose'. Hub will then show and describe the Show Directors we sell and have sold in the past so you can decide.

Next, you will be asked to verify the correct drive for your SD card, as well as select the show you will be creating. Hub will attempt to correctly identify the drive, however you should always double check to ensure that you are using the correct location on your computer.

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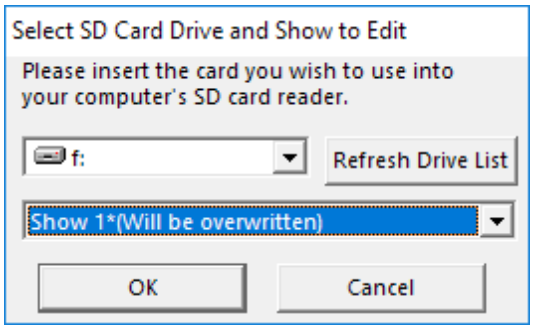


If you insert a different SD card into your computer, please press the 'refresh drive list' button.

Show Selection

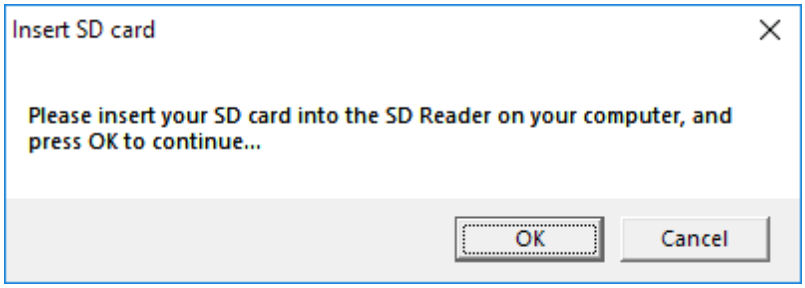
Up to nine shows can be downloaded to an SD card, and each will be assigned a number between 1 and 9. If two shows are scheduled for the same time, the lower numbered show will be played. Mini Directors do not have a time clock and so the lowest show number will *always* be played. For this reason if you have a Mini Director, it is best to only ever create 'Show 1' to avoid confusion.

Once you press the OK button, you are brought to the Sequence Selection and Show Options screen.

5.7.1.2.4 Editing an SD Card Show

Hub allows for the editing of previously created SD cards without the need to completely re-build them from scratch. In order to use the editing functionality, the SD card must have been previously created with Hub. If the card was not created with Hub, you will need to create a new show the first time. You can then start to use Hub's SD card editing features.

Before starting to create a new SD card show, please first insert the SD card you would like to use into your computer's SD card reader/writer. This will allow Hub to search for the card and correctly identify the drive. If you forget to insert the SD card, Hub will remind you:



Next, you will be asked to verify the correct drive for your SD card, as well as select the show you will be creating. Hub will attempt to correctly identify the drive, however you should always double check to ensure that you are using the correct location on your computer.

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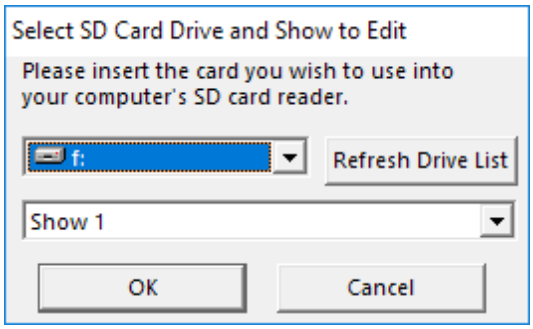
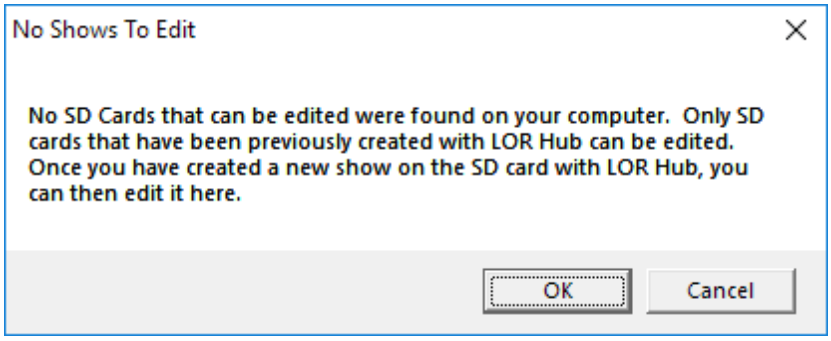
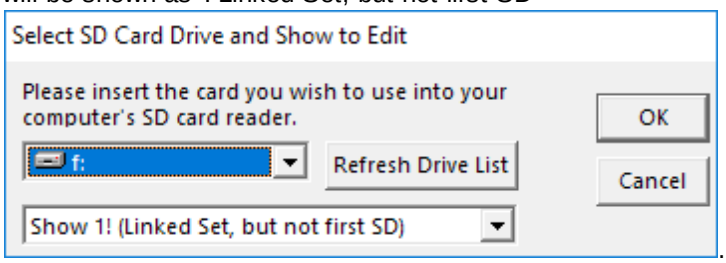


Only shows that can be edited will be listed here. If a show is not listed here that is on your SD card, that show was created with either the Hardware Utility or the Simple Show Builder and does not have the required data to be edited. You will need to re-create that show as new.

If there are no shows found on an SD card that can be edited, Hub will warn you:



If you are editing a Multi-Director SD card show, you must insert the FIRST card of the show. If you insert a card that is part of a multi-director show, and that card is not the FIRST card for that show , it will be shown as '! Linked Set, but not first SD'



You can not edit a show unless you start with the first card. If you attempt to do so, hub will warn you and ask you to insert the first card:

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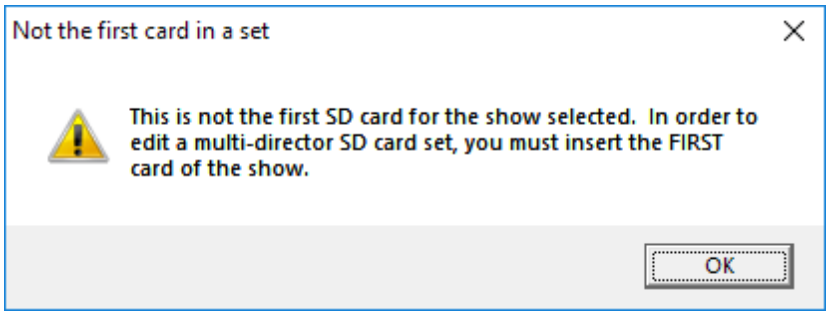
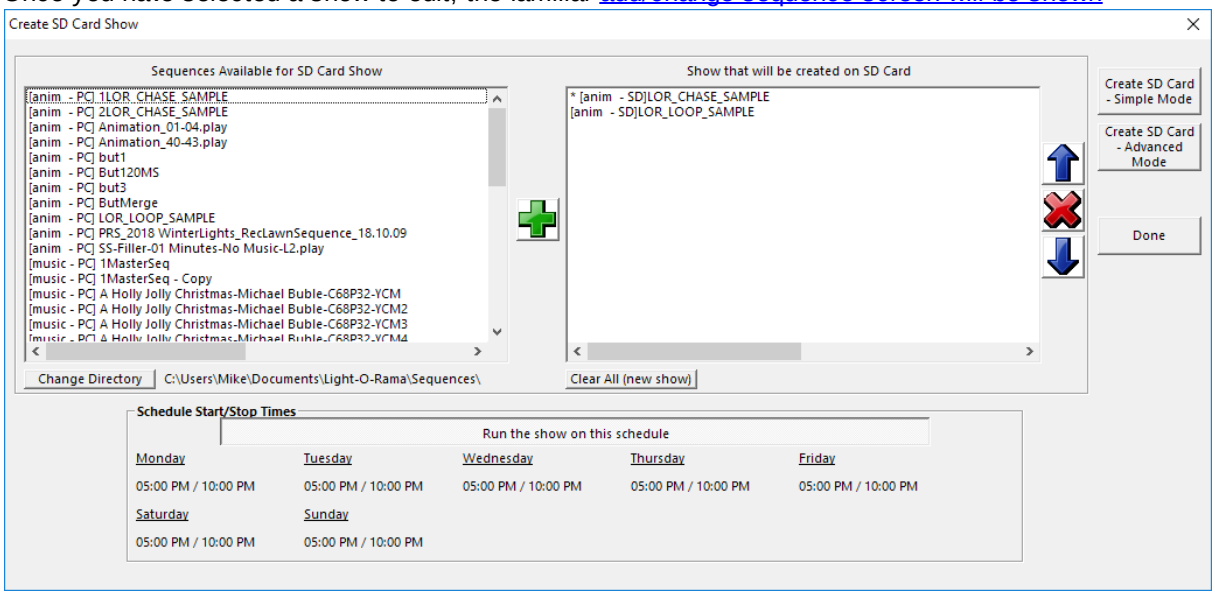


Once you have selected a show to edit, the familiar add/change sequence screen will be shown



The sequences on your computer are shown on the right, the sequences in the order they play on the SD card is shown on the left.

There are several important things you need to be aware of:

1. The * in front of a sequence name on the SD card side means the sequence cannot be found in the folder on your computer where it was originally created from. You may have deleted the sequence on your computer.
2. For each sequence on the SD card, Hub will verify that sequence still exists *in the same folder as it did when the SD card was created*. The * in front of a sequence name on the SD card side means the sequence can not be found. If you move that sequence, even to a folder that is currently displayed on the right, hub will not be able to update the sequence when you write the SD card. You should *always* keep your sequences in the Light-O-Rama Sequences directory.
3. For any sequence with a * on the SD card side, if you remove that sequence from the SD it is lost. In order to re-create that sequence you MUST have the original sequence. You can still move the sequence in the show, or duplicate it on the SD card, but once removed it is gone. Before removing, you will be warned and asked if you really want to remove the sequence or not..
4. For multi-director shows, all sequences in the show must be present on the computer and must be in the same directory. If they are not, you'll receive a warning. If you continue that sequence will be removed from the SD card show.

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5. Once an SD card is created, there is no indicator on the card if it is for a Deluxe MP3 director, or a Mini Director. Even if you edit an SD card and turn ON scheduling, the Mini director will run the show whenever there is power. Mini Directors *ALWAYS* ignore a schedule.

Here you will be able to add and change the order of sequences to be built for your show. If you have a Deluxe Show Director, you can also optionally schedule when the show should play. Mini Directors do not have a time clock and so the schedule is not displayed.

In the Sequences Available for SD Card Show, you will find a list of all sequences that can be added from your computer or duplicated from the SD card. The list is first sorted by sequences available on the computer, and then by sequences already on the SD card. Within those sequences are sorted based on if they are Animation or Musical. You may think it is strange to include sequences already on the SD card in the available list. However, this allows you to duplicate any sequence already on the SD card - including ones where you may no longer have the source (.LMS or .LAS). If your sequences are not located in your Light-O-Rama data directory, you can press the 'Change Directory' button to move to another folder on your computer.

Sequences are displayed with either [anim], [music] or [S5]. Anim are ANIMATION (.las) sequences. Music are of course MUSICAL (.lms) sequences. S5 are sequences created in the LOR S5 Sequencer. Animation sequences are sorted to the top, followed by Musical sequences and then S5. PC is a sequence located on your computer. SD is a sequence located on the SD card show.

Select one or more sequences on the left and press the "+" button. The sequences will then be added to the show you are creating on the right side. You can duplicate any sequence as many times as you like (up to 99)

To remove a sequence from the show, select it on the right side and press the "X" button. This removes the sequence from the SD card show, but does not delete the sequence from your computer. If you attempt to remove a sequence that can't be found, you will be warned.

To change the order of sequences that are played in your show, select a sequence on the right and use the UP or DOWN arrow buttons.

Schedule (for Deluxe Show Directors only)
If you have a Deluxe Show Director, you can also optionally set a schedule for when this show should run. If the SD card was created with a schedule, the current schedule is displayed.

- To change to a show that runs whenever the MP3 director has power (and the card is inserted), the button in the schedule section should say 'Schedule Ignored'.
- To change to a show that runs on a schedule, the button should say 'Run the Show on this Schedule", and the days/times will be enabled.

To change the scheduled start/stop time, click on the times under the day you wish to change. The change time dialog will then be shown:

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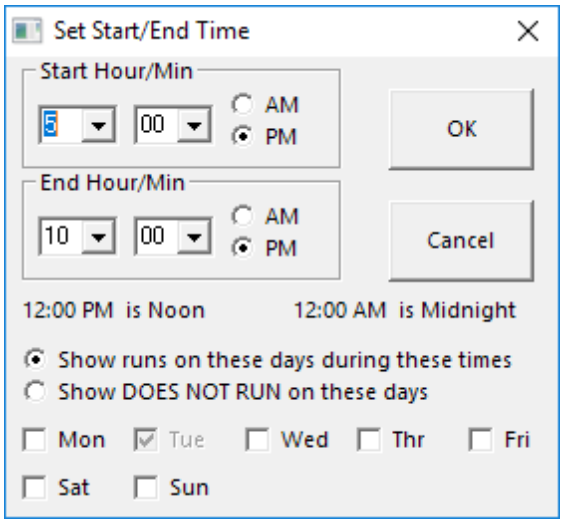


Select the start and end time you desire. If you would also like to quickly set other days to the same schedule, click the boxes at the bottom (the day you initially clicked is always selected and can not be un-selected).

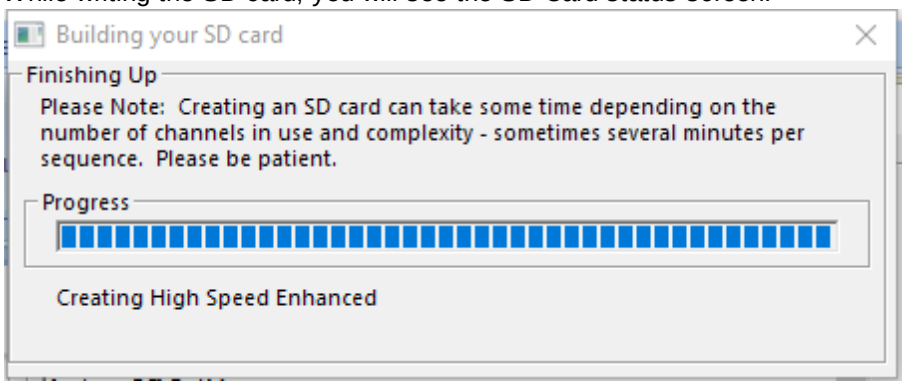
Writing the SD Card

Once you are satisfied with the sequences to be created on the SD card as well as their order, press either Create SD Card - Simple Mode or Create SD Card - Advanced Mode.

Simple mode will create an SD Card for 90% of situations. It will use a single port of your MP3 director at a default speed that should work with all controllers and sequences. All sequences from the existing SD card that were also found on the computer will be automatically updated on the SD card.

Advanced mode allows you to customize how the SD card will be written. You should use advanced mode if your display contains pixels, DMX channels, or Intensity Files (Enhanced LOR protocol), or if you wish to select which sequences on the SD card are updated.

While writing the SD card, you will see the SD Card status screen:



It may take several minutes per sequence to create your SD card. Once complete, you will see this message:

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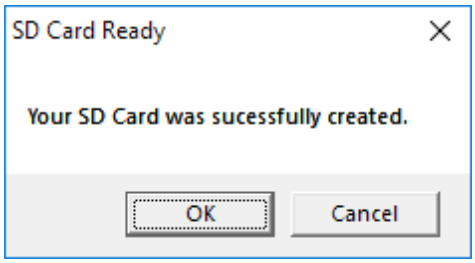

5.7.1.2.5 Select Sequences and Show Options for SD cards

At this point going forward there is no difference between creating a new show or editing an existing show. For new shows, defaults are provided that should work in almost all cases. If you are editing a show, all of your previous selections and choices will be filled in.

If you previously used the 'Simple Show Builder' to create SD cards:
There are several sections to this form that allow for very complex shows to be created and scheduled. You can ignore most of them as they are options that were never available in the Simple Show Builder. The only additional section you may need to be concerned with is the 'This show plays...'

- For MP3 Directors that do not have a real time clock:

All of the options for a new show have been made to create a 'runs anytime powered' show. All you need to do is add/arrange your sequences into the right side of the screen and when ready press the 'Create SD Card - Simple Mode' button.

- For MP3 Directors with real time clock (allows for scheduling):

All of the options for a new show have been set to default to a show that will run whenever the director has power. If you would like to instead run on a schedule, simply select the option that says 'During the scheduled times on the days shown'. From there, follow the instructions to update the days/times you would like your show to run. When complete, press the 'Create SD Card - Simple Mode' button. Please remember that not all directors can run on a schedule.

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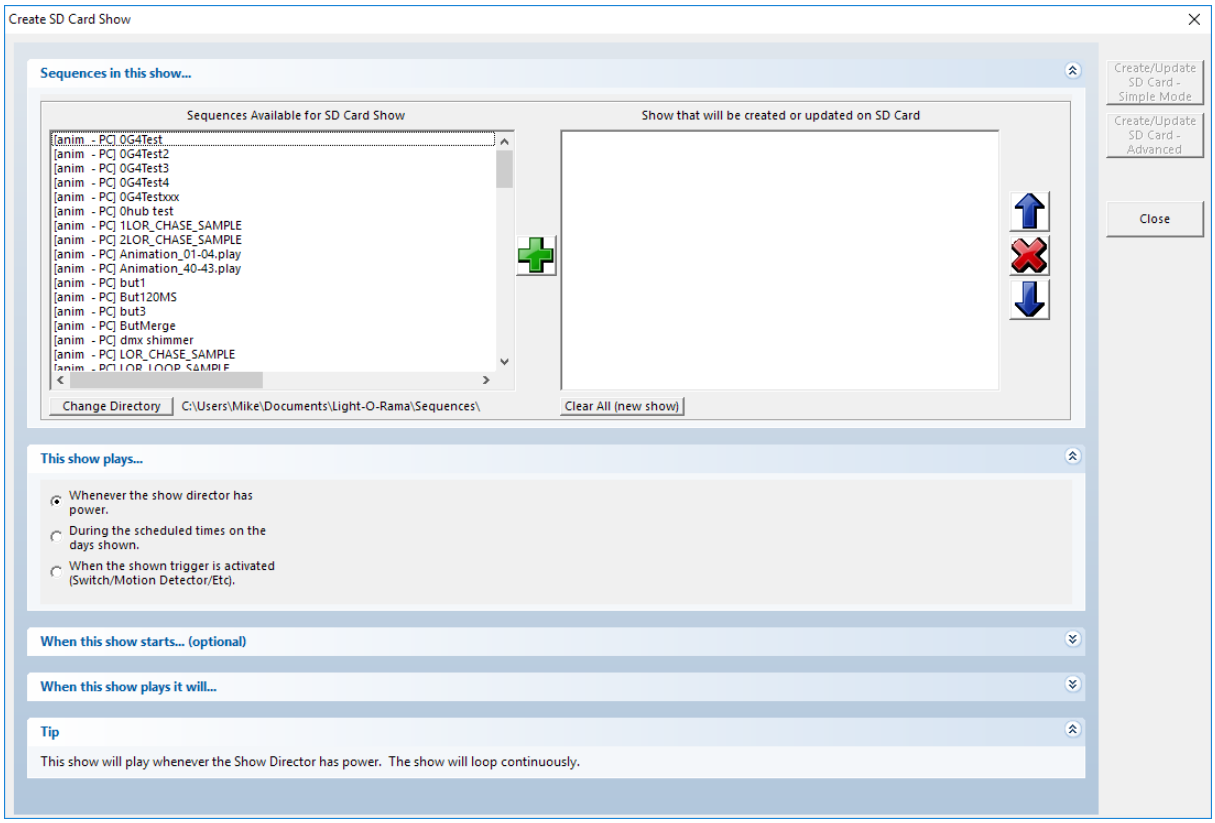

On the left side are all of the sequences that are available on your computer in the specified directory. If your sequences are not located in your Light-O-Rama data directory, you can press the 'Change Directory' button to move to another folder on your computer.

Sequences are displayed with either [anim], [music], or [S5]. Anim are S1-S4 ANIMATION (.las) sequences. Music are of course S1-S4 MUSICAL (.lms) sequences, and S5 are sequences created in the LOR S5 sequencer. Animation sequences are sorted to the top, followed by Musical sequences, and then S5 sequences.

Select one or more sequences on the left and press the "+" button. The sequences will then be added to the show you are creating on the right side. You can duplicate a sequence onto the SD card as many times as you like (up to 99)

To remove a sequence from the show, select it on the right side and press the "X" button. This removes the sequence from the show, but does not delete the sequence from your computer.

To change the order of sequences that are played in your show, select a sequence on the right and use the UP or DOWN arrow buttons.

There are several important things you need to be aware of when selecting/deleting sequences from a show:

1. When editing an existing SD card show, a * in front of a sequence name on the SD card side means the sequence cannot be found in the folder on your computer where it was originally created from. You may have deleted the sequence on your computer.
2. When editing an existing SD card show, for each sequence on the SD card, Hub will verify that sequence still exists *in the same folder as it did when the SD card was created*. The * in front of

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a sequence name on the SD card side means the sequence can not be found. If you move that sequence, even to a folder that is currently displayed on the right, hub will not be able to update the sequence when you write the SD card. You should *always* keep your sequences in the Light-O-Rama Sequences directory.

3. For any sequence with a * on the SD card side, if you remove that sequence from the SD it is lost. In order to re-create that sequence you MUST have the original sequence. You can still move the sequence in the show, or duplicate it on the SD card, but once removed it is gone. Before removing, you will be warned and asked if you really want to remove the sequence or not..
4. For multi-director shows, all sequences in the show must be present on the computer and must be in the same directory. If they are not, you'll receive a warning. If you continue that sequence will be removed from the SD card show.
5. Once an SD card is created, there is no indicator on the card if it is for a Deluxe MP3 director, or a Mini Director. Even if you edit an SD card and turn ON scheduling, the Mini director will run the show whenever there is power. Mini Directors *ALWAYS* ignore a schedule

More Complex Shows:

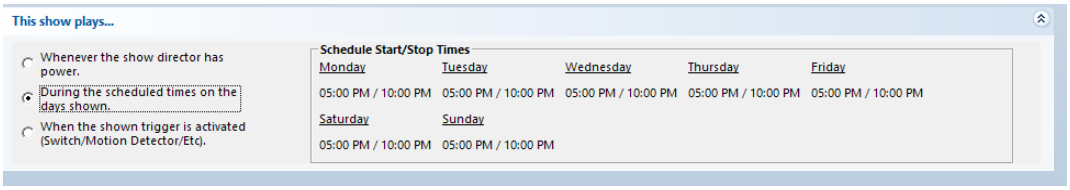
There are multiple sections available which allow you to tailor this show to your liking. Those options are broken down into 3 sections that allow you to change when the show plays ("This Show Plays...."), if there are any special options when the show first starts ("When this show starts..."), and how the show will behave while running ("When this show plays it will..."). Each section can be expanded and collapsed by clicking on it's title or the small double arrow located on the right side. If you are ever confused as to what will and wont happen with your show, check in the 'Tip' section. That section will in plain words tell you exactly how the show will run.

- **This Show Plays....**

Options in this section control how the show actually starts up:

- Whenever the Show Director has power
  In this mode, the show will run as soon as power is applied to the MP3 director and it has finished booting. The show with the lowest show number will be the one that runs regardless of any scheduling information (all schedules are ignored).

- During the scheduled times on the days shown
  If you have a Deluxe Show Director, you can set a schedule for when this show should run. Once you have selected this option the schedule section will appear to the right:



To change the scheduled start/stop time, or to skip a day completely, click on the times under the day you wish to change. The change time dialog will then be shown:

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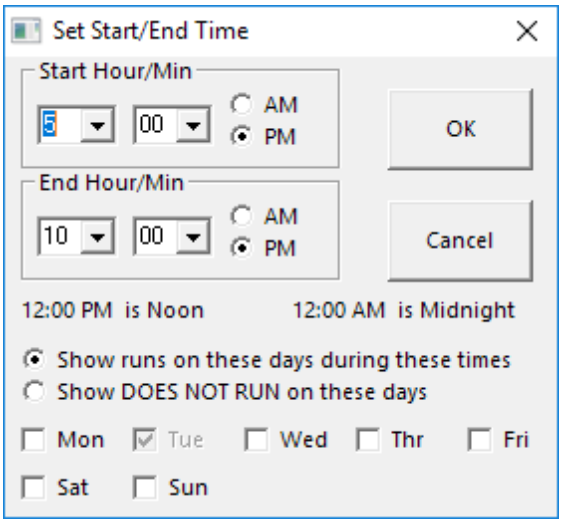

There are two options here, and the default is 'Show runs on these days...'. If you do NOT want this show to run on a specific day (or days), change the option to 'DOES NOT RUN'.

For those days you do wish the show to run, select the start and end time you desire.

If you would also like to quickly set other days to the same schedule, click the boxes at the bottom (the day you initially clicked is always selected and can not be un-selected).

- When the shown trigger is activated
  A show on an MP3 director can be started when a trigger is detected. A trigger is a switch or other device, like a motion detector, that tells the director to start playing a show. It is important to know that the show you selected to create/edit must be the same as the trigger number on the director itself. So for example if you want a show to start running when 'Trigger 4' is activated, be sure that you are creating or editing Show 4.

  Switches come in 2 different varieties - normally open and normally closed. For most switches, you select 'Normally Open'. That means there is no signal sent to the MP3 director until the switch is operated. There are some devices (usually motion detectors and other 'security' type devices) that are 'Normally Closed'. Normally Closed switches constantly send a signal back to the MP3 director, and once they are activated STOP sending that signal.

- **When this show starts...**
  The option of having a starter sequence or not is here. When this is enabled, the very FIRST thing the director will do is play the 'starter sequence'. It is played one time and one time only - at the very start of the show. Even if the show is set to loop (see below), the starter sequence will only be played once.

- **When this show plays it will...**
  This section controls what will happen once the show has started. Not all of these options are available for every type of show. For example, Round Robin play is only available for triggered shows. The 4 main options in this section are:
  - Loop continuously
    This show will continue to run until told to stop. For shows that run when the director is powered, that would mean turning off the power. If you are using a schedule, the show will stop at the end time. If you are using a trigger, once the trigger condition is met, the show

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will continue to play until powered off.

- Play once from Start to End, then stop
  The show will run once from top to bottom and then stop. Usually triggered shows use this option, but it can be used with the other two options as well. When used with a triggered show, the list plays and then stops at the end waiting again for the trigger signal.

- Repeat Every (10/15/30/60 minutes)
  This option is only available for MP3 directors that have a real time clock. The show will play from start to end and then stop. At the time selected the show will start and run again from top to bottom. Note that the 'start' time is based on the 'clock' time. That is to say that a show that is set to run every 15 minutes will run on the hour and then at 15, 30, 45 past the hour. You should ensure that your show is no longer than the amount of time you select here. For example, if you show is 11 minutes long and you select every 10 minutes, the show will simply keep repeating.

- Play the next song in the list (Round Robin).
  This option is only available for triggered shows. When the trigger is activated, the first sequence in the list will be played and then the show will stop. Every time after that when the trigger is activated the next sequence in the list will play and then will also stop. Once the last sequence is reached, the next trigger will start over with the first sequence again.

Depending on your selection above, you may also be able to control what happens with your lights while the show is not playing. For every option except 'Loop Continuously' you can select if you lights are ON, OFF, or Running a filler sequence. If you use a filler sequence, the sequence that you select will loop continuously until the next event occurs. That could be a trigger, a repeat of the show at X minutes, etc.

Once you have completed the selection of the sequences you want to use in the show, as well as the options for that show, move on to creating the SD card by pressing one of the 'Create/Update SD Card' buttons on the right.

- **Simple Mode:**
  When creating a NEW show, this will create a show that works port 1 (or the only port if your director only has one) on your MP3 director. The show will use defaults for all other parameters including speed, number of ports, protocol, etc. If you have a non-linkable MINI mp3 director you should use this button. LOR Hub will verify that there are no errors on in any of the sequences you selected and immediately start to write the SD card.

  When editing an Existing show, this will update the sequences on the SD card and keep any parameters as they were.

  While writing the SD card, you will see the SD Card status screen:

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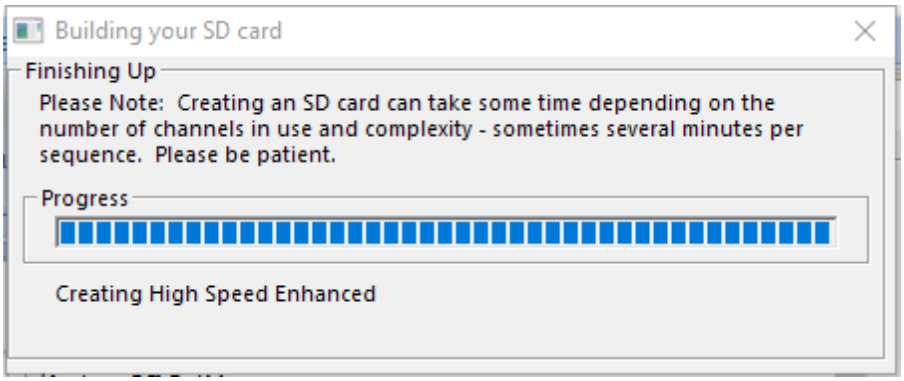
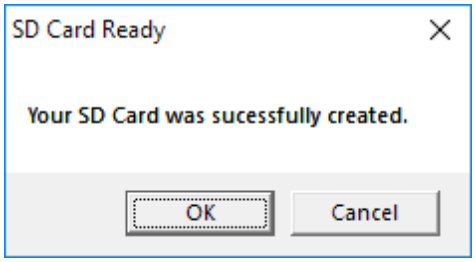


It may take several minutes per sequence to create your SD card. Once complete, you will see this message:



- **Advanced Mode**
  Pressing this button will start the SD Card Wizard. The wizard will allow you to select if you are going to update sequences from the computer or not, port speeds and protocols, etc. Most users can use the 'Simple SD Card' Creation button, however you want to use the Advanced SD wizard if any of the following are true:

  - You are using Pixels or a large number of channels and need to increase the speed of the network
  - You are using intensity files, and/or want to use LOR Enhanced networking protocol (if your license supports it)
  - You are using multiple generations of LOR controllers some of which support enhanced mode or high speed.
  - You have a G3 or higher multi-port director and wish to use more than the first port
  - You have a G4 Director and want to use 'director link'
  - You need to change any of the Misc options as shown in Step 5 (not common)
  - You need to change any of the advanced throttling options (not recommended)

5.7.1.2.6 Advanced SD Card Wizard

LOR Hub can create very powerful shows for MP3 Directors. Most users can use the 'Simple SD Card' Creation button, however you want to use the Advanced SD wizard if any of the following are true:

- You are using Pixels or a large number of channels and need to increase the speed of the network
- You are using intensity files, and/or want to use LOR Enhanced networking protocol (if your license supports it)
- You are using multiple generations of LOR controllers some of which support enhanced mode or high speed.
- You have a G3 or higher multi-port director and wish to use more than the first port

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- You have a G4 Director and want to use 'director link'
- You need to change any of the Misc options as shown in Step 5 (not common)
- You need to change any of the advanced throttling options (not recommended)

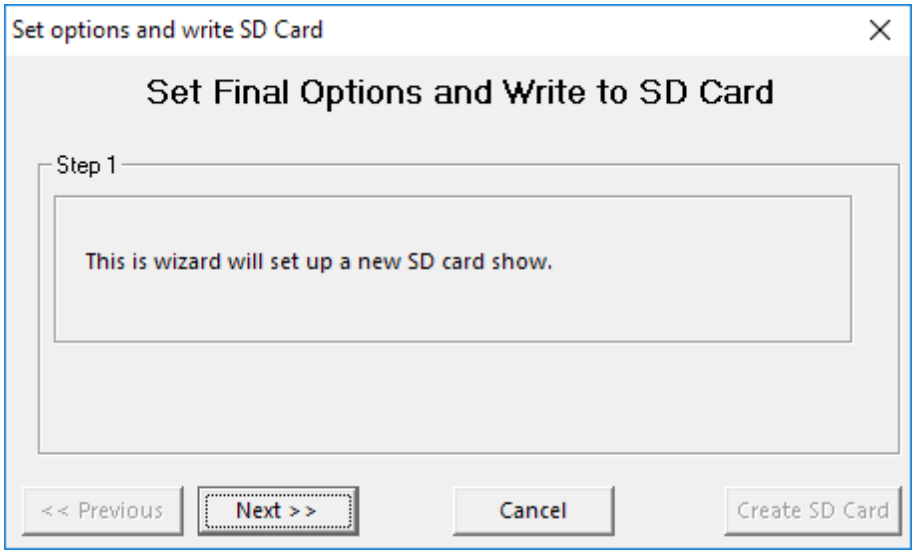
When using Advanced Mode to create an SD card, either by creating a new show or editing an existing show, the SD Card Wizard will appear.

Depending on the Director type selected, if this is a new show or not, and other options, some of these steps may not appear or some options may not be available.

When editing an SD card, the options here will default to the options of the current show on the card.

Step 1 - Update existing sequences or not

NEW show: When creating a new Sequence, there is nothing that needs to be done here, just press NEXT



Existing Show: If you are editing a show you will be asked if you would like to update the existing sequences on the SD card or not:

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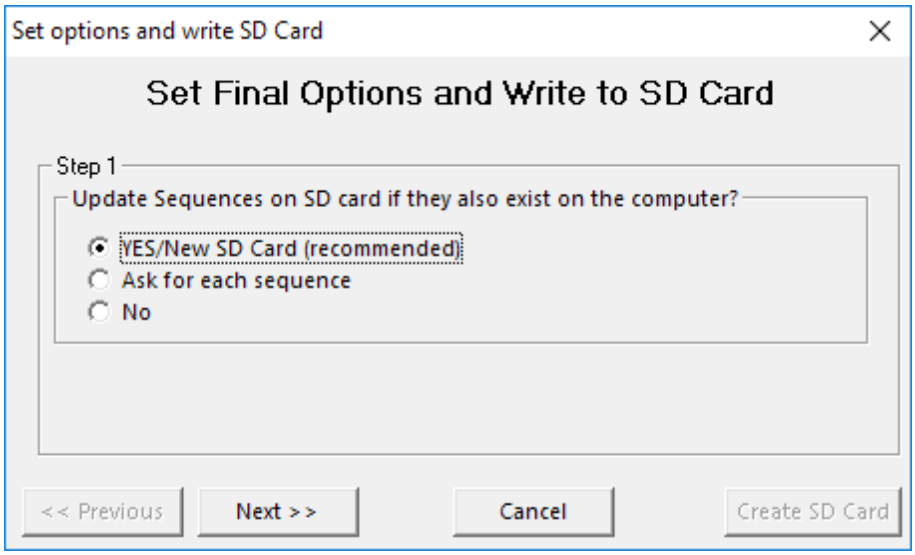
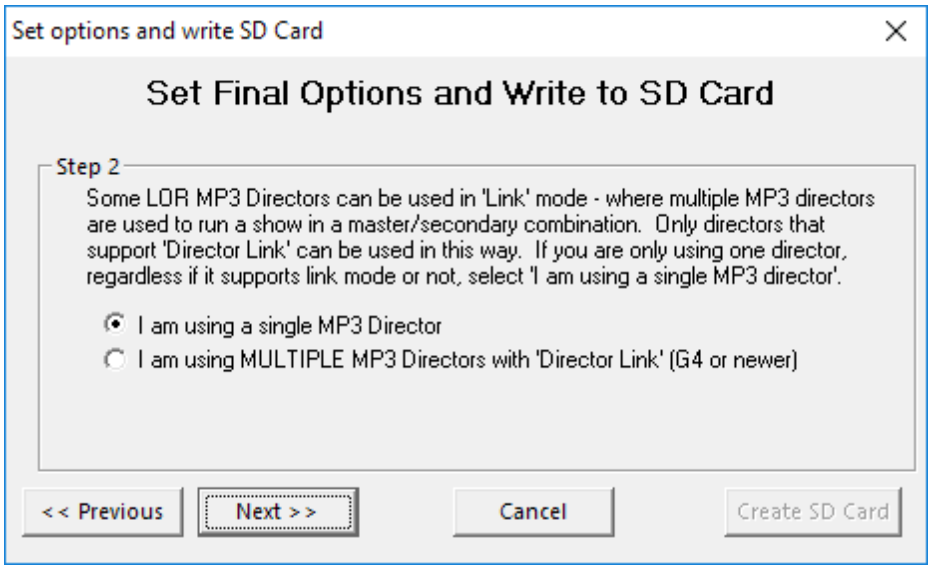


NOTE: if you are editing a Multi-Director SD Card set, you MUST update the sequences each time. Ask and No are not available.

Selecting Yes will search your computer for the sequence originally used to create the SD card. If it is found, any changes in the sequence on the computer will be moved to the SD card. This is recommended.
Selecting 'Ask' will prompt you for each sequence that is found on the computer that is also on the SD card. There you can select yes or no.
Selecting 'No' will leave the existing sequence on the SD card as-is. No changes from the computer for that sequence will be moved.

Step 2 - Linked Directors or Single Director

When creating an SD card/SD card set for a new show you'll be asked if this show will be part of a Multi-Director Link show or not.



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In this step you need to tell the wizard if you are going to be using Linked Directors or not. For most users, the 'I am using a single MP3 director' should be selected.

Select the other option only if **ALL of these are true**:

a. You plan on using MORE THAN 1 director to run this show.
b. ALL of the directors you plan to use in this show are Generation 4
c. ALL of the directors you plan to use support Director Link

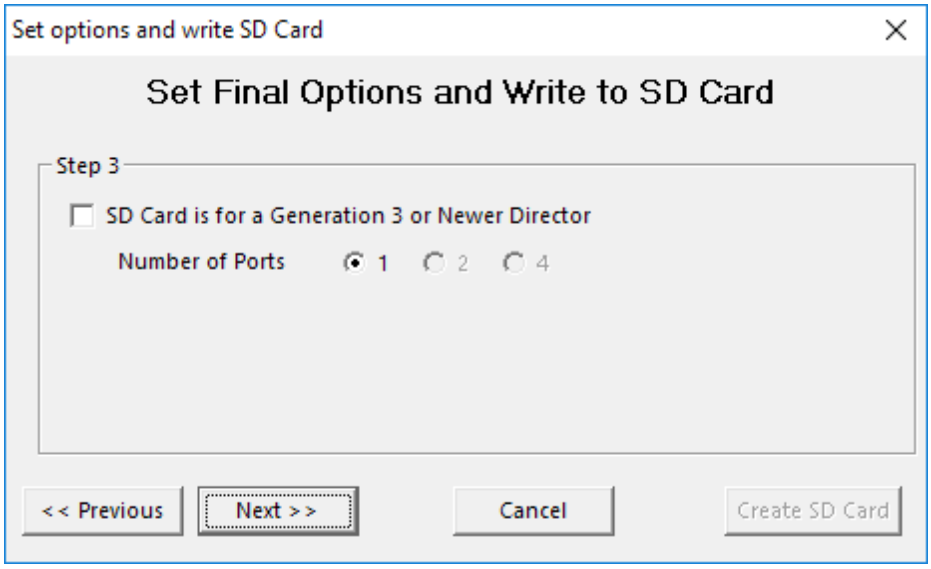
For existing shows, you can not change this once the SD card is written. For new shows, once you have moved past step 3, you can no longer change this. If you do need to change it at step 4 or later, cancel the wizard and start again.

Step 3 - Generation and Ports

If in the previous step you selected that you are using multiple MP3 directors, the check box selection has already been made for you and you can not change it. If you selected the default single MP3 director, the wizard now needs to determine if you have a G3 OR NEWER MP3 director.

If you have a G3MP3 director or newer, you should select the check box here. Once this is selected you can also specify the number of ports that your MP3 director has.

If you are creating a set of SD cards for Linked directors, the number of ports here is the number of total ports on your FIRST (Master) director. You will be able to add your additional directors in Step 4.



Remember, if you are creating a linked director set of SD cards, the number of ports here is the number of total ports on your FIRST (Master) director.

Step 4 - Port information

Step 4 differs slightly if you are using a single director, or if you are creating a Linked Director set.

For Single Director shows:

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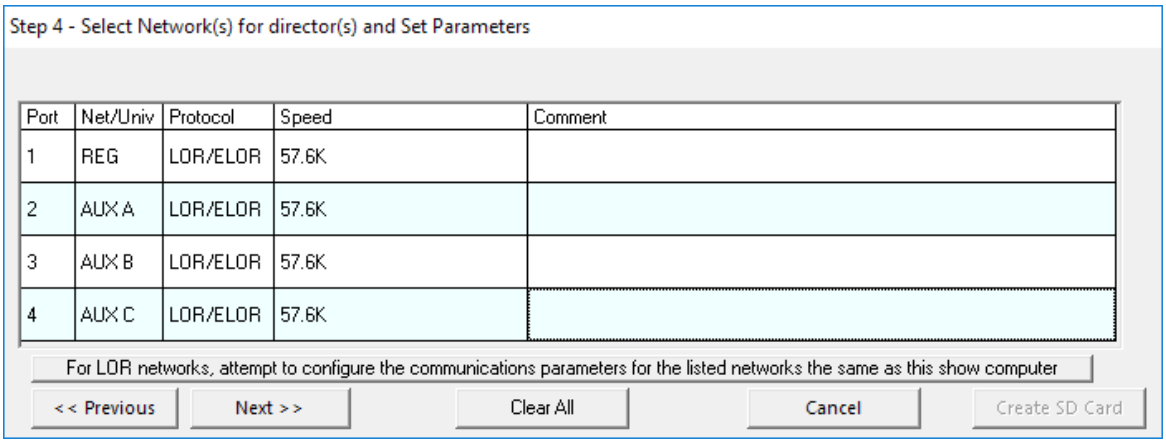


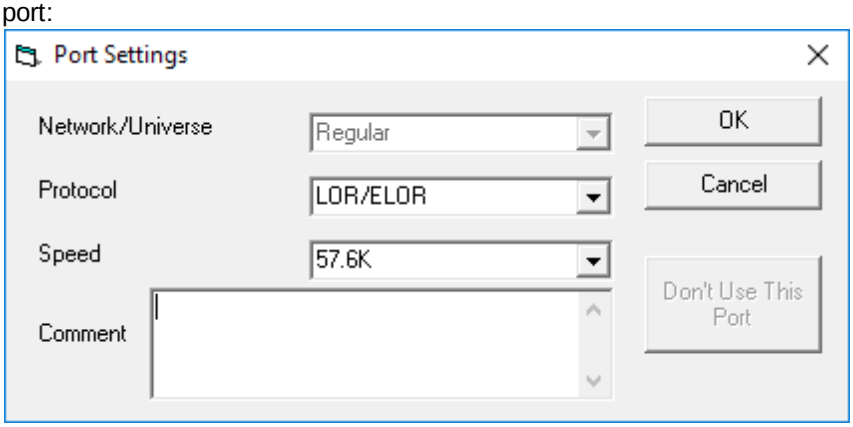
In this example, the user selected that they had a 4 port G4 director being used as a single (not multi-director) setup.

- Port: The physical port number of the director
- Net/Univ: The LOR Network or DMX universe that this port will control
- Protocol: The data protocol in use: LOR, ELOR (Enhanced LOR) or DMX.
- Speed: The speed of the network. DMX universe speed can not be changed.
- Comment: User comment if desired.

The LOR Networks or DMX Universes to be written are selected based on the SD Card Priority system and can not be changed.

The Wizard will allow you to quickly set the parameters of the MP3 director to the same as this computer. This is very handy if you have been using a computer to test and tune your show. Once you are satisfied with how the computer runs the show, you can press the '...configure the communications parameters...' button and the wizard will configure each port to run the same as the computer.

If you would like to manually configure the ports, clicking on a row will bring up the settings of that port:



- Net/Univ: The LOR Network or DMX universe that this port will control. You can not change this as it is selected by the priority system.
- Protocol: The data protocol in use: LOR, LOR/ELOR (LOR AND Enhanced LOR) or DMX. Depending on your license level, you may be restricted from using DMX or ELOR.
- Speed: The speed of the network.

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Protocol and Speed go Hand-In-Hand. If a port is using LOR devices:
Select the communications speed that will be used to broadcast lighting commands. The recommended setting (57.6) will suffice for many users' displays. If you have many controllers that are far distances apart, a slower speed may help; if your sequences use many rapid lighting commands, a faster speed may help.

- G3 directors (and higher) have additional speeds of 500K and 1000K available. The 500K speed is approximately four times faster than the previous high speed of 115.4K, but is only supported on Generation 3 (G3) devices with updated firmware.

- The 1000K speed can ONLY be used with networks that only contain PixCon16 controllers or Pixie family controllers. No other LOR controllers support 1000K.

- For directors that have multiple ports, you can specify a different speed(s) for each port. The MP3 Director will keep both networks synced even if your show uses multiple ports at different speeds.

- If your license supports Enhanced LOR Protocol and you are creating a card for a G3 or above director, an additional option may be available depending on the first sequence loaded. If the first sequence has both Normal LOR and Enhanced LOR commands available, you can select if you want BOTH to be written to the card (checked). If you do not have a G3 controller, or you do not have a license that supports Enhanced LOR protocol, or if your sequence does not have both types of networks, then this option is not available. There is no option that will allow for only Enhanced commands, even if your sequence has both available.

If a port is using DMX devices
DMX Universes run at a fixed speed, and therefore the options to change port speed are not available.

- Comment: User comment if desired.

