



version 5.1.4

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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.

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

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](#).

## 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 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.

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?**

### Updates Made to Older Versions

- [What's New in Version 4.x.x](#)
- [What's New in Version 3.x.x](#)
- [What's New in Version 2.x.x](#)
- [What's New in Version 1.x.x](#)

### What's New in the Latest Version

- [What's New in Version 5.1.4](#)
- [What's New in Version 5.1.2](#)
- [What's New in Version 5.1.0](#)

### What's New in Version 5.1.4

- [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 Definition. 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 Selected 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:

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.

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 lkubsrule.

<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 button (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:**

- 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 within 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.
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.
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 the S4 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.

## ***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.

## 2.1 What's New in Version 4.x.x

- [What's new in Version 4.3.36](#)
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## What's New in Version 4.3.36

- [Registry Wipe can now clean Program Files folder](#)
- [New Superstar Auto Sequence Options](#)
- [Bug Fixes](#)

### ***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.

### ***New Superstar Auto Sequence Options***

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'.

### ***Bug Fixes***

- The following bugs or small improvements have all been fixed or made in [Superstar](#)
  - [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 within 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.supe'.
  - When saving in the [Demo](#) Version, the suggested filename was incorrectly defaulted to '.supe.supe'.
  - 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.
- o Writing large [images](#) could cause the program to crash.
- o The number of fonts has been increased to 30 to allow for user created fonts to be used.
- o While using the Pixel Extender, if the Layer Priority feature was active pixels were extended too far.
- o When using the [Move or Scale effects tools](#) after [selecting effects](#) that have a group in the selection, the effects would not be applied.
- o When using the [Move or Scale effects tools](#) while in wrap around mode, some effects were not wrapped properly.

## What's New in Version 4.3.34

- [Bug Fix](#)

### **Bug Fixes**

- When [installing 4.3.32](#) on new computer (one that has not had S4 installed on it previously), The Post Install program would error out on creating the Downloads directory.

## What's New in Version 4.3.32

- [New Auto Sequence Effects for Superstar](#)
- [Bug Fixes](#)

### **New Auto Sequence Effects for Superstar**

Auto Sequence effects in [Superstar](#) are a cross between [standard effects](#) and [Instant Sequence](#).

### **Bug Fixes**

- When [installing 4.3.28 or 4.3.30](#) over the top of an older version of the software (an upgrade) the install would appear to work successfully. However on some computers starting any of the LOR programs would then re-start the install process as if it had not completed or had an error. The installer for this version should fix that behavior.
- In [Superstar](#), in some cases intensity data was exported incorrectly in [Visualization Mode](#).
- In [Superstar](#), an [LOR CCR](#) string could cause a "Channel XX in <channel name> is assigned to more than one object in the visualization file" error.
- In [Superstar](#), scenes were not rendering correctly on visualizations with a length different than 50.
- In [Superstar](#), opening a file with the extension .supe, making changes, and exiting the program could sometimes cause an error that the filename did not end in .sup
- In [Superstar](#), when using star effects on a group and then importing a [visualization](#) with a star, the group could no longer be expanded.
- In [Superstar](#), in some cases when scenes are part of a group, grouping could be incorrectly changed.
- In [Superstar](#), fan effects longer than 1:51.3 would not display on time layers
- In [Superstar](#) exporting in half ribbon CCR mode was not working properly.

## What's New in Version 4.3.30

- [Bug Fix](#)

### **Bug Fix**

- In [Superstar](#) the colors of scenes did not render properly when used on a visualization.

## What's New in Version 4.3.28

- [Update Pixel Editor to use same support packages as S5](#)
- [Pixel Editor Now Shows an error message if intensity data failed to save](#)
- [The Configuration of Cosmic Color Devices and Pixies has been split](#)
- [Support for 'Dynamic Files'](#)
- [Support for new upcoming LOR Props](#)
- [Support for new upcoming Pixie Firmware](#)
- [Superstar Clip Rectangles](#)
- [Bug Fixes](#)

### **Update Pixel Editor to use the same packages as S5 Sequencer**

Several support libraries were updated to use the same packages in Pixel Editor as in the upcoming S5 Sequencer for compatibility. This should be transparent to the user.

### **Pixel Editor now shows an error message if intensity data failed to save**

It was possible in previous versions of the Pixel Editor that the user was not notified if the save of Intensity Data failed.