For Multi-Director shows:

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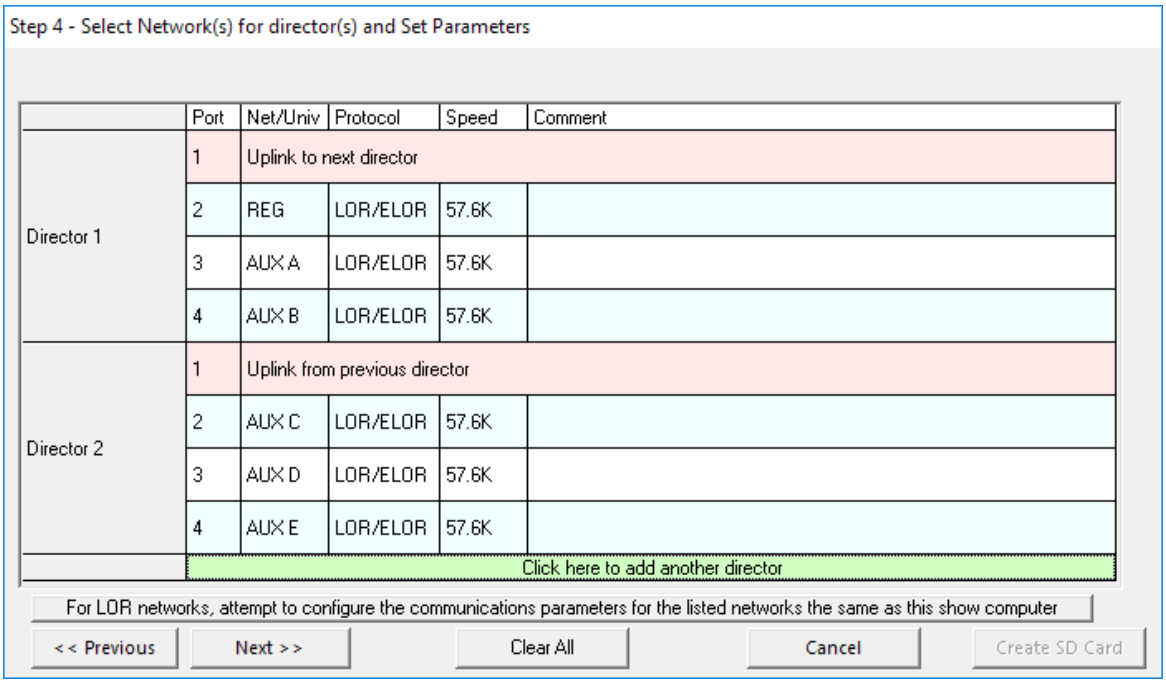
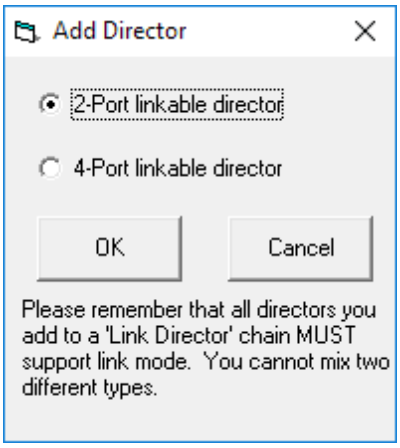


Step 4 for Multi-Director shows has many additional features to support these more complex shows.

In the list, each director is a group of ports. In this example, there are 2 four port directors in use. To add a director, simply click the bottom line of the table. The wizard will then ask you how many ports are on the director you are adding:



You may add any number or combination of 2 and 4 port linkable directors to a show. HOWEVER please be aware that ALL directors **MUST** be Director-Link capable. **You can not mix linkable and older non-linkable directors in the same show**.

Once added, your new director will appear:

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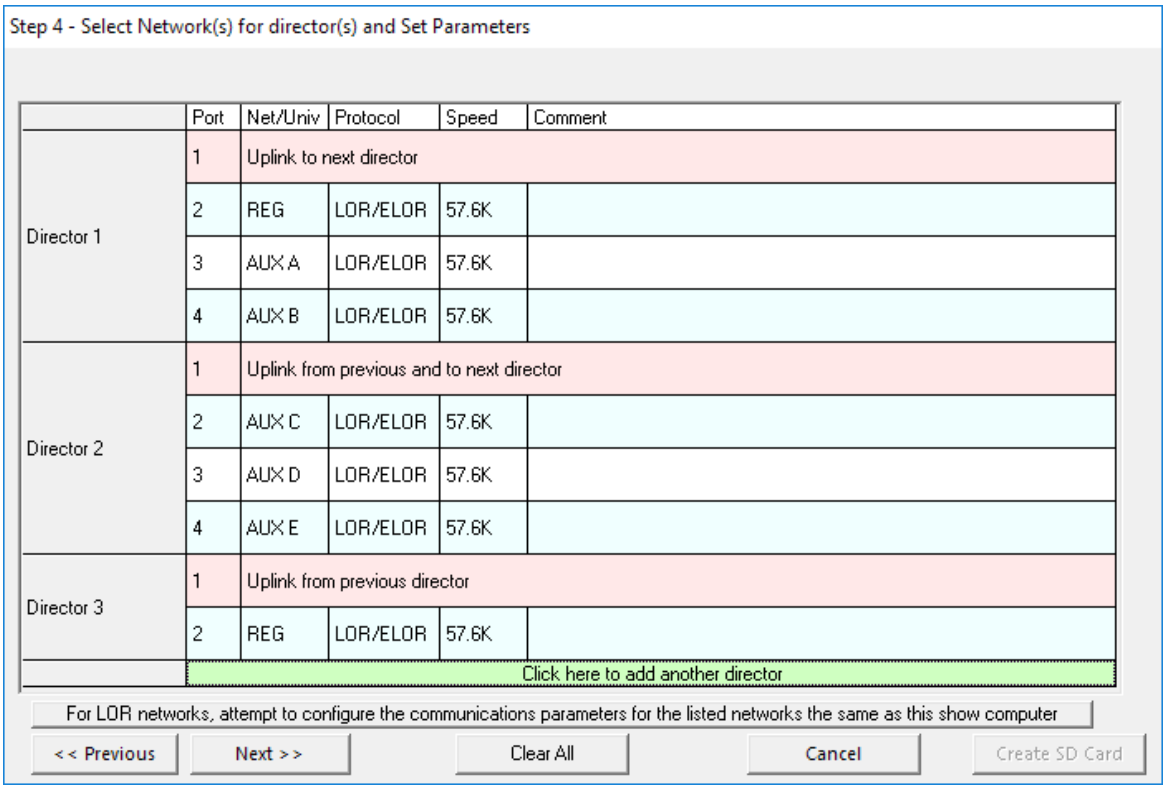

Here we have added a 3rd 2-port linkable director.

To change the order or remove a director, first click on the first column of the director you would like to change. Once you click, control icons will be shown. Remember, you should click on the 'Director' column. If you click on any other column:you will be presented the port settings for that particular port.

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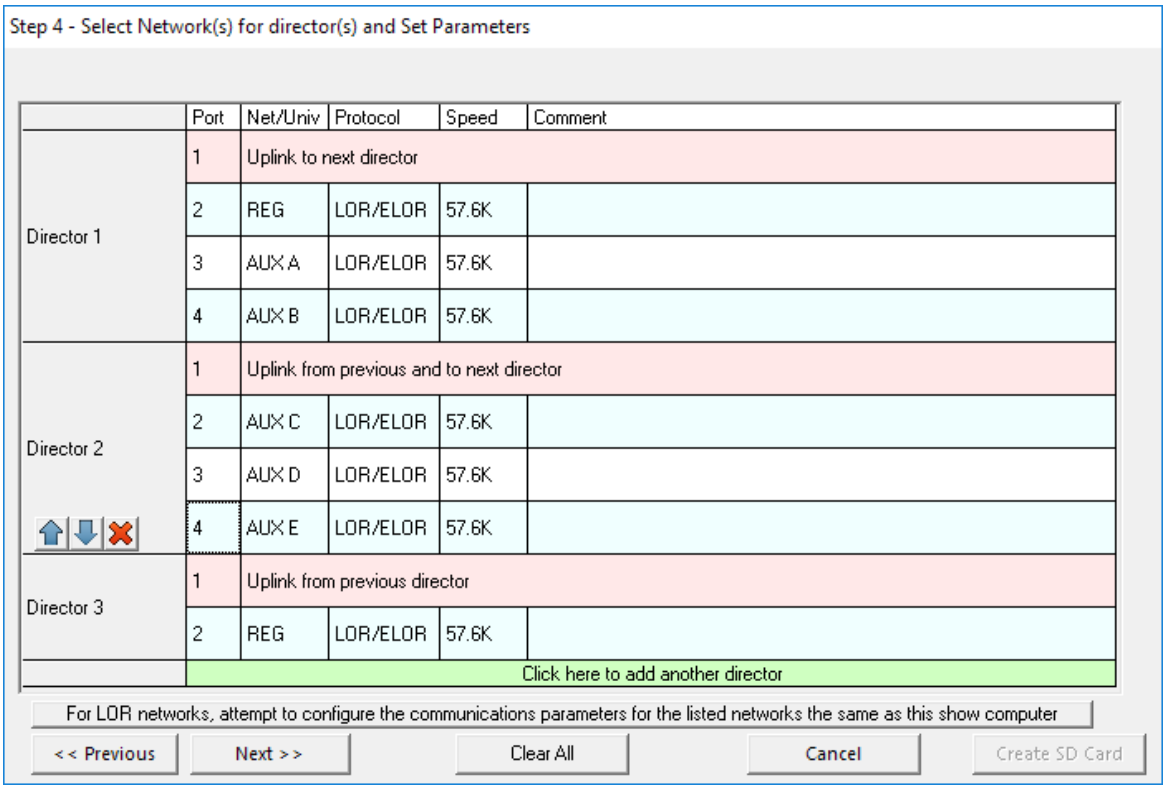
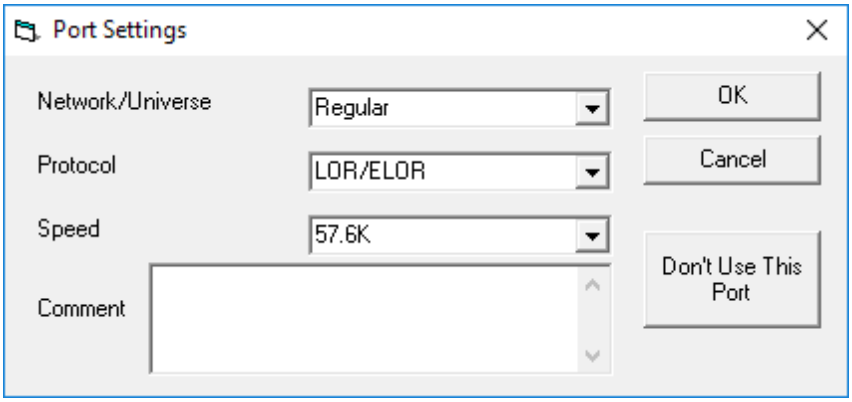


- Up Arrow: Move this director UP the chain
- Down Arrow: Move this director DOWN the chain
- Red X: Delete this director from the chain

The Wizard will allow you to quickly set the parameters of all the MP3 directors to the same as this computer. This is very handy if you have been using a computer to test and tune your show. Once you are satisfied with how the computer runs the show, you can press the '...configure the communications parameters...' button and the wizard will configure each port to run the same as the computer.

If you would like to manually configure the ports, clicking on a row will bring up the settings of that port: Please remember that since Port 1 is the 'Link' connection between MP3 directors, you can not assign or change any of it's parameters.



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Unlike in a Single Director show, a Multi-Director show allows for changing which LOR network or DMX universe is attached to a port, and even allows for a port to be skipped entirely

- Net/Univ: The LOR Network or DMX universe that this port will control. This drop-down contains all the networks that are available in the first sequence that was added to the show. If a network or universe was not in use in that first sequence, it is not shown here.
- Protocol: The data protocol in use: LOR, LOR/ELOR (LOR AND Enhanced LOR) or DMX. Depending on your license level, you may be restricted from using DMX or ELOR.
- Speed: The speed of the network.

Protocol and Speed go Hand-In-Hand. If a port is using LOR devices:
Select the communications speed that will be used to broadcast lighting commands. The recommended setting (57.6) will suffice for many users' displays. If you have many controllers that are far distances apart, a slower speed may help; if your sequences use many rapid lighting commands, a faster speed may help.

- G3 directors (and higher) have additional speeds of 500K and 1000K available. The 500K speed is approximately four times faster than the previous high speed of 115.4K, but is only supported on Generation 3 (G3) devices with updated firmware.
- The 1000K speed can ONLY be used with networks that only contain PixCon16 controllers or Pixie family controllers. No other LOR controllers support 1000K.
- For directors that have multiple ports, you can specify a different speed(s) for each port. The MP3 Director will keep both networks synced even if your show uses multiple ports at different speeds.

If your license supports Enhanced LOR Protocol and you are creating a card for a G3 or above director, an additional option may be available depending on the first sequence loaded. If the first sequence has both Normal LOR and Enhanced LOR commands available, you can select if you want BOTH to be written to the card (checked). If you do not have a G3 controller, or you do not have a license that supports Enhanced LOR protocol, or if your sequence does not have both types of networks, then this option is not available. There is no option that will allow for only Enhanced commands, even if your sequence has both available.

If a port is using DMX devices
DMX Universes run at a fixed speed, and therefore the options to change port speed are not available.

- Comment: User comment if desired.

- Don't Use This Port: Press this button if you do not want to use this particular port in your show. It will then be disabled:

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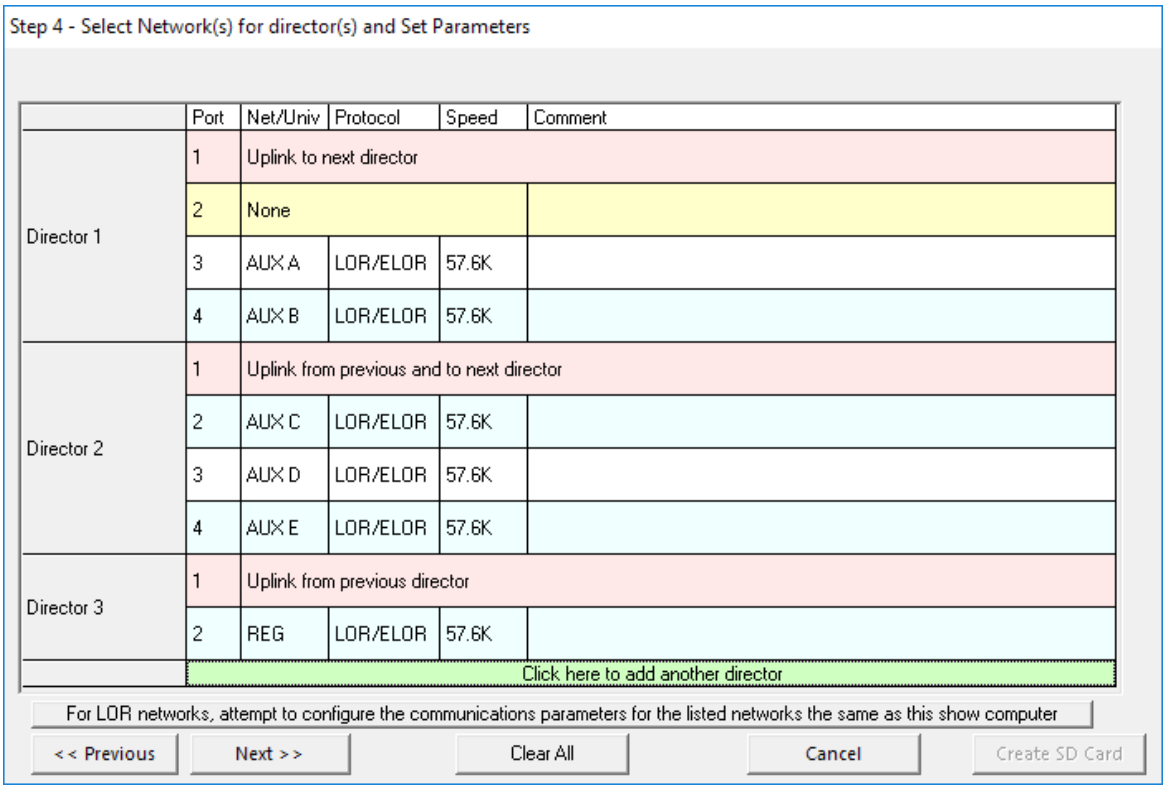
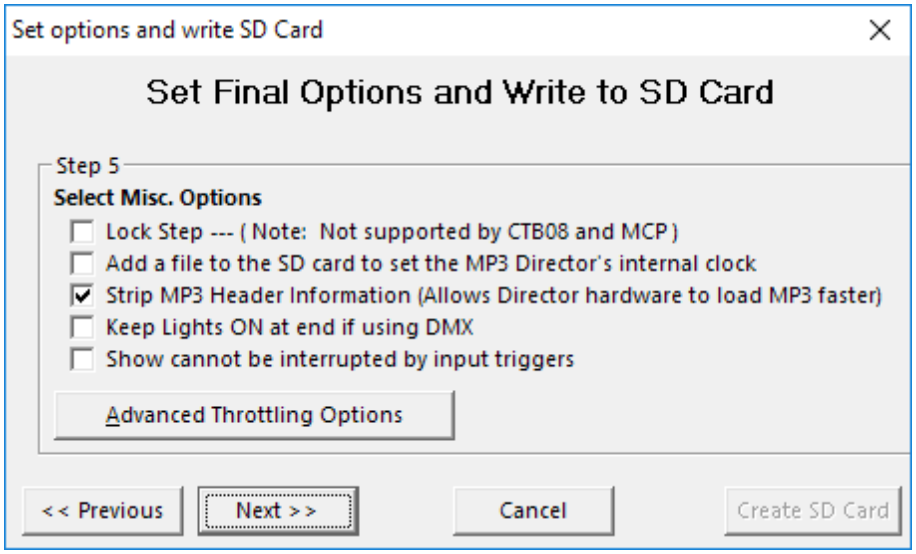


Step 5 - Misc Options

Here is where you can specify different options that your show or hardware may require. For most users, the defaults are OK:



- **Lock Step:** If you have a very large display, selecting "lock step" may help the different controllers used in the display react with a higher degree of synchronization. This is not supported on all controller types, and the level of firmware in the controllers must be 3.0 or higher.

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- **Set MP3 player's internal clock:** If you wish to add a file to the SD card to set the MP3 director's internal clock, check the box that says so. Note that there are also other ways to set the director's clock.

- **Strip MP3 Header Information:** Some MP3s may have a large data block before the actual music data. For example, an MP3 may have several high-resolution pictures in its ID3 Tags. The MP3 director will correctly ignore this data, however it does take time to find the actual start of the music file. Stripping this data will allow the MP3 director to start playing the sequence faster.

- **Keep lights ON at end if using DMX:** Previously if one or both ports were controlling DMX Universes the MP3 director would always shut off all the lights. Checking this box will allow channels in DMX universes controlled by the MP3 director to remain in the last state they were sent. If you leave a light on at the end of a sequence, that light will remain on until the start of the next sequence.

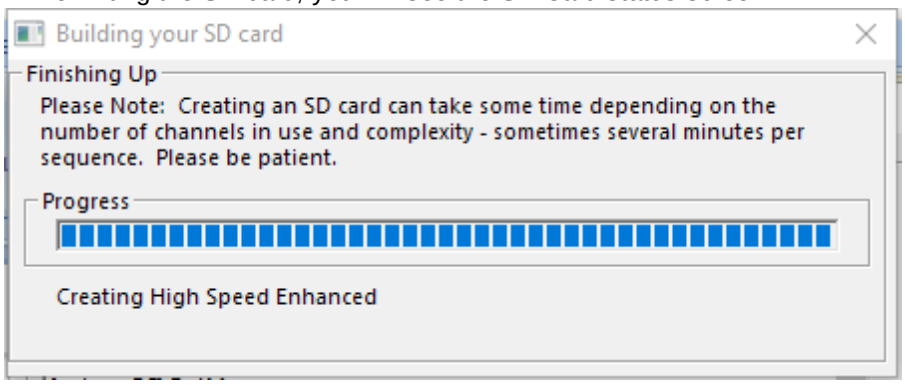
- **Show can not be interrupted by input triggers:** Once this show has started on the MP3 director, pressing an input will not interrupt the show - it will run to completion.

- **Advanced Throttling Options:** The advanced options button will bring up an additional window that allows you to change parameters which relate to how data will be transmitted from your MP3 Director. **Unless a specific issue is preventing your MP3 Director from working correctly, you should not change these options.**

Step 6 - Ready to Create SD Card/Cards

At this point Hub is ready to create your SD card show or SD card set. Press the Create SD card button, and Hub will start the process. It can take some time to create an SD card show depending on the complexity of your sequences, number of networks, etc. Once the process is complete, Hub will let you know.

While writing the SD card, you will see the SD Card status screen:



Multi-Director SD card sets:

Hub will tell you the total number of SD cards that are required for your show. Please remember that these cards need to be placed into the correct directors and should be labeled to avoid confusion.

When it is time to change cards, Hub will pause and let you know with a message on screen:

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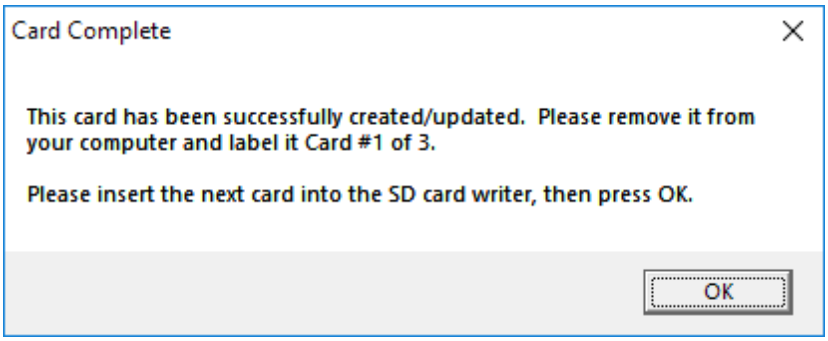
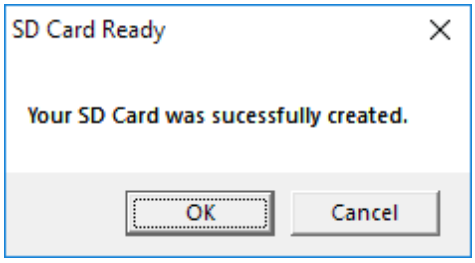


Please be aware that there are no checks or validations that happen when changing cards, Hub will overwrite the show on all subsequent cards without warning.

It may take several minutes per sequence to create your SD card. Once complete, you will see this message:



5.7.1.2.6.1 SD Card Priority System

MP3g3 Directors can control DMX Devices

In addition to LOR Devices, G3 and newer Directors can also drive DMX devices on one or both output ports. In order to control DMX devices, your G3 MP3 Director must have at least firmware version 5.28.

Network and Universe Priorities

New advanced MP3 Directors, like the Dual Port G3MP3 Director, or G4N4 4-Port can drive 2 or 4 separate physical networks of devices. These advanced directors can control LOR devices, DMX devices, or a combination of them on separate ports. For single (non-linked) directors, LOR Hub will automatically select which networks and/or universes in your sequence will be used by the director.

Only the ADVANCED level of the LOR software will allow for the creation of DMX output for a director. All other levels are limited to creating LOR output only.

Older Directors, like the DC-MP3-SHOWTIME, are limited to ONLY the LOR REGULAR network.

For Advanced Directors, LOR Hub uses a 'priority system' based on the contents of the ***FIRST*** sequence added to the show list. In order to prevent confusion, all sequences that are part of a single show should use the same preview. Shows that use Director Link use these rules as a default however the user has the ability to change them as they see fit.

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1. If your license supports them, there is no difference between LOR Enhanced networks and normal LOR networks. Both are treated the same when it comes to priority.
2. LOR networks have priority over DMX universes.
3. The LOR REGular network has the highest priority, followed by AUX A through AUX O.
4. A lower number DMX Universe is higher priority than a higher number.
5. If the sequence contains more than 2 (or 4) networks, universes, or a combination thereof, those Networks and Universes are silently discarded.
6. If your director only has one port, then only the PORT 1 column applies. 4 port directors use the same rules and simply extend the table to 4 columns.

Examples assuming that you have the 'Advanced' level of the software:

Your sequence contains....	PORT 1 on the director controls	PORT 2 on the director controls	Notes
1. LOR REG	LOR REG	(*)	Only one network, so it is placed on port 1. See note for port 2/3/4.
1. LOR REG 2. LOR AUX B	LOR REG	LOR AUX B	Two ports active with LOR See note for port 3/4.
1. LOR REG 2. LOR AUX A 3. LOR AUX B	LOR REG	LOR AUX A	Aux B is silently discarded for two port directors. Used as port 3 on 4 port directors.
1. DMX Universe 1	DMX Universe 1	(*)	DMX on port 1. See note for port 2..
1. LOR AUX A 2. DMX Universe 1	LOR AUX A	DMX Universe 1	LOR devices have priority over DMX, so AUX A is on port 1. See note for port 3/4
1. DMX Universe 1 2. DMX Universe 99	DMX Universe 1	DMX Universe 99	DMX Universes are assigned in ascending order. See note for port 3/4

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Your sequence contains....	PORT 1 on the director controls	PORT 2 on the director controls	Notes
1. LOR REG 2. LOR AUX A 3. LOR AUX B 4. DMX Universe 1 5. DMX Universe 99	LOR REG	LOR AUX A	LOR Devices have priority over DMX. REG has highest priority followed by AUX A. For 2 port directors all others are discarded. For 4 port directors, AUX B is on port 3, DMX Universe 1 is on port 4. All others are discarded.

*** Please note** that the dual network and 4 network directors will mirror the output of Port 1 onto Port 2 on a per-sequence basis - as well as any other empty ports. If you wish to have all controllers on port 2 stay dark during certain sequences, ensure that ALL of the sequences in that show use the same preview. That is to say, ensure all of your sequences contain channels for BOTH ports, even if those channels are all OFF for the duration of the sequence.

'Startup' sequences as well as 'Filler' sequences can also use LOR or DMX devices on advanced directors and the same rules apply to them.

5.7.1.2.7 Throttle Parameters

While writing your show to the SD card for an MP3 player,LOR Hub will automatically monitor how much bandwidth is required by your sequence every centi-second. When the bandwidth is exceeded, the program can 'compress' your data so that your music and lights stay better in sync. The advanced options window allows you to turn this functionality on/off or adjust its parameters.

Please note that changing these parameters can cause your show to fall out of sync, have unacceptable delays, or cause other issues. You should only change these if you are having issues with the defaults, and even then be prepared to restore to the defaults should your show fail. For 99.9% of shows, these defaults are already optimized.

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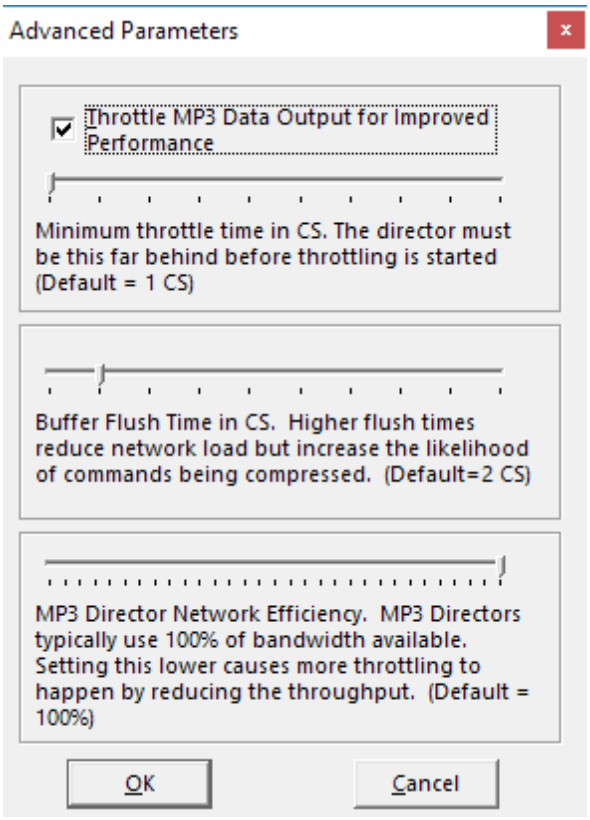

The Advanced Parameters window

- **Throttle Data Output for Improved Performance**: It is recommended that this option remain ON (checked). When checked, your sequence is monitored. For each centi-second that passes, the program will compute the amount of bandwidth required and compare it to the amount available. If unchecked, no throttling is done - this is the same mode as versions previous to 3.12.0.

- **Minimum Throttle Time in CS**: If throttling is enabled, this is the minimum amount that the sequence must be behind before compression starts. For example, if this is set to 5 CS, then once the sequence is 5 or more centi-seconds behind the audio, compression will begin. Setting this higher will allow for more complex areas of your sequence to remain uncompressed at the expense of lagging further behind your audio. The default value is 1, and this means that as soon as the sequence falls behind, compression should begin.

- **Buffer Flush Time in CS**: This can be thought of as the 'resolution' that your MP3 Director will run at. Setting the value lower will increase resolution as well as network load. Setting the value higher will decrease network load at the expense of having more commands be compressed. The default value of 2 most closely emulates what a computer produces for output, either in the Sequencer or the Show Player, when running a sequence on your hardware. For versions before 3.12.0, this value was 1.

- **MP3 Director Network Efficiency:** MP3 directors will typically use 100% of the bandwidth that is available for a port. Setting this to a lower percentage reduces the amount of throughput, which will cause more throttling to happen. It may be best to think of this option as a reduction in the network speed. For example, if you set a port to 57.6K speed, and set this option to 70%, then the hardware utility will throttle the sequence as if it was for a network that runs at approximately 40.3K (57.6 * 70%).

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5.7.2 Applying and Using MotionPaks

MotionPaks are the exciting new way to customize your LOR purchased sequences. MotionPaks allow you to add programming for custom props that you build or purchase from Light-O-Rama.

For example, LOR sells 'Singing Faces' - ready-to-go items for your display. Once you have purchased the hardware prop, you can then go to our sequence store and purchase the programming to make them work. LOR Hub will then take the MotionPak and combine it with your sequence. You will only ever have to pay for programming you want, saving money.

MotionPaks are a lot like sequences - but they only contain the programming for specific elements. You use LOR Hub to combine the MotionPak with the existing Base Sequence

5.7.2.1 LOR Sequences

Sequences are the programs that make your show work. The Light-O-Rama software allows you to create your own sequences, or you can purchase ready made sequences from our sequence store.

Purchasing sequences from our sequence store makes having a show a breeze! Our sequences are designed to get you off to a fast start and to make you look great! Once you have purchased a sequence, you can customize it with MotionPaks - additional programming for additional display items to make your show unique!

To see what sequences are available, press the 'Shop for Sequences' button in Hub.

5.7.2.2 LOR Hardware Props

While it is possible to create your own Props and use them with MotionPaks, the easiest and fastest way to add a new dimension to your show is to purchase the prop from Light-O-Rama.

Light-O-Rama props are pre-configured to work with MotionPaks and Light-O-Rama sequences right from the box. Simply connect your new prop to your existing controllers with a CAT-5 cable, purchase and download the MotionPak for each sequence in your show for that prop, press the 'Scan For MotionPaks' button in hub, then 'Do it!'. All of your sequences are updated and it just works!

To see the props available from Light-O-Rama, press the 'Shop for Props/Hardware' button in Hub.

5.7.2.3 LOR MotionPaks

MotionPaks are what bring unique display elements to life. These are not 'sequences' in themselves as they do not contain the programming for any other part of your show - you will need to already own (or purchase) the 'Base Sequence' from the Light-O-Rama sequence store.

The 'Base Sequence', usually just called the 'Sequence' contains all the main commands for a particular song. If a MotionPak is available for that particular sequence, it *adds* additional programming to make things like singing faces or pixel trees work. A MotionPak is unique to the sequence it is for, as well as for the prop it is made to control. For example, you could have the sequence "A Mad Russians Christmas" by TSO in your show. There could be several different MotionPaks available for that sequence - one for singing faces, another for a pixel tree, and perhaps even one for a pixel screen. You only need to purchase the MotionPak(s) for that sequence for the prop(s) you own. And remember that

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the 'Singing Face' MotionPak for this sequence is not the same as a MotionPak for a singing face for "Hard Candy Christmas" by Dolly Parton.

5.7.2.4 Updating Sequences with MotionPaks

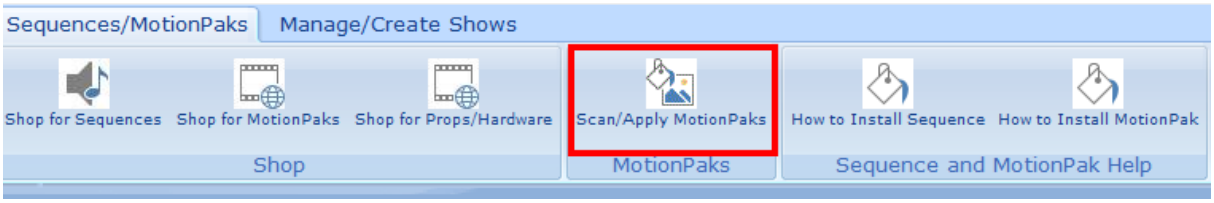
You use Light-O-Rama Hub to combine the programming of a MotionPak with an existing LOR Sequence store sequence. If you have not made any changes to your sequences or props purchased from Light-O-Rama, the process is very simple.

First, be sure that your Light-O-Rama base sequences (the files with the main programming for a sequence) are all in the Light-O-Rama Sequences directory.

Next purchase and download the MotionPak(s) you would like for the sequences you already own. You can always purchase a new sequence and then install a MotionPak.

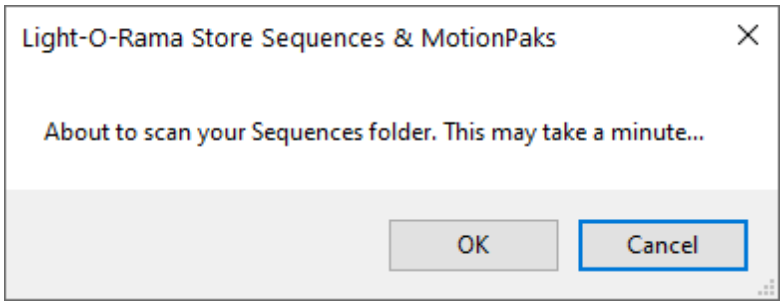
Initial Scan

In Hub, press the 'Scan/Apply MotionPaks button':



Hub - Main Screen

A new window will open and you will be warned that your Sequences folder is about to be scanned, and that it may take some time. Scan time will vary depending on how many sequences are in the folder. Click the OK button to proceed; or press Cancel to return to the main Hub screen.



When the scan is complete you will see a list of your store-bought sequences that need some sort of attention. If you want to see ALL of your store-bought sequences, change the drop-down from "Sequences needing attention" to "All store sequences". Reasons a file might need attention include:

- you may have purchased a new MotionPak that needs to be merged with the base sequence
- the music for your base sequence wasn't found
- the sequence hasn't been converted to the S5 format yet
- the sequence file is damaged/corrupted and can't be read

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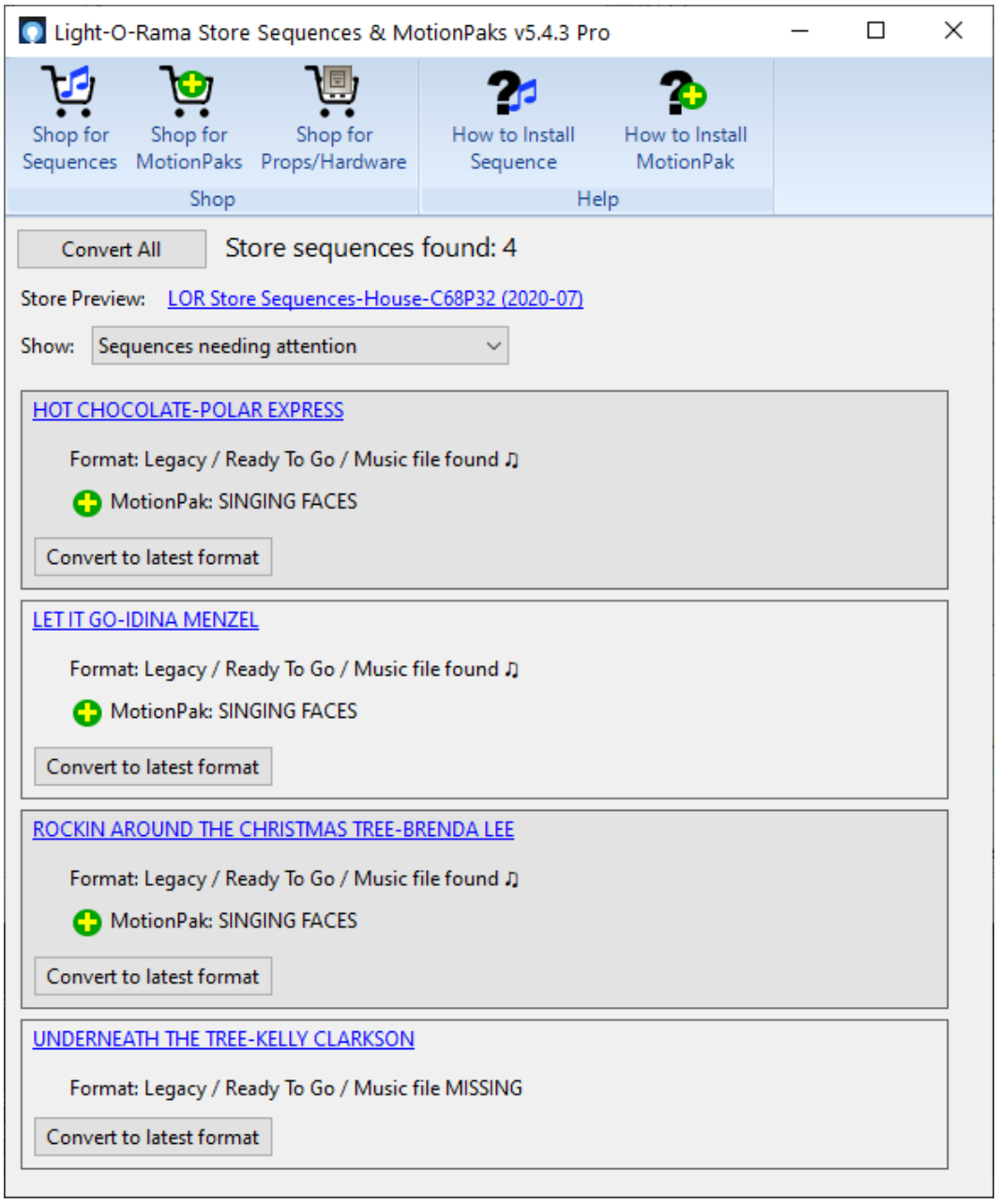

Initial Scan Result

For each sequence the scan result tells you:

- whether the sequence is in "Ready To Go" or "You Can Modify" format
- whether the associated music file was found or not
- whether any associated MotionPaks were found

In the example shown above, 4 store sequences were found, all of them in the "Ready To Go" format. The music files for the top 3 have been found; however, the music file is missing for the last sequence. Also, the top 3 each have a "Singing Faces" MotionPak, but the last sequence does not (it is just the Base Sequence).

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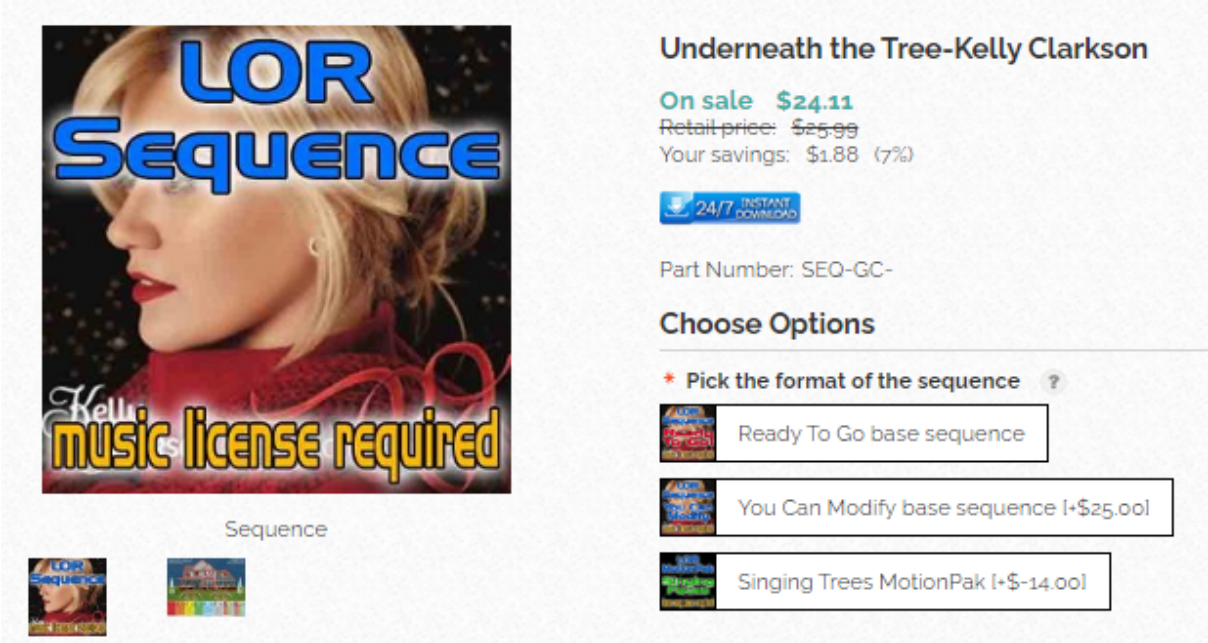
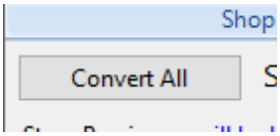
If you want to look for MotionPaks for a song, click on the song title. This will search the Light-O-Rama Sequence Store for that song. Click on the search result to see the details for that song. For example, if you do this for "UNDERNEATH THE TREE-KELLY CLARKSON", you would see this:



Sequence Store

Here you can see that the "Singing Trees MotionPak" is available for this song. You can purchase it and add singing faces to this song - so that it will match the others in your collection.

Convert To S5 Format



The next step is to convert all of the sequences to the S5 format. While you can click the "Convert to latest format" button for each sequence, the fastest way is to click the "Convert All" button at the top. This will convert all listed sequences to the S5 format.

After pressing "Convert All", our screen now shows:

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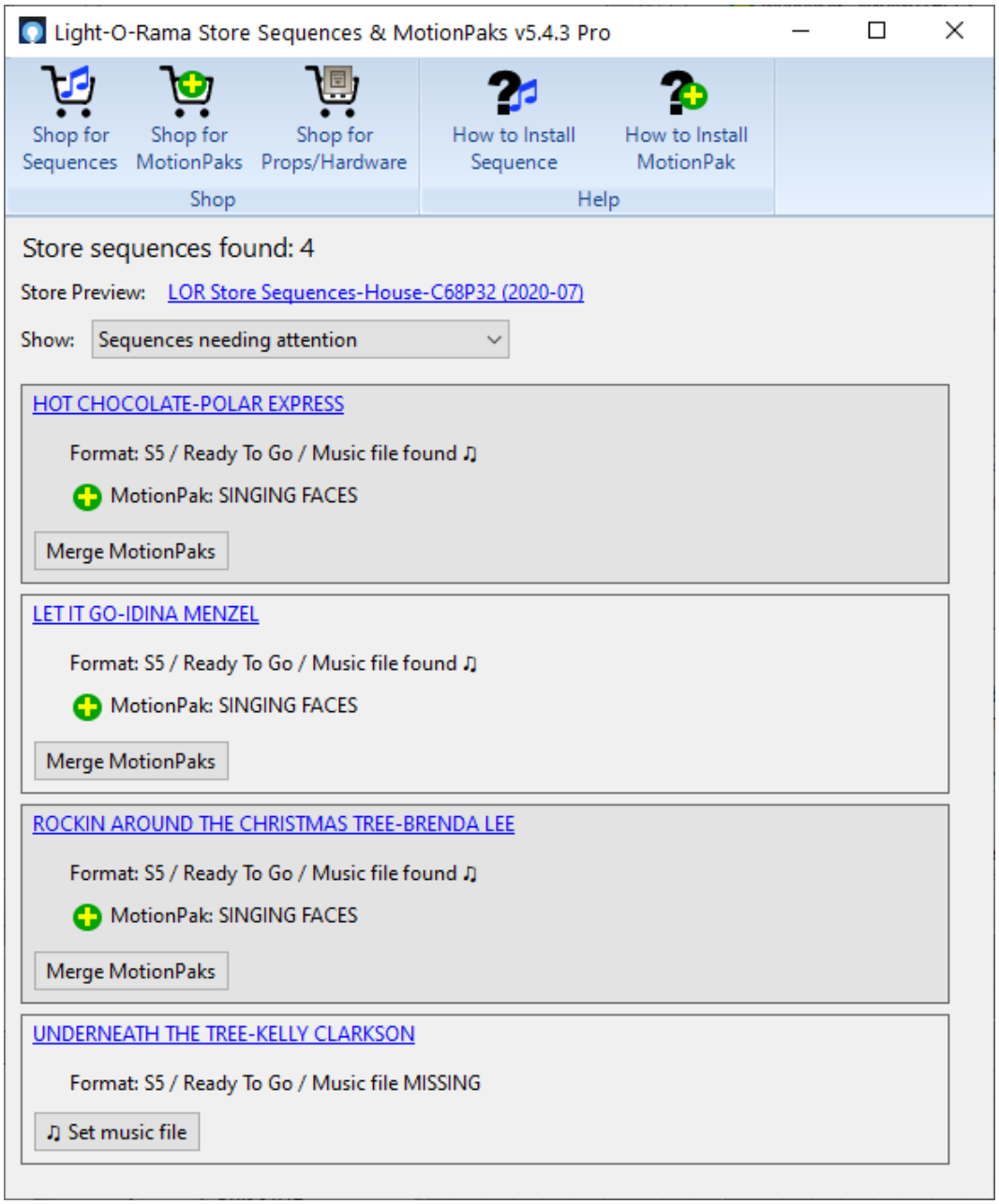

After "Convert All"

- All of the sequences have been converted to the S5 format. Ready-to-go sequences will have a .LORPROT extension. You-can-modify sequences will have a .LOREDIT extension.

- Base sequences have been moved to a sub-folder called "Sequence Store Originals". It is best to leave the originals untouched, in case you need them again someday.

Set Music File

Many sequences sold by Light-O-Rama require that you purchase the music separately. If the purchased sequence did not get linked up to the music file earlier, you can do it now by clicking on the "Set music

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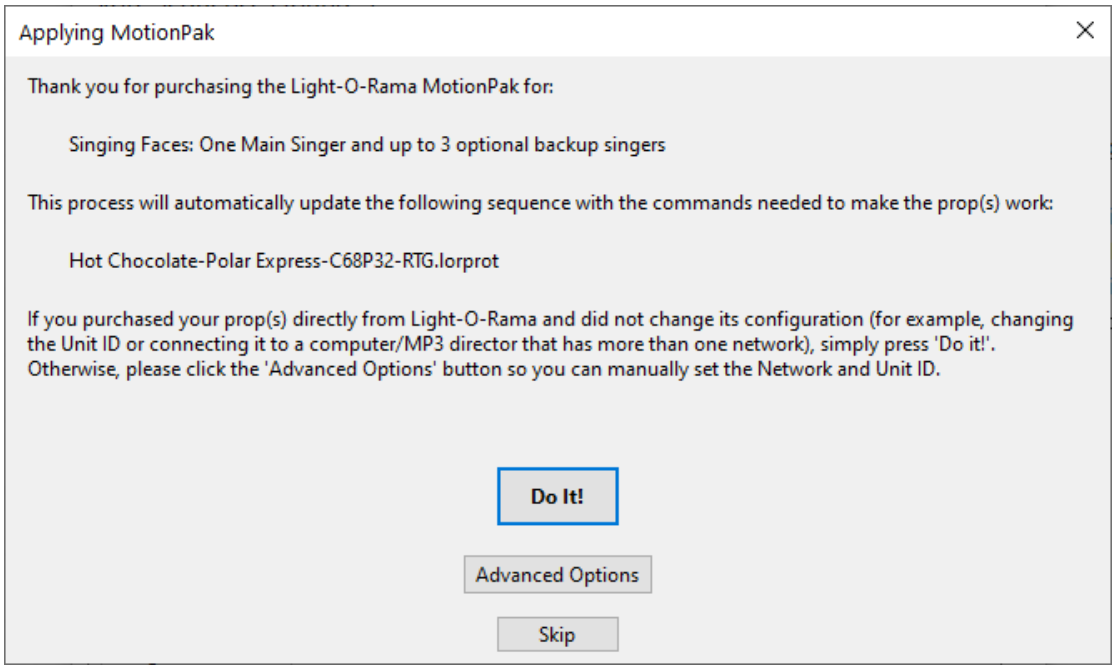
file" button. You will be prompted for the music file's location, and once selected, the sequence will be linked to the music.

You can also do this using the Sequencer by opening the sequence and then selecting Sequence > Media File from the main menu.

Merge MotionPaks

For sequences with MotionPaks, the MotionPak programming needs to be merged into the main sequence. You can accomplish this by clicking the "Merge MotionPaks" button for each sequence. This button will not be shown if there are no MotionPaks for the song in your Sequences folder.

After clicking the "Merge MotionPaks" button, you will see a screen similar to this:



- **Do It!** - select this option if you did not make any changes to your LOR Prop or LOR Sequence. Your Sequence will be updated with all the commands from the MotionPak, and the job is complete.
- **Skip** - cancels the MotionPak merge and takes you back to the main screen.
- **Advanced Options** - select this option if you need to change the default settings of a MotionPak, for example you changed the Unit ID of the prop. Here you can change the network and unit ID of the MotionPak to match your hardware. See the example below.

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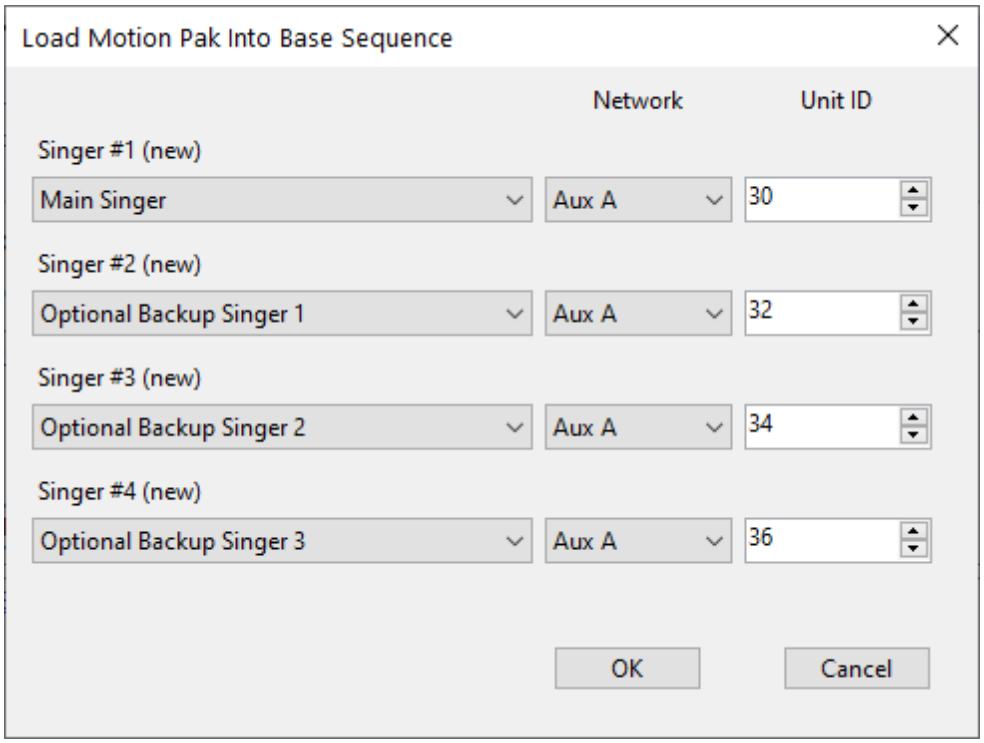


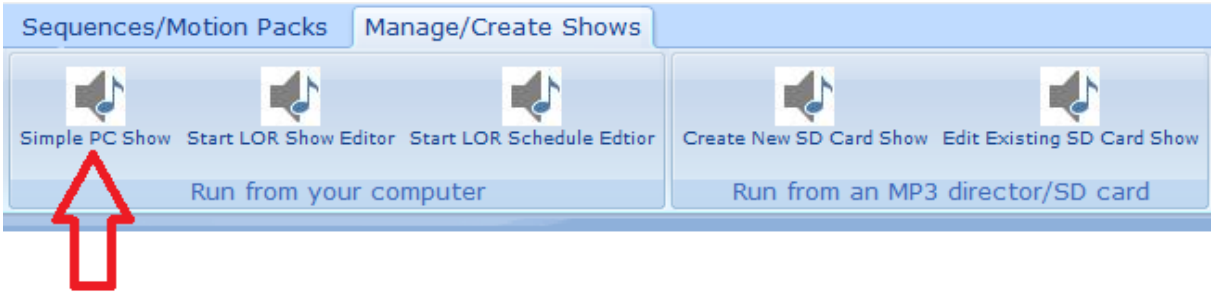
Advanced Options

In the example shown above, the show has 2 LOR networks and the Singing Faces prop for the MotionPak is on Aux A (rather than REGular)

5.8 Simple Show Builder

Simple Show Builder functionality has been replaced by LOR Hub

In LOR Hub, select the "Manage/Create Shows" tab, then click the "Simple PC Show" button.



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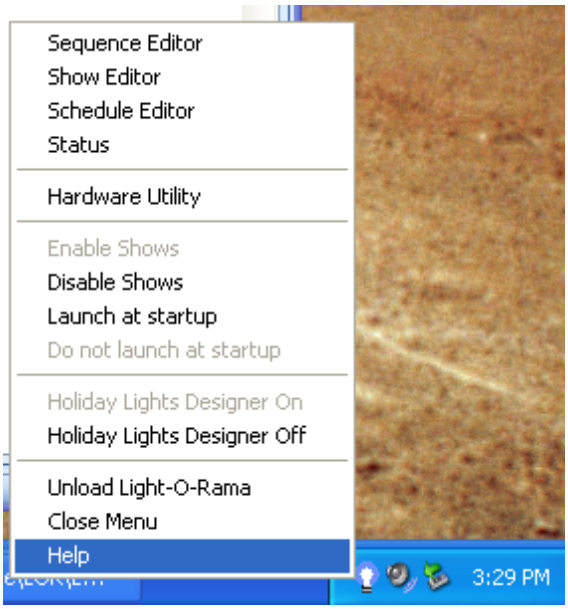
5.9 Show Player

The Light-O-Rama Show Player is a program that runs behind the scenes, monitoring your schedule to see if a show should be playing at the current time, and if so, playing it.

To make sure that the Show Player is running, and therefore that your scheduled shows will be played, you first must ensure that the Light-O-Rama Control Panel is running. Next, right-click on the Light-O-Rama Control Panel's icon in your computer's system tray, and select "Enable Schedule" from the popup menu. If "Enable Shows" is greyed out, that means that it is already selected.



The Light-O-Rama Control Panel, with shows enabled

If the Light-O-Rama Control Panel is not running, or if "Disable Shows" is greyed out, your scheduled shows will *not* be played.

Note that only one source can control your lights at any time - either the Show Player, the Sequencer, or the Hardware Utility. So, if you try to enable the Show Player with one of the others running, you may be shown a message saying that you need to shut down the others before "Enable Shows" will work.

5.10 Network Preferences

Light-O-Rama software running on a computer can control a wide variety of hardware devices and communicate with them via several different methods. In the simplest case, the devices are connected to your computer via a USB to RS485 adapter sold by Light-O-Rama. Light-O-Rama also supports communication to:

- DMX devices via USB to DMX adapters,
- Ethernet-connected devices via the E1.31/sACN protocol.

Typically, Light-O-Rama controllers are connected to USB adapters, and up to 16 USB adapters can be connected to a single computer - that is, 16 different "networks". In many cases, a Light-O-Rama user will only need a single network -- that is, a single USB to RS485 adapter -- for all of his or her controllers: this is called the "Regular" network. Should additional networks be needed, 15 auxiliary networks ("Aux A", "Aux B", and so on, up to "Aux O") are also available, each of which would be controlled via a separate USB adapter.

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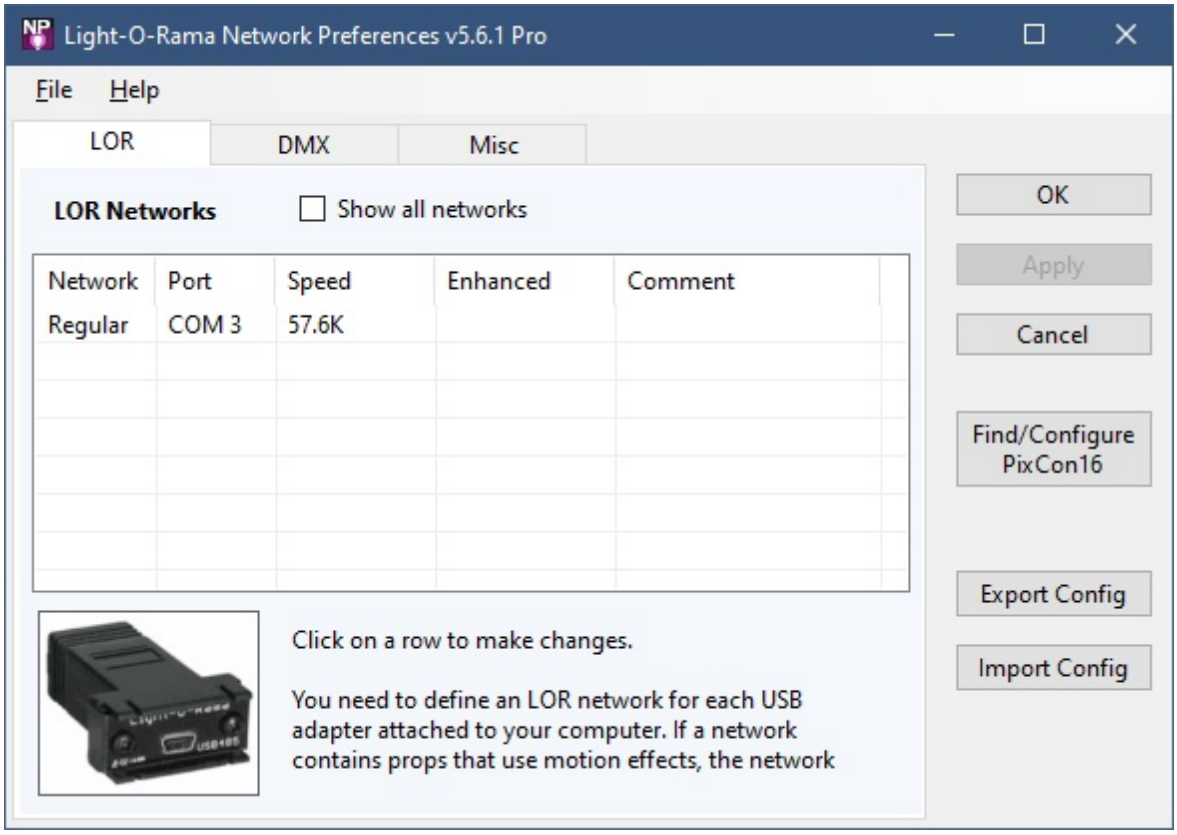
The Network Preferences window can be resized if needed to show more networks.

Click the links below to find more information about each function:

- use the LOR tab to configure networks connected to Light-O-Rama USB to RS485 adapters (or the old Light-O-Rama serial port adapter).
- use the DMX tab to configure DMX universes associated with USB to DMX adapters or E1.31/sACN controllers. An Advanced or Pro license is required to control DMX universes.
- use the Misc tab if you have old Light-O-Rama MC-P controllers (pre-2004) or the Light-O-Rama Comm Listener is interfering with other software on your computer.
- use the Export/Import buttons to save your current preferences or restore an old configuration.
- click the "Find/Configure PixCon16" button to configure Light-O-Rama PixCon16 controllers. After configuring the controller, you will need to make sure the universes you just assigned in controller configuration are also configured on the DMX tab.



The Light-O-Rama Network Preferences program

5.10.1 The LOR Tab

The LOR tab of the Light-O-Rama Network Preferences program enables you to specify up to 16 different networks for Light-O-Rama controllers, each using a different Light-O-Rama USB adapter. The communication speed of each network can be set independently. For displays without RGB pixels, a single Light-O-Rama network is often sufficient. If using a single network, the first network in the list, the "Regular Network", should be used.

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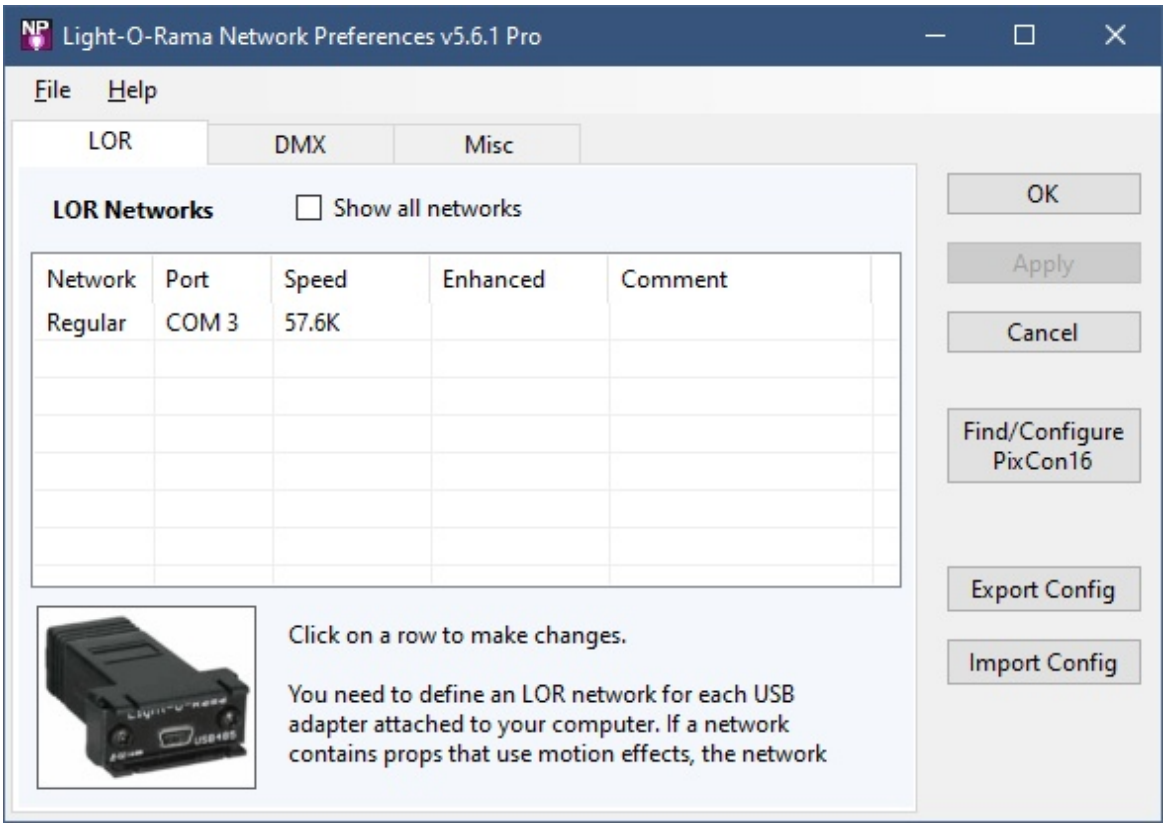

The LOR tab, showing only the Regular network

If you need to configure additional networks (referred to as "auxiliary networks" or "Aux networks"), click the "Show all networks" box. Aux networks are only available at the Advanced and Pro license levels.

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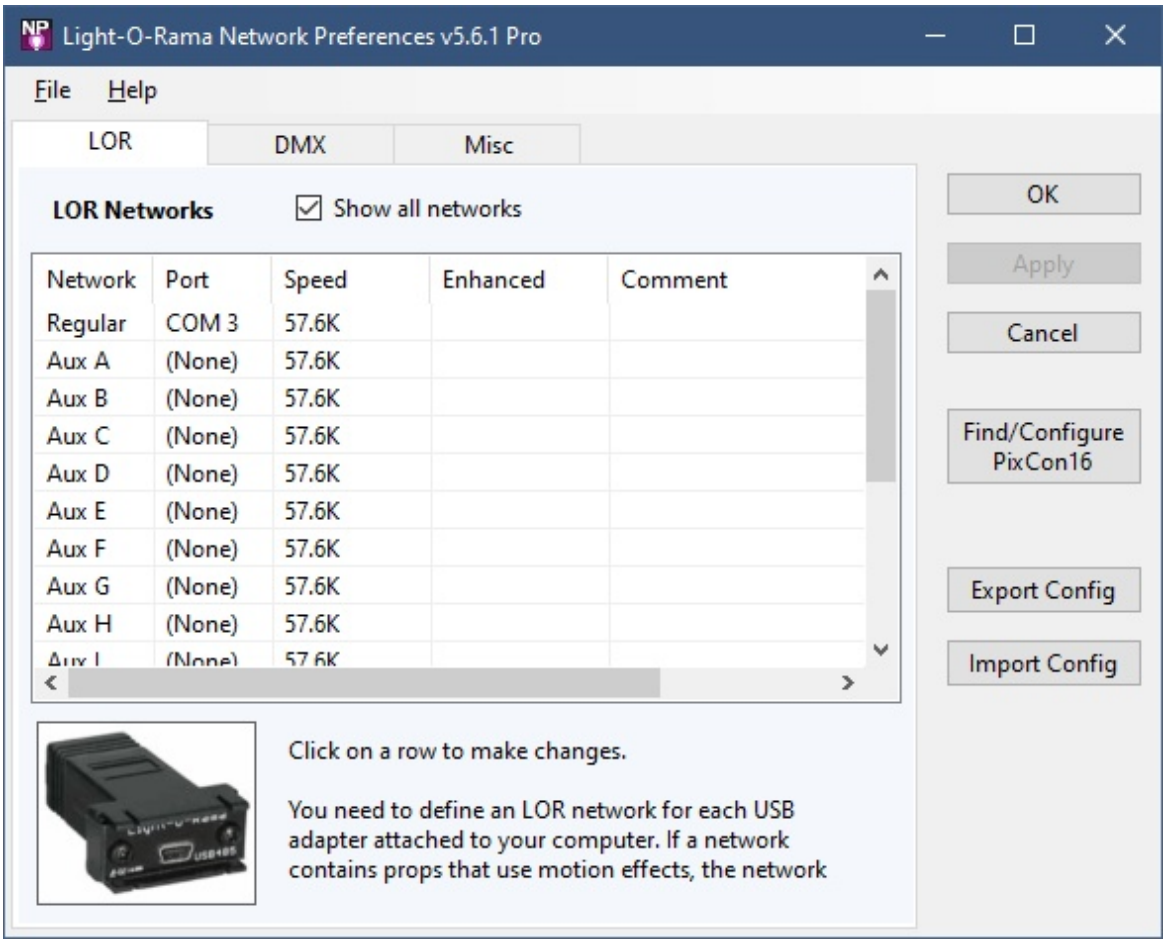

The LOR tab, showing all networks

Click on any row to bring up a dialog box allowing you edit the settings for that particular network.

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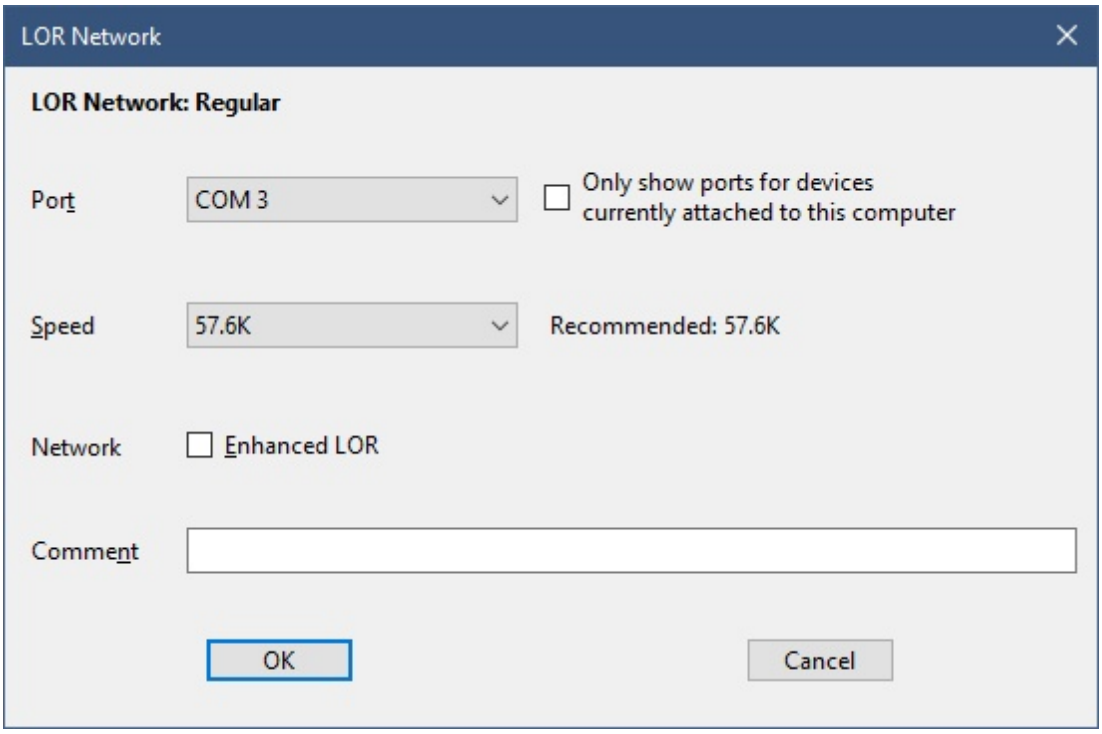

Configuration for an LOR network

Serial Port ("Port")

In the drop-down box, chose the serial port that you wish to use for that network. Make sure that your selection does not conflict with another network, or with DMX adapters. For networks that are not in use, set the port to "(None)".

If you check the box to the right of the drop-down, only adapters currently connected to the computer will be shown in the drop-down. This will make it easier to identify the correct port.

If you are setting up multiple LOR networks, we recommend connecting and setting up one adapter at time, checking the "Only show ports..." box each time. After you are done setting up all of the adapters in Network Preferences, you can then plug all of the adapters into your computer.

Connection Speed ("Speed")

Light-O-Rama software can communicate with Light-O-Rama controllers using various communication speeds. These speeds can be set independently for each Light-O-Rama network:

- If you do not have extraordinary needs and the network is not enhanced, "57.6K" is suggested.
- If you have controllers that are hooked up to your computer using a very long or poor quality communications cable, you may need to set the speed to "19.2K (Slowest)".
- If you are using Light-O-Rama Easy Light Linkers (ELL) for wireless communication in your network, speeds will be limited to a maximum of 115.4K (57.6K for the older V4 ELL).
- If you have many circuits with very fast action, you may need to set the speed to "115.4K", or even "500K". Note that 500K is currently supported only on G3 controllers, Cosmic Color Ribbons, Cosmic Color Bulbs, Cosmic Color Pixels, Pixie Controllers, and the PixCon16. You may also

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have to upgrade your firmware to use 500K. See our Network Speeds web page for the latest information.
- If you are using enhanced LOR, then 500K is the recommended speed.
- If this network ONLY contains a combination of Pixie and Pixcon16 controllers running on an Enhanced LOR Network, you may select 1000K.

Enhanced LOR

Checking this box designates this network as an enhanced network. This optimizes the network for high channel counts, such as when using RGB pixels. Motion effects and SuperStar effects can only be played on enhanced LOR networks and DMX networks.

A Pro level license is required to use this feature, and the Light-O-Rama Comm Listener must be running in order for the lights to be controlled. Not all controllers can be used on such a network, and some controllers may require firmware updates before they are able to be used on an enhanced network. Also, input triggers are not supported on LOR Enhanced networks.

Comments

Use the comment field as you see fit for notes, etc.

5.10.2 The DMX Tab

The DMX tab of the Light-O-Rama Network Preferences program can be used to configure up to 999 separate DMX universes, each using a separate adapter or E1.31 address (although please note that the software and your computer may not be able to adequately drive nearly that many universes simultaneously). For DMX universes that use an adapter, the adapter and the protocol used on each universe can be specified; for those using E1.31, the remote IP address and port can be specified.

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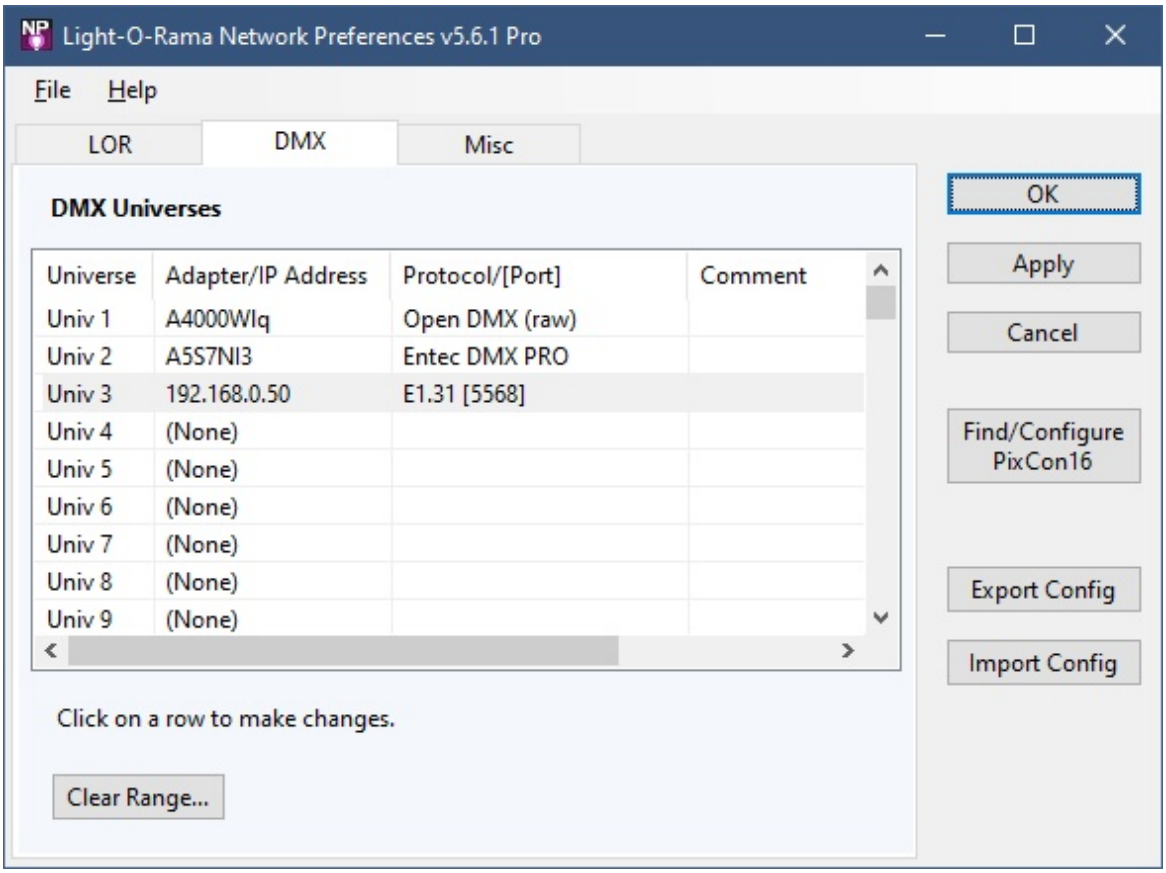

The DMX tab

To configure a particular universe, click on its row in the list. You will then be presented with the Advanced DMX Universe Configuration dialog, which has two main options - Use Adapter and Use E1.31:

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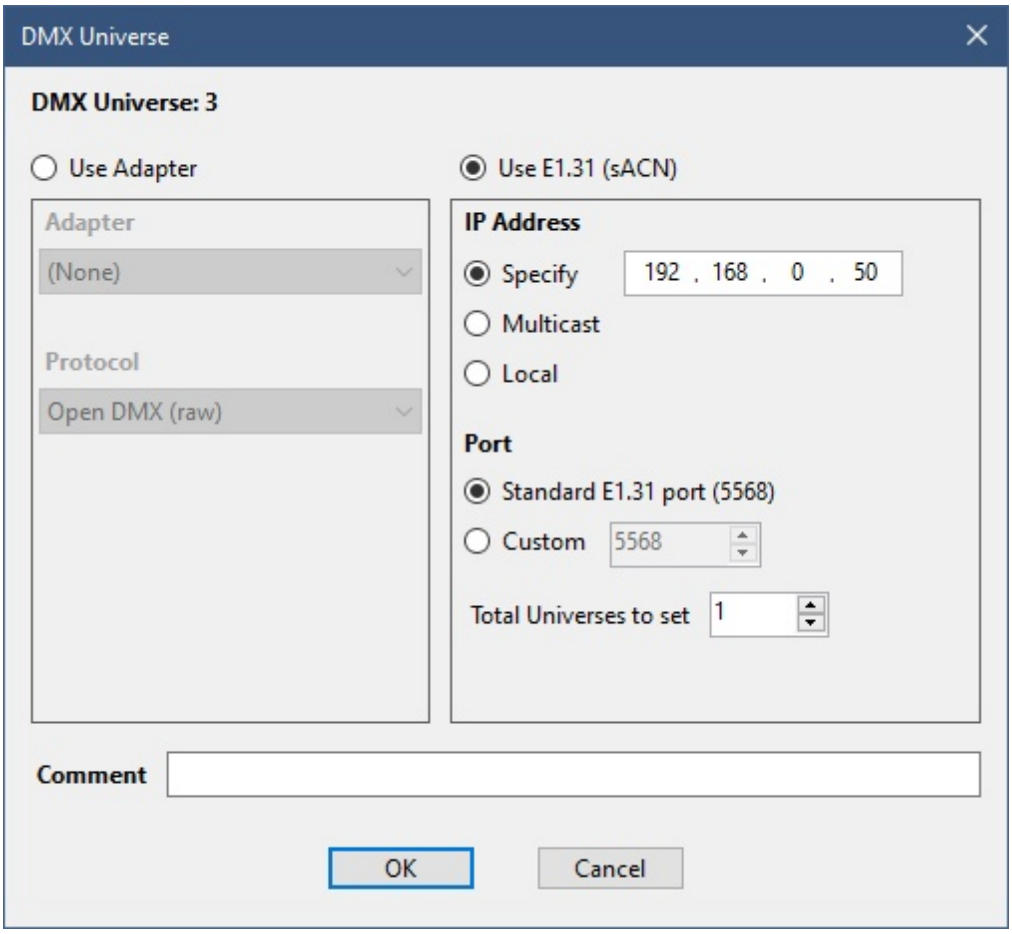

DMX Universe Configuration dialog

Use Adapter

If you select "Use Adapter", you will then be able to choose the adapter and the protocol that the adapter uses.

For each universe, the Network Preferences program presents a drop-down list of adapters available on the system. Note that the Network Preferences program cannot detect adapters that are currently in use. For example, if you have an LOR USB485 adapter that is currently assigned to an LOR network, and you wish to assign it to a DMX universe instead, you will first need to unassign it from the LOR network before it can be reassigned to the DMX universe. Furthermore, you may need to stop and restart the Sequencer, Hardware Utility, and/or Show Player before the device will be shown in the Adapter drop-down box.

DMX Adapter ("Adapter")

Each DMX universe (other than those that use E1.31) must be assigned to a DMX adapter, such as the LOR USB485 or the ENTTEC Open DMX USB adapter. Each adapter can be assigned to only one universe.

Note that there are different types of DMX protocols that can be used. Please be sure to select the correct protocol for your adapter.

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DMX Protocol ("Protocol")

Different DMX adapters use different protocols. You must specify the correct protocol for the DMX adapter you wish to use:

Adapter Type	Protocol
DMXKing UltraDMX Micro	ENTTEC DMX Pro (or compatible)
DMXKing UltraDMX RDM Pro	ENTTEC DMX Pro (or compatible)
ENTTEC DMX USB Pro	ENTTEC DMX Pro (or compatible)
ENTTEC Open DMX USB* *: Some old ENTTEC Open devices, built in approximately 2008 or earlier, may not be supported	Open DMX (Raw)
LOR USB485	Open DMX (Raw)
LOR USB485B	Open DMX (Raw)
LOR USB485-ISO	Open DMX (Raw)
Lynx	Lynx

Other types of adapters may or may not work with LOR software. If they do, you may need to experiment to find the correct protocol to use.

Use E1.31

If you choose "Use E1.31", you will then be able to select the IP configuration for the universe to use.

Please note that E1.31 configurations can be complex, and may require a firm grasp of networking, network topologies, and addressing. Such topics are beyond the scope of this document.

IP Address

Here, you must select the type of IP address you wish to use for this universe:

- **Specify:** Selecting this option will cause the universe to use unicast mode, and lighting commands for the universe will be received by a single E1.31 device, using the IP address that you specify.
- **Multicast:** Selecting this option will cause the universe to use multicast mode, allowing lighting commands for the universe to be received by multiple E1.31 devices. The actual IP address that will be used depends upon the universe number, in the manner described by the E1.31 standard. For example, universe 37 will use IP address 239.255.0.37, while universe 650 will use IP address 239.255.2.138.
- **Local:** This option will cause the universe to send lighting commands to the computer itself, using the local loopback address (127.0.0.1).

Port

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The IP port that the remote device or devices will listen on for lighting commands should be specified here. In almost all cases, the standard value (5568) should be appropriate.

This should not be confused with the DMX Listener port.

Total Universes to Set

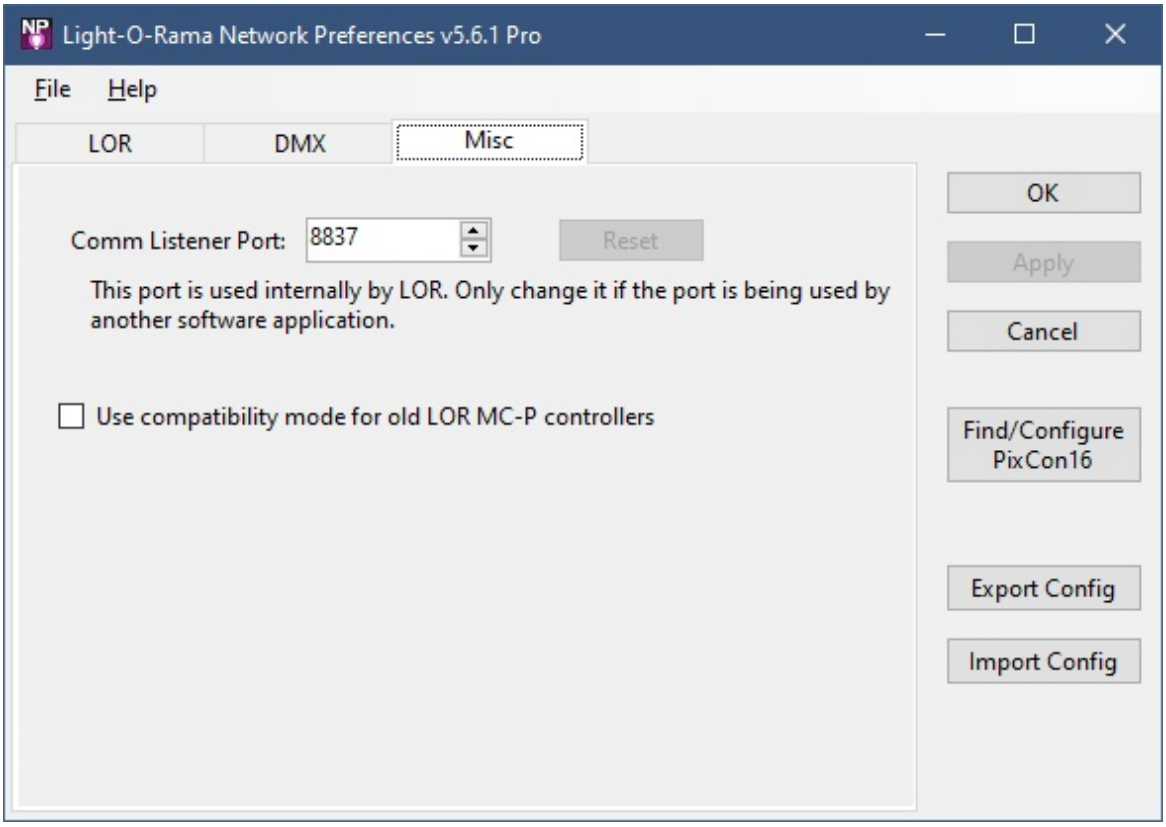
If you would like to set any following ports to these same parameters, simply change the value here to the total number of Universes you would like. The universe being edited along with as many additional universes following this one will have the identical settings created.

Comments

Use the comment field as you see fit for notes, etc.

5.10.3 The Misc Tab

The Misc tab of the Light-O-Rama Network Preferences program enables you to configure general communications options. Most Light-O-Rama users will not have need for this tab.



The Misc tab

Comm Listener Port

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This section can be used to configure the IP port that the Light-O-Rama Comm Listener listens on for lighting commands to be delivered over Enhanced LOR and DMX networks. The default port of 8837 should work for nearly all users, but can be changed here if it conflicts with other software on your computer.

Clicking the Reset button will restore the port setting to the default of 8837.

Use Compatibility Mode for Old MC-P Channel Controllers

If you are using Light-O-Rama MC-P controllers purchased prior to November 15, 2003, they you should enable Old MC-P compatibility mode by checking this box. If you do not check this box, then you will see odd behavior on circuits 9 through 16 of such controllers.

Old MC-P compatibility mode only affects controllers on the Regular LOR network; those on Aux networks are unaffected. Therefore, make sure to put all such controllers on your Regular network.

NOTE: Enabling Old MC-P compatibility mode may have a significant effect on communications speed for the regular network. It is therefore strongly recommended that you do not enable it without reason, and that if you do enable it, you should consider moving any other Light-O-Rama controllers (which do not need Old MC-P compatibility mode) off of the Regular network, and onto one or more auxiliary networks.

5.10.4 Export/Import

The Advanced and Pro versions of the software can export/import your entire network configuration to a file. This is useful if you would like to have multiple different configurations available, or if you use the software on multiple machines and want to move the configuration between them.

The Import/Export function works on ALL the parameters that can be changed in the Network Configuration program. This includes not only actual network configurations, but also items on the Misc tab.

Please be careful when importing a network configuration from another computer. While the hardware and software give a best-effort to configure themselves the same way across physical machines, that is not guaranteed. This is especially true of COM port settings, and IP addresses. After importing a configuration, you should always check all values to ensure they are correct.

To export your configuration, press the Export button and give the file a name. The exported files are normally saved in the LOR Data path under "Network\SavedConfigurations". An exported file will have the .LIV extension.

To import a configuration, press the Import button and select the configuration to import.

5.10.5 PixCon16 Configuration

Open the PixCon16 Configuration page by clicking the "Find/Configure PixCon16" button on the right-hand side of the Network Preferences program. Make sure your PixCon16 controller is powered on and that it and your computer are connected to the same Ethernet network (the Ethernet connector on the PixCon16 is the silver connector).

The PixCon16 is a little different than other Light-O-Rama controllers when it comes to configuration and use. All configuration of the board is done while it is connected to a standard LAN. The PixCon16 can not be configured via the LOR RS485 mode. The PixCon16 however *can* run (i.e. control lights) in either

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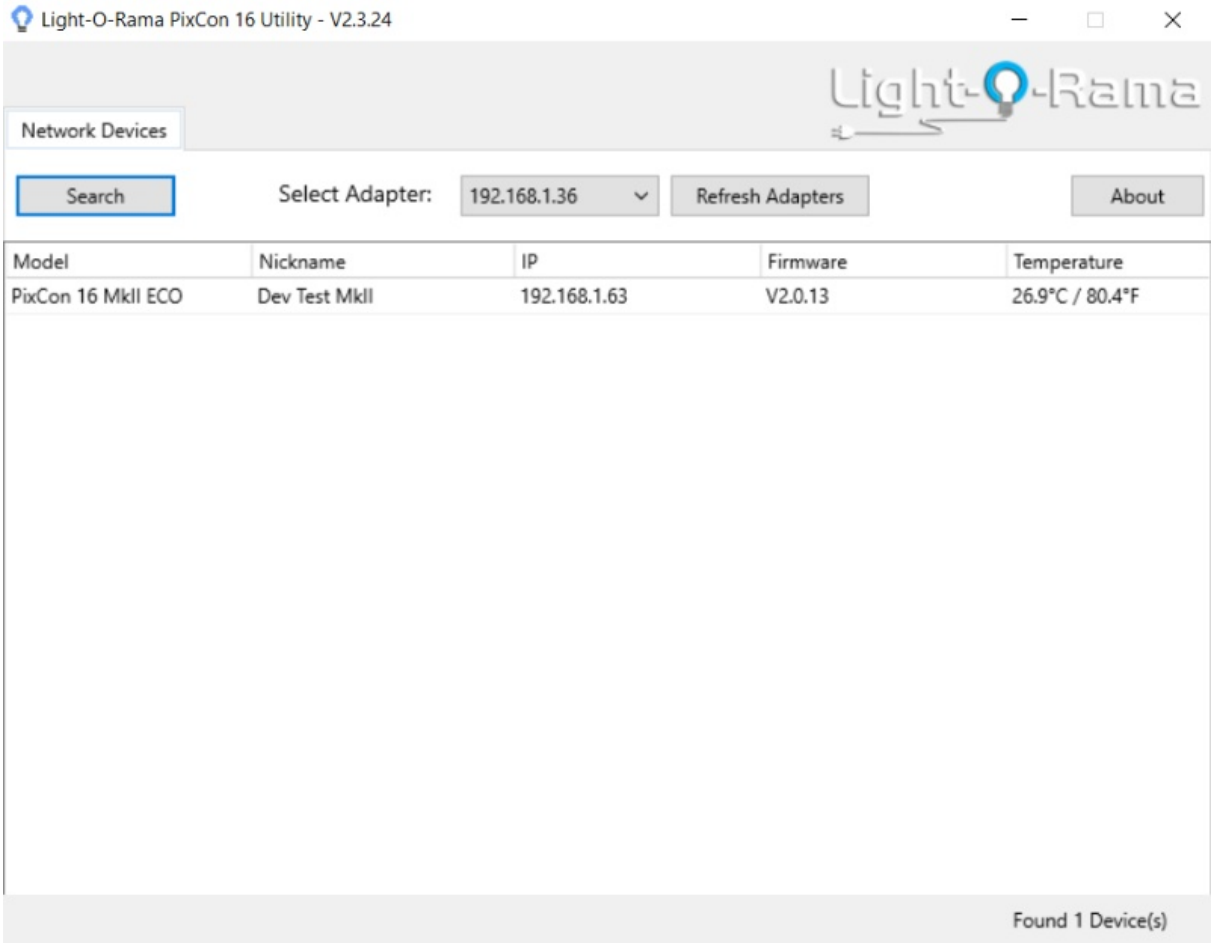
E1.31 mode (via an Ethernet network), or as an LOR device on an LOR ENHANCED network at 500K (1000k if there are only Pixie and/or PixCon16 controllers on the network). If you would like to use the PixCon16 as an LOR device, be sure to select 'LOR Mode', explained below. When in LOR mode, the PixCon16 can be connected to an MP3 Director (G3 or later) if desired.