### **The Configuration of Cosmic Color Devices and Pixies has been split**

Previously the [Hardware Utility](#) treated both [Cosmic Color Devices](#) and Pixie based controllers identically when being configured. They now have separate configuration screens.

### **Support for 'Dynamic Files'**

In order to better support new [hardware](#), several files can now be downloaded automatically from the internet by the software if the user is online. As of this release, the software can now download the LOR\_DeviceFile.txt file, as well as a new file for supporting Pixie based Props in the [Hardware Utility](#). These new files are downloaded into your LOR Data Directory. They can be found in LORInternal/Downloads.

You should not modify any of the files in the LORInternal folder.

Even though the software *can* download these files, it is **not** required that your computer be online. If you are not online, the LOR software will still work, although it may be with outdated data.

### **Support for new Upcoming LOR Props**

The [Hardware Utility](#) has been updated to allow for the configuration of new LOR Props. These props will be physical items you can purchase, like Singing Faces, and quickly integrate into your show.

### ***Support for new Upcoming Pixie Firmware***

New [firmware](#) for the LOR Pixie controllers will be released that allows for Props as well as by port Triplet Ordering.

### ***Superstar Clip Rectangles***

Previously Scenes and Morphs did not have a clip rectangle. That has now been added so all effects now have a clip rectangle. The Modify Selected Events button was also modified to support these new clip rectangles.

### ***Bug Fixes***

- In the Network Preferences program, the [IP Troubleshooter](#) could not be started for [PixCon MKII](#) boards.
- In the Network Preferences program, the [IP Troubleshooter](#) could occasional crash depending on the configuration of the users computer.
- In the Network Preferences program, the [IP Troubleshooter](#) was not properly sending broadcast packets to change a [PixCon](#) to Dynamic or Static IP addressing.
- In the [Hardware Utility](#) when working with the configuration of a Pixie, changes may not have been picked up until the Refresh button was pressed.
- In [Superstar](#) if the .sup file opened has more ribbons than is currently displayed, and the audio file fails to open, the program would crash.
- In [Superstar](#) the Shockwave maximum for the head and tail are now 200. Formerly it was 50.
- In [Superstar](#) when using Instant Sequence Trigger Size could exceed the maximum.
- In [Superstar](#) a left single click on time scale may not have marked the beginning of the selection.
- In [Superstar](#) when using the Image dialog box. If "Apply X,Y in Preview" was selected and an image was selected, the image would not be drawn at X,Y unless the user pressed "Modify".
- In [Superstar](#) when using the Text dialog box occasionally no font would be selected
- In [Superstar](#) the state of some controls in the Scene, Morph, Smooth Effects, Image, and Text dialog boxes were not being saved/restored when switching between modes using the toolbar buttons.

## **What's New in Version 4.3.26**

- [SuperStar Improvements](#)
- [Support for PixCon16 MkII](#)

### ***SuperStar improvements***

- Fixed a bug where if you do a "move or scale selected group" then immediately do a "group modify move" and it moves everything to the location of the first selection. This has been fixed.
- Fixed a bug where if a scene has pixels that have been moved to the left of the visible sequencing grid it could cause the program to hang when playing the sequence or exporting to sequence

editor

- Added the button "Set Grid Bitmap and Add Image" to the image dialog box
- Increased the maximum number of Intensity data files that you can merge from 10 to 15
- Images with a preRamp or postRamp in wrapAround mode could cause superstar to crash when played or exported to sequence editor.
- Group Modify of Text preRampLength, PostRampLength, FadeToBright, FadeFromBright, and clipRectangle, were not working.
- Changed it so if you do "Select All", "Select All Right", or "Select All Left" and you are not in a group, then it selects things in all groups in addition to things that are not in a group.
- Fixed a bug where if you have a sequence with star effects and you import a visualization without a star and it removes the star effects, it removed the star effects but it did not update the Scene dialog box, so the effects still showed up in the dialog box.

### ***Support for PixCon16 MkII***

LORNetworkPreferences supports PixCon16 MkII boards.

## **What's New in Version 4.3.24**

- [Bug Fix](#)

### ***Bug Fix***

- The [Hardware Utility](#) when started would occasionally not send heartbeats to controllers, leading to seemingly erratic behavior: not being able to detect units, only detecting some units not others, etc.