Main Window

Click the "Search" button in the PixCon16 Utility. After a few seconds, a list of the PixCon16 / E1.31 devices that were found will be shown.



After pressing the Search button

To configure a particular board, double-click on it. The PixCon Configuration window should open.

Under some circumstances, the program may not be able to detect all of the controllers connected to your LAN. This can be due to multiple issues since the routing and configuration of TCP/IP can be tricky:

- Most Importantly: Please select the correct network adapter at the top of the window. You must select the network adapter that is directly connected to the same network the PixCon16 is

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connected to.

- The board may simply have missed the command for it to report in. Pressing "Search" again will usually find the missing controller. It could also be that the network is currently saturated with lighting commands. You should stop any running show before attempting to configure an E1.31 device.

- If this is the first time you are configuring a board, or if you changed the configuration of your network, the device may no longer be at an IP that you are expecting. In that case, you may want to reset the board to factory specifications. This will then place the board into 'DHCP' mode where it will request an IP from your network. This requested IP should then be able to be found with the program. Please note that resetting the board will clear all of your configuration information, and you will need to re-configure the board.

PixCon Configuration Window

Use this window to configure a specific PixCon16 controller. After changing the settings, click the "OK" button at the bottom of the screen to save the changes; otherwise, click "Cancel" to leave the device configuration unchanged.

The "PixCon Configuration" window has 5 tabs:

- Network
- Control
- LEDs
- Test
- Misc

Network Tab

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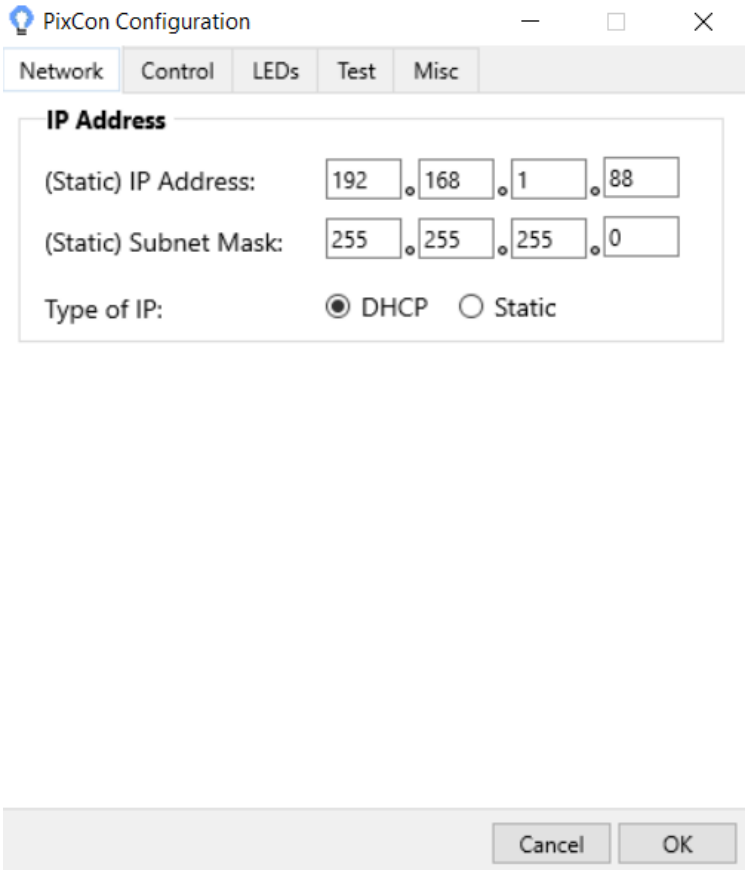

The Network Tab

If you wish to let the controller be assigned an IP automatically by a router, select the 'DHCP' button. DHCP is the default mode of operation and will allow the controller to connect instantly to most home or corporate networks that have a router.

If you are connecting your controller directly to your PC or via a basic network switch on a network without a router, you will need to use a Static IP address.

To set a static address, select "Static" and then type in the IPV4 address you would like for the board, as well as the Subnet Mask. The address should be in the same range as the computer you are currently using to configure the board. The subnet mask should match the computer's as well. If you change the address to one that is not within the range of your local LAN, the board may 'disappear'. In that case you should reset the board to factory settings, search again for the board, and attempt to reconfigure it again.

Control Tab

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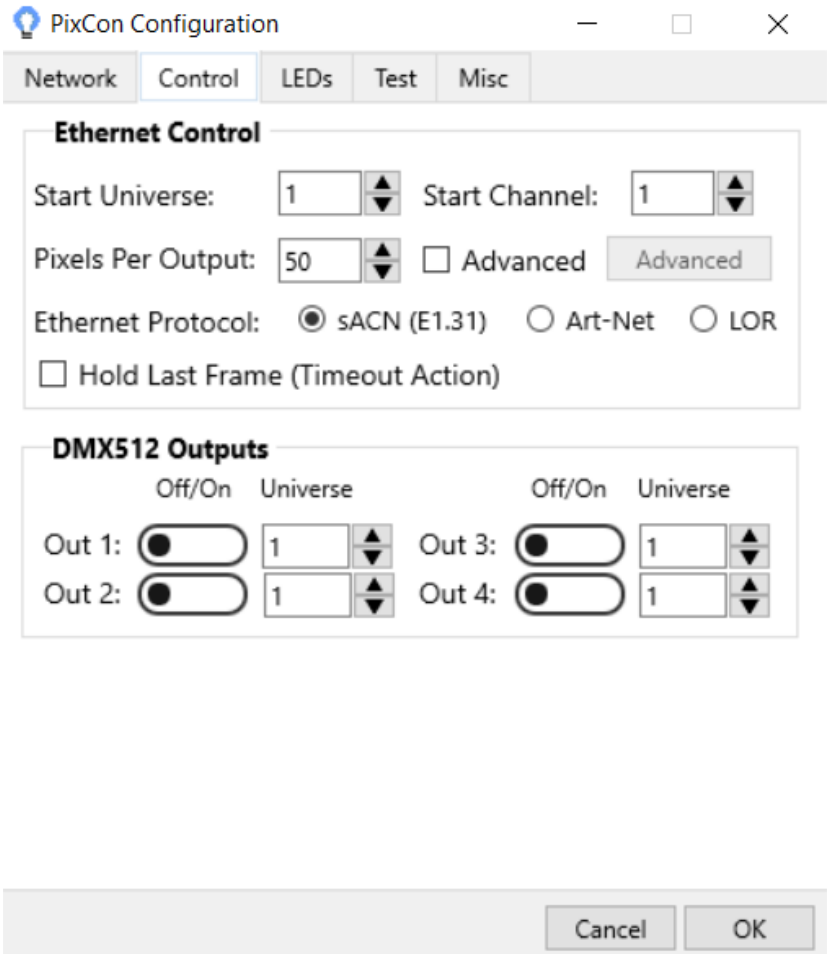

The Control Tab

Mode of Operation (Ethernet Protocol)

The PixCon16 can be run in 3 different modes:

- As an **E1.31** controller on an Ethernet network. The Ethernet cable should be connected to the silver connector on the PixCon16.
- As an **Art-Net** controller on an Ethernet network. This mode is not currently supported by the Light-O-Rama Software Suite.
- As an **LOR** device on an LOR RS485 network. A Cat5 cable is attached to the "J3/J4 (DMX #1)" jack on the board and run (directly or indirectly) to a Light-O-Rama USB adapter. Be sure to also move the jumpers on the board from the ESTA side to the LOR side near J4.

Start Universe / Channel

In E1.31 and Art-Net mode, these 2 fields specify the universe and start channel for the first port. Normally, the channel should be set to 1.

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In LOR mode, this specifies the Unit Id and Circuit of the first port. Normally, the channel (circuit) should be set to 1. Note that the Unit Id here is in decimal (base 10), whereas the unit id is hexadecimal (base 16) in all other parts of the software. See the Unit Id Values topic for a conversion table.

Pixels Per Output

Enter the number of pixels on the longest string attached to this PixCon16.

DMX512 Outputs

This section allows you to enable/disable the 4 DMX ports available on the board, as well as assign the universe each will control. These ports act as a bridge between E1.31 and a DMX universe. By using one or more of these ports, you can eliminate the use of one or more USB DMX adapters. These ports are **not** active when using the board in LOR mode.

Advanced - OFF

If the "Advanced" box is not checked, then the start universe (or unit id) and channel for ports 2-15 will be automatically assigned.

When using E1.31 mode and Advanced is off, then you should set up your Prop Definition similar to the following picture:

- Prop Definition's "Nodes per String" should match the PixCon16 Configuration "Pixels Per Output".
- Prop Definition's device type should be set to "DMX".
- Prop Definition's "Max Channel" should be set to 510.
- Prop Definition's Universe and Start Channel should match the corresponding PixCon16 Configuration.
- Prop Definition's "Enter channel on first row, auto-number the rest" should be selected.
- Prop Definition's "Separate Universe for each RGB string" should be unchecked.

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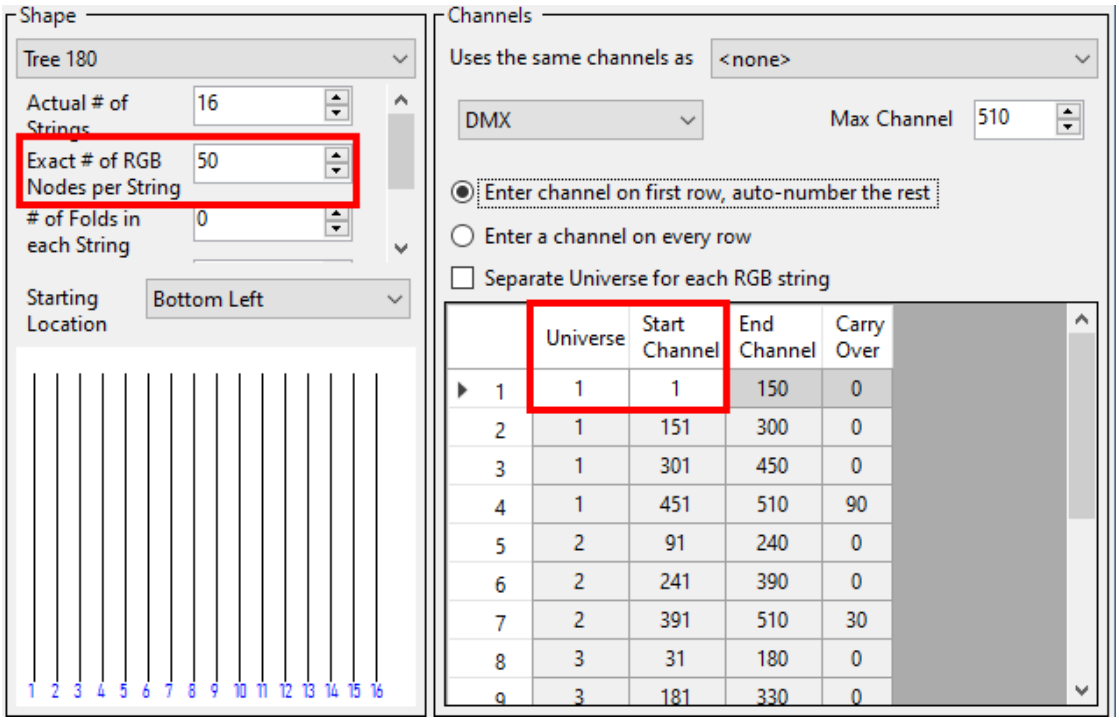

When using LOR mode and Advanced is off, then you should set up your Prop Definition similar to the following picture:

- Prop Definition's "Nodes per String" should match the PixCon16 Configuration "Pixels Per Output".
- Prop Definition's device type should be set to "LOR".
- Prop Definition's Unit Id and Start Circuit should match the corresponding PixCon16 Configuration.
- Prop Definition's "Max Circuit" should be set to 510.
- Prop Definition's "Enter channel on first row, auto-number the rest" should be selected.
- Prop Definition's "Separate Unit Id for each RGB string" should be unchecked.

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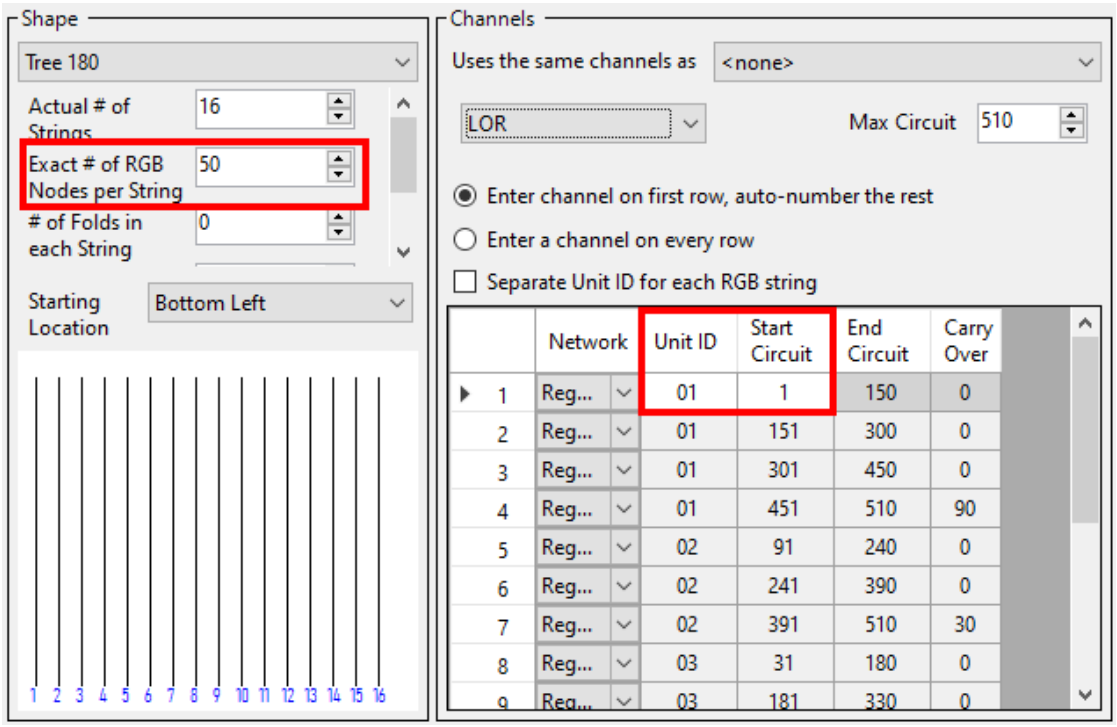

Advanced - ON

There are 2 modes available for setting up the pixel ports of a PixCon16, simple and advanced. For most users, simple mode is all that will be needed. For more complex configuration options, please use the advanced mode.

Here you can set:

- an individual start universe and channel for each string
- the number of pixels attached to each port
- the number of "null pixels". Null pixels allow the controller to ignore or skip a specified number of pixels at the beginning of an output. This is useful when you want to extend the distance between controller and your actual lights, as the data signals used by pixel chips are not designed to travel over long distances. Sometimes the signal between controller and first pixel gets degraded and causes problems such as flickering lights. In these cases inserting a “fake” (null) pixel between controller and first real pixel can help as they reproduce the signal on their output; remember that they will not actually light up as they are ignored by the controller. The PixCon16 treats null pixels as an entirely different parameter to normal pixels. So for example if you had 50 pixels in your pixel fixture and needed to insert 2 null pixels before the start, the ‘Null Pixels’ field for that output would need to be set to 2 and the ‘Num Pixels’ field would remain at 50 (even though there are 52 physical pixels in total on that output).
- Use of the Zig-Zig feature is not recommended. Instead, use one of the matrix shapes in Prop Definition and set the number of folds.
- Grouping allows the user to specify how many physical pixels are grouped together and treated as one single pixel to the outside world. For example, if you had a pixel strip with 150

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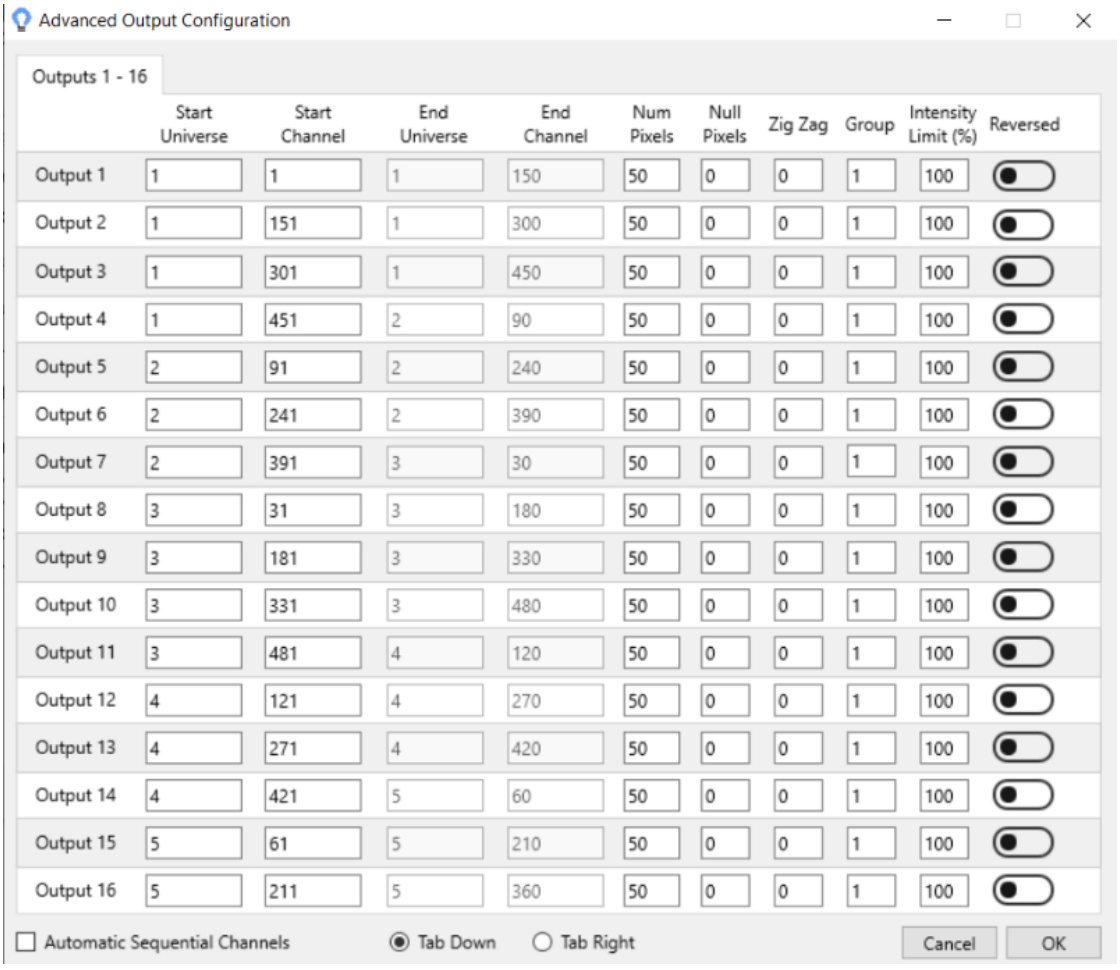
physical pixels on an output and entered 10 in the grouping field for that output, it would effectively turn that strip of 150 individual pixels into a strip of 15 individual 'pixels'. Each 'pixel' would now actually consist of a group of 10 physical pixels all grouped together as one single 'pixel' as far as your lighting control software or console is concerned.

- Intensity Limit allows the user to specify a value between 0 and 100% for the brightness level of the pixels on a given output. Note that the brightness output is scaled based on the input level provided to the controller. This is used in circumstances where the lights are too bright for your application. If you set the Intensity limit to 50% for example, the PixCon16 would halve all incoming data values. Reducing brightness also reduces the amount of power consumed by the pixel strings.

- Turning on the reversed option tells the controller to light up the pixels in reverse order to the way that they are physically connected. This means the first pixel to light will actually be the last physical pixel on that output instead of the first physical pixel. Usually, it is best to leave this setting disabled, as it is easier to take care of such situations in your Preview.



The Control Tab - Advanced

LEDs Tab

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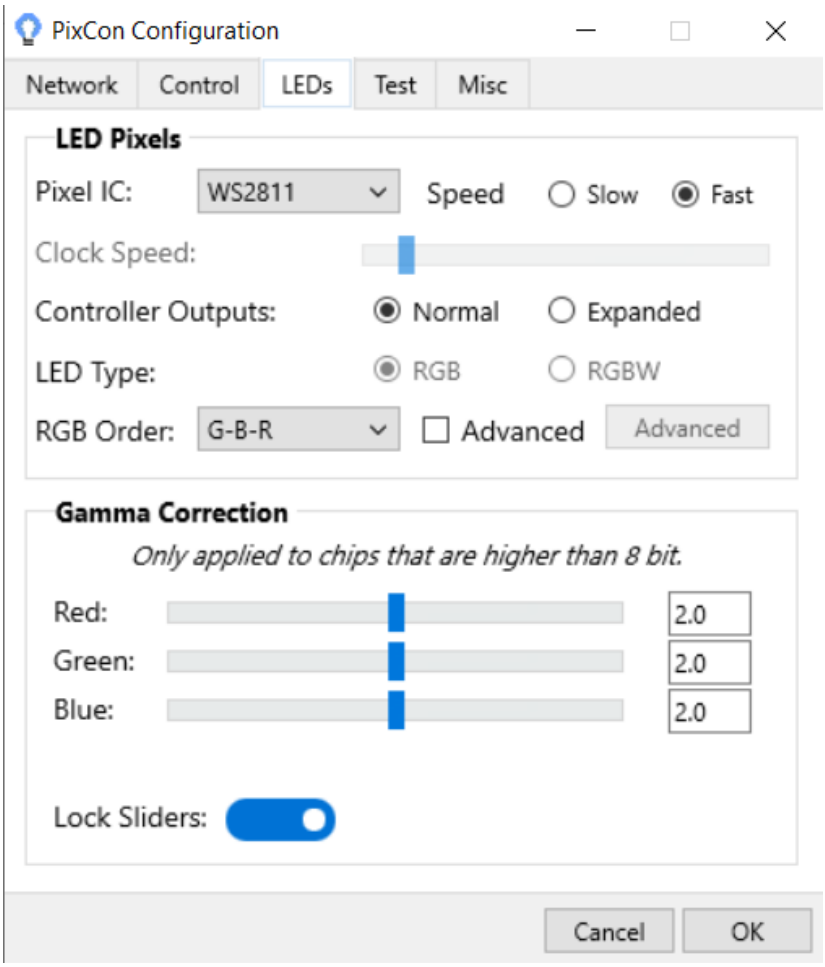

The LEDs Tab

Pixel IC

Select your pixel string's chip-set here. The PixCon16 can support a variety of pixel driver chips -- which chips are supported depends on the firmware loaded to the board. Current Light-O-Rama pixel strings use the WS2811 chip (IC). This setting applies to all 16 outputs.

If in doubt, check the packaging:

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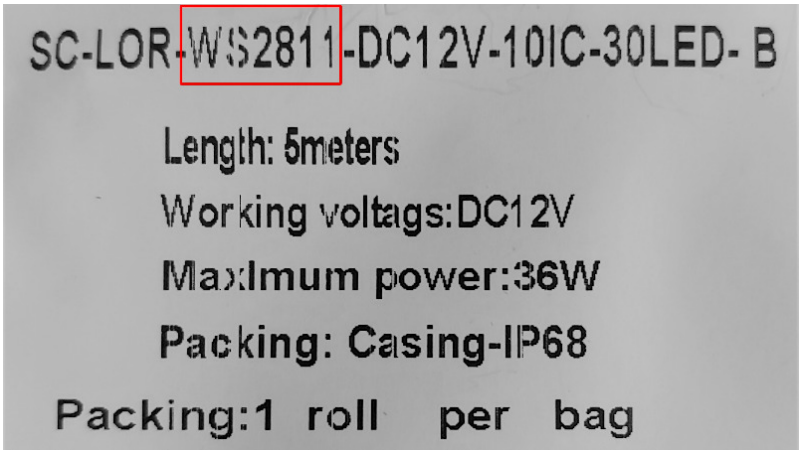

Speed

Some pixel chip-sets have a low and high speed. If your chip-set supports high speed (current LOR pixel strings do), check the "Fast" box.

Controller Outputs

In most cases, select "Normal" here.

If using a controller that supports expanded mode and you select a pixel type that is a single wire protocol with no clock line (like WS2811), then you will have the option to select expanded mode. This mode allows the clock output on each of the pixel outputs on the control board to function as a data output instead of a clock line. This doubles the number of physical data outputs available and also increases the refresh rate. On a PixCon16 Mk2 for example, your data outputs will go from 16 to 32 in expanded mode and the max RGB pixels per data output will drop from 1020 to 510. In this mode, special care will be required in wiring your pixels to the connectors on the board.

LED Type

Some pixel drivers can operate RGB or RGBW LEDs. In this case, an option will be shown to select the type you are using. RGB LEDs use 3 channels and RGBW LEDs use 4 channels per pixel.

RGB Order

Under this tab you can also change the RGB (W) color order of all the outputs simultaneously, or change it for individual outputs separately. This is useful if the lights you are using are not physically wired in the standard red, green, blue order. To change the order of all outputs at once simply select the order from the drop-down box. To change specific outputs, click the ‘Advanced’ checkbox and then click the "Advanced" button to bring up the RGB (W) configuration window for individual outputs.

You can also set color order in Prop Definition. If your pixel strings are naturally in RGB order, then both the controller and Prop Definition should be set to RGB order. If not, set one to RGB and the other to the pixel string order. Things become very confusing if you try to change it both places!

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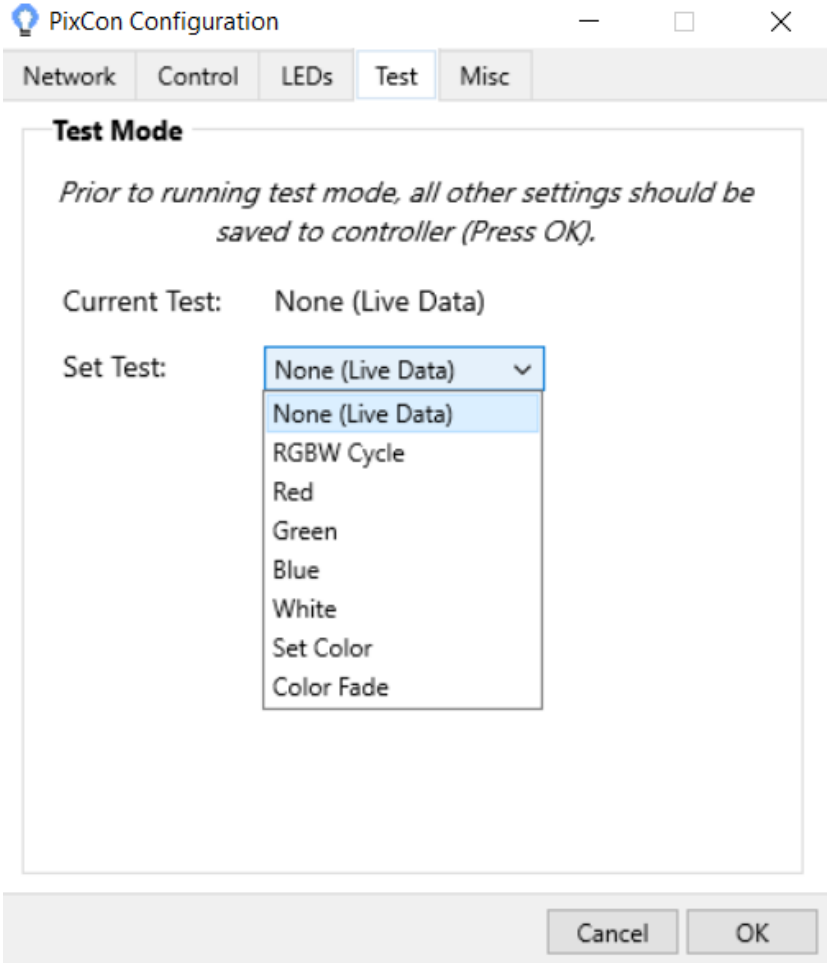
Color Correction (Gamma)

These sliders allow you to adjust the relative amount of power supplied to each channel of a triplet attached to the 16 pixel ports of the board. Color Correction is typically used so that pixels attached to this board can be adjusted to more closely match pixels on other boards. Please note that this setting is for the entire board and not per port. Use the sliders to increase or decrease the amount of 'color' for each component.

Test Tab



The Test Tab

This tab allows you to remotely select a number of different hardware test modes on the controller that can help to determine if your pixels are connected correctly and are working as they should. Simply select the test you wish to run from the drop-down box to turn it on, and select either an individual pixel output or all pixel outputs for the test to be applied to. Note: Before running the tests the pixel type and outputs should be configured correctly or it will not work.

Misc Tab

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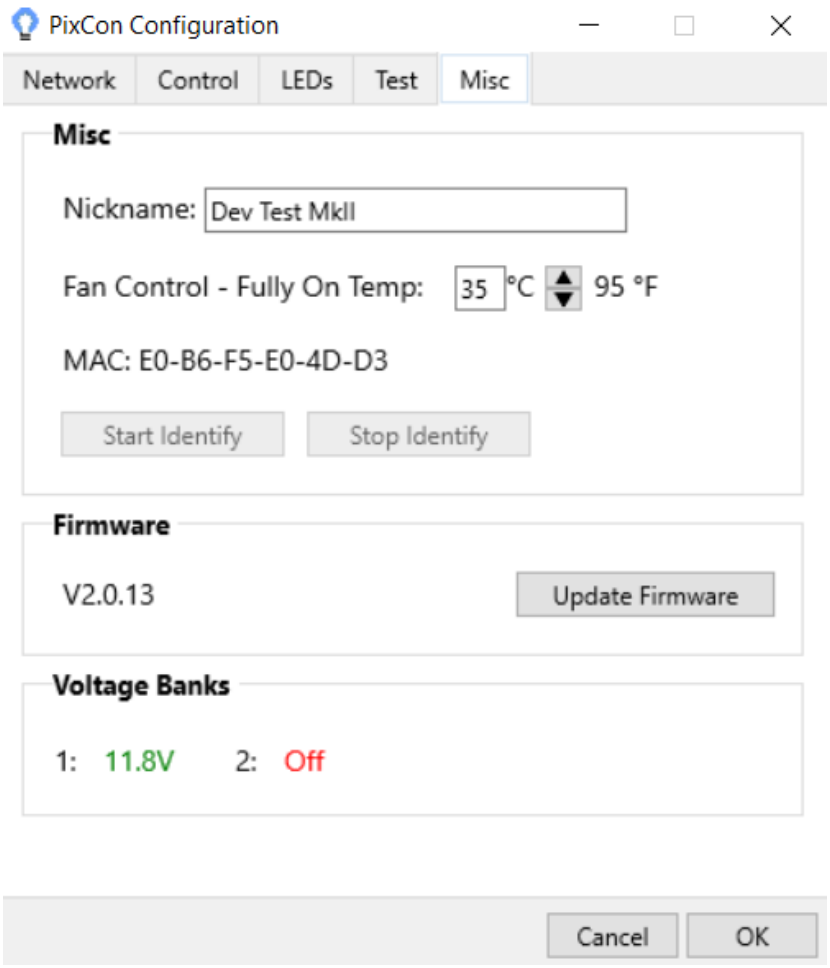

Nickname:

You should set the *name* of the board to something meaningful to you. For example, if this particular controller is used for a tree, you may want to name it 'Pixel Mega Tree' or the like.

Fan Control

Optionally, you can connect a fan to the PixCon16. When the board reaches the temperature specified here, the fan will be set to full on. If you don't have a fan connected, you can ignore this field. See the PixCon16 Hardware manual for more information.

Firmware Update:

To update the firmware, press the Update Firmware button. You will then be asked for the location of an LOR PixCon16 Firmware File. To ensure you have the latest firmware available, please check the Light-O-Rama website and download the latest available.

Once you have selected the correct file, the firmware update process will start. The process is typically safe to perform, however we recommend that you do not update firmware unless you are addressing a known problem, or need to add some new functionality that a new firmware offers.

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When updating the firmware of a PixCon16, the power and status lights will flash on/off in different patterns. Do not power off the board while the update is in progress. If you are unsure if the update was applied properly or not, wait a few minutes and then observe the power and status lights. This will give the board enough time to reboot and stabilize. Also, pay attention to any instructions that may be shown on your screen.

Should the update process fail, the board could be in one of several states after the failure:

- If the status light is blinking and the power light is solid, this typically means the update was successful. However, it could also mean the board did not receive or it did not properly start the update process.
- If the power and status lights are alternating, then the board is currently in the boot-loader mode.
- If the power light is ON but the status light is OFF there was a problem with the firmware update.

In all cases after allowing the board to sit for a few minutes, power it off then back on. The board should return to normal operation at that time. If not, please refer to the hardware manual of the PixCon16 for additional troubleshooting information.

5.11 Comm Listener

The LOR Comm Listener is a program that runs in the background, allowing other programs (such as the Sequencer and the Show Player) to control LOR devices that are on LOR Enhanced networks, and also to control DMX devices. The Comm Listener must be running in order for those programs to control such devices.

The LOR Comm Listener is automatically started when the LOR Control Panel is started, unless the license level does not support it or if no Listener port is specified in Network Preferences. Also, it is automatically shut down when the LOR Control Panel is shut down. So, to make sure that you can control your LOR Enhanced devices and DMX devices, make sure that the LOR Control Panel is running.

5.12 Hardware Utility

The Light-O-Rama Hardware Utility is used to manage the hardware that you use to control your lights. This includes several types of controllers as well as other devices such as Light-O-Rama MP3 Directors and Light-O-Rama wireless devices.

Each of these types has a different tab in the Hardware Utility. When you start the Hardware Utility, the tab for Light-O-Rama controllers is displayed; to access one of the others, simply click its tab.

For details on each, please refer to the following sections:

- Light-O-Rama Controllers
  - Selecting a Comm Port
  - Setting Unit IDs
  - Configuring Units
  - Testing Units
  - Downloading Sequences
  - Firmware Update

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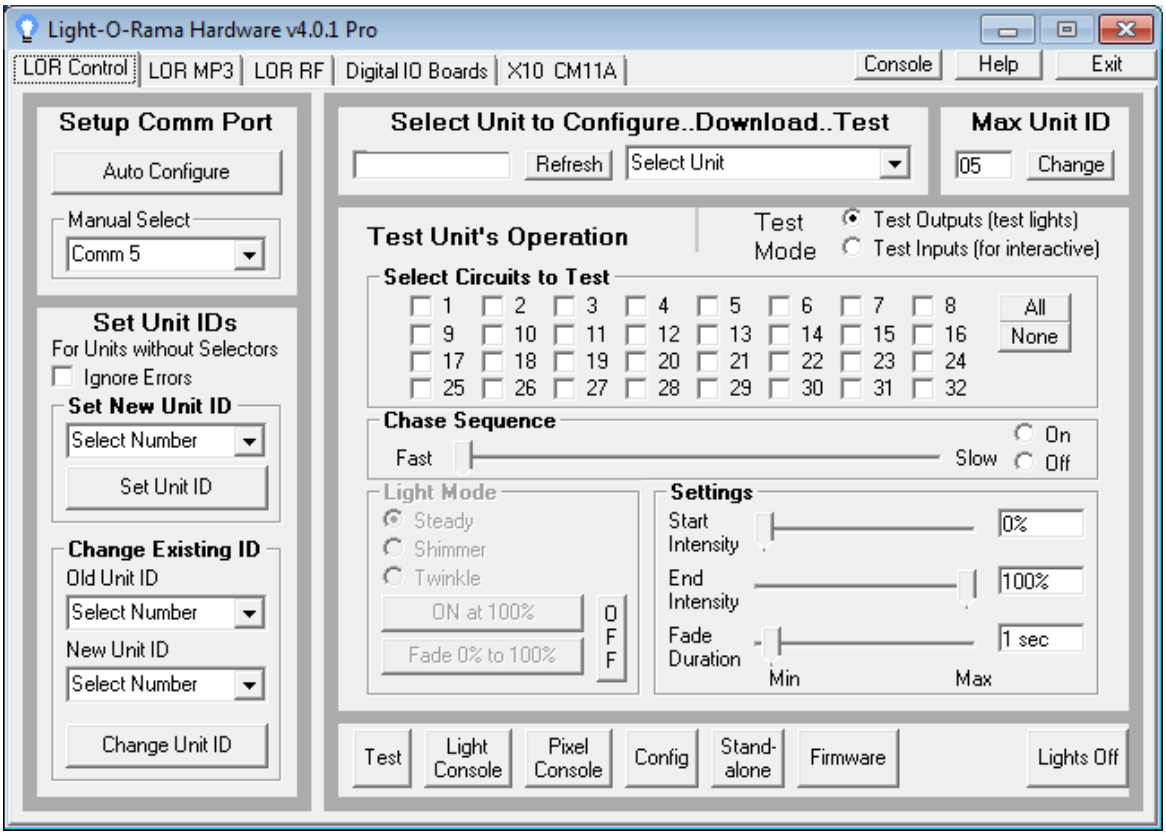
- Light-O-Rama MP3 Directors
- Light-O-Rama Wireless Devices
- Digital IO Boards (Support removed in S5)
- X10 Controllers (Support removed in S5)
- Test Console

To run the Hardware Utility, select it from your computer's Start menu (Start / Light-O-Rama / Hardware Utility) or, if the Light-O-Rama Control Panel is currently running, right-click on its icon in your computer's system tray and select "Hardware Utility" from the popup menu.

Note that support for X10 was discontinued in S5. The X10 tab and other references to X10 in the software will be removed in coming releases.



The Hardware Utility's tab for Light-O-Rama controllers

5.12.1 Light-O-Rama Controllers

The Light-O-Rama Hardware Utility can be used to configure and test Light-O-Rama controllers in several ways:

- Selecting a Comm Port
- Setting Unit IDs
- Configuring Units
- Testing Units
- Downloading Sequences
- Firmware Updates

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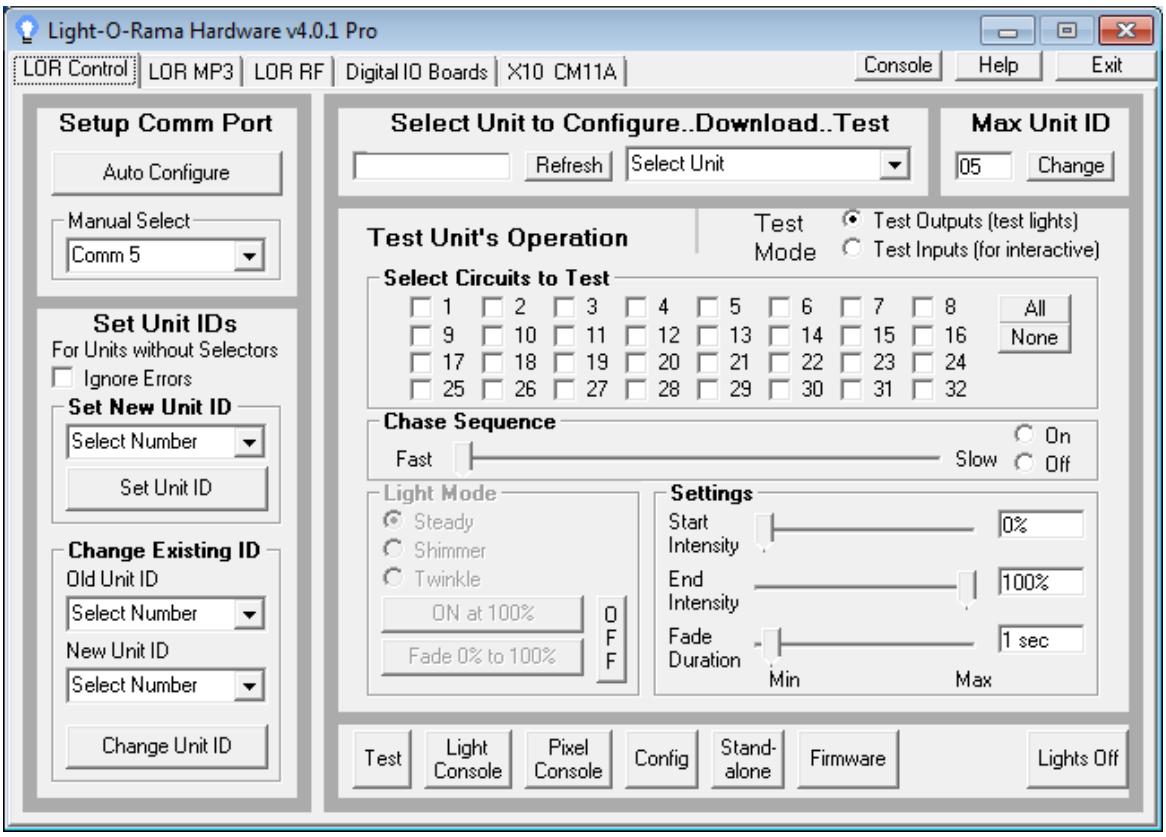
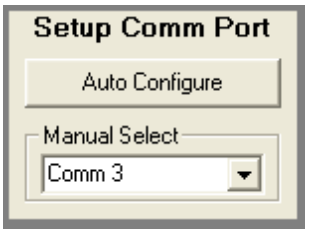
To use these, select the Hardware Utility's tab labeled "LOR Control" (it is already selected by default when the Hardware Utility is started).



The Hardware Utility's "LOR Control" tab, for configuring and testing Light-O-Rama controllers

5.12.1.1 Selecting a Comm Port

The "Setup Comm Port" section of the LOR Control tab of the Light-O-Rama Hardware Utility is used to set which RS-232 comm port the Hardware Utility will use for Light-O-Rama controllers.



The Setup Comm Port section

While the Sequencer and Show Player can use up to four different comm ports simultaneously for Light-O-Rama controllers, the Hardware Utility only uses one at a time. By default, it will be set to use the port you have configured to be your "Regular" port (if you have done so); see "Network Preferences" in the Sequencer for details on how to set your Light-O-Rama ports.

Only comm ports 1 through 16 are supported in the Hardware Utility.

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If you know the comm port that it should be using, you can simply select it from the "Manual Select" dropdown box. If you select a port other than your "Regular" port, the Hardware Utility will offer to automatically change your "Regular" port to be the one that you selected.

If you do not know the comm port to be used, you can ask the Hardware Utility can automatically detect it:

- Connect a Light-O-Rama controller to your PC, for example using an SC485 connector or a USB-RS485 adapter.
- Connect the controller to AC power, and turn it on.
- Click on the "Auto Configure" button.

The Hardware Utility should then automatically detect the comm port that you have hooked the controller up to. If it does not:

- Check the physical connection (such as cables and the SC485 connector).
- Check that the controller's power is on.
- Ensure that switches or jumpers on the controller are correct.
- Ensure that the correct type of cable is used.
- Retry the "Auto Configure" button.

If all of the above fails to find the port, then watch the controller's blinking LED light while manually selecting different comm ports from the list. Once a comm port is selected, wait about five seconds. If the LED stops blinking, then that is the correct port. If it does not stop blinking, try the next comm port in the list.

If this still does not determine the correct comm port, there may be a problem with the connector or the controller.

If "Auto Configure" does not work, but you were able to determine the comm port by manual selection, there may be a problem with the connector. Or, if your computer is an older PC or laptop, there may be a compatibility issue with the computer's communications drivers.

In any case, if you can get the unit's LED to stop blinking, then that controller will most likely work on your PC.

5.12.1.2 Setting Unit IDs

Each Light-O-Rama controller must have a unique assigned unit ID, identifying this particular controller. The reason for this is that every Light-O-Rama controller in a network can see every lighting command message that is sent over the network, not only the lighting commands sent for that controller. So, all of the commands contain a unit ID, and a controller only acts upon a command if the unit ID of the controller matches the unit ID of the message.

A unit ID is a two-character field. Each character can have any of the values 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F. For example, a unit ID might be "03", "07", "25", "37", "6B", "C8", or "DA". However, certain values are reserved, and so not allowed (specifically, "00", and "F1" through "FF").

Some Light-O-Rama controllers have selector switches that allow you to directly set their unit IDs. In that case, simply use a small screwdriver (making sure that the unit is not attached to power) to dial the switches to the desired unit ID.

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Other controllers do not have selector switches. To set the unit IDs of these controllers, you can use the LOR Control tab of the Light-O-Rama Hardware Utility:

- Connect the Unit to the Computer
- Select the Comm Port
- Set the ID of a New Unit
- Change the ID of an Existing Unit
- Troubleshooting

Connect the Unit to the Computer

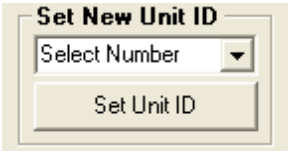
The first step in setting a Light-O-Rama controller's unit ID using the Hardware Utility is to connect the unit to the computer, for example using an SC485 adaptor or a USB-RS485 adaptor. Make sure that the selector switches are correctly set for the type of cable used (units are shipped ready to use data cables). Plug the unit into an AC outlet, and turn the unit on.

Select the Comm Port

After you have connected the unit to the computer, select the comm port that the Hardware Utility should use to communicate with the controller.