## **What's New in Version 4.3.22**

- [Changes to SuperStar Files/Clipboards](#)
- [Improvements to SuperStar's Load/Save Clipboard dialog](#)
- [New Superstar 'Time Layer Priority' feature](#)
- [Bug Fixes](#)

### ***Changes to Superstar Files/Clipboards***

If the current license level does not support exporting the current layout, the associated .sup and .scb files are encrypted and can only be opened on the computer that created them.

### ***Improvements to SuperStar's Load/Save Clipboard dialog***

Users can now change and create folders in the dialog.

### ***New SuperStar Time Layer Priority feature***

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. Added Transparent, Semi-Transparent, and Solid in the Effect dialog boxes. These settings are used when the "Time Layer Priority Feature" is enabled.

## **Bug Fixes**

- In [Hardware Utility](#) and [Simple Show Builder](#) when [creating an SD card](#) the files created were always empty.
- In [SuperStar](#) the export of a sequence would sometimes only export the effects from where the time ruler is currently at.
- In [SuperStar](#) in the Load/Save Clipboard dialog box, the effect counts were not being updated if you navigated to a folder.
- In [SuperStar](#) the number of rows for the Timing Map was being incorrectly set to 3.
- In [SuperStar](#) when using Instant Sequence, the program was not taking into account if the number of rows changed, so the Timing Map also did not reflect the correct rows.
- In [SuperStar](#) improved the Image Group Modify dialog as well as the added a Preferences Box.
- In [SuperStar](#) When saving a clipboard to a file, the file that was added becomes selected in the list.

## What's New in Version 4.3.20

- [Improved Hardware Utility testing of Pixie and Cosmic Color Devices](#)
- [Support for new PixCon16 Firmware version 1.4.13](#)
- [Bug Fixes](#)

### ***Improved Hardware Utility testing of Pixie and Cosmic Color Devices***

The [Hardware Utility](#) has been updated to allow for more intuitive [testing](#) of [Pixie and Cosmic Color Devices](#).

### ***Support for new PixCon16 Firmware, version 1.4.13***

Firmware 1.4.13 of the PixCon board has been released. There are no new features - this is only a maintenance release.

## **Bug Fixes**

- In some cases if a board that was not in the DeviceFile was searched for in the [Hardware Utility](#), the hardware utility could incorrectly log debug information as if the device were a [Pixie board](#). This did not affect the end user, but should not have been occurring.
- In Pixel Editor the OpenGL version on certain computers was not being detected correctly, leading to a race condition.

## What's New in Version 4.3.18

- [New Enhanced File Processing for G3 MP3 directors](#)
- [New Firmware for G3 MP3 Directors](#)
- [Bug Fixes](#)

### ***New Enhanced File Processing for G3 MP3 directors***

A new File Format is now created when writing an SD card with the [Hardware Utility](#) when a [Network](#) contains Enhanced Light O Rama commands. This new file format improves the performance of the

MP3 director when using high speed (500K, 1000K) networks. To take advantage of this performance enhancement, you must re-create your SD card using the Hardware Utility, as well as update your MP3 director to the latest firmware.

### ***New Firmware for G3 MP3 Directors***

[New firmware](#) for [G3 MP3](#) directors has been released to support the New Enhanced File processing above. This firmware also corrects a bug that would sometimes cause a [PixCon16](#) running at 1000K to misfire/not connect.

### ***Bug Fixes***

- When writing an SD card with the [Hardware Utility](#), in some rare cases where the first sequence only had [REGular LOR](#) commands and a [non-G3MP3](#) director was selected, a blank Enhanced file could be written to the SD card instead of regular commands.
- In [Superstar](#), when importing a visualization that forced a fixture to column 64 an error was incorrectly reported. This error should occur only if the column is 65 or greater.
- In the [Hardware Utility](#), the '[Channel Mode](#)' for Cosmic Color Ribbons was being incorrectly set.
- In the [Sequence Editor](#), if the user added a [Pixie Device](#) with [Insert Device](#), in many cases the [Unit IDs](#) of the created channels were not incremented properly.
- In the [Hardware Utility](#), the progress bar when writing an SD card was not correctly reflecting actual progress.