Set the ID of a New Unit

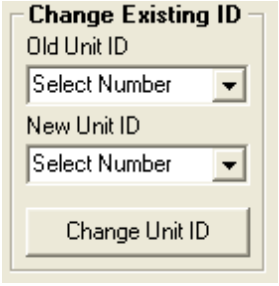
If this is a new unit that has not previously been assigned a unit ID, use the "Set New Unit ID" section of the LOR Control tab of the Hardware Utility. Simply select the unit ID you want to assign, and click the "Set Unit ID" button.



Setting the ID of a new unit

Change the ID of an Existing Unit

If you have previously assigned a unit ID to this unit, but want to change it, use the "Change Existing ID" section of the LOR Control tab of the Hardware Utility. Select the unit's current ID in the "Old Unit ID" list, and the unit ID that you want to change it to in the "New Unit ID" list. Finally, click the "Set Unit ID" button.



Changing a unit ID

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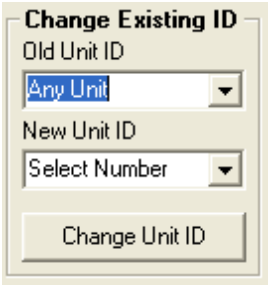
If you do not remember the unit's current unit ID, or if the controller doesn't seem to be reacting to its current ID, you can change it to a new unit ID by selecting "Any Unit" in the "Old Unit ID" list. However, ***be very careful***. If you select "Any Unit", then *all* units that are connected to the PC will have their unit IDs changed. So, make sure that you have only the one controller (whose unit ID you wish to change) connected.



Changing a unit ID for "Any Unit"

Troubleshooting

If, while setting a Light-O-Rama controller's unit ID, you receive an error saying that the unit cannot be located, the first thing to do is to check all connections and to make sure that the correct comm port is selected. If the Hardware Utility still cannot locate the unit, check the Communication LED on the unit. When the unit is disconnected from the data cable the LED should blink; when it is connected and the Hardware Utility is running with the correct comm port selected, the LED should stop blinking, turning on steady.

If the Communications LED continues to blink regardless of the steps taken, then there may be a problem with the cable, the adaptor, the controller, or the PC's comm port.

If the LED stops blinking but you still get an error when attempting to set the unit ID, then there may be a problem with the adaptor or the controller, or the PC may have a communications driver that is not completely compatible with Light-O-Rama. However, you may still be able to set the unit ID by checking the "Ignore Errors" box and then trying to set the unit ID again. If you do check the "Ignore Errors" box, make sure that the unit ID has been set correctly by running some tests on the controller.

5.12.1.3 Configuring Units

Some Light-O-Rama controllers, such as the MC-P*x* and CTB*xx*D units, have special options that can be configured. You can use the LOR Control tab of the Hardware Utility to do so, using the following steps:

- Connect The Unit to the PC
- Select the Comm Port
- Select the Unit
- Choose "Configuration"
- Set the Minimum and Maximum Intensities
- Set the Input Channel Types
- Set the Port Type
- Configuring DIO32 Servos
- Configuring *Original* Cosmic Color Ribbons, Bulbs, and Pixels
- Configuring Pixie Controllers including Cosmic Color 2 Ribbons, Bulbs, Pixels
- Dimming Curves
- Update

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Connect the Unit to the PC

The first step is to connect the unit to the computer, for example using an SC485 adaptor or a USB-RS485 adaptor. Make sure that the selector switches are correctly set for the type of cable used (units are shipped ready to use data cables). Plug the unit into an AC outlet, and turn the unit on.

Select the Comm Port

After you have connected the unit to the computer, select the comm port that the Hardware Utility should use to communicate with the controller.

Select the Unit

After you have connected the unit to the PC and selected the comm port, select the unit ID of the controller that you wish to configure: Hit the "Refresh" button, and the Hardware Utility will scan your network for connected units. You can then select the unit ID from the dropdown list. Alternatively, if you already know the unit ID, you could simply type it into the dropdown box, without hitting "Refresh" first; this is quicker, but has some drawbacks:

Depending upon the type of controller and the level of firmware, hitting "Refresh" may allow the Hardware Utility to automatically populate the configuration settings screen with the actual current configuration of the controller. Typing in the unit ID, without first hitting "Refresh", will not do this, and so the configuration settings screen will simply show default values, which may or may not be how the controller is currently configured.

Also, "Refresh" allows the Hardware Utility to figure out the type of the controller, which lets it know various things about how to interact with this controller specifically; for example, the maximum number of bytes in a standalone sequence varies with the type of controller. If you hit "Refresh", the Hardware Utility will know how many bytes this controller can handle, and so won't allow a larger sequence to be sent to the controller. Simply typing in the unit ID, without first hitting "Refresh", will not do this, and so the Hardware Utility may try to send a standalone sequence that is larger than the controller can deal with.

NOTE: Scanning the network may take some time. If you have set the unit IDs of your controllers to low values, you can use the "Max Unit ID" section to speed up this scan drastically. It is therefore a good habit to assign your controllers unit IDs starting at 01, and increasing sequentially through 02, 03, and so on.

Selecting the unit to configure

Choose "Configuration"

Next, click the "Configuration" button (near the bottom of the LOR Control tab of the Hardware Utility). This brings up configuration settings:

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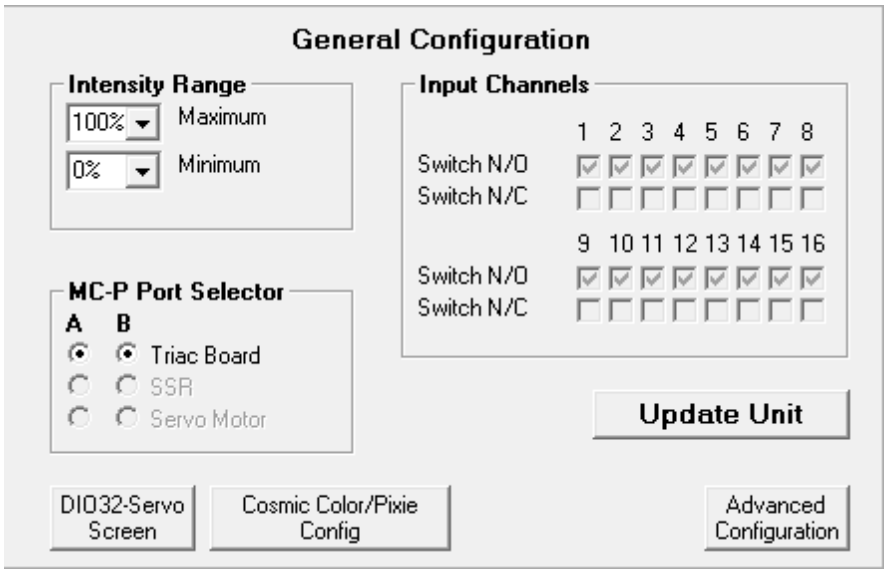


The configuration section of the LOR Control tab

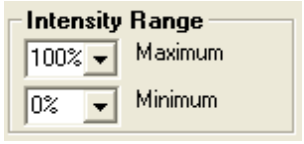
Set the Minimum and Maximum Intensities

While active, the controller will not set its lights' intensities below the specified minimum. If, however, it loses communications with its director, it will turn them off (i.e. 0% intensity). The lights are not turned up to the minimum until the unit receives its first lighting command.

Setting a maximum intensity below 100% may be used to help prolong the life of bulbs, although there is an important exception: Retro LED C7 and C9 bulbs (also known as replacement LEDs) can be harmed by using them at any intensity *other* than 100% or 0%.

The initial values displayed in this section are read from the controller itself (although this is supported only for certain versions of firmware - your controller may need a firmware update in order to read the values from the controller).

These settings only take effect for ports that are configured as "Triac Board".



Setting the intensity range

Set the Port Type

The port type can be set to Triac Board, SSR, or Servo Motor. When set to Triac Board, dimming and fading are possible. When set to SSR, the unit will support SSRs with zero cross detectors. For the CTB08D controller, the two servo pins can be activated by setting Port B to Servo.

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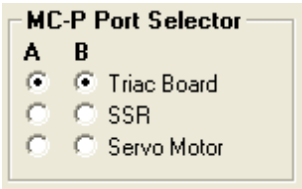
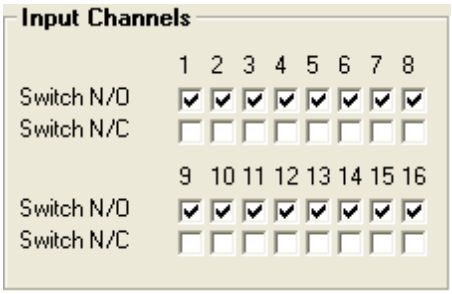


Setting the port type

Set the Input Channel Types

Circuits that are used for interactive triggers can be either normally open ("N/O") or normally closed ("N/C"). The current value for each circuit is read from the controller itself, and the value can be updated in the "Input Channels" section.

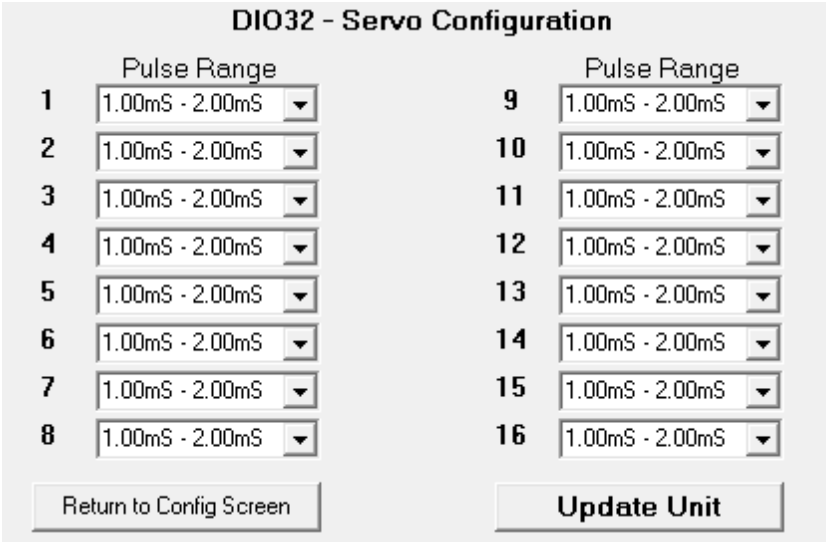
Not all versions of firmware support this feature; if your controller has not yet been updated with firmware that supports it, the circuit will be treated as normally open (which is also the default for versions of firmware that can support both).



Setting the input channel types

Configuring DIO32 Servos

DIO32 devices can be set up to control servos; the Hardware Utility can be used to configure them by clicking the "DIO32-Servo Screen" button in the Configuration section. Doing so brings up the following:



DIO32 servo configuration options

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For each circuit, you can select the appropriate pulse width to be used for the servo attached to that circuit. There are at least two reasons why you might want to do this: First, some servos support different pulse widths than others; second, you might want to use this to limit the range of the servo.

The minimum value in the selected pulse width will be used whenever a 0% intensity is set on that circuit's channel; the maximum value will be used whenever a 100% intensity is set. Regardless of the pulse width, 50% intensity always corresponds to 1.5 milliseconds.

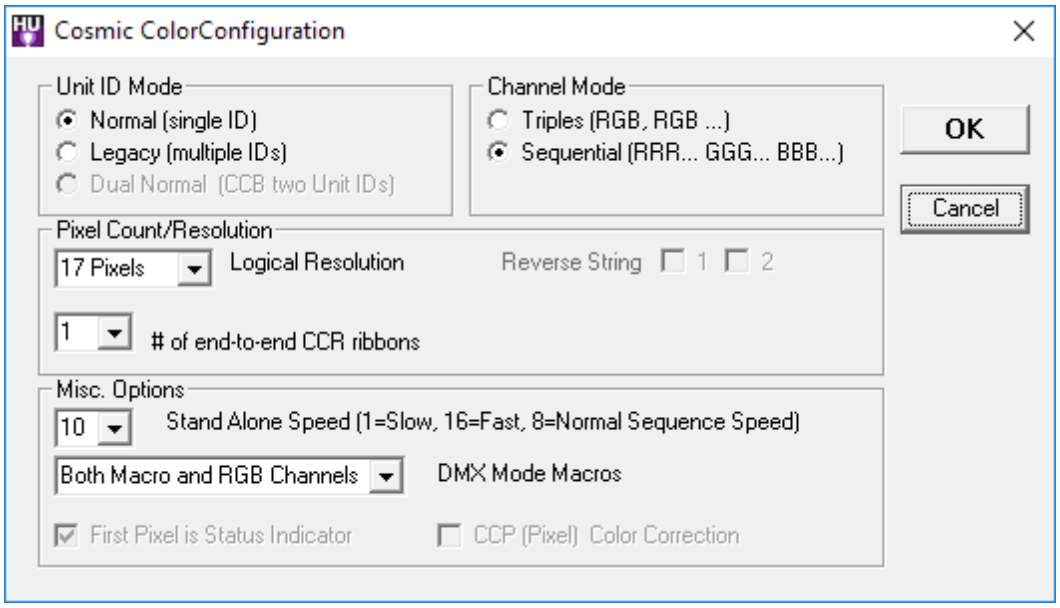
Note that only sixteen circuits are displayed, though the DIO32 has 32 circuits. This is because its 32 circuits are spread among two unit IDs. For example, the first sixteen circuits might be for unit ID 01, in which case the next sixteen would be for unit ID 02. Both sets of sixteen can be configured independently, by selecting the appropriate unit ID. However, if you want to configure both, make sure to update the controller with your changes for one before proceeding to the other.

Configuring Original Cosmic Color Ribbons, Bulbs, and Pixels

Cosmic Color Ribbons, Bulbs, Pixels, have their own configuration options, unique to them. You can use the Hardware Utility to configure these options by clicking the "Cosmic Color/Pixie Config" button in the Configuration section (note, though, that this button will be grey and non-selectable unless you have selected a Cosmic Color Ribbon,Bulb,Pixel or Pixie unit; you may have to use the Refresh button in order to let the Hardware Utility know about your Cosmic Color Ribbon or Cosmic Color Bulb).

There are currently 2 versions of Cosmic Color devices available, the 'Original' and the new Cosmic Color 2 devices which are based on our Pixie controllers. The Hardware Utility can distinguish the difference between the two when connected to your computer and will present you the correct dialog.

When you press the button with an Original Cosmic Color device selected, you will be presented the following window:



Cosmic Color Ribbon/Bulb/Pixel/Pixie configuration options

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For details on these options, please refer to your device's manual (All of our hardware manuals are available on our website in PDF format here:http://www1.lightorama.com/documentation/). Not all devices support all options. If a device does not support a particular option, that option is grey and can not be used. Here is a brief overview of each:

- **Unit ID Mode:** In "Normal" mode, the Cosmic Color device will be a single unit ID, with 157 circuit IDs for a one-string CCD or 314 for a two-string. In "Legacy" mode, the Cosmic Color device will use up to ten sequential unit IDs per string (depending upon the configured resolution), with up to 16 circuit IDs for each unit ID. In "Dual Normal" mode, which is applicable for two-string CCDs, the device will have two contiguous unit IDs, each having 157 circuit IDs.

- **Channel Mode:** In "Triples" mode, channels will be arranged red, green, blue, red, green, blue, and so forth. For example, circuit 1 is red for the first pixel; circuit 2 green for the first pixel; circuit 3 blue for the first pixel; circuit 4 red for the second pixel; and so on. In "Sequential" mode, all red pixels will come first, then all green pixels, then all blue pixels.

- **Resolution:** The number of logical pixels that the Cosmic Color device will be. For example, setting it to 50 will give individual control over each of the 50 physical pixels, using 150 channels (one red, one green, and one blue for each pixel), while setting it to 1 will make all of the lights on the Cosmic Color device act as a single pixel, using three channels (red, green and blue).

- **Num of end-to-end connected CCR Ribbons** The number of end-to-end connected Cosmic Color Ribbons.

- **Reverse String #:** Reverses the order of the pixels on the ribbon, or string of the Cosmic Color Device. Thus, when unchecked, pixel 1 is nearest the controller, and when checked, the highest pixel is nearest the controller.

- **Standalone Speed:** The speed at which a standalone sequence will run. A value of 8 is normal speed; higher values are faster, and lower values are slower.

- **DMX Mode:** Selects how the Cosmic Color device will appear in a DMX universe: just the RGB channels, just the Macro channels, or both.

- **First Pixel is Status Indicator:** For Cosmic Color devices, if this field is checked, for the first minute after the unit is powered up (or until a lighting command is received), the first pixel of the unit will act similarly to the unit's status indicator, blinking on and off if there is no communication, and holding on steady if there is.

- **CCP Color Correction:** Select this option if you are using Cosmic Color Pixels and notice that colors are slightly off, especially when compared to a Cosmic Color Bulb controller.

Configuring Pixie Controllers including Cosmic Color 2 Ribbons, Bulbs, Pixels

Pixie Controllers, Cosmic Color **2** Ribbons, Bulbs, Pixels, have their own configuration options unique to them. You can use the Hardware Utility to configure these options by clicking the "Cosmic Color/Pixie Config" button in the Configuration section (note, though, that this button will be grey and non-selectable unless you have selected a Cosmic Color Ribbon,Bulb,Pixel or Pixie unit;

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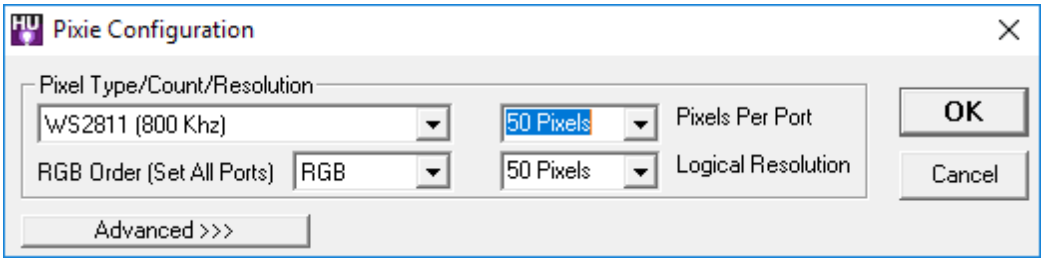
you may have to use the Refresh button in order to let the Hardware Utility know about your Cosmic Color Ribbon or Cosmic Color Bulb).

There are currently 2 versions of Cosmic Color devices available, the 'Original' and the new Cosmic Color 2 devices which are based on our Pixie controllers. The Hardware Utility can distinguish the difference between the two when connected to your computer and will present you the correct dialog.

When you press the button with a Pixie Controller or Cosmic Color **2** device selected, you will be presented the following window:



For most users, simple mode will be all that is needed. For details on these options, please refer to your device's manual (All of our hardware manuals are available on our website in PDF format here:http://www1.lightorama.com/documentation/). Not all devices support all options. If a device does not support a particular option, that option is grey and can not be used. Here is a brief overview of each:

- **Pixel Type**: Select the type of pixels connected to your Pixie controller. A list of supported pixels can be found in the documentation for your hardware.
- **RGB Order**: Order of the Red Green and Blue channels for your pixel. RGB is the default. Selecting an option here will set ALL ports on the Pixie device to the same order.
- **Pixels Per Port**: Number of pixels connected to each physical port of the Pixie controller. Can any value 1-100.
- **Logical Resolution:** The number of logical pixels that the Cosmic Color device will be. For example, setting it to 50 will give individual control over each of the 50 physical pixels, using 150 channels (one red, one green, and one blue for each pixel), while setting it to 1 will make all of the lights on the Cosmic Color device act as a single pixel, using three channels (red, green and blue).

Advanced Mode

If you press the 'Advanced' button, the dialog expands and shows the following:

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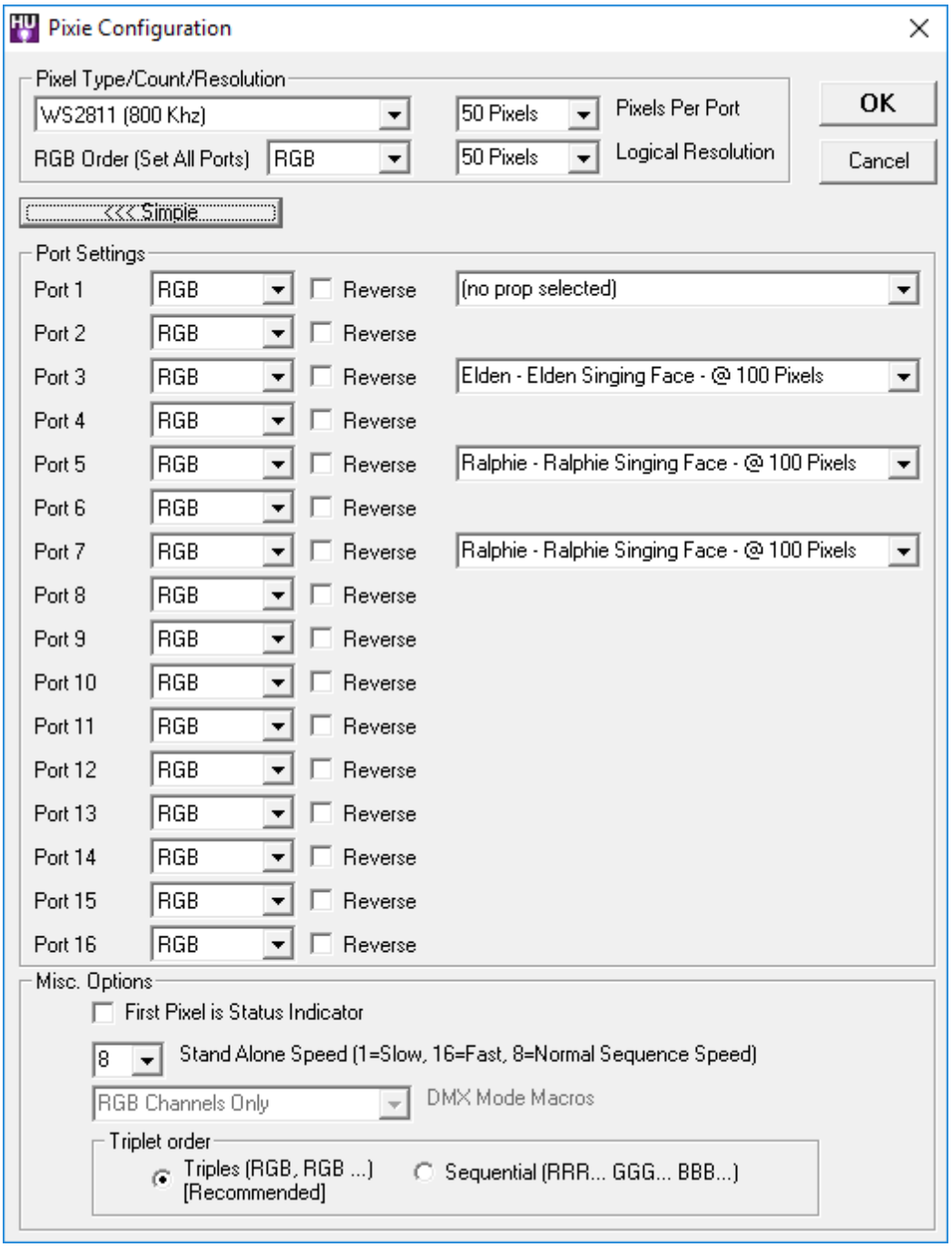

Port Settings:

In the Port Settings section you will see 1 line for each port that your Pixie has. For example, if you are configuring a Pixie 4, you would only see ports 1-4.

Depending on the firmware your Pixie has, you may not be able to change all of these. Only newer Pixie firmware allows for the configuration of by port RGB Order as well as prop selection. If your version of the firmware does not support these, they will be grey and you will see a message that your firmware does not support them.

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For each port you can configure:

- **RGB Order**: Order of the Red Green and Blue channels for your pixel. RGB is the default. Selecting an RGB order effects only that port. That means each port on your Pixie can have a different RGB order.

- **Reverse:** Reverses the order of the pixels on the ribbon, or string connected to that port of the Pixie. Thus, when unchecked, pixel 1 is nearest the controller, and when checked, the highest pixel is nearest the controller.

- **Prop:** Pixie controllers can be configured to run certain available LOR props, like singing faces. Selecting the prop here will allow the pixie to control that prop on that and the next port. If you have a pixie 16, props are only supported on the first 8 ports. For more information, please see the manual that came with your LOR prop. For regular operation select 'no prop selected', otherwise select the name of the prop connected to that and the next port.

Misc. Options

In this section on can change some uncommon parameters.

- **First Pixel is Status Indicator:** For Cosmic Color devices, if this field is checked, for the first minute after the unit is powered up (or until a lighting command is received), the first pixel of the unit will act similarly to the unit's status indicator, blinking on and off if there is no communication, and holding on steady if there is.

- **Standalone Speed:** The speed at which a standalone sequence will run. A value of 8 is normal speed; higher values are faster, and lower values are slower.

- **DMX Mode:** Selects how the Cosmic Color device will appear in a DMX universe: just the RGB channels, just the Macro channels, or both.

- **Triplet order:** In "Triples" mode, channels will be arranged red, green, blue, red, green, blue, and so forth. For example, circuit 1 is red for the first pixel; circuit 2 green for the first pixel; circuit 3 blue for the first pixel; circuit 4 red for the second pixel; and so on. In "Sequential" mode, all red pixels will come first, then all green pixels, then all blue pixels. It is recommended that you use Triples mode - some parts of the LOR software do not support Sequential mode.

Dimming Curves

The Hardware Utility's Advanced Configuration screen can be used to set dimming curves for Gen3 controllers, or for pre-Gen3 controllers that have Gen3 firmware installed. To get to the Advanced Configuration screen, click on the Advanced Configuration button in the Configuration section of the LOR Control tab of the Hardware Utility.

Dimming curves determine the output of a channel versus the intensity setting of that channel. For example, the On/Off only curve has the output set at 100% for intensity values greater than 50% (or DMX 128), and the output at 0% for any other intensity value.

Each channel can be configured for a specific dimming curve. Gen3 firmware comes with three curves: "LOR standard" (which is normal for incandescent lights), "Dim Curve01" (which is a good

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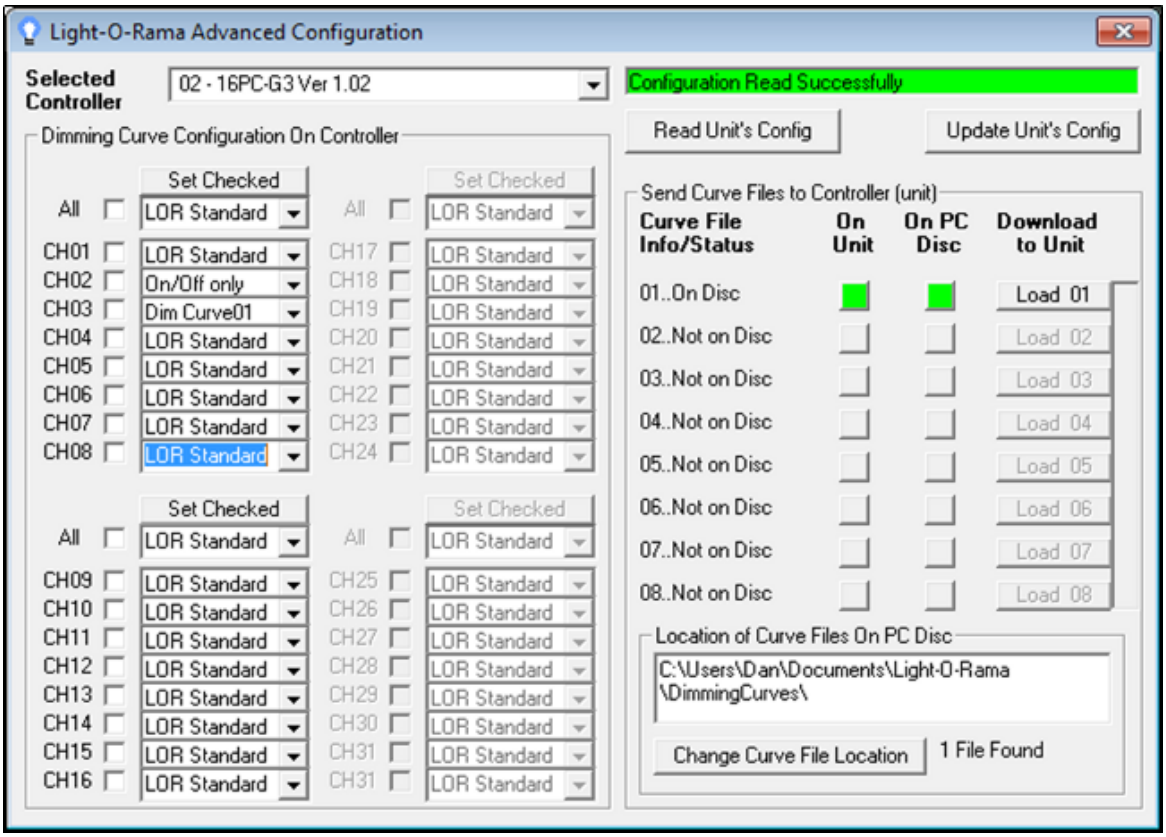
curve for LED Lighting), and "On/Off only" (which is best with loads such as strobe lights that should never be dimmed).

The LOR Standard and On/Off curves cannot be changed. Any other curves can be downloaded and updated on the controller. If a channel is set to use a dimming curve that is not present on the controller, then the channel will default to using LOR Standard.



The Advanced Configuration screen

Update

When you have set the configuration settings to the value you want, click the "Update Unit" button to send the new configuration information to the controller. Note: Doing so will update both the settings from the main screen and the settings from the DIO32 servo screen.

After updating, hit "Refresh" again to reload the new settings from the controller into the Hardware Utility.

5.12.1.3.1 Light-O-Rama MP3 Directors

The functionality this tab provides has been replaced by LOR HUB. You should start using

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LOR Hub for ALL SD creation tasks. This tab will be removed in a future version of the software.

`The LOR MP3 tab of the Light-O-Rama Hardware Utility can be used to download both musical sequences and animation sequences to a Light-O-Rama MP3 director (such as an "LOR1602W with Show Director and MP3 Player"), and schedule when those sequences should be played.

Newer Generation 3 MP3 Directors, like the MP3g3 Dual Network Director, can drive both LOR and DMX hardware.

Note, that any loops in an animation sequence will be ignored. Up to nine separate shows can be downloaded to an MP3 director.

In the future, Light-O-Rama Hub will completely replace this tab of the Hardware Utility.

For details, please refer to the following sections:

- Scheduling/Show Options
  - Select When Show Plays
  - Select How Show Plays
- MP3 Player Showlist
  - MP3g3 Directors can control DMX Devices
  - Priority of Networks and Universes
- Download the Show
- Set the Time

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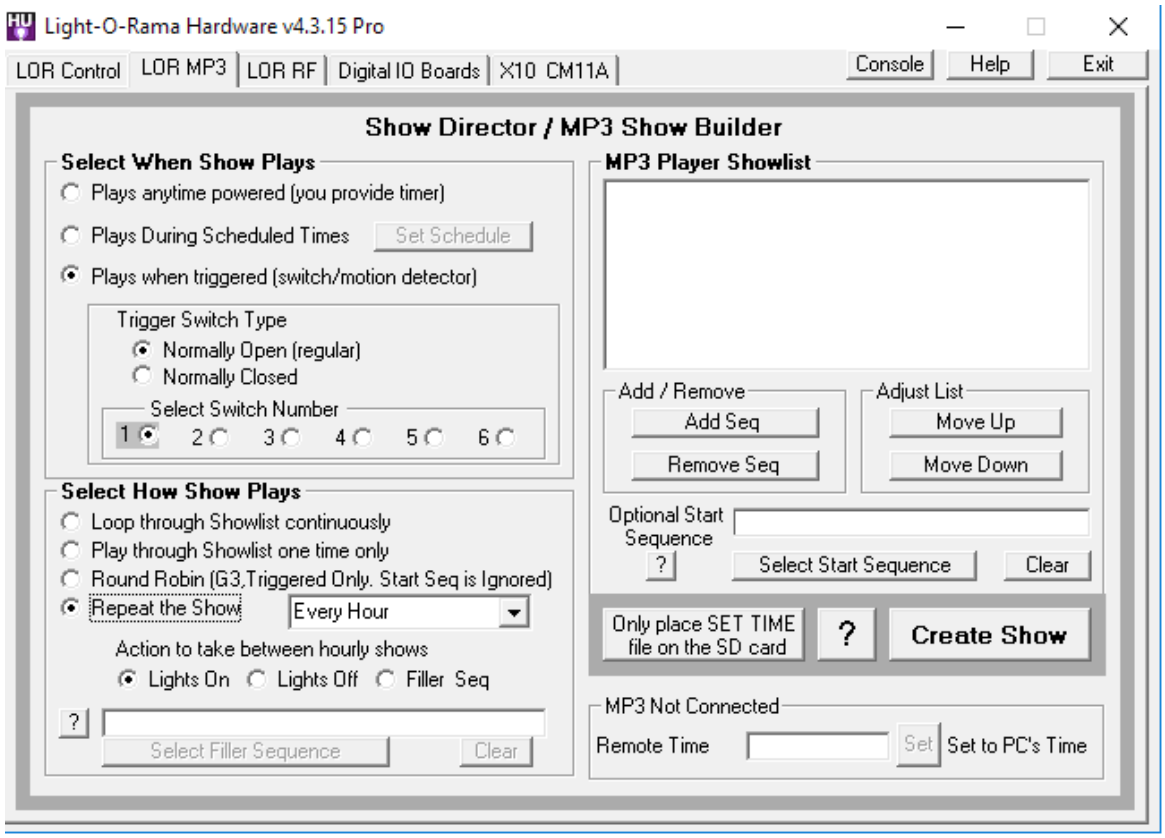

The LOR MP3 tab of the Hardware Utility

Scheduling/Show Options

This section allows you to select various options about the show:

- Select When Show Plays
- Select How Show Plays

Select When Show Plays

This section gives three main options for when the show will play: "plays anytime powered", "plays during scheduled time", and "plays when triggered". Additionally, you can specify that the show cannot be interrupted by input triggers, even if other shows are set up to start on those triggers.

Selecting "plays anytime powered" will cause the show to run whenever the MP3 director is powered on.

Selecting "plays during scheduled time" allows you to specify a time or times when the show should play. Up to nine shows can be downloaded to a controller, and each will be assigned a number between 1 and 9. If two shows are scheduled for the same time, the lower numbered show will be played.

Selecting "plays when triggered" will cause the show to start whenever some external trigger happens (such as a circuit being closed or a motion detector being tripped). If you choose this

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option, you will be prompted to select the trigger's switch number (up to six switches are supported), and whether the switch is normally open or normally closed.

A normally open switch has its contacts open until you activate it, at which point they close; a normally closed switch has its contacts closed until you activate it, at which point they open. Most switches are normally open; motion detectors, however, are typically normally closed. This is because they are often used in security systems, where it is important to notice that a wire has been cut.

Select How Show Plays

In this section, you can choose whether the show should loop continuously (that is, when it finishes playing the last sequence in its list, it will start over at the first), or only one time, or every so often (every hour, half hour, fifteen minutes or ten minutes). If you are using a triggered sequence you can also select if you would like to run the sequence list in a 'Round Robin'.

If you choose to play the show every so often, you will also be prompted for what the lights should do in between. You can choose to have all your lights on, or off, or else use an animation sequence as a "filler" that will play continuously during the time in between.

If you choose to play the sequences in a Round Robin, only the first sequence in the sequence list will play. The next time the MP3 director is triggered, it will play the next sequence in the list. After playing the last sequence in the list, the next trigger will start over with the first sequence. **Note:** Round Robin play can only be used with triggered sequences on G3 MP3 directors with Firmware version 5.34 or higher.

MP3 Player Showlist

You can add both musical sequences and animation sequences to the show by clicking the "Add Sequence" button. To remove one, click on it to highlight it, and then click the "Remove Sequence" button.

The sequences will be played in the order listed. You can change the order by clicking on a sequence to highlight it, and then clicking "Move Up" or "Move Down".

Sequences with subsequences cannot be added to the showlist.

Optionally, you can also specify a "start sequence", which will be played once and only once every time the show starts up, before the other sequences. This is most useful if you selected that the show should loop continuously. For example, a show with a start sequence and three sequences in the showlist will, when "loop continuously" is turned on, first play the start sequence, then the first sequence of the showlist, then the second, then the third, and then back to the first in the showlist - *not* back to the start sequence.

Both musical sequences and animation sequences can be used as start sequences.

MP3g3 Directors can control DMX Devices

In addition to LOR Devices, MP3g3 Directors can also drive DMX devices on one or both output ports. In order to control DMX devices, your MP3g3 must have at least firmware version 5.28.

Network and Universe Priorities

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New advanced MP3 Directors, like the Dual Port G3MP3 Director, can drive 2 separate physical networks of devices. In the future new MP3 directors will be available that can drive 4 physical networks. These advanced directors can control LOR devices, DMX devices, or a combination of them on separate ports. The Hardware Utility will automatically select which networks and/or universes in your sequence will be used by the director.

Only the ADVANCED level of the LOR software will allow for the creation of DMX output for a director. All other levels are limited to creating LOR output only.

Older Directors, like the DC-MP3-SHOWTIME, are limited to ONLY the LOR REGULAR network.

For Advanced Directors, the Hardware Utility uses a 'priority system' based on the contents of the ***FIRST*** sequence added to the show list. In order to prevent confusion, all sequences that are part of a single show should use the same preview.

1. If your license supports them, there is no difference between LOR Enhanced networks and normal LOR networks. Both are treated the same when it comes to priority.
2. LOR networks have priority over DMX universes.
3. The LOR REGular network has the highest priority, followed by AUX A through AUX O.
4. A lower number DMX Universe is higher priority than a higher number.
5. If the sequence contains more than 2 networks, universes, or a combination thereof, those Networks and Universes are silently discarded.
6. If your director only has one port, then only the PORT 1 column applies.

Examples assuming that you have the 'Advanced' level of the software:

Your sequence contains....	PORT 1 on the director controls	PORT 2 on the director controls	Notes
1. LOR REG	LOR REG	(*)	Only one network, so it is placed on port 1. See note for port 2.
1. LOR REG 2. LOR AUX B	LOR REG	LOR AUX B	Both ports active with LOR
1. LOR REG 2. LOR AUX A 3. LOR AUX B	LOR REG	LOR AUX A	Aux B is silently discarded.
1. DMX Universe 1	DMX Universe 1	(*)	DMX on port 1. See note for port 2..

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Your sequence contains....	PORT 1 on the director controls	PORT 2 on the director controls	Notes
1. LOR AUX A 2. DMX Universe 1	LOR AUX A	DMX Universe 1	LOR devices have priority over DMX, so AUX A is on port 1.
1. DMX Universe 1 2. DMX Universe 99	DMX Universe 1	DMX Universe 99	DMX Universes are assigned in ascending order.
1. LOR REG 2. LOR AUX A 3. LOR AUX B 4. DMX Universe 1 5. DMX Universe 99	LOR REG	LOR AUX A	LOR Devices have priority over DMX. REG has highest priority followed by AUX A. Others are discarded.

*** Please note** that the MP3g3 dual network controller will mirror the output of Port 1 onto Port 2 on a per-sequence basis. If you wish to have all controllers on port 2 stay dark during certain sequences, ensure that ALL of the sequences in that show use the same preview. That is to say, ensure all of your sequences contain channels for BOTH ports, even if those channels are all OFF for the duration of the sequence.

'Startup' sequences as well as 'Filler' sequences can also use LOR or DMX devices on advanced directors and the same rules apply to them.

Download the Show

When you have selected the show's options and the sequences to be played, you can download the show to an SD card (which can later be placed into the MP3 director). Make sure that you have your SD card reader/writer hooked up to your PC, and click on the "Create Show" button. This brings up a the Write Show to SD Card Wizard. Once you have made your selections, press 'NEXT' to continue. If you would like to go back and change a selection, press 'PREVIOUS'.

There are several steps to specify the options you need to set up the SD card properly, depending on your hardware, preferences, etc.

Step 1
Select the drive that contains your SD card.

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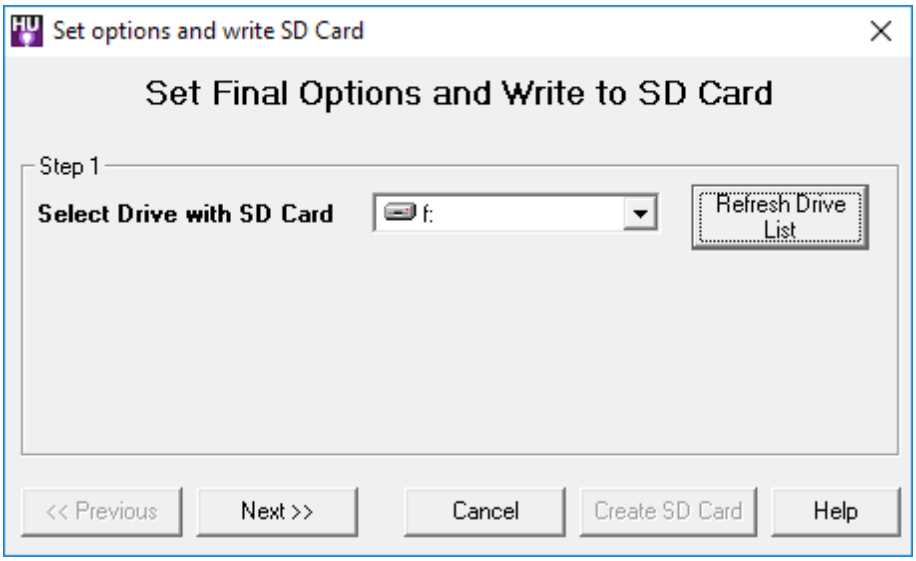
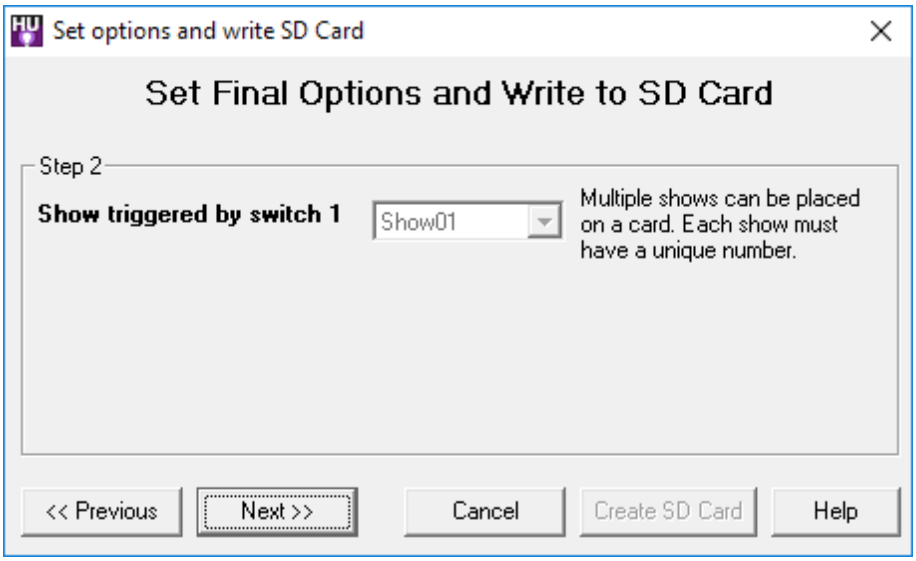


Step 2
Select the show number that you want to use for this show. Each show on a card must have a unique number assigned. If multiple shows are scheduled at the same time, the lowest numbered show will take priority.



Step 3
if you have a G3MP3 director, select the check box here, and then specify the number of ports for your director.

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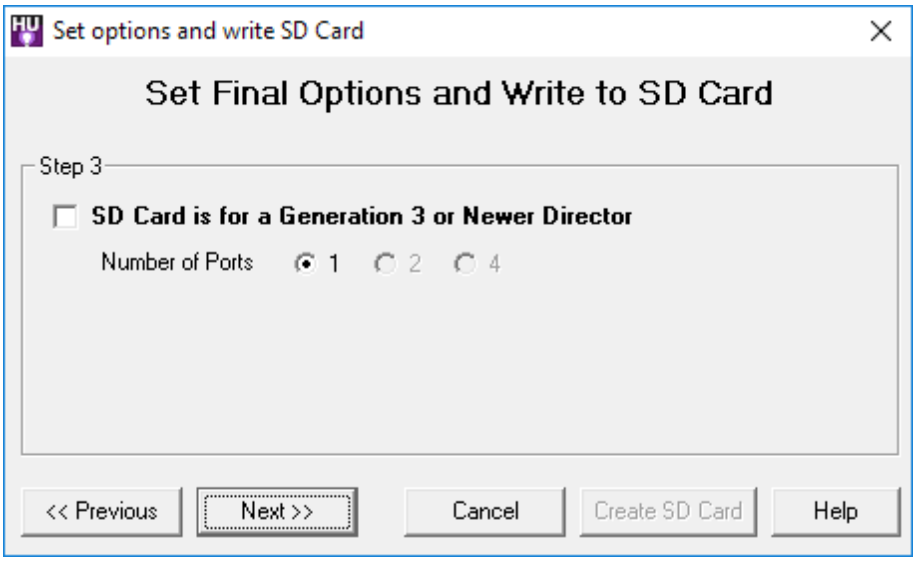
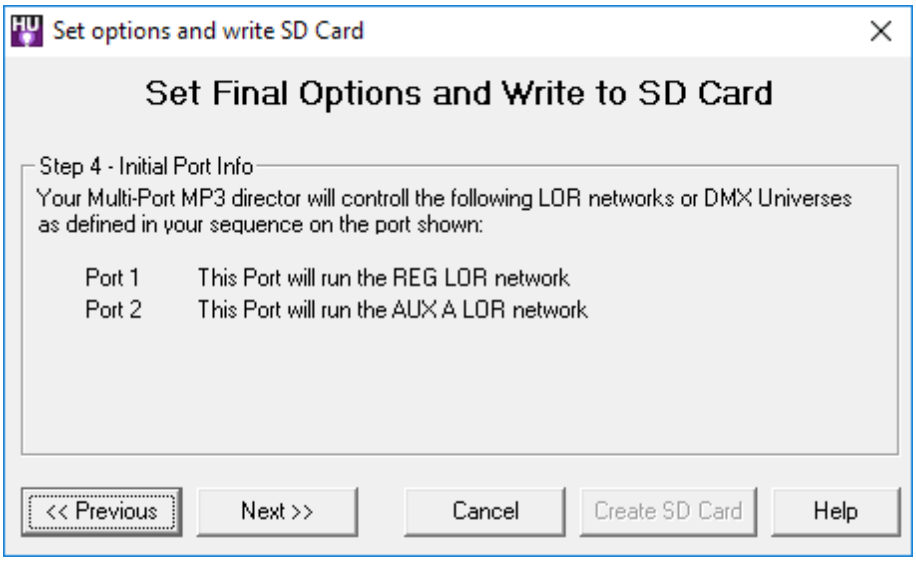


Step 4
This is what LOR Networks and/or DMX Universes the SD Card Wizard will write to the card, based on the priority system from above. This is informational only, there are no changes to be made here.