## **What's New in Version 4.3.16**

- [Hardware Support for Pixie Controllers](#)
- [Hardware Support for New 4 port MP3 Director](#)
- [Insert Pixie Device in Sequence Editor](#)
- [New SD Card Wizard for writing MP3 Director SD cards in Hardware Utility](#)
- [Bug Fixes](#)

### ***Hardware Support for Pixie Controllers***

[Hardware Utility](#) support for [Pixie16](#), [Pixie 8](#), and [Pixie 4](#) controllers has been added. You can now configure these devices for use. Please note that the [Sequence Editor](#) has not been updated to include Pixie devices, and the Visualizer will only support 50 pixels on a [Unit ID](#) until a future update.

### ***Hardware Support for New 4 port MP3 directors***

[Hardware Utility](#) support for an upcoming 4 port [MP3 Director](#) has been added. This hardware has not been released for sale yet.

### ***Insert Pixie Device in the Sequence Editor***

The [Sequence Editor's Insert Device](#) dialog can now insert [Pixie devices with 2,4,8 or 16 ports](#).

### ***New SD Card Wizard for writing MP3 Director SD cards in Hardware Utility***

In support for the new 4 port [MP3 director](#) and other future improvements to SD card handling, the way SD cards are written in the [Hardware Utility](#) has changed somewhat. The old '[Final Options](#)' [screen has been replaced with a wizard](#). There are no functionality changes.

## **Bug Fixes**

- In many, but not all, cases when using the [Pixcon16](#) 'simple' [configuration](#) if the RGB Triplet order was changed it was not actually updated on the board.
- When updating the [configuration](#) of a [PixCon16](#), an error 513 or 528 could appear if the voltage for Bank 2 changed between the time the packet was written and the board was re-read.
- In some very rare cases, when writing a show to an SD card with the [Hardware Utility](#), one or both ports may not have been [throttled](#).
- While running a [show](#), if a [sequence](#) started playing that used video media, and the video mode was set to Full Screen, the [Show Player](#) would not always put the video in full screen mode.
- In [Superstar](#), if you clicked on an effect in the list box and the effect was in a group, the grouping would be corrupted.
- In [Superstar](#), if you right clicked to bring up the color picker dialog while moving the mouse, the dialog was not updated.
- In [Superstar](#), on some computers, saving sequences to audio files to the desktop was not working.
- In [Superstar](#), spiral and fan effects that were part of a group would not stay as part of the group when saved.
- In [Superstar](#), in some cases importing a matrix wizard with the origin set at the top were not working.
- In [Superstar](#), Star hotspots were being incorrectly drawn when in CCR and Floating window mode. The hotspots are no longer drawn, matching the behavior when floating windows are turned off.
- In [Superstar](#), changed an error message instead to a warning if an effect were added that straddled a text action mask. The action is now allowed.
- In [Superstar](#), saved state of the "Pixel Extender" if it was active, and warn the user that it is ON the first time they try to run a sequence.
- In [Superstar](#), when using the Pixel Extender, morph coordinates were being incorrectly clipped if the Pixel Extender is shrinking effects.
- In [Superstar](#), if you exceeded 64 columns by using force row/column in a prop and/or fixture, the program would crash instead of producing an error.
- In [Superstar](#), in some cases groups were not saved to clipboard files properly.
- In [Superstar](#), while doing a copy/paste between two different instances of the program, the groups were not pasted properly.
- In [Superstar](#), the maximum number of image actions has increased from 5,000 to 10,000.
- In [Superstar](#), the 'Scene Group Modify' wrap check box now supports 'no wrapping'.
- In [Superstar](#), properly convert star scenes to RGB scenes when importing a visualization that has a Superstar RGB star.

## **What's New in Version 4.3.14**

- [New Pixel Types supported on PixCon16](#)
- [New Test Mode available on PixCon16 configuration](#)
- [New PixCon16 Firmware](#)
- [New firmware for G3 MP3 directors](#)
- [Bug Fixes](#)

### ***New Pixel Types supported on PixCon16***

The [PixCon16](#) can now also run SK6812 (RGB only, not RGB+W), UCS1903 and P9813 pixels. PixCon16 [firmware](#) of 1.4.11 or higher is required.



## ***New Test Mode available on PixCon16 configuration***

The [PixCon16](#) can now be placed into hardware test mode using the [Network Preferences configuration program](#). PixCon16 [firmware](#) of 1.4.11 or higher is required.

## ***New PixCon16 firmware***

[Firmware](#) version 1.4.11 (filename PixCon16 Firmware Showtime (S4)-V1.4.11.nhx) has been released and includes support for the new pixel types and test mode entry from above.

## ***New Firmware for G3 MP3 directors***

[Firmware](#) version 5.36 has been released for the [MP3g3](#) (filename: MP3g3-V5\_36.lhx), [uMP3](#) (filename: uMP3g3-V5\_36.lhx), and [LOR1602g3MP3](#) (filename: MP3g3-V5\_36.lhx) [MP3 directors](#). This firmware allows for faster show start-up when using [DMX output](#) exclusively.

## ***Bug Fixes***

- In some cases if a [PixCon16](#) board were [connected and searched for](#) and the 'Minimum Required Version' for the board was higher than the software could handle, it would not be shown at all when it should have been shown in red.
- During an [update](#) of the [PixCon16](#), the re-read of the board's configuration could time out. The time out period was increased.
- In [SuperStar](#), a bug was fixed that was limiting Visualizer locations to 50 in the y direction. This has been increased to 360.

## **What's New in Version 4.3.12**

- [Altered ServoDog Utility parameter adjustment](#)
- [Select all effects in SuperStar](#)
- [Grouping effects in SuperStar](#)
- [Open each frame of an animated GIF in SuperStar](#)
- [Added info in SuperStar's Layout dialog for imported visualizations](#)
- [Bug fixes](#)

## ***Altered ServoDog Utility parameter adjustment***

The [ServoDog Utility](#) now adjusts servo parameters relative to the channel's neutral trim and not with absolute values.

## ***Select all effects in a row in SuperStar***

In [SuperStar](#), you can now [select all effects that are in a specified row](#) in the the time layers.

## ***Grouping effects in SuperStar***

In [SuperStar](#), you can now ["group" effects](#) in time layers. After making a group, you can ["Expand"](#) and ["Compress"](#) the group. You can also ["Ungroup"](#) the effects.

## ***Open each frame of an animated GIF in SuperStar***

In [SuperStar's "Import Image"](#) feature, you can now open each frame of an animated GIF.

### ***Added info in SuperStar's Layout dialog for imported visualizations***

If you have [imported a visualization](#) in [SuperStar](#), the Layout dialog box will now display the number of channels in the visualization and the [license level](#) required to export the visualization.

### ***Bug fixes***

- [SuperStar's](#) mapping of visualization colors to the four basic colors has been improved. In particular, 128,0,128 was being mapped to red, and now maps to purple.
- In the past, if you launched two instances of [SuperStar](#) and used a different audio file in each one, the first one launched would use the other one's audio file. This has been fixed.

## **What's New in Version 4.3.10**

- [New 'Round Robin' play for G3MP3 directors](#)
- [New Firmware for G3MP3 directors](#)
- [Bug fixes](#)

### ***New 'Round Robin' play for G3MP3 Directors***

- [G3MP3 directors](#), with a [firmware](#) upgrade, can now play sequences in a ['Round Robin'](#) when using triggers.

### ***New Firmware for G3MP3 Directors***

- [Firmware](#) version 5.34 for both the [G3-MP3](#) (filename: MP3g3-V5\_34.lhx) and the [uMP3g3](#) (filename: uMP3g3-V5\_34.lhx) director has been released to support Round Robin triggers.
- [Firmware](#) version 5.34 for the [G3-MP3](#) (filename: MP3g3-V5\_34.lhx) also fixes a problem where DMX channels could be left in an inconsistent state when an SD card was inserted.
- [Firmware](#) version 5.34 for the [uMP3g3](#) (filename: uMP3g3-V5\_34.lhx) director now correctly turns the status LED ON when a card is initially inserted.

### ***Bug fixes***

- When the [Hardware Utility](#) created a show for an [MP3 Director](#) with [DMX channels](#), the DMX channels would always be turned off at the end of the sequence regardless of what the value of the ["Keep lights ON at end if using DMX"](#) option was.

## **What's New in Version 4.3.8**

This version contains no functional changes, only some textual changes.

## **What's New in Version 4.3.6**

- [CF50D firmware](#)
- [Import Image in SuperStar](#)
- [Bug fixes](#)

## CF50D firmware

Version 1.05 of the [firmware](#) for the CF50D has been released (filename CF50D-V1\_05.lhx). This version fixes problems with delayed response when attached to an [Enhanced LOR network](#). It is the first version of firmware for the CF50D to be included with the LOR software suite installer.

## Import Image in SuperStar

[SuperStar](#) now has an [Import Image](#) feature to import image files such as .jpg, .gif, .bmp, .png, and .ico files.