Step 5
Here is where you can specify different options that your show or hardware may require:

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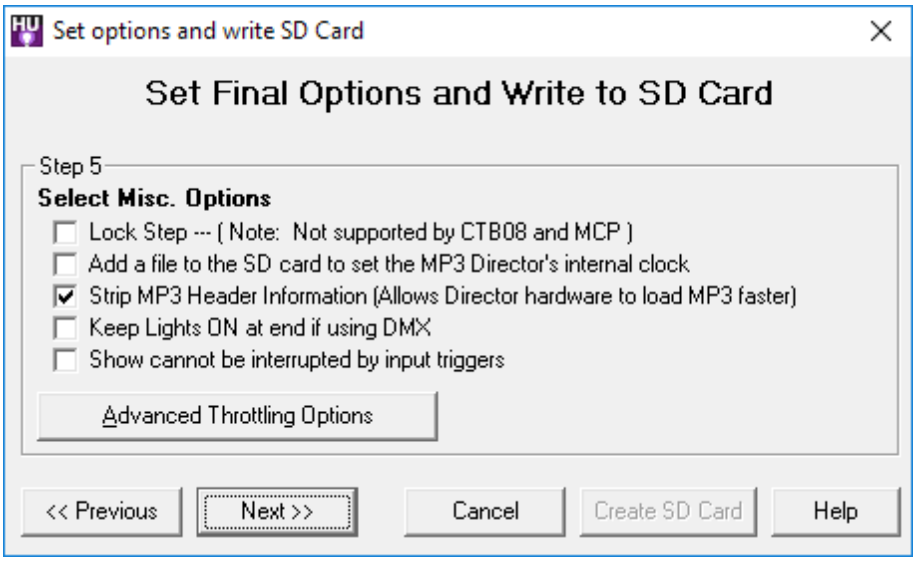

- **Lock Step:** If you have a very large display, selecting "lock step" may help the different controllers used in the display react with a higher degree of synchronization. This is not supported on all controller types, and the level of firmware in the controllers must be 3.0 or higher.

- **Set MP3 player's internal clock:** If you wish to add a file to the SD card to set the MP3 director's internal clock, check the box that says so. Note that there are also other ways to set the director's clock.

- **Strip MP3 Header Information:** Some MP3s may have a large data block before the actual music data. For example, an MP3 may have several high-resolution pictures in its ID3 Tags. The MP3 director will correctly ignore this data, however it does take time to find the actual start of the music file. Stripping this data will allow the MP3 director to start playing the sequence faster.

- **Keep lights ON at end if using DMX:** Previously if one or both ports were controlling DMX Universes the MP3 director would always shut off all the lights. Checking this box will allow channels in DMX universes controlled by the MP3 director to remain in the last state they were sent. If you leave a light on at the end of a sequence, that light will remain on until the start of the next sequence.

- **Show can not be interrupted by input triggers:** Once this show has started on the MP3 director, pressing an input will not interrupt the show - it will run to completion.

- **Advanced Throttling Options:** The advanced options button will bring up an additional window that allows you to change parameters which relate to how data will be transmitted from your MP3 Director. Unless a specific issue is preventing your MP3 Director from working correctly, you should not change these options.

Step 6
Communications port setup is done here.

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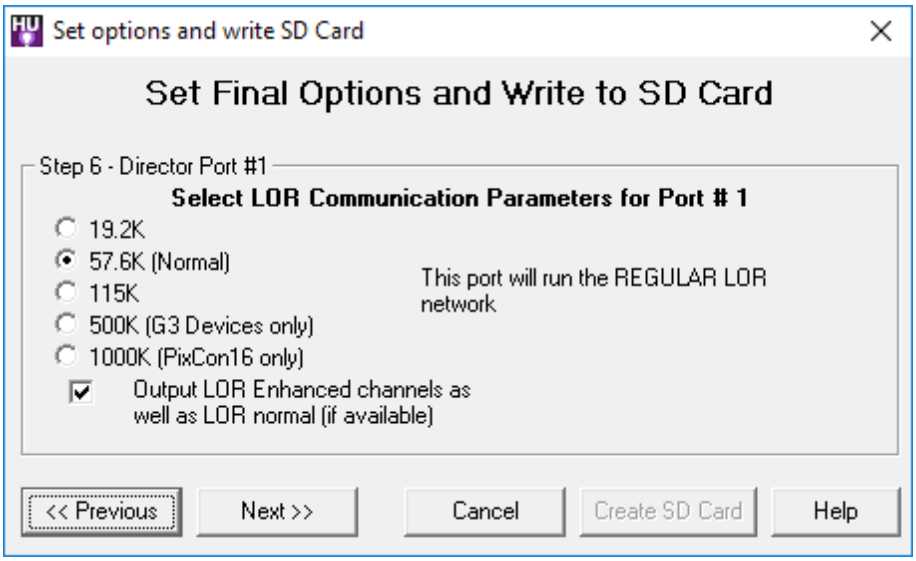

For each port your director has, you will be presented these options. So for example if you have a G3MP3 Dual Network director, you see this dialog twice. Once for the fist physical port, and then again for the other physical port. Depending on the type of equipment you have, your LOR license level, and/or the contents of your sequence, one or more of these options may not be available to you.

If a port is using LOR devices:

Select the communications speed that will be used to broadcast lighting commands. The recommended setting (57.6) will suffice for many users' displays. If you have many controllers that are far distances apart, a slower speed may help; if your sequences use many rapid lighting commands, a faster speed may help.

- G3 directors (and higher) have an additional speeds of 500K and 1000K available. The 500K speed is approximately four times faster than the previous high speed of 115.4K, but is only supported on Generation 3 (G3) devices with updated firmware.
- The 1000K speed can ONLY be used with networks that only contain PixCon16 controllers. No other LOR controllers support 1000K.
- Since the MP3g3 director has two ports, you can additionally specify a different speed for port 2 if your show will use both ports. Single network directors do not have a second port and so these options are not available.
- If your license supports Enhanced LOR Protocol and you are creating a card for a G3 or above director, an additional option may be available depending on the first sequence loaded. If the first sequence has both Normal LOR and Enhanced LOR commands available, you can select if you want BOTH to be written to the card (checked), or if you only want Normal (unchecked) commands written. If you do not have a G3 controller, or you do not have a license that supports Enhanced LOR protocol, or if your sequence does not have both types of networks, then this option is not available. There is no option that will allow for only Enhanced commands, even if your sequence has both available.

If a port is using DMX devices

DMX Universes run at a fixed speed, and therefore the options to change port speed are not available.

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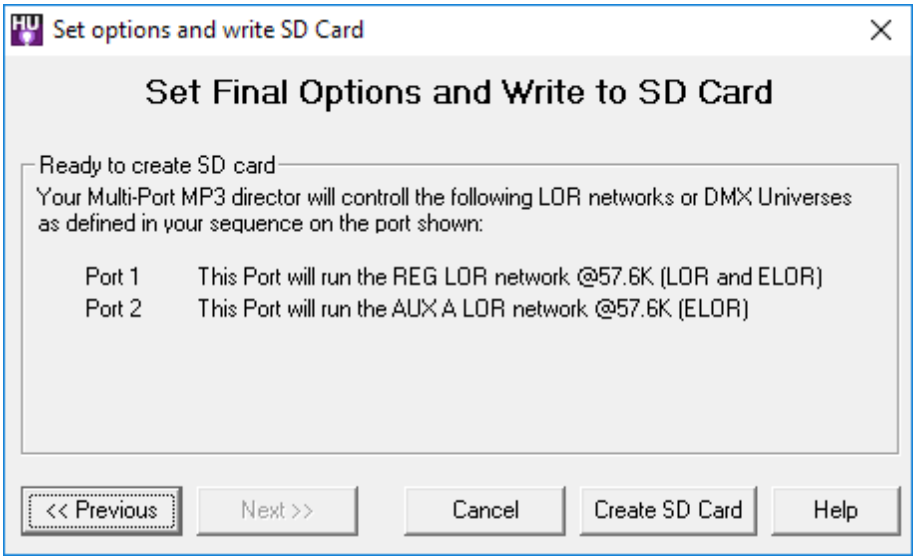
Final Step
This final screen will confirm the choices you made. When you are ready to write to the SD card, press the 'Create SD Card' button.



Set the Time

If any of your shows are set up to run on schedules, it is important to set the MP3 director's clock appropriately. There are several ways to do this:

First, you can directly hook your MP3 director up to your PC, and click on the "Set to PC's time" button (in the lower right-hand corner of the LOR MP3 tab).

If you cannot (or do not wish to) hook the MP3 director up to your PC, you can instead create a "time file" to be placed on an SD card. The first time that SD card is placed in the MP3 director, the director's clock will be set to the time specified in the time file (which you can choose, so that you have enough time to move the card from your PC to your MP3 director).

There are two ways to build a time file: First, you can click on the "Only place SET TIME file on the SD card"; this will create a time file and download it, without downloading a show as well. Second, when you create a show, during the final options dialog, you can request that a time file be created and downloaded along with the show.

Finally, you can manually set the time on an MP3 director. See the director's user's guide for details.

Advanced Parameters

While writing your show to the SD card for an MP3 player, the Hardware Utility will automatically monitor how much bandwidth is required by your sequence every centi-second. When the bandwidth is exceeded, the program can 'compress' your data so that your music and lights stay better in sync. The advanced options window allows you to turn this functionality on/off or adjust its parameters.

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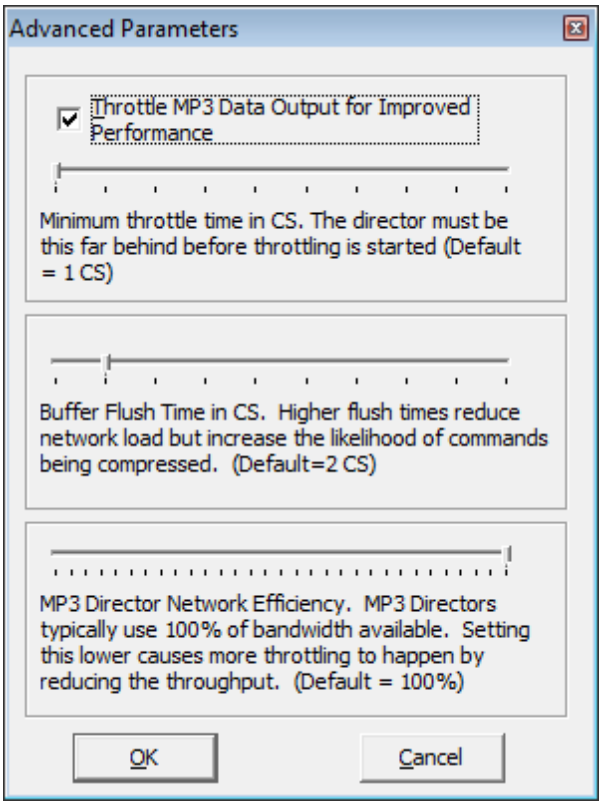

The Advanced Parameters window

- **Throttle Data Output for Improved Performance**: It is recommended that this option remain ON (checked). When checked, your sequence is monitored. For each centi-second that passes, the program will compute the amount of bandwidth required and compare it to the amount available. If unchecked, no throttling is done - this is the same mode as versions previous to 3.12.0.

- **Minimum Throttle Time in CS**: If throttling is enabled, this is the minimum amount that the sequence must be behind before compression starts. For example, if this is set to 5 CS, then once the sequence is 5 or more centi-seconds behind the audio, compression will begin. Setting this higher will allow for more complex areas of your sequence to remain uncompressed at the expense of lagging further behind your audio. The default value is 1, and this means that as soon as the sequence falls behind, compression should begin.

- **Buffer Flush Time in CS**: This can be thought of as the 'resolution' that your MP3 Director will run at. Setting the value lower will increase resolution as well as network load. Setting the value higher will decrease network load at the expense of having more commands be compressed. The default value of 2 most closely emulates what a computer produces for output, either in the Sequencer or the Show Player, when running a sequence on your hardware. For versions before 3.12.0, this value was 1.

- **MP3 Director Network Efficiency:** MP3 directors will typically use 100% of the bandwidth that is available for a port. Setting this to a lower percentage reduces the amount of throughput, which will cause more throttling to happen. It may be best to think of this option as a reduction in the network speed. For example, if you set a port to 57.6K speed, and set this option to 70%, then the hardware utility will throttle the sequence as if it was for a network that runs at approximately 40.3K (57.6 * 70%).

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5.12.1.4 Testing Units

You can test the operation of Light-O-Rama controllers using the LOR Control tab of the Hardware Utility, sending commands to turn lights on and off and to do other effects, or generate interactive triggers, by taking the following steps:

- Connect the Unit to the Computer
- Select the Comm Port
- Select the Unit
- Testing
  - Testing Pixie and Cosmic Color devices
  - Test All Other Units

Connect the Unit to the Computer

The first step is to connect the unit to the computer, for example using an SC485 adapter or a USB-RS485 adapter. Make sure that the selector switches are correctly set for the type of cable used (units are shipped ready to use data cables). Plug the unit into an AC outlet, and turn the unit on.

Select the Comm Port

After you have connected the unit to the computer, select the comm port that the Hardware Utility should use to communicate with the controller.

Select the Unit

After you have connected the unit to the PC and selected the comm port, select the unit ID of the controller that you wish to use. If you know the controller's unit ID, you can simply type it into the dropdown box labelled "Select Unit". If not, use the "Refresh" button, and the Hardware Utility will scan your network for connected units. You can then select it from the dropdown list.

NOTE: Scanning the network may take some time. If you have set the unit IDs of your controllers to low values, you can use the "Max Unit ID" section to speed up this scan drastically. It is therefore a good habit to assign your controllers unit IDs starting at 01, and increasing sequentially through 02, 03, and so on.

Selecting the unit to use

Testing Pixie and Cosmic Color devices

Because of their high channel counts, output to Pixie and Cosmic Color devices, like Cosmic Color Bulb, Cosmic Color Pixel, and Cosmic Color Ribbon, are tested a little differently than other LOR Controllers. If you want to test inputs on a Cosmic Color or Pixie device that supports them, please see below.

The "Test Unit's Operation" screen of the LOR Control tab of the Hardware Utility is the screen displayed by default when the Hardware Utility is opened. If it is not currently open, make sure you have selected the LOR Control tab, and then hit the "Test" button near the bottom of the Hardware

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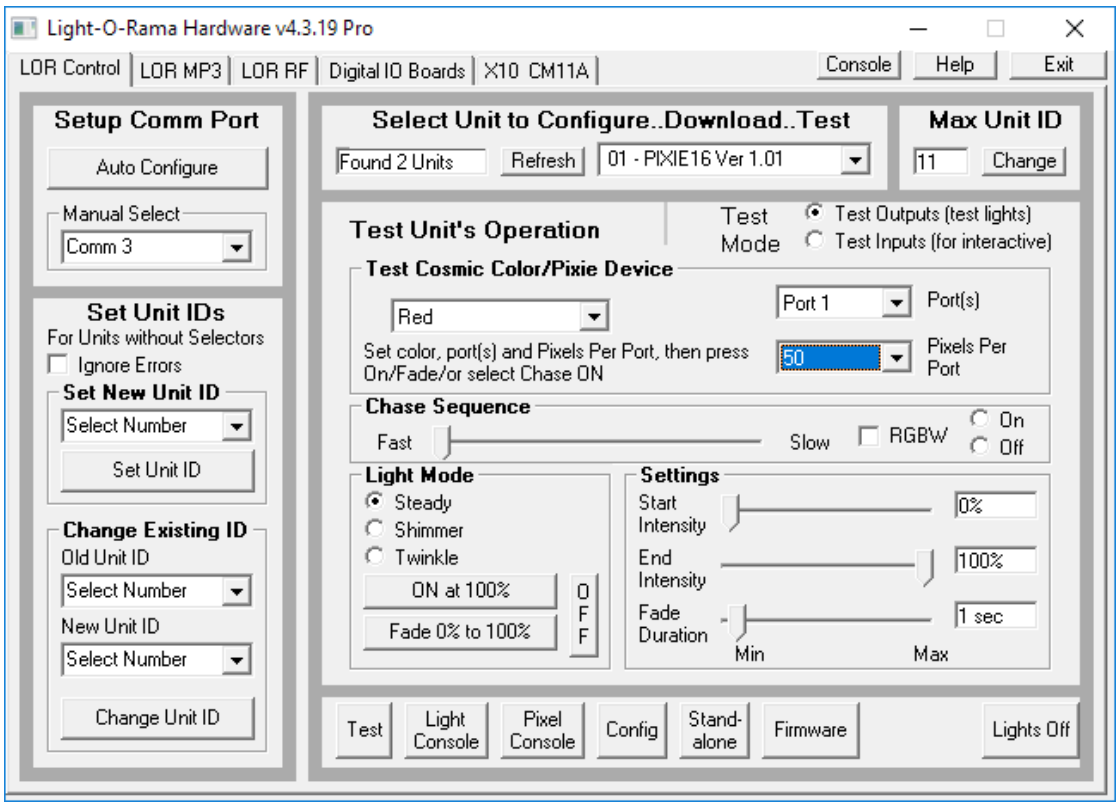
Utility. If you have selected a Pixie or Cosmic Color device, the test screen for those devices is displayed:



The testing section of the LOR Control tab for Pixies and Cosmic Color Devices

Depending on the device you have selected as well as the parameters of that device, not all options will be available.

Because of the large number of circuits available on Cosmic Color Devices like the Cosmic Color Ribbon or Cosmic Color Bulbs, you do not test individual circuits. Instead, you can select a color to be displayed across the device/port. You can select from a list of pre-determined colors, or select 'Custom' to set the RGB values. Please note that due to differences in hardware, the color that is displayed on your computer screen may not match what is displayed by the device.

Advanced effects like twinkle, shimmer, and fade are only available on devices that are configured for 50 pixels or less.

If you would like to test individual circuits on a Pixie or Cosmic Color device, the Pixel Console can be used.

Test All Other Units

The "Test Unit's Operation" screen of the LOR Control tab of the Hardware Utility is the screen displayed by default when the Hardware Utility is opened. If it is not currently open, make sure you have selected the LOR Control tab, and then hit the "Test" button near the bottom of the Hardware Utility:

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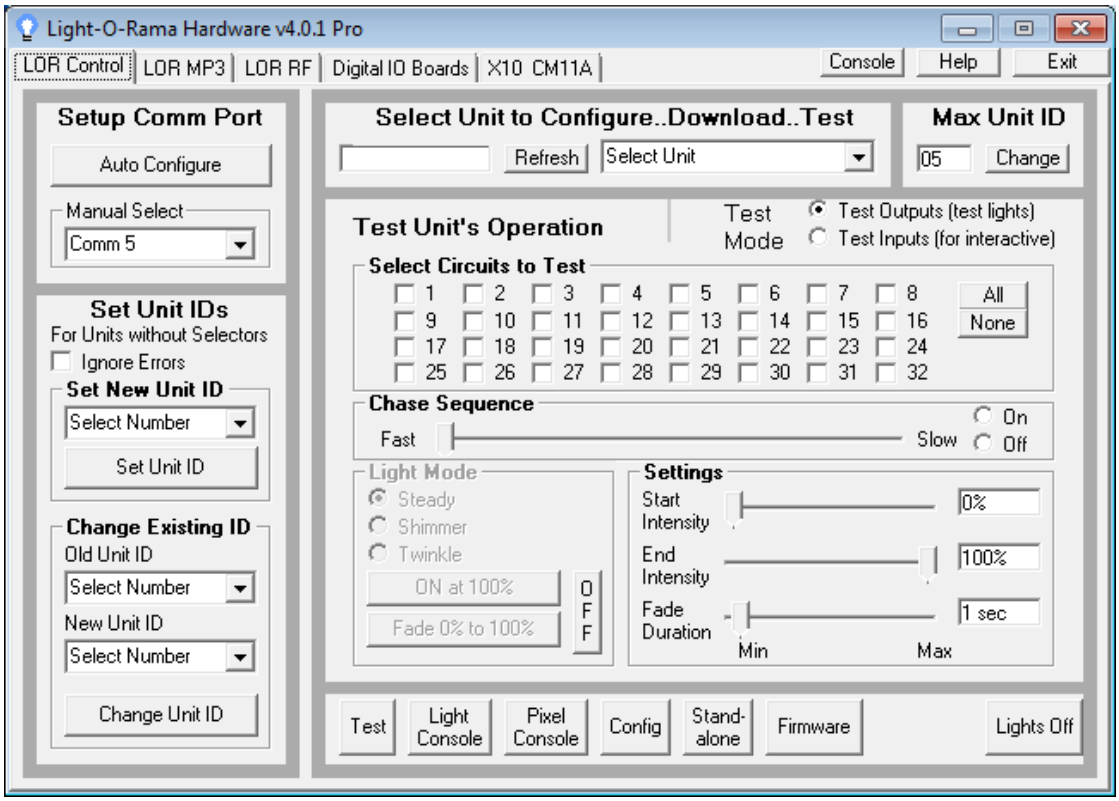

The testing section of the LOR Control tab

By setting the "Test Mode" appropriately, you can either test output to the controllers - that is, test that they can control your lights - or test input from your controllers - that is, test that they can generate interactive triggers.

Test Outputs (test lights)

To test that your controllers can control your lights, select "Test Outputs (test lights)" as your "Test Mode".

After selecting the circuits that you wish to test (by checking their boxes in the "Select Circuits to Test" section), you can send a lighting effect command to those circuits by choosing the "Light Mode", "Start Intensity", "End Intensity", and "Fade Duration", and clicking on either the "ON", "OFF", or "Fade" buttons. **Note:** If "ON" is used, the intensity is specified via "End Intensity", not "Start Intensity".

Alternatively, the "Chase Sequence" section can be used to turn the selected circuits on and off in sequence.

Test Inputs (for interactive)

To test that your controllers can generate interactive triggers, select "Test Inputs (for interactive)" as your "Test Mode".

Select the circuits that you want to test. When you trip a trigger for one of those circuits, it should show up as red in this screen.

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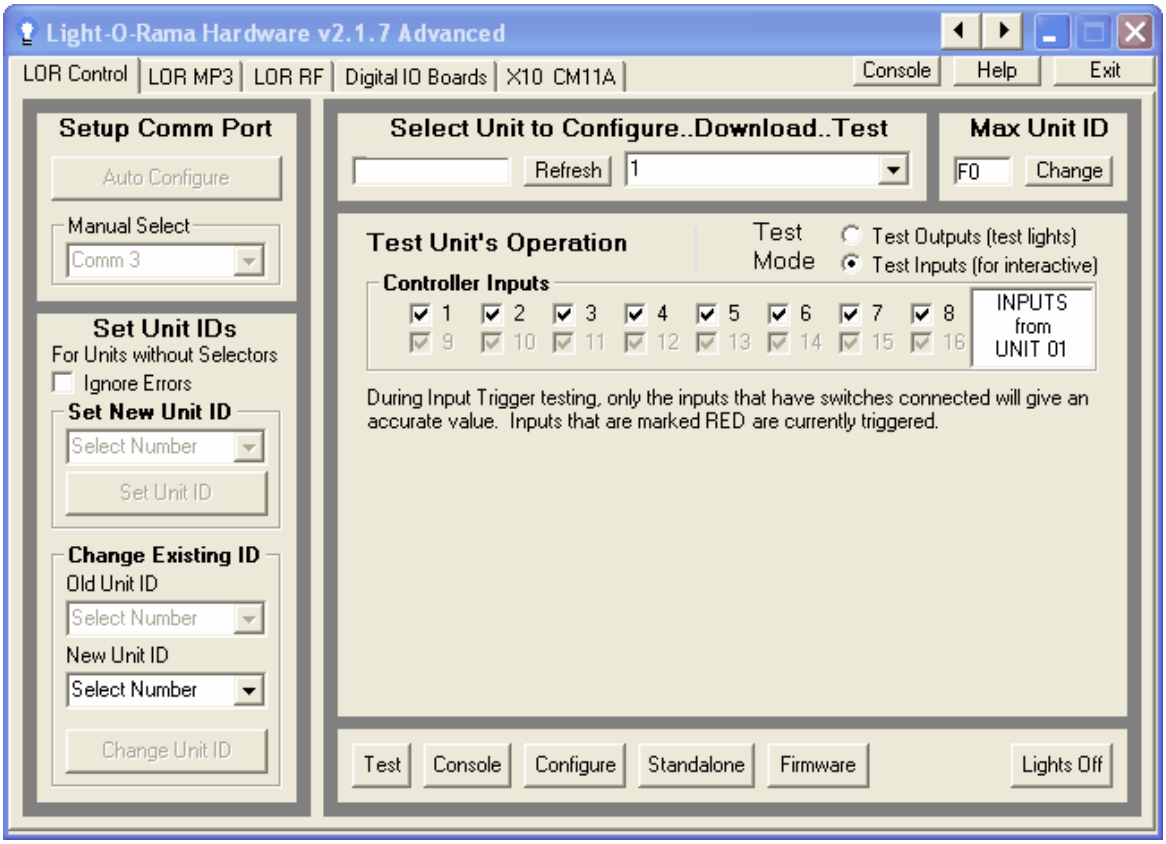
Please note that triggers are not supported on LOR Enhanced networks. If your trigger is on a controller that is on an LOR Enhanced network, you will be able to test it in the Hardware Utility, but it will not work during your show.



The input testing section of the LOR Control tab, with no circuits tripped

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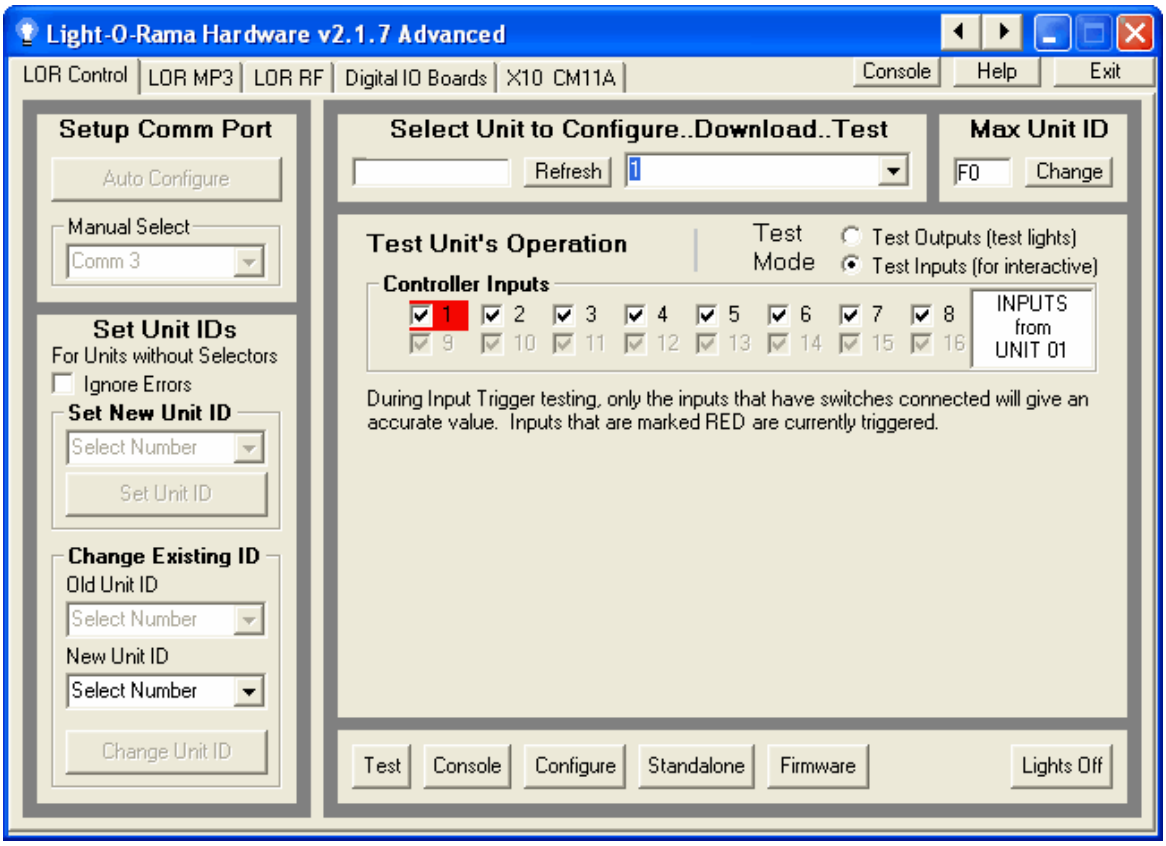

The input testing section of the LOR Control tab, with circuit 1 tripped

5.12.1.5 Downloading Sequences

The Standalone Sequence Downloader section of the LOR Control tab of the Light-O-Rama Hardware Utility can be used to send an animation sequence to a Light-O-Rama controller, which can later run that sequence independently, in "standalone" mode, without being hooked up to a computer running Light-O-Rama software.

When a unit runs a sequence in standalone mode, it not only executes the lighting commands in the sequence that are for that controller itself, but also, if the sequence contains any commands for other units, it will transmit them to the other units that it is connected to. In this way, a single controller can be downloaded with a sequence, and act as a "director" for several linked controllers.

It is important that only one controller in any mutually connected group act as a director. Downloading sequences to two separate controllers that are hooked up in a mutually connected group will have undesired results, as the commands transmitted by the two will interfere with each other. Similarly, it is important not to also control sequences from your computer while you have a controller hooked up to it acting in standalone mode, for the same reason.

Normally, the controller will execute the standalone sequence any time that it is powered on. However, some controllers have internal clocks that allow the standalone sequence to be scheduled to run during a particular timeframe.

Note: The CTB08 controller does not have transmit capability in standalone mode.

To download a sequence to a controller to be used in standalone mode, take the following steps:

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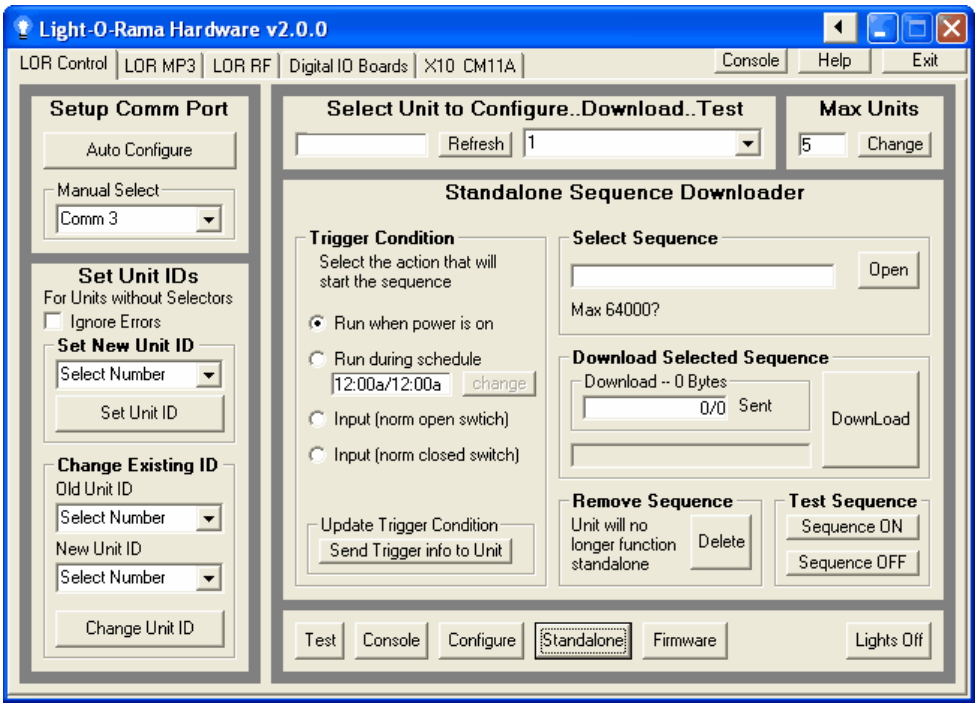
- Create the Sequence
- Connect the Controller to the PC
- Select the Comm Port
- Select the Unit
- Download the Sequence

You can also use this section of the Hardware Utility to choose when the sequence will run (for controllers that support this), to remove the standalone sequence from a controller, and to test a standalone sequence.

To get to the Standalone Sequence Downloader screen, make sure that you are in the LOR Control tab of the Hardware Utility, and then click on the "Standalone" button.



The Standalone Sequence Downloader section of the Hardware Utility

Create the Sequence

Using the Sequencer, create an animation sequence. Only animation sequences - not musical sequences - can be downloaded for standalone mode. When you create the sequence, associate it with a preview that has the appropriate unit IDs and circuit IDs, as normal.

Some controllers have very little storage space for sequences. Because size is a limiting factor, you should consider the following tips to keep your sequence's size at a minimum:

- Fade commands take up the most space.
- The least space is used when all lights on a controller are at either 100% or 0% intensity.
- When possible, place similar commands at the same time. For example, if you turn one circuit of a controller off and then, a tenth of a second later, turn another circuit on the same controller off, that will take about twice as much space as would turning both of them off at the same time.
- Use loops whenever possible.

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- Different types of controllers have different maximum sequence sizes; controllers such as the CTB08 have little space and can handle only very simple animations.

Also, sequences to be used in standalone mode have some limitations:

- You must download the playback file (.play.las) created by the Sequencer.
- The sequence's preview should only contain props that are on a single network; unexpected results may occur if you have more than one network listed in the preview.
- The network must not be marked as "enhanced" in Network Preferences.
- The sequence cannot contain motion effects.
- Timings are only supported on tenth-of-a-second boundaries (for example, 1 second, 1.1 seconds, 1.2 seconds). If any timings in the sequence are at some centisecond other than a tenth-of-a-second boundary (for example, 1.15 seconds), they will be considered to be at the next tenth-of-a-second boundary.
- Depending on the device type, between 1 and 10 loop levels may be supported.
- Loop speed modification is not supported, and will be ignored.

Connect the Controller to the PC

Connect the unit to the computer, for example using an SC485 adaptor or a USB-RS485 adaptor. Make sure that the selector switches are correctly set for the type of cable used (units are shipped ready to use data cables). Plug the unit into an AC outlet, and turn the unit on.

Select the Comm Port

After you have connected the unit to the computer, select the comm port that the Hardware Utility should use to communicate with the controller.

Select the Unit

After you have connected the unit to the PC and selected the comm port, select the unit ID of the controller that you wish to use. If you know the controller's unit ID, you can simply type it into the dropdown box labelled "Select Unit". If not, use the "Refresh" button, and the Hardware Utility will scan your network for connected units. You can then select it from the dropdown list.

NOTE: Scanning the network may take some time. If you have set the unit IDs of your controllers to low values, you can use the "Max Unit ID" section to speed up this scan drastically. It is therefore a good habit to assign your controllers unit IDs starting at 01, and increasing sequentially through 02, 03, and so on.

Selecting the unit to use

Download the Sequence

Choose the animation sequence you wish to download using the "Open" button in the "Select Sequence" section, and then download it using the "DownLoad" button in the "Download Selected Sequence" section:

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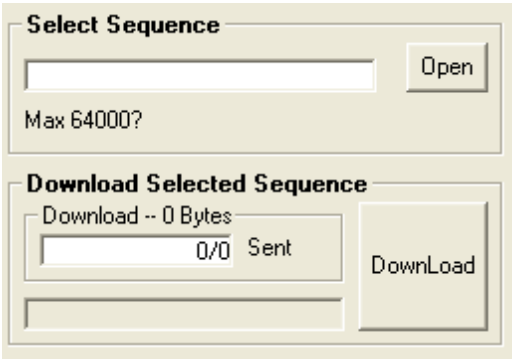
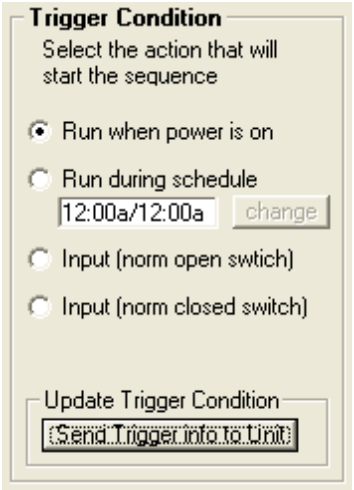


Selecting and downloading the sequence

If you do not see this in the Hardware Utility, make sure that you are on the LOR Control tab, and click on the "Standalone" button near the bottom.

Scheduling the Sequence

Some Light-O-Rama controllers can schedule the downloaded sequence to run at certain times or in certain conditions (those that cannot will run the sequence continually whenever powered on). To schedule when it will run, use the "Trigger Condition" section:



Scheduling the sequence

Select the condition you want to start the sequence, and click "Send Trigger info to Unit".

If you do not see this in the Hardware Utility, make sure that you are on the LOR Control tab, and click on the "Standalone" button near the bottom.

Note: If you choose to use specific scheduled times, the clock on the controller is set to the current time according to your computer. Make sure that the time on your computer is correct.

Removing the Sequence

To remove a downloaded sequence from a standalone controller, use the "Delete" button in the "Remove Sequence" section:

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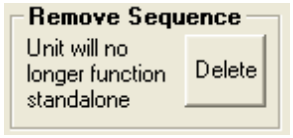


Removing a sequence

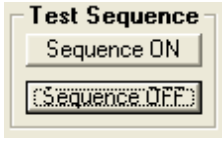
Note: This does not *actually* remove the sequence from the controller; rather, it makes it so that the controller will no longer play the sequence. So, if you later decide to use the sequence again, you can simply reschedule the sequence to run, rather than downloading the sequence again.

If you do not see this in the Hardware Utility, make sure that you are on the LOR Control tab, and click on the "Standalone" button near the bottom.

Testing the Sequence

After downloading a sequence to a controller to be used in standalone mode, it is recommended that you test the sequence, using the buttons in the "Test Sequence" section. To start the sequence, click "Sequence ON"; to stop it, click "Sequence OFF".

Note that the "Sequence OFF" button will stop the sequence even if it was started automatically (by powering on or by schedule, as opposed to via the "Sequence ON" button).



Testing the sequence

If you do not see this in the Hardware Utility, make sure that you are on the LOR Control tab, and click on the "Standalone" button near the bottom.

5.12.1.6 Firmware Updates

The Firmware Update section of the LOR Control tab of the Hardware Utility can be used to send new firmware to Light-O-Rama controllers. A controller's firmware has a similar purpose to the operating system on your computer (such as Windows XP or Windows Vista): The operating system on your computer is used to run other programs that you load on the computer, such as Light-O-Rama. The firmware on a Light-O-Rama controller is used to execute the commands to control the lights and run standalone sequences.

From time to time, new versions of firmware will become available. In general, unless the new version of firmware has a new feature that you need to use, you should not update the firmware.

If you do wish to update the firmware of a controller, do so using the following steps:

- Select the Unit
- Select the Firmware File
- Download the Firmware

If any problems are encountered, please see "Troubleshooting".

To get to the Firmware Update section of the Hardware Utility, make sure that you are in the LOR Control tab, and click the "Firmware" button (near the bottom).

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The Firmware Update section of the Hardware Utility

Select the Unit

It is recommended that only one controller be connected to the computer when updating firmware. Units can have firmware updated when more than one is attached to the computer, but if you choose to do this, make sure that "Selected unit listed above" is selected, and make sure that the proper unit is selected in the "Select Unit to Configure.. Download.. Test" section (above the "Firmware" section).

If you instead use the recommended method of having only a single controller attached to the PC during a firmware update, choose "Only one unit is connected".

To update the firmware of a Light-O-Rama MP3 Player or a Light-O-Rama Wireless Unit, select the matching entry in the "Select Unit" section.

Selecting the unit

Select the Firmware File

Use the "Open" button to select the firmware file that you wish to send to the controller. The "Open" button starts in your Light-O-Rama base directory; the firmware files are typically located in the "Firmware" subdirectory.

Select the latest version of firmware for the unit being updated. The names of the firmware files correspond with the names of the controllers.

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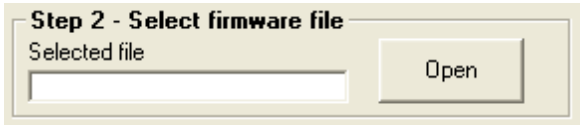
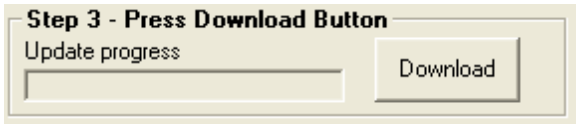


Selecting the firmware file

Download the Firmware

Finally, start the download by pressing the "Download" button. The progress bar will provide you with an update.

If you encounter any problems, please see "Troubleshooting".



Starting the download

Troubleshooting

If the download does not start within 15 seconds of hitting the "Download" button, check that the unit is powered and properly connected to the PC. If all else fails, power the unit on and off ***after you click the download button and the PC is attempting to start the download.***

5.12.2 Light-O-Rama Wireless Devices

The LOR RF tab of the Light-O-Rama Hardware Utility can be used to configure Light-O-Rama wireless devices (such as the Easy Light Linker).

When using this tab, make sure that only a single wireless device is in the daisy-chained network hooked up to the PC.

For details, please see the following sections:

- Frequency
- Speed
- Power Level
- Stream Data
- Get Current Configuration
- Set Defaults
- Update Configuration

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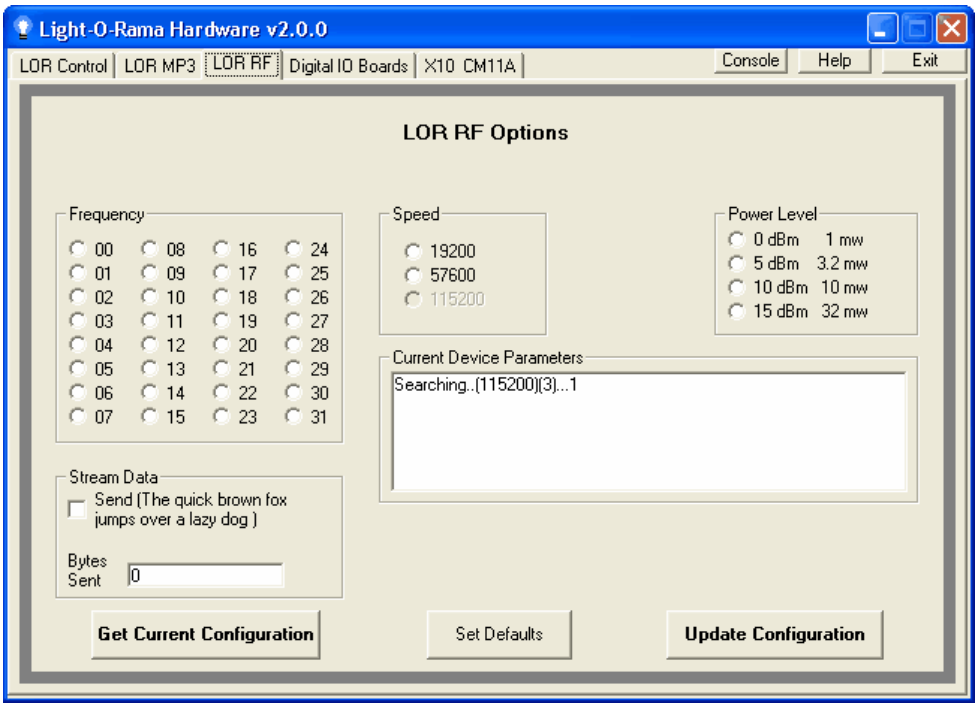

The LOR RF tab of the Hardware Utility

Frequency

Use this section to control the frequency used by the wireless device. Note that the transmitter and any receivers for it must be set to use the same frequency.

You can also use this to set the frequencies of two different transmitters to different values, so that they will not interfere with each other; these different transmitters can then be placed far apart from each other, effectively increasing the range of your wireless network.

Finally, some other wireless source in your area may interfere with Light-O-Rama's wireless communications at certain frequencies, so if you notice problems with the controllers hooked up to your wireless devices, try changing the frequency that is used.

If you change this setting, make sure to click the Update Configuration button so that the change will be sent to the wireless device currently hooked up to the PC.

Speed

Use this section to control the communications speed used by the devices. The faster speed is typically the better, allowing more frequent lighting effects, unless your controllers are separated over large distances. In that case, if you notice problems with the higher speed, try changing to the lower speed.

Note that a transmitter and its receivers must use the same speed.