## Bug fixes

- If the first channel for [SuperStar's](#) star were set to anything but 1, [export as intensity data](#) to a new file would fail because it did not create an empty [channel](#) for the container [sequence](#).
- If you did an "[Export to Sequence Editor](#)" in [SuperStar](#) when in CCR mode with DMX selected in [Configuration dialog box](#), then the first time you played to the screen, the effects would get shifted and scrambled.
- If you used an imported [visualization](#) in [SuperStar](#), and the visualization contained a DMX Prop name that contained an ampersand or quote character, then the [Sequence Editor](#) would fail to open the exported file, displaying the error "Expected entity name for reference".
- If a sequence has the white color in it, [SuperStar](#) now displays the white color even if the display only has red, green, and blue in it. This is so that you can remove the white color if you want.
- In [SuperStar](#), white lights that were on a row that was below an RGB matrix could not be sequenced. The effects could be added, but nothing would happen when you played it back.
- In [SuperStar](#), if you created a [visualization](#) with CCRs in it using "[Create Quick Visualization](#)", the CCR rows would be disabled and could not be sequenced.
- Using [Instant Sequence](#) in [SuperStar](#) could have resulted in effects past the end of the song, which would make the [Sequence Editor](#) unable to open the file.
- In very rare circumstances, the Visualizer could fail to start because of an issue with detecting the Network Adapters available on the computer.
- If a computer had more than 32 Network Adapters, or more than 32 IP addresses assigned to a network adapter and the user selected 'Local' as the IP adapter to use, the Visualizer would incorrectly report that the IP address could not be found, was blank, or was 0.0.0.0 when going into simulation mode.
- In [SuperStar](#), if a smooth effect with white in it painted to the first pixel of a CCR, then it would write to the pixel resolution macro and cause the CCR to blink.
- In CCR mode with DMX selected and half ribbon selected, [exporting as intensity data](#) from [SuperStar](#) would cause a crash.
- In CCR mode with half ribbon selected, the pixels were not [exporting](#) correctly from [SuperStar](#) (the order of each half ribbon was not always correct).
- [SuperStar's](#) clipboard was fixed so that you can copy from one instance of SuperStar and paste into another.
- The [Sequence Editor's Insert Device dialog](#) would add the universe number to a [DMX universe's](#) name even if the "Include base unit ID in channel names" were disabled.
- When copying and then pasting a prop in the Visualizer, the additional Superstar Data was not preserved.
- When exporting a prop from the Visualizer, Superstar data was not written to the file.
- A [PixCon16](#) reboot is highly dependent on how fast a network DHCP server responds to the IP lease request. On certain networks with slow DHCP servers, an [update of the configuration](#) of a PixCon16 with the [Network Preferences](#) program could sometimes throw an error. More time is now given to the update process, and should that still not be enough an informational message is

generated rather than an error.

- When an update of a [PixCon16's configuration](#) failed, only a single error was used regardless of the reason. Additional errors have been added to the update process as well as debug information in some circumstances.
- On computers that are set up to use Japanese, and probably various other languages, the [Comm Listener](#) would often put out strange error messages (ostensibly about having received malformed messages) and fail to work properly.
- [SuperStar's "Wrapped Tree"](#) feature was failing to create [visualizations](#) in some cases.
- When selecting or deselecting in [SuperStar's](#) sequencing grid when using a ["Wrapped Tree" visualization](#), sometimes only some of the squares in a group were getting selected/deselected.
- [SuperStar](#) was not detecting the largest screen resolution, and was setting the wrong view size.
- The maximum number of RGB strings in [SuperStar](#) has been increased from 160 to 200.
- [SuperStar's Positive Mask](#) was always centering on the mask, and would not allow modification of the coordinates.
- [SuperStar](#) no longer saves the enable state of the pixel multiplier. Instead, it will always launch with the pixel multiplier disabled. This is because if you were to launch with it enabled and start sequencing, it would be very confusing because the playback of the sequence would be different than expected, and it would look like things were broken if you didn't realize it was enabled.
- If RGB dumbstrings in a visualization are assigned the same DMX addressing, then when [imported](#) into [SuperStar](#), each RGB dumbstring was being assigned to its own square on the sequencing grid. This has been fixed so that all RGB dumbstrings with the same DMX addressing will be treated as if they are one fixture, and that one fixture will be assigned to only one square on the sequencing grid.