If you change this setting, make sure to click the Update Configuration button so that the change will be sent to the wireless device currently hooked up to the PC.

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Power Level

If your transmitter and receivers are physically close to each other, using too much power might cause unintended effects. If you notice this, try setting a lower power level.

If you change this setting, make sure to click the Update Configuration button so that the change will be sent to the wireless device currently hooked up to the PC.

Stream Data

This section continuously streams data. This is mostly for internal testing purposes, and it is unlikely that you will need to use this.

Get Current Configuration

Clicking this button will retrieve the settings (such as frequency) from the wireless device currently hooked up to the PC, and display them in the "Current Device Parameters" section.

Set Defaults

Clicking this button will reset the settings (such as frequency) of the wireless device currently hooked up to the PC back to their factory defaults.

Update Configuration

After you have changed the frequency, speed, or power level, click this button to send the changes to the wireless device currently hooked up to the PC.

5.12.3 Digital IO Boards

Please note that support for DIO boards was removed with S5.

5.12.4 X10 Controllers

Please note that support for X10 was removed with S5.

5.12.5 Light Console

Clicking on the "Light Console" button of the Light-O-Rama Hardware Utility opens the Test Console. The Test Console can be used to test standard Light-O-Rama controllers, or to configure and test Light-O-Rama iDMX-1000 DMX interface. If you are trying to test RGB based devices, you may want to instead use the Pixel Console.

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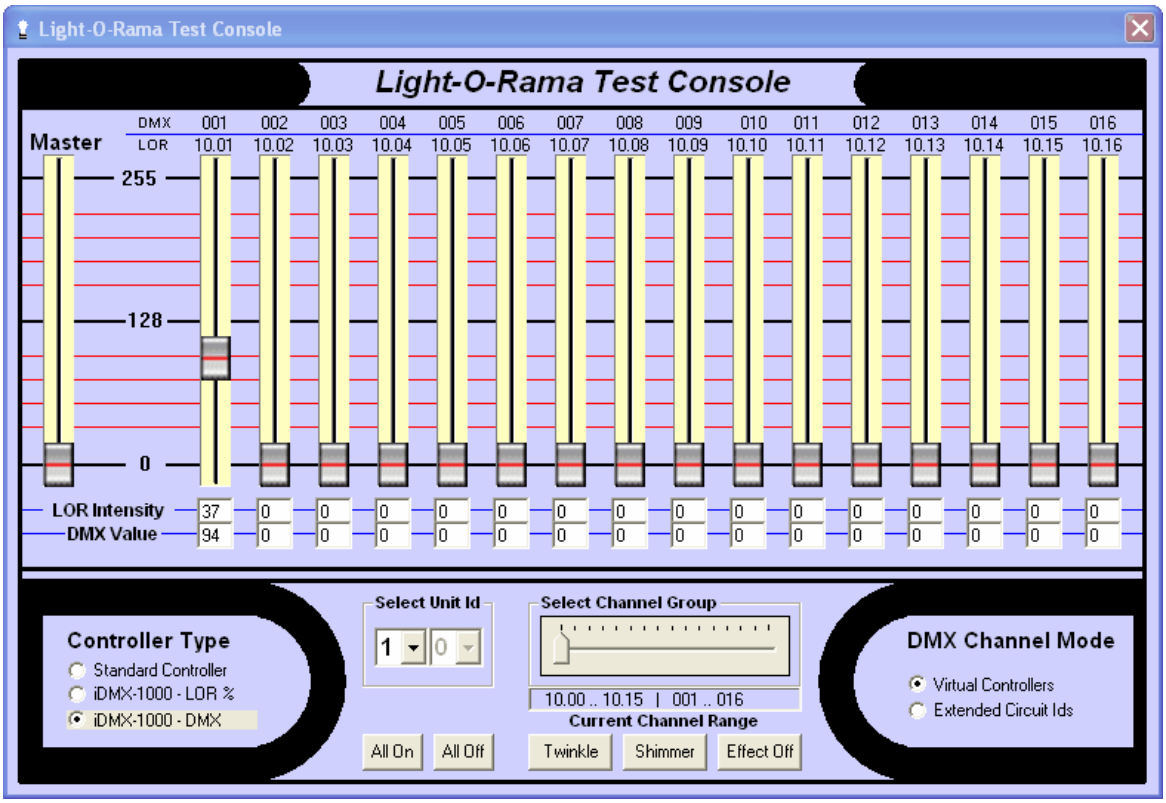

The Test Console of the Hardware Utility

Controller Type

Use this section (in the lower left) to choose whether to use a test a standard Light-O-Rama controller or to configure and test a Light-O-Rama DMX interface. In the latter case, you can choose between the ability to send any of 101 different intensities, from 0 to 100 ("LOR %" mode), or the ability to send any of 256 different intensities ("DMX" mode).

DMX Channel Mode

This section (in the lower right) is available only if the controller type is set to "iDMX-1000 - LOR %" or "iDMX-1000 - DMX". It allows you to choose how to map Light-O-Rama channels to DMX channels.

NOTE: Only "Virtual Controllers" is currently supported. "Extended Circuit IDs" will be supported in a future release.

In "Virtual Controllers" mode, the DMX interface is treated as sixteen separate Light-O-Rama controllers each having its own unit ID and each with sixteen circuits, for a total of 256 channels. These 256 channels are each mapped to an individual DMX channel.

In "Extended Circuit IDs" mode (which is *not* currently supported), the DMX interface will be treated as a single Light-O-Rama unit ID, but can individually address all 256 circuits (whereas currently a single Light-O-Rama unit ID supports up to 16 circuits).

Select Unit ID

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Use this section to select the unit ID.

If the controller type is set to "Standard Controller", or if the DMX channel mode is set to "Extended Circuit IDs", both dropdown lists are enabled, with 0 through F available as the choices in each. So, for example, to use unit ID C7, select "C" from the first dropdown list, and "7" from the second.

If the DMX channel mode is set to "Virtual Controllers", only the first dropdown list is enabled. The DMX interface will use all sixteen unit IDs starting with the value selected there. For example, to use unit IDs 30 through 3F, select "3" in the first dropdown box.

Select Channel Group

A Light-O-Rama DMX interface can support up to 256 DMX channels simultaneously. However, the intensity sliders at the top of the Test Console only show sixteen of them at once (plus the master slider). To select which sixteen are currently displayed, use the "Select Channel Group" slider with the controller type set to iDMX-1000.

Set Intensities

The top portion of the Test Console shows sixteen sliders for the intensities of sixteen channels, plus a master slider (on the left) which can be used to slide them all simultaneously.

Above each slider are the Light-O-Rama unit ID and circuit ID associated with that slider. Also, if the controller type is set to iDMX-1000, then above *those* is the corresponding DMX address. These values depend upon the selections made for the controller type, DMX channel mode, unit ID, and channel group.

A common use of this is to determine the Light-O-Rama intensities to be used to produce various effects on a DMX controller. For example, a DMX controller may be able to turn on red, green, or blue lights; each of these is done by sending the same circuit a different command value. In Light-O-Rama, these are represented as intensities. The Light-O-Rama intensities and the corresponding DMX values are displayed below each slider.

So, for example, you could use this portion of the Test Console to determine that your controller turns on a blue light when sent a value of 94, which corresponds to a Light-O-Rama intensity of 37%. So, when building a sequence in the Sequencer, you can tell this DMX controller to turn on a blue light by applying a Set Intensity effect for 37%.

Test Buttons

You can use the various buttons at the bottom of the Test Console to send lighting effect commands to the controller.

5.12.6 Pixel Console

Clicking on the "Pixel Console" button of the Light-O-Rama Hardware Utility opens the Pixel Test Console. The Pixel Test Console is best used to test RGB Light-O-Rama controllers. The labels above each group of sliders show the physical pixel number, as well as the LOR channels in use.

The Pixel Console can be used to test DMX and E1.31 RGB devices as long as:

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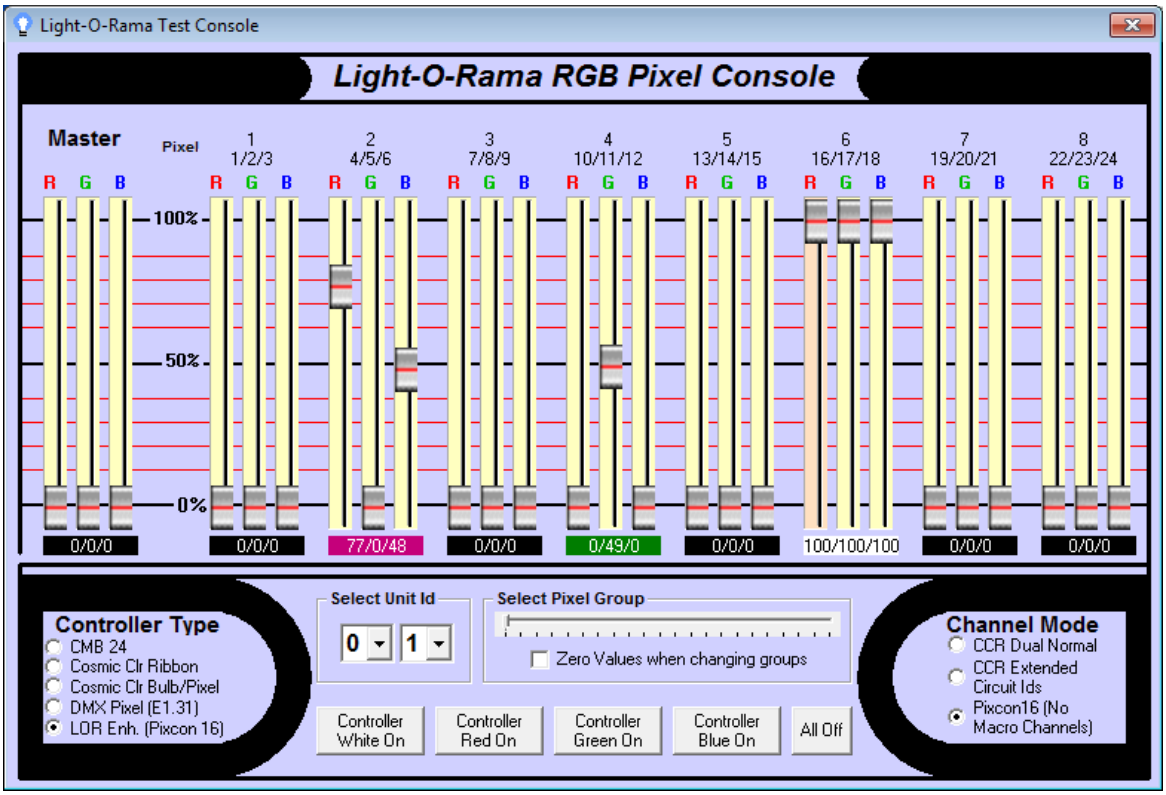
1. Your software is registered and your license level supports Native DMX Devices (Advanced or Higher)
2. The Comm Listener is running. This will require that you have the LOR Control Panel loaded.
3. You have properly defined your DMX Universe in Network Preferences.

The Pixel Console can be used to test PixCon16 devices running in LOR mode as long as:

1. Your software is registered and your license level supports Enhanced LOR Networks (Pro)
2. The Comm Listener is running. This will require that you have the LOR Control Panel loaded.
3. Only devices on the REGular network can be tested.
4. The REGular network must be defined to be running at 500K in Enhanced mode.
5. You did not allow the Hardware Utility to take control of the REGular port from the Listener on start up.



The Pixel Test Console of the Hardware Utility

Set Intensities

The top portion of the pixel console shows up to twenty four sliders for the intensities of eight RGB pixels, plus a master slider (on the left) which can be used to slide them all simultaneously.

Above each slider are the Physical Pixel Number and the Light-O-Rama circuit IDs, or DMX Channels associated with that triplet. The top number is the Pixel Number, the bottom three numbers are the Circuit or Channel IDs.

Color Label

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The colored label box under each group of 3 sliders shows an approximate representation of the color that will be output by the device. NOTE: colors on your monitor may not exactly match what you would see on the actual device. You should always reference what is actually output on the physical device when selecting color values. Clicking this box will bring up a color selection dialog that will set the R G and B components automatically. The numbers shown in the box are the LOR intensities of each of the sliders, or the DMX Channel values in R/G/B order.

Controller Type

Use this section (in the lower left) to choose whether to use a test a Light-O-Rama CMB24 controller, Cosmic Color Ribbon, Cosmic Color Bulb/Pixel device, a DMX universe, or network device like the PixCon16 running on the REGular network in LOR Enhanced mode. If your license does not support native DMX the DMX and LOR Enh. options are not available. If you license does not support Enhanced LOR networks, the LOR Enh. option is not available,

Channel Mode

This section (in the lower right) is available only if the controller type is set to "Cosmic Color Bulb/Pixel" or LOR Enhanced. Set this to match the configuration of your Cosmic Color device or to No Macro Channels (PixCon16). The No Macro Channels option is only available if you have selected the LOR Enh (PixCon16) controller type.

Please note that the Pixel Console does not know exactly what device(s) you have connected to your Enhanced LOR network. If you incorrectly set the channel mode, you may experience strange behavior on your device. For example, if you have a Cosmic Color device connected to your Enhanced LOR network, but have specified No Macro Channels (PixCon16) channel mode, results are going to be random once you pass channel 150. Always ensure the channel mode matches the device you are trying to test.

Select Unit ID/Select Universe

Use this section to select the unit ID. When working with DMX devices, this changes to allow selection of a DMX Universe.

Select Pixel Group

A Light-O-Rama RGB device can support up to 300 channels as 100 pixels, and DMX Universes can support up to 510 channels as 170 pixels. Due to screen space limitations, the Pixel Console can only show sliders for 8 pixels at one time. If your device supports more than 8 pixels, this selector is active and allows you to set which group of pixels to control.

Zero Values when changing groups

When using the Select Pixel Group slider, the lights for the next selected group will be updated with the values of the current sliders. However, if you check this box, the sliders will all be set to 0 when changing groups.

Test Buttons

You can use the various buttons at the bottom of the Test Console to send lighting effect commands to the controller. Please remember that while the buttons may refer to 'Controller', Cosmic Color

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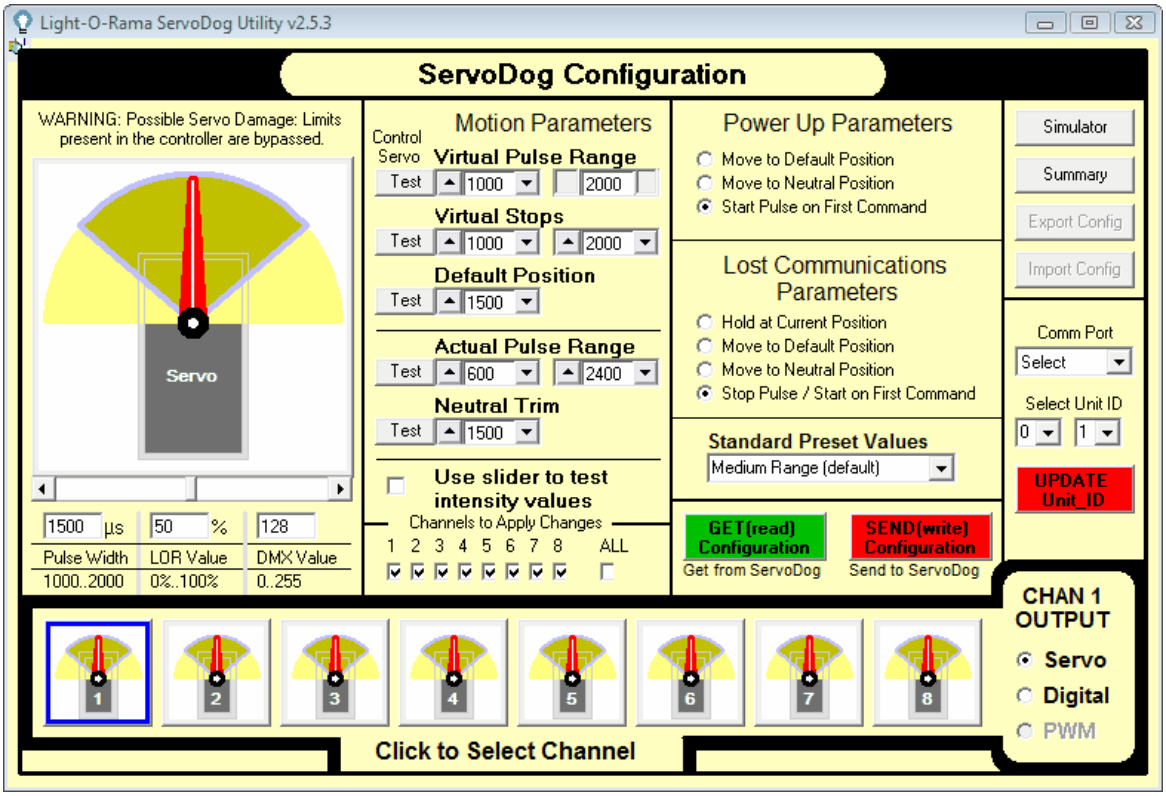
Bulbs or Pixels that are in Dual Normal mode will only update the string the Unit ID corresponds to. Using these buttons with an incorrect Channel Mode selected will produce unintended results.

5.13 ServoDog Utility

The Light-O-Rama ServoDog Utility can be used to configure the Light-O-Rama ServoDog, which is a fourteen channel digital controller that can perform digital input, digital output, servo control and PWM ("Pulse Width Modulation") dimming.

For details on how to use the ServoDog Utility, please refer to your ServoDog manual. This can be downloaded from the Light-O-Rama Support page.



The Light-O-Rama ServoDog Utility

5.14 Verifier

The Light-O-Rama Verifier can be used to check for certain types of problems with the way that Light-O-Rama is configured on your machine, and with your schedule, shows, and sequences.

To use the Verifier, simply click its "Verify" button. By default, this will cause it to check for issues in your Light-O-Rama configuration, your schedule, shows that you have scheduled, and sequences in those shows. You can also tell it to "Verify a Single Show" or "Verify a Single Sequence"; note, though, that two sequences which each pass "Verify a Single Sequence" without any problems might have problems when used together in a single show, so it's always a good idea to do "Verify a Single Show" and especially "Verify Entire Schedule" at least once before going live with your show.

As the Verifier is checking for issues, it will display what it is doing in its "Output Log" tab; when it is complete, it will switch to its "Results" tab, showing a list of the issues that it has found:

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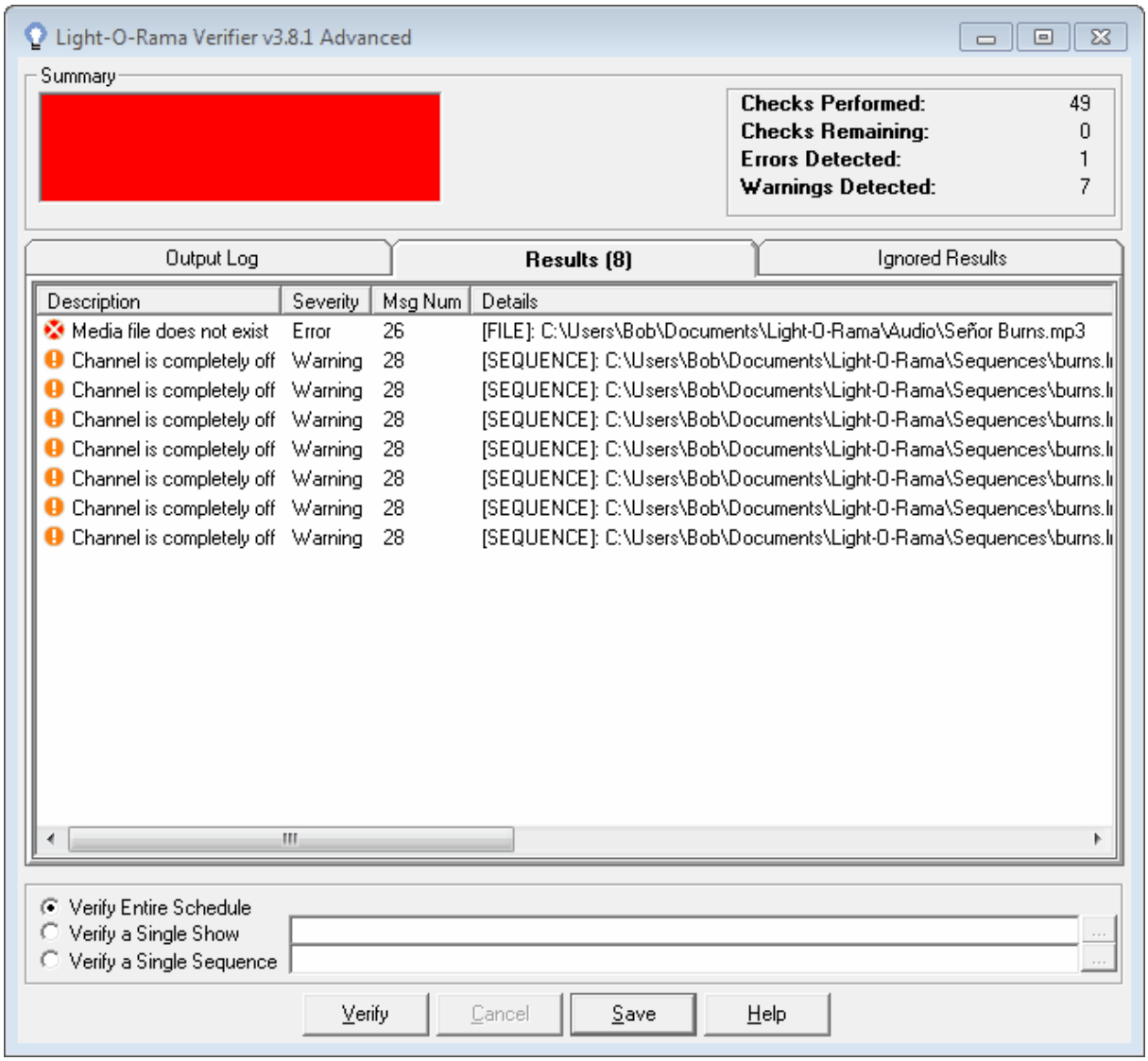
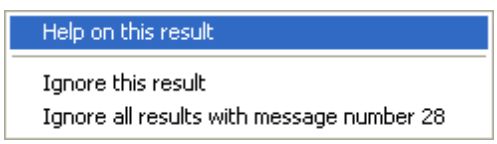


The Verifier has found one error and seven warnings

Each result has a description, severity, and message number, and may have additional details. There are several "Details" columns, each of which may contain a piece of information specific to the detected problem. For example, in the above screenshot, several warning messages appear, all with message number 28, meaning "Channel is completely off". This message number's first "Details" column shows the name of the sequence in which the problem was found and its second "Details" column shows the track containing the channel which is completely off. Its third "Details" column (which cannot be seen in the screenshot above, but which could be seen by scrolling to the right) displays the name of the channel.

If you right-click on a particular result, a popup menu will appear:



The right-click popup menu for a result

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Clicking "Help on this result" simply opens the help file to the page for the result number in question.

The two "ignore" options let you tell the Verifier that you are not interested in seeing this result in the future - either it specifically ("Ignore this result") or all results with the same message number ("Ignore all results with message number 28").

If you ignore a result (or all results with a certain message number), then whenever such results are detected in the future, they will not count towards the number of errors or warnings which the Verifier says it detected, and they will be displayed on the Verifier's "Ignored Results" tab instead of the "Results" tab. You can later decide to stop ignoring such results by going to that tab, right-clicking on a result, and unchecking the ignore option that you had previously selected.

You can also save the list of results to a text file, by clicking the Verifier's "Save" button. Only results on the "Results" tab will be saved to the file; those on the "Ignored Results" will not be.

Please see the list of Verifier messages for details on the types of problems that the Verifier checks for.

5.14.1 List of Verifier Messages

The following messages can be generated by the Light-O-Rama Verifier. For details on any given one, please refer to its individual help page.

- Message 1 (Info): **No errors or warnings found**
- Message 2 (Warning): **Verification cancelled**
- Message 3 (Error): **Light-O-Rama is not fully installed**
- Message 4 (Error): **No registry entry for application path**
- Message 5 (Error): **Application directory does not exist**
- Message 6 (Warning): **Verifier not running from LOR application path**
- Message 7 (Error): **Application file does not exist**
- Message 8 (Error): **Unlicensed LOR demo version used**
- Message 9 (Warning): **Unsupported version of Windows Media Player**
- Message 10 (Error): **No registry entry for user data path**
- Message 11 (Error): **User data directory does not exist**
- Message 12 (Warning): **No registry entry for non-media data path**
- Message 13 (Warning): **Non-media data directory does not exist**
- Message 14 (Warning): **No registry entry for media data path**
- Message 15 (Warning): **Media data directory does not exist**
- Message 16 (Error): **Application file has unexpected version number**
- Message 17 (Warning): **Weekly schedule file does not exist**
- Message 18 (Warning): **Yearly schedule file does not exist**
- Message 19 (Warning): **Calendar scheduling not supported**
- Message 20 (Warning): **No shows are scheduled**
- Message 21 (Error): **Show file does not exist**
- Message 22 (Error): **Error reading show file**
- Message 23 (Error): **Sequence file does not exist**
- Message 24 (Error): **Sequence file cannot be loaded**
- Message 25 (Warning): **Show has no sequences**
- Message 26 (Error): **Media file does not exist**
- Message 27 (Warning): **Conflicting channel settings in sequence**
- Message 28 (Warning): **Channel is completely off**
- Message 29 (Warning): **Sequence is completely off**
- Message 30 (Warning): **Channel is missing settings**
- Message 31 (Warning): **Channel uses undefined comm network**

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- Message 32 (Warning): **Channel in tracks of conflicting length**
- Message 33 (Warning): **Musical file used in non-audio section of show**
- Message 34 (Warning): **Subsequences not supported**
- Message 35 (Warning): **Background sequences unsupported**
- Message 36 (Warning): **Startup sequences unsupported**
- Message 37 (Warning): **Shutdown sequences unsupported**
- Message 38 (Warning): **Interactive triggers unsupported**
- Message 39 (Warning): **Unsupported number of tracks**
- Message 40 (Warning): **Shell commands unsupported**
- Message 41 (Warning): **Shell command map file does not exist**
- Message 42 (Warning): **Shell command not set**
- Message 43 (Warning): **Channel conflict**
- Message 44 (Warning): **Old MC-P compatibility enabled**
- Message 45 (Warning): **Channel settings conflict in sequence/intensity file**
- Message 46 (Warning): **Channel settings conflict in intensity file**
- Message 47 (Warning): **Intensity file conflict**
- Message 48 (Warning): **Channel/intensity file conflict**
- Message 49 (Warning): **Intensity file uses undefined comm network**
- Message 50 (Warning): **Intensity files not supported by license level**
- Message 51 (Warning): **Use Compressed Sequences disabled**
- Message 52 (Warning): **Show Player Memory Restarts disabled**
- Message 53 (Warning): **Trigger uses undefined network**
- Message 54 (Warning): **Trigger uses LOR Enhanced network**

5.14.1.1 Verifier Messages 1-10

The following are some messages can be generated by the Light-O-Rama Verifier. For details on any given one, please refer to its individual help page. To see all possible messages, please refer to the List of Verifier Messages.

- Message 1 (Info): **No errors or warnings found**
- Message 2 (Warning): **Verification cancelled**
- Message 3 (Error): **Light-O-Rama is not fully installed**
- Message 4 (Error): **No registry entry for application path**
- Message 5 (Error): **Application directory does not exist**
- Message 6 (Warning): **Verifier not running from LOR application path**
- Message 7 (Error): **Application file does not exist**
- Message 8 (Error): **Unlicensed LOR demo version used**
- Message 9 (Warning): **Unsupported version of Windows Media Player**
- Message 10 (Error): **No registry entry for user data path**

5.14.1.1.1 1: No errors or warnings found

Message Number: 1
Severity: Info
Summary: No errors or warnings found

If the LOR Verifier does not find any errors or warnings (other than those you have told it to ignore), it will output this message.

The LOR Verifier

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List of Verifier Messages

5.14.1.1.2 2: Verification cancelled

Message Number: 2
Severity: Warning
Summary: Verification cancelled

If you hit the cancel button while the LOR Verifier is checking for problems, it will stop checking, display any issues that it has found to that point, and additionally display this message to warn you that there may be other issues that it would have found had it not been cancelled.

Note that it may not stop immediately when you hit the cancel button; it may finish its current check first.

The LOR Verifier
List of Verifier Messages

5.14.1.1.3 3: Light-O-Rama is not installed

Message Number: 3
Severity: Error
Summary: Light-O-Rama is not fully installed

The installation of Light-O-Rama is not complete. This could occur, for example, if the installation was interrupted, or if a registry cleanup utility deleted certain Light-O-Rama entries from your computer's Windows registry.

If the problem is that the registry entries have been deleted, you can solve it by running the LORPost utility, which is typically automatically run after installation. This utility can be found in the directory where you installed your Light-O-Rama program files, which is typically (but not always) C:\Program Files\Light-O-Rama.

Note that the LORPost utility will ask where your Light-O-Rama data files should be stored. If you already have a "Sequences" directory, and would like to keep your sequences there by default, tell it the directory one level *above* that directory. For example, if your sequences are stored in C:\LOR\Sequences, tell the LORPost utility to store your Light-O-Rama data files in C:\LOR.

Otherwise, try reinstalling Light-O-Rama, or uninstalling and then reinstalling.

The LOR Verifier
List of Verifier Messages

5.14.1.1.4 4: No registry entry for application path

Message Number: 4
Severity: Error
Summary: No registry entry for application path

A required Light-O-Rama entry in the Windows registry cannot be found. This could occur, for example, if the installation was interrupted, or if a registry cleanup utility deleted certain Light-O-Rama entries from your computer's Windows registry. You will not be able to use Light-O-Rama until this problem is resolved.

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If the problem is that the registry entries have been deleted, you can solve it by running the LORPost utility, which is typically automatically run after installation. This utility can be found in the directory where you installed your Light-O-Rama program files, which is typically (but not always) C:\Program Files\Light-O-Rama.

Note that the LORPost utility will ask where your Light-O-Rama data files should be stored. If you already have a "Sequences" directory, and would like to keep your sequences there by default, tell it the directory one level *above* that directory. For example, if your sequences are stored in C:\LOR\Sequences, tell the LORPost utility to store your Light-O-Rama data files in C:\LOR.

Otherwise, try reinstalling Light-O-Rama, or uninstalling and then reinstalling.

The LOR Verifier
List of Verifier Messages

5.14.1.1.5 5: Application directory does not exist

Message Number: 5
Severity: Error
Summary: Application directory does not exist
Details: The name of the directory that is missing

The Windows registry says that the Light-O-Rama program files, such as the Sequencer and the Hardware Utility, can be found in a certain directory, but that directory does not actually exist. You will not be able to use Light-O-Rama until this problem is resolved.

It is suggested to uninstall and reinstall Light-O-Rama.

The LOR Verifier
List of Verifier Messages

5.14.1.1.6 6: Verifier not running from LOR application path

Message Number: 6
Severity: Warning
Summary: Verifier not running from LOR application path
Details #1: The name of the directory that LOR program files should be contained in
Details #2: The name of the directory that the Verifier is running from

The various Light-O-Rama program files, such as the Sequencer and the Hardware Utility, are expected to be found in a certain Windows directory. The Verifier itself is one such program. However, the copy of the Verifier that you are running is actually contained in a different directory.

This may not be a problem, for example if you intentionally copied the Verifier to a different directory and ran it from there.

However, it might indicate that you are using an old version of the Verifier from a previous installation, and that old Verifier may not be completely compatible with the current installation. Or, it might be indicative of a deeper problem with the installation of Light-O-Rama.

It is suggested that you run the Verifier from the same directory where the Light-O-Rama program files are installed. If you are doing so, and still get this error, consider uninstalling and reinstalling Light-O-Rama.

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The LOR Verifier
List of Verifier Messages

5.14.1.1.7 7: Application file does not exist

Message Number: 7
Severity: Error
Summary: Application file does not exist
Details: The expected directory and filename of the missing application file

One of the Light-O-Rama program files, such as the Sequencer or the Hardware Utility, cannot be found.

Depending upon exactly what is missing, your shows may still be able to play. However, they may not, and in any case, something is definitely wrong.

It is suggested that you uninstall and reinstall Light-O-Rama.

The LOR Verifier
List of Verifier Messages

5.14.1.1.8 8: Unlicensed LOR demo version used

Message Number: 8
Severity: Error
Summary: Unlicensed LOR demo version used

Your Light-O-Rama software has not been registered. Until you register it, it will not actually control your lights (and will have other limitations as well).

This may have occurred for various reasons - for example, it simply may be that you have not yet purchased a Light-O-Rama license. If you do have a license, though, you may not have entered it on this computer, or perhaps you have recently installed a new version of Light-O-Rama (in which case your license may or may not be valid for this new version). Or, perhaps your licensing information has been deleted from the Windows registry, perhaps by a registry cleanup tool.

If you have not yet purchased a license, you can do so from the Light-O-Rama website.

If you have already purchased one, try using it to register Light-O-Rama on this computer. If this does not work, perhaps you have already installed Light-O-Rama on the maximum number of computers covered by your license, or perhaps your license is for an older version of Light-O-Rama than the one that you are trying to run.

The LOR Verifier
List of Verifier Messages

5.14.1.1.9 9: Unsupported version of Windows Media Player

Message Number: 9
Severity: Warning
Summary: Unsupported version of Windows Media Player

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The version of Windows Media Player installed on this computer is older than the minimum version required by Light-O-Rama, or, perhaps, Windows Media Player is not correctly installed.

You may still be able to use Light-O-Rama, but it will (at the very least) be severely limited - for example, musical sequences will not play. It is suggested that you install the latest version of Windows Media Player.

The LOR Verifier
List of Verifier Messages

5.14.1.1.10 10: No registry entry for user data path

Message Number: 10
Severity: Error
Summary: No registry entry for user data path

A required Light-O-Rama entry in the Windows registry cannot be found. This could occur, for example, if the installation was interrupted, or if a registry cleanup utility deleted certain Light-O-Rama entries from your computer's Windows registry.

Your shows will not run successfully until this problem is resolved.

If the problem is that the registry entries have been deleted, you can solve it by running the LORPost utility, which is typically automatically run after installation. This utility can be found in the directory where you installed your Light-O-Rama program files, which is typically (but not always) C:\Program Files\Light-O-Rama.

Note that the LORPost utility will ask where your Light-O-Rama data files should be stored. If you already have a "Sequences" directory, and would like to keep your sequences there by default, tell it the directory one level *above* that directory. For example, if your sequences are stored in C:\LOR\Sequences, tell the LORPost utility to store your Light-O-Rama data files in C:\LOR.

Otherwise, try reinstalling Light-O-Rama, or uninstalling and then reinstalling.

The LOR Verifier
List of Verifier Messages

5.14.1.2 Verifier Messages 11-20

The following are some messages can be generated by the Light-O-Rama Verifier. For details on any given one, please refer to its individual help page. To see all possible messages, please refer to the List of Verifier Messages.

- Message 11 (Error): **User data directory does not exist**
- Message 12 (Warning): **No registry entry for non-media data path**
- Message 13 (Warning): **Non-media data directory does not exist**
- Message 14 (Warning): **No registry entry for media data path**
- Message 15 (Warning): **Media data directory does not exist**
- Message 16 (Error): **Application file has unexpected version number**
- Message 17 (Warning): **Weekly schedule file does not exist**
- Message 18 (Warning): **Yearly schedule file does not exist**
- Message 19 (Warning): **Calendar scheduling not supported**
- Message 20 (Warning): **No shows are scheduled**

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5.14.1.2.1 11: User data directory does not exist

Message Number: 11
Severity: Error
Summary: User data directory does not exist
Details: The name of the missing directory

The directory that Light-O-Rama expects to find Light-O-Rama data files in does not exist. This could occur, for example, if the installation was interrupted, or if a registry cleanup utility deleted certain Light-O-Rama entries from your computer's Windows registry, or if the directory was deleted or renamed.

Your shows will not run successfully until this problem is resolved.

You may be able to solve this problem by running the LORPost utility, which is typically automatically run after installation. This utility can be found in the directory where you installed your Light-O-Rama program files, which is typically (but not always) C:\Program Files\Light-O-Rama.

Note that the LORPost utility will ask where your Light-O-Rama data files should be stored. If you already have a "Sequences" directory, and would like to keep your sequences there by default, tell it the directory one level *above* that directory. For example, if your sequences are stored in C:\LOR\Sequences, tell the LORPost utility to store your Light-O-Rama data files in C:\LOR.

Otherwise, try reinstalling Light-O-Rama, or uninstalling and then reinstalling.

The LOR Verifier
List of Verifier Messages

5.14.1.2.2 12: No registry entry for non-media data path

Message Number: 12
Severity: Warning
Summary: No registry entry for non-media data path

A required Light-O-Rama entry in the Windows registry cannot be found. This could occur, for example, if the installation was interrupted, or if a registry cleanup utility deleted certain Light-O-Rama entries from your computer's Windows registry.

Until this problem is resolved, it is possible that your shows will run successfully, but it is likely that they will not. Even if the shows themselves do run, certain sequences in them may not.

If the problem is that the registry entries have been deleted, you can solve it by running the LORPost utility, which is typically automatically run after installation. This utility can be found in the directory where you installed your Light-O-Rama program files, which is typically (but not always) C:\Program Files\Light-O-Rama.

Note that the LORPost utility will ask where your Light-O-Rama data files should be stored. If you already have a "Sequences" directory, and would like to keep your sequences there by default, tell it the directory one level *above* that directory. For example, if your sequences are stored in C:\LOR\Sequences, tell the LORPost utility to store your Light-O-Rama data files in C:\LOR.

Otherwise, try reinstalling Light-O-Rama, or uninstalling and then reinstalling.

The LOR Verifier

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List of Verifier Messages

5.14.1.2.3 13: Non-media data directory does not exist

Message Number: 13
Severity: Warning
Summary: Non-media data directory does not exist
Details: The name of the missing directory

The directory that Light-O-Rama expects to find Light-O-Rama sequence files in does not exist. This could occur, for example, if the installation was interrupted, or if a registry cleanup utility deleted certain Light-O-Rama entries from your computer's Windows registry, or if the directory was deleted or renamed.

Until this problem is resolved, it is possible that your shows will run successfully, but it is likely that they will not. Even if the shows themselves do run, certain sequences in them may not.

You may be able to solve this problem by running the LORPost utility, which is typically automatically run after installation. This utility can be found in the directory where you installed your Light-O-Rama program files, which is typically (but not always) C:\Program Files\Light-O-Rama.

Note that the LORPost utility will ask where your Light-O-Rama data files should be stored. If you already have a "Sequences" directory, and would like to keep your sequences there by default, tell it the directory one level *above* that directory. For example, if your sequences are stored in C:\LOR\Sequences, tell the LORPost utility to store your Light-O-Rama data files in C:\LOR.

Otherwise, try reinstalling Light-O-Rama, or uninstalling and then reinstalling.

The LOR Verifier
List of Verifier Messages

5.14.1.2.4 14: No registry entry for media data path

Message Number: 14
Severity: Warning
Summary: No registry entry for media data path

A required Light-O-Rama entry in the Windows registry cannot be found. This could occur, for example, if the installation was interrupted, or if a registry cleanup utility deleted certain Light-O-Rama entries from your computer's Windows registry.

Until this problem is resolved, it is possible that your shows will run successfully, but it is likely that they will not. Even if the shows themselves do run, certain sequences in them may not.

If the problem is that the registry entries have been deleted, you can solve it by running the LORPost utility, which is typically automatically run after installation. This utility can be found in the directory where you installed your Light-O-Rama program files, which is typically (but not always) C:\Program Files\Light-O-Rama.

Note that the LORPost utility will ask where your Light-O-Rama data files should be stored. If you already have a "Sequences" directory, and would like to keep your sequences there by default, tell it the directory one level *above* that directory. For example, if your sequences are stored in C:\LOR\Sequences, tell the LORPost utility to store your Light-O-Rama data files in C:\LOR.

Otherwise, try reinstalling Light-O-Rama, or uninstalling and then reinstalling.

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The LOR Verifier
List of Verifier Messages

5.14.1.2.5 15: Media data directory does not exist

Message Number: 15
Severity: Warning
Summary: Media data directory does not exist
Details: The name of the missing directory

The directory that Light-O-Rama expects to find audio and video files in does not exist. This could occur, for example, if the installation was interrupted, or if a registry cleanup utility deleted certain Light-O-Rama entries from your computer's Windows registry, or if the directory was deleted or renamed.

Until this problem is resolved, it is possible that your shows will run successfully, but it is likely that they will not. Even if the shows themselves do run, certain sequences in them may not.

You may be able to solve this problem by running the LORPost utility, which is typically automatically run after installation. This utility can be found in the directory where you installed your Light-O-Rama program files, which is typically (but not always) C:\Program Files\Light-O-Rama.

Note that the LORPost utility will ask where your Light-O-Rama data files should be stored. If you already have a "Sequences" directory, and would like to keep your sequences there by default, tell it the directory one level *above* that directory. For example, if your sequences are stored in C:\LOR\Sequences, tell the LORPost utility to store your Light-O-Rama data files in C:\LOR.

Otherwise, try reinstalling Light-O-Rama, or uninstalling and then reinstalling.

The LOR Verifier
List of Verifier Messages

5.14.1.2.6 16: Application file has unexpected version number

Message Number: 16
Severity: Error
Summary: Application file has unexpected version number
Details #1: The name of the application file
Details #2: The expected version number of the application file
Details #3: The actual version number of the application file

A certain Light-O-Rama program file, such as the Sequencer or the Hardware Utility, has a version number other than the one that the Verifier was expecting.

This may be because you are using an old version of the Verifier from a previous installation, and that old Verifier may not be completely compatible with the current installation. Or, it might be indicative of a deeper problem with the installation of Light-O-Rama.

Make sure that you are running the copy of the Verifier that is in the same directory where your current version of Light-O-Rama is installed. If you are doing so, it is suggested that you uninstall and reinstall Light-O-Rama.

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The LOR Verifier
List of Verifier Messages

5.14.1.2.7 17: Weekly schedule file does not exist

Message Number: 17
Severity: Warning
Summary: Weekly schedule file does not exist
Details: The name of the missing file

The file which is supposed to contain your weekly schedule does not exist.

If you do not intend to have any shows scheduled via the weekly schedule, this is not an issue; any shows that you have scheduled via the calendar schedule should play as scheduled. But if you do intend to have shows scheduled via the weekly schedule, they will not be played until this problem is resolved.

Perhaps the file was renamed out of the way, in which case you can rename it back to the expected name. Or, perhaps it was deleted; check your computer's Recycle Bin. If neither of these is the problem, then you will have to recreate your weekly schedule via the Schedule Editor or the Simple Show Builder.

The LOR Verifier
List of Verifier Messages

5.14.1.2.8 18: Yearly schedule file does not exist

Message Number: 18
Severity: Warning
Summary: Yearly schedule file does not exist
Details: The name of the missing file

The file which is supposed to contain your calendar schedule does not exist.

If you do not intend to have any shows scheduled via the calendar schedule, this is not an issue; any shows that you have scheduled via the weekly schedule should play as scheduled. But if you do intend to have shows scheduled via the calendar schedule, they will not be played until this problem is resolved.

Perhaps the file was renamed out of the way, in which case you can rename it back to the expected name. Or, perhaps it was deleted; check your computer's Recycle Bin. If neither of these is the problem, then you will have to recreate your weekly schedule via the Schedule Editor or the Simple Show Builder.

The LOR Verifier
List of Verifier Messages

5.14.1.2.9 19: Calendar scheduling not supported

Message Number: 19
Severity: Warning
Summary: Calendar scheduling not supported
Details #1: The date on which a show is scheduled via the calendar
Details #2: The name of the show

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A show is scheduled via the calendar schedule, but your license does not support calendar scheduling (or you are using the unlicensed demo version of the software). The show will not play at the scheduled time.

If you already have a license, and have registered Light-O-Rama on this computer, then to get the show to play, you can either upgrade to a higher level license which does support calendar scheduling, or else remove the show from your calendar schedule and schedule it in your weekly schedule instead.

If you are using the unlicensed demo version, and you have not yet purchased a license, you can do so from the Light-O-Rama website.

If you have already purchased one, try using it to register Light-O-Rama on this computer. If this does not work, perhaps you have already installed Light-O-Rama on the maximum number of computers covered by your license, or perhaps your license is for an older version of Light-O-Rama than the one that you are trying to run.

The LOR Verifier
List of Verifier Messages

5.14.1.2.10 20: No shows are scheduled

Message Number: 20
Severity: Warning
Summary: No shows are scheduled

You have no shows scheduled. None of your shows will play until you schedule them, via the Schedule Editor or the Simple Show Builder.

The LOR Verifier
List of Verifier Messages

5.14.1.3 Verifier Messages 21-30

The following are some messages can be generated by the Light-O-Rama Verifier. For details on any given one, please refer to its individual help page. To see all possible messages, please refer to the List of Verifier Messages.

- Message 21 (Error): **Show file does not exist**
- Message 22 (Error): **Error reading show file**
- Message 23 (Error): **Sequence file does not exist**
- Message 24 (Error): **Sequence file cannot be loaded**
- Message 25 (Warning): **Show has no sequences**
- Message 26 (Error): **Media file does not exist**
- Message 27 (Warning): **Conflicting channel settings in sequence**
- Message 28 (Warning): **Channel is completely off**
- Message 29 (Warning): **Sequence is completely off**
- Message 30 (Warning): **Channel is missing settings**

5.14.1.3.1 21: Show file does not exist

Message Number: 21
Severity: Error
Summary: Show file does not exist

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Details: The name of the missing show file

You have a show scheduled, but the file that is supposed to contain that show does not exist. The show will not play until this problem is resolved.

If you do not want the show to play, this is not a problem, but you may want to remove it from your schedule (using the Schedule Editor) so that this error message does not appear in the future.

If you do want the show to play, perhaps its file was renamed, or deleted. If it was renamed, either rename it back, or else use the Schedule Editor to point to the new name of the show file instead of the old name. If it was deleted, check your computer's Recycle Bin.

If these suggestions do not resolve the situation, you may have to recreate the show, using the Show Editor.

The LOR Verifier
List of Verifier Messages

5.14.1.3.2 22: Error reading show file

Message Number: 22
Severity: Error
Summary: Error reading show file
Details: The name of the show file

You have a show scheduled, but the show cannot be loaded. For example, perhaps the show's file has become corrupted. The show will not play until this problem is resolved.

If you have any backups of the show file, check to see if they work. Otherwise, you may have to recreate the show, using the Show Editor.

The LOR Verifier
List of Verifier Messages

5.14.1.3.3 23: Sequence file does not exist

Message Number: 23
Severity: Error
Summary: Sequence file does not exist
Details #1: The name of the missing sequence file
Details #2: The name of the show file that this sequence is referenced in

One of your scheduled shows refers to a sequence file that does not exist. The sequence will not play in the show until this problem is resolved.

If you do not want the sequence to play, this is not a problem, but you may want to remove it from the show (using the Show Editor) so that this message does not appear in the future.

If you do want the sequence to play, perhaps its file was renamed (or placed in a different directory), or deleted.

If it was renamed (or placed in a different directory), you can either rename it back, or else use the Show Editor to point to the new name instead of the old one.

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If it was deleted, check your computers Recycle Bin, or any backups that you may have. Note that whenever you change a sequence and save it (using the Sequencer), Light-O-Rama automatically saves a backup copy of the file as it was before your changes, so you may be able to use that backup copy. It will be saved to the same directory as the original, with the file extension ".bak" appended to its name. For example, if your sequence is named "MySequence.las", the automatic backup will be named "MySequence.las.bak".

If none of these suggestions help, you may have to recreate the sequence, using the Sequencer.

The LOR Verifier
List of Verifier Messages

5.14.1.3.4 24: Sequence file cannot be loaded

Message Number: 24
Severity: Error
Summary: Sequence file cannot be loaded
Details: The name of the file

One of your scheduled shows refers to a sequence file that cannot be loaded. For example, perhaps the sequence file has become corrupted. The sequence will not play in the show until this problem is resolved.

If you have any backups of the sequence file, check to see if they work. Note that whenever you change a sequence and save it (using the Sequencer), Light-O-Rama automatically saves a backup copy of the file as it was before your changes, so you may be able to use that backup copy. It will be saved to the same directory as the original, with the file extension ".bak" appended to its name. For example, if your sequence is named "MySequence.las", the automatic backup will be named "MySequence.las.bak".

Otherwise, you may have to recreate the sequence, using the Sequencer.

The LOR Verifier
List of Verifier Messages

5.14.1.3.5 25: Show has no sequences

Message Number: 25
Severity: Warning
Summary: Show has no sequences
Details: The name of the show file

One of your scheduled shows has no sequences in it. This will not cause any problems - your other scheduled shows should play fine - but there isn't much point to scheduling a show without sequences, so this probably indicates a mistake.

If you want sequences to play in the scheduled show, use the Show Editor to add the sequences to the show.

If you do not want any sequences to play in the scheduled show, consider removing the show from your schedule, using the Schedule Editor, so that this message does not appear in the future.

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The LOR Verifier
List of Verifier Messages

5.14.1.3.6 26: Media file does not exist

Message Number: 26
Severity: Error
Summary: Media file does not exist
Details #1: The name of the missing media file
Details #2: The name of the sequence file that refers to the missing media file

One of your scheduled musical sequences refers to an audio file or video file that does not exist. The sequence will not play until this problem is resolved.

It is possible that the file has been renamed, placed in a different directory, or deleted.

If it has been renamed or placed in a different directory, you can either move it back to its original location, or else use the Sequencer to modify the sequence so that it points to its new location.

If it has been deleted, check your computer's Recycle Bin, or for any backups that you may have of the file.

The LOR Verifier
List of Verifier Messages

5.14.1.3.7 27: Conflicting channel settings in sequence

Message Number: 27
Severity: Warning
Summary: Conflicting channel settings in sequence
Details #1: The name of the sequence having the conflict
Details #2: The track containing the first conflicting channel
Details #3: The name of the first conflicting channel
Details #4: The track containing the second conflicting channel
Details #5: The name of the second conflicting channel

One of your scheduled sequences contains two different channels that both are set up to control the same physical string of lights - for example, they are both set up to control circuit 3 of Light-O-Rama unit 7 on the regular Light-O-Rama network.

Your sequence will play, but these two channels will fight for control over the lights hooked up to the circuit, which may have make the lights behave in ways that you weren't expecting.

The cause of this may simply be that one of the two channels is set up with the wrong unit ID, circuit number, network, or device type. In this case, use the Sequencer to change the channel's settings appropriately.

If you do intend both channels to control the same string of lights, the lights may or may not behave as you expect. The suggested way to do what you probably want is not to have two different channels with the same settings, but to have a single channel that is contained in two different tracks:

Let's say that you have "Channel A" in the first track, and "Channel B" in the second track. These channels have the same physical settings as each other, but different effect events. Then to change this situation to the suggested way, use the Sequencer as follows:

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First, copy Channel A from the first track to the second track.

Next, merge the effect events from Channel B into Channel A, so that Channel A contains the effect events from both channels.

Finally, delete Channel B.

This will leave you with a single channel - Channel A - which is contained in both tracks, and which contains all of the effect events that you wanted for its string of lights. Having this single channel in two tracks, instead of two different channels in the two tracks, will make the lights behave as you probably expect.

The LOR Verifier
List of Verifier Messages

5.14.1.3.8 28: Channel is completely off

Message Number: 28
Severity: Warning
Summary: Channel is completely off
Details #1: The sequence containing the channel
Details #2: The track containing the channel
Details #3: The name of the channel

One of your scheduled sequences contains a channel which is completely off for its entire duration.

Consider removing the channel from the sequence, using the Sequencer.

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List of Verifier Messages

5.14.1.3.9 29: Sequence is completely off

Message Number: 29
Severity: Warning
Summary: Sequence is completely off
Details: The name of the sequence file

One of your scheduled sequences has no lighting effects for any of its channels, except for having each of them off for the sequence's entire duration.

This may be intentional - for example, you may have scheduled a musical sequence so that a song plays while your lights are off. Otherwise, consider adding effects to the sequence, or removing the sequence from the show.

The LOR Verifier
List of Verifier Messages

5.14.1.3.10 30: Channel is missing settings

Message Number: 30
Severity: Warning

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Summary: Channel is missing settings
Details #1: The name of the sequence file containing the channel
Details #2: The track containing the channel
Details #3: The name of the channel

One of your scheduled sequences has a channel which is missing a required part of its physical settings - for example, perhaps it does not have a unit ID set.

This may be intentional - for example, perhaps you have a channel that shows the beat of a song, which you intend to use to help build other channels rather than to actually control lights when your show plays. If not, though, use the Sequencer to set the channel's settings appropriately.

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List of Verifier Messages

5.14.1.4 Verifier Messages 31-40

The following are some messages can be generated by the Light-O-Rama Verifier. For details on any given one, please refer to its individual help page. To see all possible messages, please refer to the List of Verifier Messages.

- Message 31 (Warning): **Channel uses undefined comm network**
- Message 32 (Warning): **Channel in tracks of conflicting length**
- Message 33 (Warning): **Musical file used in non-audio section of show**
- Message 34 (Warning): **Subsequences not supported**
- Message 35 (Warning): **Background sequences unsupported**
- Message 36 (Warning): **Startup sequences unsupported**
- Message 37 (Warning): **Shutdown sequences unsupported**
- Message 38 (Warning): **Interactive triggers unsupported**
- Message 39 (Warning): **Unsupported number of tracks**
- Message 40 (Warning): **Shell commands unsupported**

5.14.1.4.1 31: Channel uses undefined comm network

Message Number: 31
Severity: Warning
Summary: Channel uses undefined comm network
Details #1: The sequence that the channel is in
Details #2: The track that that the channel is in
Details #3: The name of the channel

One of your scheduled sequences contains a channel which is set up to use a network which does not have a comm port defined for it. The channel will not control lights until this issue is resolved.

The channel could be for a Light-O-Rama controller, which can be set up to use one of four different networks.

It is possible that the channel's network (or device type) is simply set incorrectly. For example, perhaps a channel for a Light-O-Rama controller was accidentally set to use the Aux A network, whereas you only have a comm port assigned to the Regular network. Or perhaps a channel was accidentally set to control a Dasher controller, whereas it was intended to control a Light-O-Rama controller. In cases like these, use the Sequencer to change the channel's settings in Prop Definition.

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Another possibility is that you do intend to use the network that the channel has assigned to it, but that network is not set up to use any comm port on your computer. In this case, use the Network Preferences program to specify a comm port for the network to use.

The LOR Verifier
List of Verifier Messages

5.14.1.4.2 32: Channel in tracks of conflicting length

Message Number: 32
Severity: Warning
Summary: Channel in tracks of conflicting length
Details #1: The sequence that the channel is in
Details #2: The name of the channel
Details #3: A track that the channel is in
Details #4: Another track that the channel is in

One of your scheduled sequences contains a channel which is in two different tracks, but those tracks are of different lengths. For example, one track is a minute long, while the other is two minutes long.

This will likely cause the lights hooked up to that channel to behave in a way that you don't expect, as different lighting effects from different parts of the same channel could be sent to the lights in an order that you were not expecting.

Unless you have done this intentionally, and understand the way that your lights will behave because of this, consider using the Sequencer to either remove the channel from one of the tracks or to change the tracks to be of the same length.

The LOR Verifier
List of Verifier Messages

5.14.1.4.3 33: Musical file used in non-audio section of show

Message Number: 33
Severity: Warning
Summary: Musical file used in non-audio section of show
Details #1: The sequence file
Details #2: The show file that refers to the sequence
Details #3: The section of the show that refers to the sequence

One of your musical sequences is scheduled in a section of a show that does not support audio or video. For example, perhaps a musical sequence is contained in the Background section of the show. The sequence will play at its scheduled time, but will only control lights; it will not play audio or display video.

Make sure that the sequence is in the section of the show that you intend it to be in. If it is not, use the Show Editor to move it to the appropriate section.

If it is in the section that you intended, consider using an animation sequence instead, to avoid possible confusion in the future.

The LOR Verifier
List of Verifier Messages

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5.14.1.4.4 34: Subsequences not supported

Message Number: 34
Severity: Warning
Summary: Subsequences not supported
Details #1: The name of the subsequence
Details #2: The name of the parent sequence containing the subsequence
Details #3: The name of the channel in the parent sequence referencing the subsequence

One of your scheduled sequences contains a channel set up to be a subsequence, but your license does not support subsequences (or you are using the unlicensed demo version of the software). The parent sequence will play at its scheduled time, but the subsequence will not.

If you already have a license, and have registered Light-O-Rama on this computer, then to get the subsequence to play, you would have to upgrade to a higher license level which supports subsequences.

If you are using the unlicensed demo version, and you have not yet purchased a license, you can do so from the Light-O-Rama website.

If you have already purchased one, try using it to register Light-O-Rama on this computer. If this does not work, perhaps you have already installed Light-O-Rama on the maximum number of computers covered by your license, or perhaps your license is for an older version of Light-O-Rama than the one that you are trying to run.

The LOR Verifier
List of Verifier Messages

5.14.1.4.5 35: Background sequences unsupported

Message Number: 35
Severity: Warning
Summary: Background sequences unsupported
Details: The name of the show file containing sequences in its Background section

One of your scheduled shows contains sequences in its Background section, but your license does not support sequences in this section. The show will play at its scheduled time, but sequences in this section will not.

If you already have a license, and have registered Light-O-Rama on this computer, then to get these sequences to play, you would have to either move them to a different section of the show, or else upgrade to a higher license level which supports this feature.

If you are using the unlicensed demo version, and you have not yet purchased a license, you can do so from the Light-O-Rama website.

If you have already purchased one, try using it to register Light-O-Rama on this computer. If this does not work, perhaps you have already installed Light-O-Rama on the maximum number of computers covered by your license, or perhaps your license is for an older version of Light-O-Rama than the one that you are trying to run.

The LOR Verifier
List of Verifier Messages

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5.14.1.4.6 36: Startup sequences unsupported

Message Number: 36
Severity: Warning
Summary: Startup sequences unsupported
Details: The name of the show file containing sequences in its Startup section

One of your scheduled shows contains sequences in its Startup section, but your license does not support sequences in this section. The show will play at its scheduled time, but sequences in this section will not.

If you already have a license, and have registered Light-O-Rama on this computer, then to get these sequences to play, you would have to either move them to a different section of the show, or else upgrade to a higher license level which supports this feature.

If you are using the unlicensed demo version, and you have not yet purchased a license, you can do so from the Light-O-Rama website.

If you have already purchased one, try using it to register Light-O-Rama on this computer. If this does not work, perhaps you have already installed Light-O-Rama on the maximum number of computers covered by your license, or perhaps your license is for an older version of Light-O-Rama than the one that you are trying to run.

The LOR Verifier
List of Verifier Messages

5.14.1.4.7 37: Shutdown sequences unsupported

Message Number: 37
Severity: Warning
Summary: Shutdown sequences unsupported
Details: The name of the show file containing sequences in its Shutdown section

One of your scheduled shows contains sequences in its Shutdown section, but your license does not support sequences in this section. The show will play at its scheduled time, but sequences in this section will not.

If you already have a license, and have registered Light-O-Rama on this computer, then to get these sequences to play, you would have to either move them to a different section of the show, or else upgrade to a higher license level which supports this feature.

If you are using the unlicensed demo version, and you have not yet purchased a license, you can do so from the Light-O-Rama website.

If you have already purchased one, try using it to register Light-O-Rama on this computer. If this does not work, perhaps you have already installed Light-O-Rama on the maximum number of computers covered by your license, or perhaps your license is for an older version of Light-O-Rama than the one that you are trying to run.

The LOR Verifier
List of Verifier Messages

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5.14.1.4.8 38: Interactive triggers unsupported

Message Number: 38
Severity: Warning
Summary: Interactive triggers unsupported
Details: The name of the show file using interactive triggers

One of your scheduled shows uses interactive triggers, either in an interactive group or as part of its startup options, but your license does not support interactive triggers. The show will play at its scheduled time, but its interactive triggers will not.

If you already have a license, and have registered Light-O-Rama on this computer, then to get these triggers to work, you would have to upgrade to a higher license level which supports subsequences. If your triggers are used for interactive groups, you could also move the sequences in them to a different section of the show (but if so, they will play immediately, not upon being triggered).

If you are using the unlicensed demo version, and you have not yet purchased a license, you can do so from the Light-O-Rama website.

If you have already purchased one, try using it to register Light-O-Rama on this computer. If this does not work, perhaps you have already installed Light-O-Rama on the maximum number of computers covered by your license, or perhaps your license is for an older version of Light-O-Rama than the one that you are trying to run.

The LOR Verifier
List of Verifier Messages

5.14.1.4.9 39: Unsupported number of tracks

Message Number: 39
Severity: Warning
Summary: Unsupported number of tracks
Details #1: The name of the sequence using too many tracks
Details #2: The number of tracks the sequence uses
Details #3: The allowed number of tracks

One of your scheduled sequences uses more tracks than your license supports. The sequence will play at its scheduled time, but its excess tracks will not.

If you already have a license, and have registered Light-O-Rama on this computer, then to get these tracks to play, you would have to upgrade to a higher license level which supports more tracks.

If you are using the unlicensed demo version, and you have not yet purchased a license, you can do so from the Light-O-Rama website.

If you have already purchased one, try using it to register Light-O-Rama on this computer. If this does not work, perhaps you have already installed Light-O-Rama on the maximum number of computers covered by your license, or perhaps your license is for an older version of Light-O-Rama than the one that you are trying to run.

The LOR Verifier
List of Verifier Messages

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5.14.1.4.10 40: Shell commands unsupported

Message Number: 40
Severity: Warning
Summary: Shell commands unsupported
Details: The name of the sequence using a shell command

One of your scheduled sequences is set up to use a Windows shell command, but your license does not support such commands. The sequence will play at its scheduled time, but the command will not be executed.

If you already have a license, and have registered Light-O-Rama on this computer, then to get the command to execute, you would have to upgrade to a higher license level which supports this feature.

If you are using the unlicensed demo version, and you have not yet purchased a license, you can do so from the Light-O-Rama website.

If you have already purchased one, try using it to register Light-O-Rama on this computer. If this does not work, perhaps you have already installed Light-O-Rama on the maximum number of computers covered by your license, or perhaps your license is for an older version of Light-O-Rama than the one that you are trying to run.

The LOR Verifier
List of Verifier Messages

5.14.1.5 Verifier Messages 41-50

The following are some messages can be generated by the Light-O-Rama Verifier. For details on any given one, please refer to its individual help page. To see all possible messages, please refer to the List of Verifier Messages.

- Message 41 (Warning): **Shell command map file does not exist**
- Message 42 (Warning): **Shell command not set**
- Message 43 (Warning): **Channel conflict**
- Message 44 (Warning): **Old MC-P compatibility enabled**
- Message 45 (Warning): **Channel settings conflict in sequence/intensity file**
- Message 46 (Warning): **Channel settings conflict in intensity file**
- Message 47 (Warning): **Intensity file conflict**
- Message 48 (Warning): **Channel/intensity file conflict**
- Message 49 (Warning): **Intensity file uses undefined comm network**
- Message 50 (Warning): **Intensity files not supported by license level**

5.14.1.5.1 41: Shell command map file does not exist

Message Number: 41
Severity: Warning
Summary: Shell command map file does not exist
Details: The expected name of the shell command map file

One of your scheduled sequences is set up to use a Windows shell command, but the command map file that defines the commands to execute does not exist. The sequence will play at its scheduled time, but the command will not be executed.

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This could be because you created the sequence on one computer, and moved it to another computer to play in your show, but did not move the command map file. Light-O-Rama keeps these commands in the command map file, rather than in the sequences themselves, due to security concerns. Please see Sharing Sequences between Computers, and Security for details.

The LOR Verifier
List of Verifier Messages

5.14.1.5.2 42: Shell command not set

Message Number: 42
Severity: Warning
Summary: Shell command not set
Details: The name of the sequence file with the missing shell command

One of your scheduled sequences is set up to use a Windows shell command, but the command map file does not list a command to be executed by that sequence. The sequence will play at its scheduled time, but no command will be executed.

This could be because you created the sequence on one computer, and moved it to another computer to play in your show, but did not move the command map file. Light-O-Rama keeps these commands in the command map file, rather than in the sequences themselves, due to security concerns. Please see Sharing Sequences between Computers, and Security for details.

The LOR Verifier
List of Verifier Messages

5.14.1.5.3 43: Channel conflict

Message Number: 43
Severity: Warning
Summary: Channel conflict
Details #1: The name of the show containing the channel conflict
Details #2: One of the sections of the show containing a sequence with the conflicting channel
Details #3: The sequence file in that section containing the conflicting channel
Details #4: The track in that sequence containing the conflicting channel
Details #5: The name of the conflicting channel in that track
Details #6: Another section of the show containing a sequence with the conflicting channel
Details #7: The sequence file in that section containing the conflicting channel
Details #8: The track in that sequence containing the conflicting channel
Details #9: The name of the conflicting channel in that track

One of your scheduled shows contains sequences which could possibly play at the same time, but which each contain a channel representing the same physical string of lights. For example, perhaps the show contains one sequence in its Background section, and another in its Musical section, which each contain a channel for Light-O-Rama unit 3 circuit 7 on the regular network. Since sequences in the Background section can play at the same time as those in the Musical section, this is a conflict.

The show, and its sequences, will play at the appropriate times, but the two channels may fight for control over the single string of lights that they are set up to use. This may lead to those lights behaving in a manner that you are not expecting.

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It is suggested that you use the Sequencer to check whether the channels are set up properly - for example, perhaps the unit ID of one of the channels was mistakenly set to an incorrect value. Otherwise, consider removing the conflicting channel from one of the sequences, or moving one of the sequences to a different section of the show, where it could not be played at the same time as the other sequence.

The LOR Verifier
List of Verifier Messages

5.14.1.5.4 44: Old MC-P compatibility enabled

Message Number: 44
Severity: Warning
Summary: Old MC-P compatibility enabled
Details #1: The network on which old MC-P compatibility is enabled

One of your networks has old MC-P compatibility enabled. This compatibility mode is required for certain controllers, but they are rare (Light-O-Rama MC-P controllers purchased prior to November 15, 2003). If you do not have any such controllers on this network, there is no reason to have this compatibility mode enabled, and in fact it can cause significant overhead on the network, potentially leading to lag in your lighting effects. It is suggested to turn this compatibility mode off (unless you have controllers that require it), which can be done through the Network Preferences program's "Misc" tab.

The LOR Verifier
List of Verifier Messages

5.14.1.5.5 45: Channel settings conflict in sequence/intensity file

Message Number: 45
Severity: Warning
Summary: Channel settings conflict in sequence/intensity file
Details #1: The sequence having the channel setting conflict
Details #2: The name of the track containing the channel having the settings conflict
Details #3: The name of the channel having the settings conflict
Details #4: The name of the intensity file having the channel settings conflict
Details #5: The range of addresses in the intensity file having the channel settings conflict

One of your sequences has a conflict between a channel defined in the sequence itself and an address defined in an intensity file associated with the sequence. For example, perhaps the sequence contains a channel which is set up to control Light-O-Rama unit 25 circuit 3 on the Regular LOR network, and the associated intensity file has a range of controlled addresses that includes that circuit - for example, perhaps the intensity file controls circuits 1 through 7 on unit 25 on the Regular Light-O-Rama network. In such cases, both the channel and the intensity file will simultaneously attempt to control the same physical circuit, and the resulting behavior of the lights is unlikely to be what you want or would expect.

To resolve this issue, change the channel and/or address range so that they no longer conflict with each other. Exactly how to do this depends upon the situation - for example, perhaps the conflict is due to a typo made in the channel's settings (perhaps its unit number is incorrect), in which case change the channel's settings. Or perhaps the issue should be resolved by changing the address range in the intensity file, or by deleting either the channel or the address range.

The LOR Verifier

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List of Verifier Messages

5.14.1.5.6 46: Channel settings conflict in intensity file

Message Number: 46
Severity: Warning
Summary: Channel settings conflict in intensity file
Details #1: The sequence having the channel setting conflict
Details #2: The name of the first intensity file having the channel settings conflict
Details #3: The first range of addresses having the channel settings conflict
Details #4: The name of the second intensity file having the channel settings conflict
Details #5: The second range of addresses having the channel settings conflict

One of your sequences has a conflict between two ranges of addresses controlled by its associated intensity files. For example, perhaps an intensity file is set up to control DMX universe 8 addresses 20 through 40, and also to control DMX universe 8 addresses 39 through 50. In this example, addresses 39 and 40 are both set up to be controlled twice, and the resulting behavior on the lights for those two addresses is unlikely to be what you would expect.

To resolve this issue, change the intensity file (or files) so that the address ranges do not overlap with each other.

The LOR Verifier
List of Verifier Messages

5.14.1.5.7 47: Intensity File Conflict

Message Number: 47
Severity: Warning
Summary: Intensity file conflict
Details #1: The show with the conflict
Details #2: The section of the show containing the first sequence with the conflict
Details #3: The name of the first sequence with the conflict
Details #4: The name of the intensity file associated with the first sequence with the conflict
Details #5: The range of addresses for the first side of the conflict
Details #6: The section of the show containing the second sequence with the conflict
Details #7: The name of the second sequence with the conflict
Details #8: The name of the intensity file associated with the second sequence with the conflict
Details #9: The range of addresses for the second side of the conflict

One of your shows contains two separate sequences which could possibly play at the same time as each other, and those two sequences each have associated intensity files which attempt to control some of the same physical lights as each other. For example, perhaps one intensity file attempts to control LOR Regular network unit 10 circuits 8 through 12, and the other attempts to control LOR Regular network unit 10 circuits 10 through 15. In this case, both are attempting to control circuits 10, 11, and 12 on that unit. If the two sequences actually do wind up playing at the same time as each other, the resulting behavior on the lights attached to those circuits is unlikely to be what you would expect.

How to resolve this issue depends upon the particulars of the situation. For example, perhaps the overlap is because of a typo in one of the intensity files' settings; perhaps "circuits 10 through 15" should have been "circuits 13 through 15". In this case, change the intensity file. Another possibility is that one of the sequences might not be in the correct section of the show -- for example perhaps it is in the Background section but should have been in the Animation section -- in which case the show file should be modified to correct it.

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The LOR Verifier
List of Verifier Messages

5.14.1.5.8 48: Channel/intensity file conflict

Message Number: 48
Severity: Warning
Summary: Channel/intensity file conflict
Details #1: The show with the conflict
Details #2: The section of the show containing the conflicting channel
Details #3: The name of the sequence containing the conflicting channel
Details #4: The name of the track containing the conflicting channel
Details #5: The name of the conflicting channel
Details #6: The section of the show containing the conflicting intensity file
Details #7: The name of the sequence with the conflicting intensity file
Details #8: The name of the conflicting intensity file
Details #9: The range of addresses containing the conflict in the intensity file

One of your shows contains two separate sequences which could possibly play at the same time as each other, and one of those sequences has a particular channel while the other has an intensity file which attempts to control the same physical lights as that channel. For example, perhaps one sequence has a channel that is set up to control LOR Regular network unit 10 circuit 8, while the intensity file attempts to control LOR Regular network unit 10 circuits 5 through 15. In this case, both are attempting to control circuit 8 on that unit. If the two sequences actually do wind up playing at the same time as each other, the resulting behavior on the lights attached to that circuit is unlikely to be what you would expect.

How to resolve this issue depends upon the particulars of the situation. For example, perhaps the overlap is because of a typo in one of the intensity files' settings; perhaps "circuits 5 through 15" should have been "circuits 13 through 15". In this case, change the intensity file. Or, similarly, perhaps the channel's settings are mistaken, in which case those settings should be modified. Another possibility is that one of the sequences might not be in the correct section of the show -- for example perhaps it is in the Background section but should have been in the Animation section -- in which case the show file should be modified to correct it.

The LOR Verifier
List of Verifier Messages

5.14.1.5.9 49: Intensity file uses undefined comm network

Message Number: 49
Severity: Warning
Summary: Intensity file uses undefined comm network
Details #1: The sequence whose intensity file uses the undefined comm network
Details #2: The intensity file using the undefined comm network
Details #3: The undefined comm network being used

One of your sequences uses an intensity file which attempts to control lights on a comm network that has not been defined. For example, perhaps it attempts to use the LOR Aux A network, but you have not set up the LOR Aux A network to use any particular COM port. In this case, your sequence will play, but the lights that attempt to use the undefined network will not be controlled.

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How to fix this issue depends upon the particulars of the situation. Perhaps the comm network used by the intensity file is mistaken, in which case the intensity file should be modified to use the correct network. Or perhaps the correct comm network is being used, but that comm network has not been set up via the Light-O-Rama Network Preferences program.

The LOR Verifier
List of Verifier Messages

5.14.1.5.10 50: Intensity files not supported by license level

Message Number: 50
Severity: Warning
Summary: Intensity files not supported by license level
Details #1: The sequence which is attempting to use an intensity file

One of your sequences uses an intensity file, but your license level does not support intensity files. The sequence will play, but any effects defined in the intensity file itself will not happen on your actual physical lights.

This issue can be resolved by upgrading your Light-O-Rama license to a level that supports intensity files.

The LOR Verifier
List of Verifier Messages

5.14.1.6 Verifier Messages 51-60

The following are some messages can be generated by the Light-O-Rama Verifier. For details on any given one, please refer to its individual help page. To see all possible messages, please refer to the List of Verifier Messages.

- Message 51 (Warning): **Use Compressed Sequences disabled**
- Message 52 (Warning): **Show Player Memory Restarts disabled**
- Message 53 (Warning): **Trigger uses undefined network**
- Message 54 (Warning): **Trigger uses LOR Enhanced network**

5.14.1.6.1 51: Use Compressed Sequences disabled

Message Number: 51
Severity: Warning
Summary: Use Compressed Sequences disabled

The LOR Control Panel option Use Compressed Sequences is disabled. When enabled, this option causes the Show Player to use compressed sequences instead of regular sequences. Loading a compressed sequence is significantly faster than loading a regular sequence, and the behavior of your lights should be exactly the same no matter whether you use a compressed sequence or the sequence that that compressed sequence was based on. Thus, enabling this option has the benefit that it may decrease loading delays in your show, with no drawback.

Unless you have a specific reason to believe that having this option enabled causes problems with your show, it is recommended that you enable it. You can do so via the LOR Control Panel's right-click popup menu.

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The LOR Verifier
List of Verifier Messages

5.14.1.6.2 52: Show Player Memory Restarts disabled

Message Number: 52
Severity: Warning
Summary: Show Player Memory Restarts disabled

The LOR Control Panel option Show Player Memory Restarts is disabled. When enabled, this option causes the Show Player to automatically shut down and restart in certain situations (not while your show is playing), as a proactive measure to mitigate the effects of possible hypothetical memory leaks.

Unless you have a specific reason to believe that having this option enabled causes problems with your show, it is recommended that you enable it. You can do so via the LOR Control Panel's right-click popup menu.

The LOR Verifier
List of Verifier Messages

5.14.1.6.3 53: Trigger uses undefined network

Message Number: 53
Severity: Warning
Summary: Trigger uses undefined network
Details #1: The name of the show containing the trigger
Details #2: The name of the undefined network that the trigger uses
Details #3: The name of the trigger

One of your triggers (either a show startup trigger or an interactive group trigger) uses a network that is not defined in Network Configuration. The trigger will not function during your show.

There are at least two different reasons why this warning may occur, and how to resolve the issue depends upon which one is the cause. First, there may be a mistake in the settings of the trigger itself; for example it may be set up to use network Aux B, whereas you intended it to use network Aux A. In this case, change the definition of the trigger (either in the show startup options or the interactive group, depending upon what kind of trigger it is). Second, the trigger may be set up to use the intended network, but that network might mistakenly not have a comm port defined for it. In this case, use the Network Configuration program to set the configuration of the network.

The LOR Verifier
List of Verifier Messages

5.14.1.6.4 54: Trigger uses LOR Enhanced network

Message Number: 54
Severity: Warning
Summary: Trigger uses LOR Enhanced network
Details #1: The name of the show containing the trigger
Details #2: The name of the LOR Enhanced network that the trigger uses
Details #3: The name of the trigger

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One of your triggers (either a show startup trigger or an interactive group trigger) uses an LOR Enhanced network. Triggers are not supported on LOR Enhanced networks, and the trigger will not function during your show.

There are at least two different reasons why this warning may occur, and how to resolve the issue depends upon which one is the cause. First, there may be a mistake in the settings of the trigger itself; for example it may be set up to use the Enhanced network Aux B, whereas you intended it to use non-enhanced network Aux A. In this case, change the definition of the trigger (either in the show startup options or the interactive group, depending upon what kind of trigger it is). Second, the trigger may be set up to use the intended network, but that network might mistakenly be marked as Enhanced. In this case, use the Network Configuration program to change the configuration of the network.

The LOR Verifier
List of Verifier Messages

5.15 Sequence Compressor

Compressed sequences are intended for use during shows, as they can be loaded much faster than their associated sequences, yet contain all information necessary to play the sequence. The Show Player will try to create compressed versions of the scheduled sequences (.PLAY.LMS files) when each sequence is first played, but this can delay the start of the sequence by more than a minute for large sequences (this delay only occurs the first time the sequence is played). To avoid this delay, you can compress your sequences ahead of time using the Sequence Compressor program.

It can be used to compress all sequences in the entire schedule, or all sequences in a specified show, or a single specified sequence. Simply choose which of those you want to do (and, if appropriate, choose the show or sequence), and click the "Compress" button. The "Output Log" tab will show what the Sequence Compressor is doing, as it does it. When the Sequence Compressor finishes, it will open a message box saying so, and the "Results" tab will contain a summary of what has been done. The summary will say, for example, how many (and which) sequences were compressed, and give details about any errors or warnings that happened. If desired, the "Save" button can be used to save both the results summary and the output log to a file.

If some particular sequence already has an up-to-date compressed sequence available, the Sequence Compressor will simply skip that sequence, unless the "Force compression even for sequences that are already compressed" box is checked.

Please note that not all sequences can be compressed. In particular, any sequence that contains a loop cannot be compressed, nor can any S4 sequence that contains two or more tracks with different time lengths. If such a sequence is encountered, the Sequence Compressor will issue a "warning" about it.

Compressed sequences have a .LCS file extension.

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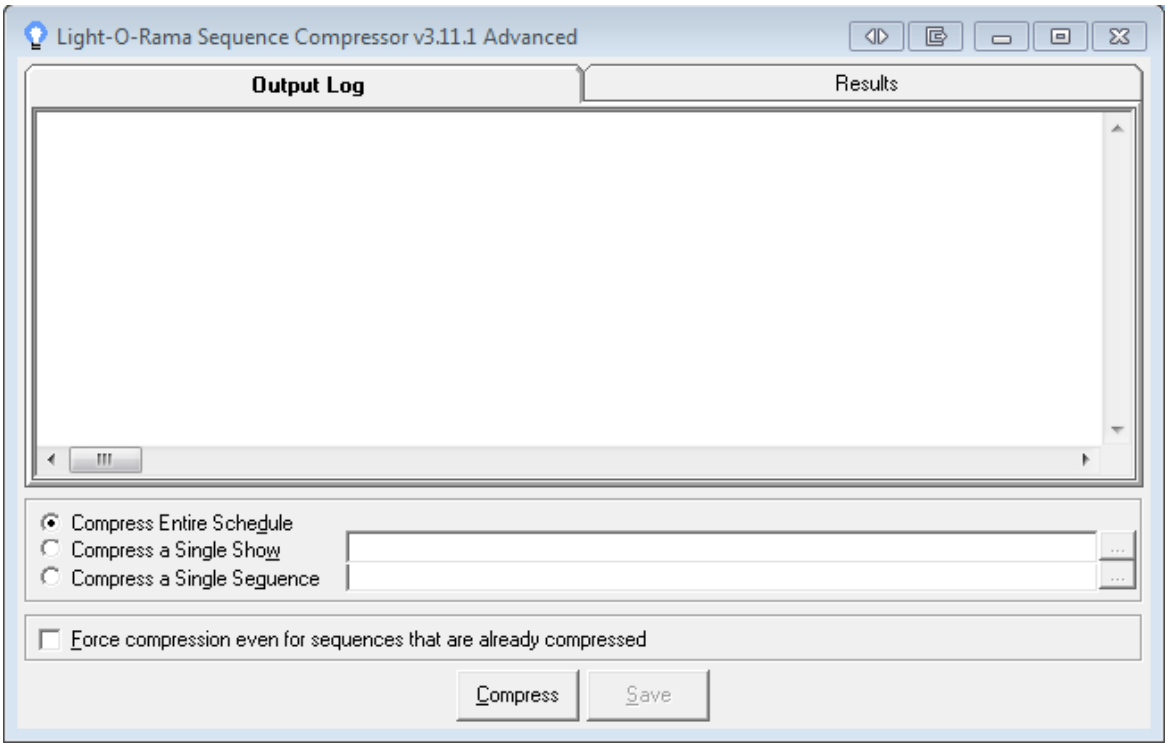

The Light-O-Rama Sequence Compressor

5.16 Diagnostic

The Light-O-Rama Diagnostic tool can be used in troubleshooting. It shows a snapshot of your Light-O-Rama configuration, such as registry settings and the version numbers of the various Light-O-Rama programs.

When the Light-O-Rama Diagnostic tool starts up, it may take several seconds before it displays your configuration information. During this time, it will tell you to please wait while Light-O-Rama gathers information.

After the configuration information has been displayed, you can copy the results to the Windows clipboard via the "Copy" button, or save them to a disk file via the "Save" button. There is also an "Advanced" button, which can be used to collect additional information that LOR Diagnostic does not collect by default.

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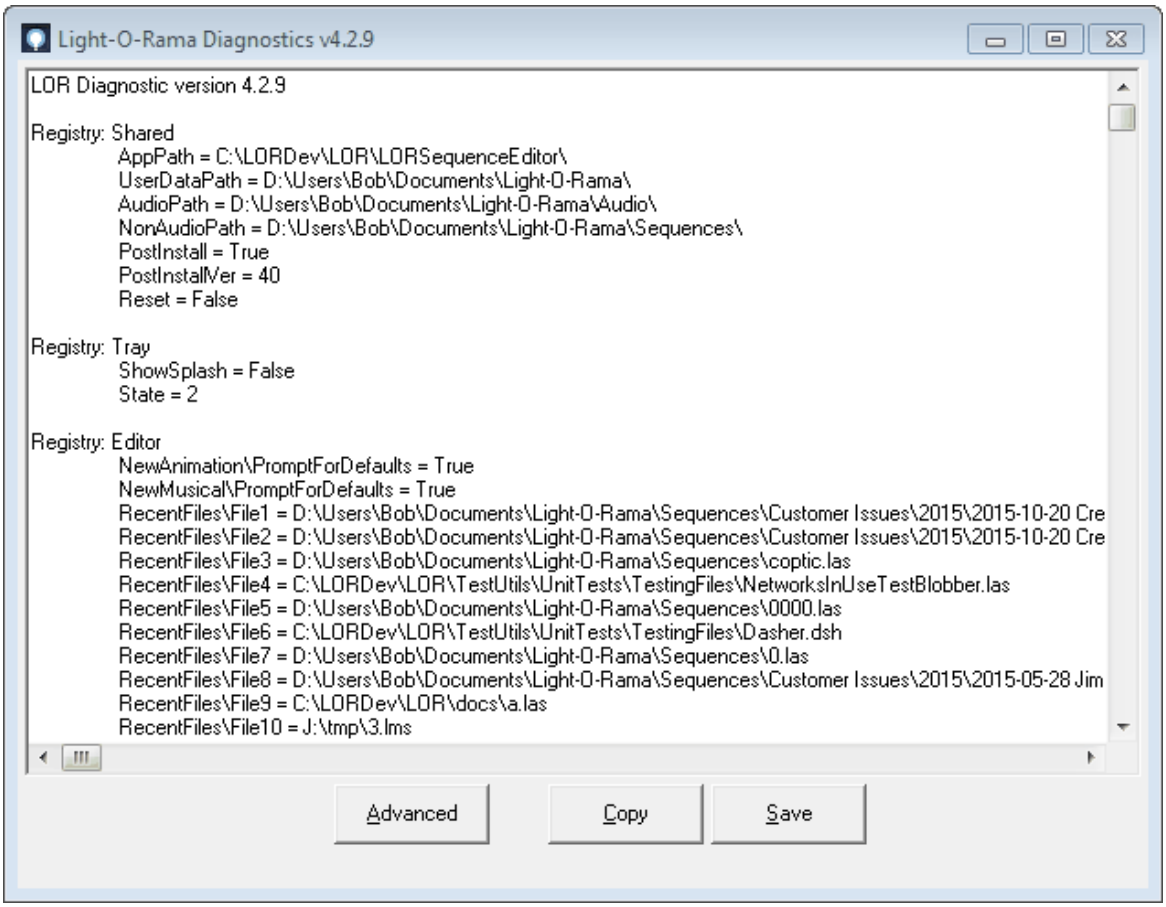

The Light-O-Rama Diagnostic tool

5.17 Offline Registration Utility

The Offline Registration Utility is a program that you can use to help register the Light-O-Rama Software Package on a computer which is not connected to the internet. It must be run on another computer, which is connected to the internet. If you do not have another computer which is connected to the internet, you can still register an offline computer by calling Light-O-Rama.

Please see the help file page "Registering Offline" for details.

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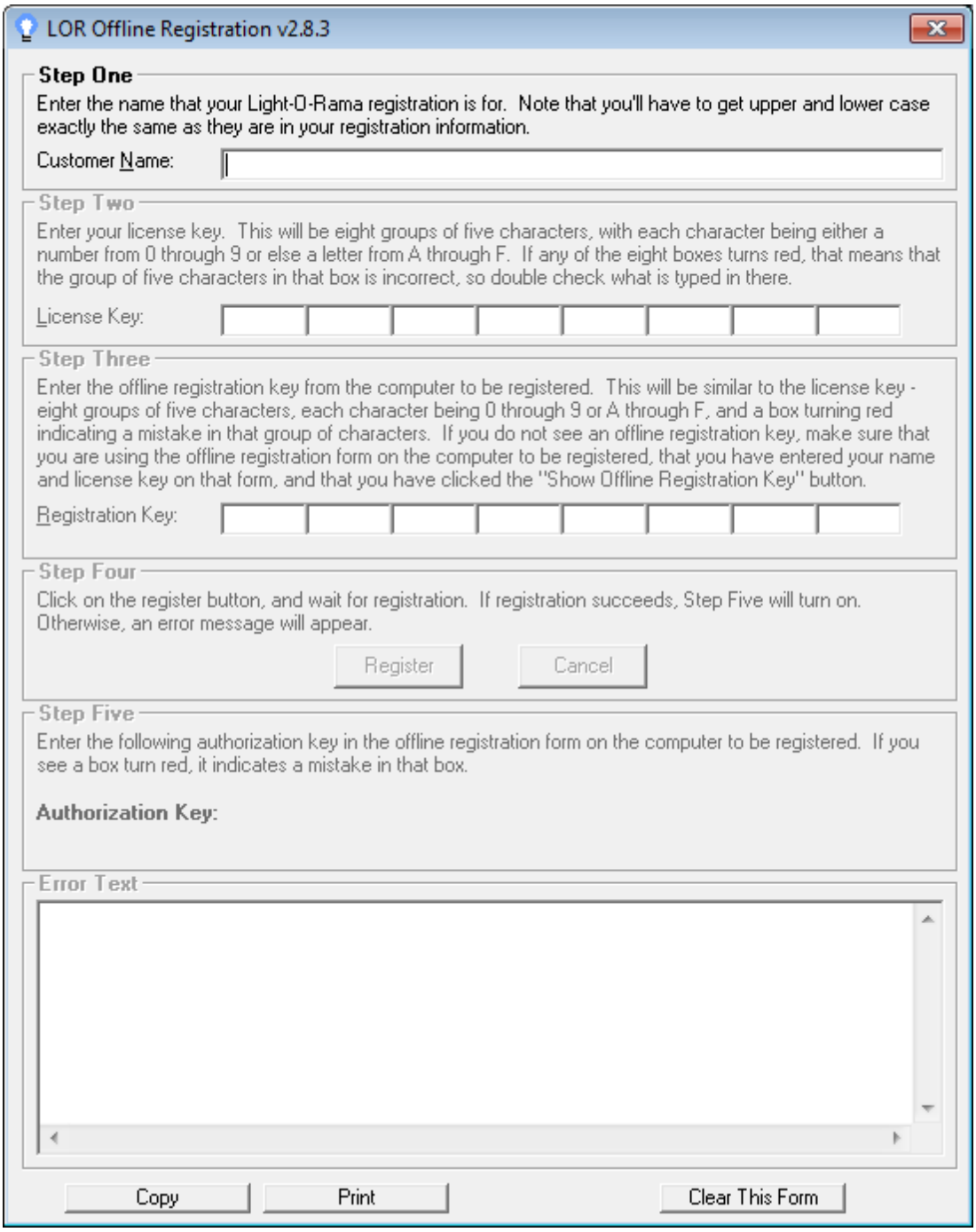

The Offline Registration Utility

5.18 Registry Wiper

The Light-O-Rama Registry Wiper tool deletes your Light-O-Rama configuration from your computer's registry. This is for use in troubleshooting severe cases.

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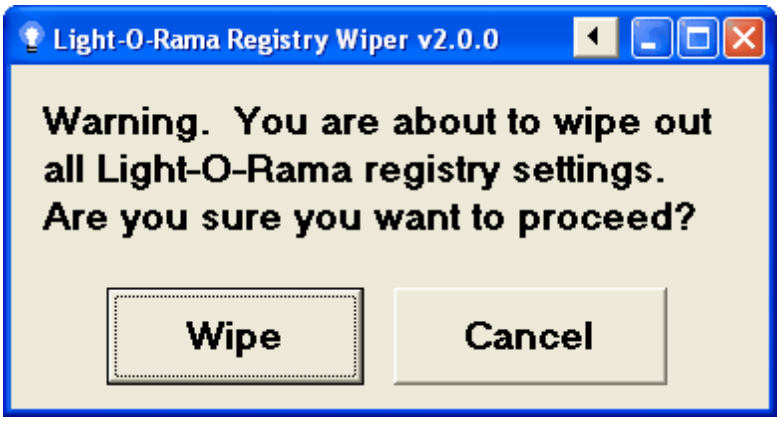
IMPORTANT: After running the Light-O-Rama Registry Wiper tool, your Light-O-Rama software will not run. You will need to reinstall Light-O-Rama. Also, even after having reinstalled, you will have lost certain preferences settings that you may have previously set.

The Registry Wiper tool is not a standard part of the Light-O-Rama software package. It is available from Light-O-Rama via the Help Desk, for troubleshooting severe cases.

The Registry Wiper tool *should not be used* except in extreme situations.



The Light-O-Rama Registry Wiper tool

If you have previously registered your copy of Light-O-Rama, after selecting "Wipe", you may be presented with a choice of whether to keep your licensing information (such as your license name and license key) in the registry or not. If you choose not to, your copy of Light-O-Rama will run in Demo mode afterwards, until you re-register. Note, though, that you will still be able to re-register using your exact same licensing information.

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