## What's New in Version 4.3.4

- [Improved "About" box in the Pixel Editor](#)
- [Pixel Editor warnings for unsupported license level](#)
- [Bug fixes](#)

### ***Improved "About" box in Pixel Editor***

The Pixel Editor's "About" window now has a "Copy to clipboard" button to make it easy to paste the displayed system information into forums and help tickets.

### ***Pixel Editor warnings for unsupported license level***

When [Tools](#) > [Control Lights](#) is selected in the Pixel Editor, the user is now warned if he or she does not have a Pro [license](#).

Also, the File > Save Intensity Data menu item is now enabled at all license levels, but the user gets an error message if they select it and do not have a Pro license.

### ***Bug fixes***

- In [SuperStar](#), stretching of [DMX](#) in CCR mode by specifying the pixel length of DMX pixels got broken in version 4.2.10. It is now fixed.
- In [SuperStar](#), [export](#) of [DMX](#) in CCR mode in Half ribbon mode with controllers at the bottom would get an error saying "Channel on wrong part of ribbon, export failed."
- [SuperStar's](#) "No Clip" rectangle has been fixed to be the entire matrix instead of being the first matrix in the [visualization](#).
- The output of intensity data by [SuperStar](#) was dimmer than it should have been.

- In some cases, the second time that a [sequence](#) was played during a run of a [show](#), it would fail with an error message saying "ERROR WITH SEQUENCE (Invalid play state (3) for InitializeForPlay)", and the sequence would never successfully play again during that run of the show. Now, if the [Show Player](#) notices a sequence in this invalid play state, instead of giving up on trying to play the sequence, it will attempt to reset the sequence to clear out the problem so that it can be played again.
- In some cases, a seemingly random string of Chinese characters (seemingly not actual meaningful Chinese text) would appear in [LOR Control Panel's Status window](#). At least some instances of this have been fixed.
- If tooltips were disabled in the [Sequence Editor](#), then the waveform cursor in the Pixel Editor did not get displayed.

## What's New in Version 4.3.2

- [Bug fixes](#)

### **Bug fixes**

- The Visualizer would claim that "Time is running backwards" and would not enter simulation mode.
- In [SuperStar's Instant Sequence](#), [themes](#) with scenes would not move in some cases.

## What's New in Version 4.3.0

- [CF50D in Insert Device](#)
- [Blanking out channel settings in Delete Controller](#)
- [Keys to view start or end of selection in the Sequence Editor](#)
- [Pixel Editor can now create New sequence files](#)
- [Pixel Editor playback window Always on Top](#)
- [SuperStar fonts modified](#)
- [New Pixel Editor effects](#)
- [Creating sequences directly in the Pixel Editor](#)
- [Nested prop groups](#)
- [Tracking marker on Pixel Editor's timeline/waveform](#)
- [Channel conflict checks](#)
- [Repeat in picture and text effects](#)
- [Minimum number of props decreased](#)
- [Bulb size in effect thumbnails](#)
- [Better thumbnails for Curtain and Fireworks effects](#)
- [New way to access prop and group definitions](#)
- [Effect Generator favorites improved](#)
- [Preview Design behavior changed](#)
- [Additional columns in Preview Info](#)
- [Default manual brightness in Effect Generator mixer](#)
- [Preview and Prop dropdowns wider](#)
- [Bug fixes](#)

### **CF50D in Insert Device**

The [Sequence Editor's Insert Device](#) dialog now can add [CF50D](#) devices to the [sequence](#). Both Cosmic Color Floods and UV Black Light Floods are supported.

### ***Blanking out channel settings in Delete Controller***

In the Channel Configuration screen of the [Sequence Editor](#), the Delete Controller function used to remove the [channels](#) of the selected [controller](#) from the [track](#). You can now choose whether you want that to happen or instead to leave the channels in place but blank out their settings (such as [unit ID](#) and [circuit](#)).

### ***Keys to view start or end of selection in the Sequence Editor***

In the [Sequence Editor](#), there are now keystrokes to move the display to ensure that the start or end of the current [selection](#) is onscreen. Shift-Alt-Up and Shift-Alt-Down will display the first or last row in the selection, respectively, and Shift-Alt-Left and Shift-Alt-Right will display the first or last column in the selection, respectively.

### ***Pixel Editor can now create New sequence files***

The Pixel Editor can now create a new [sequence file](#) rather than just work with existing [Sequence Editor](#) files.

### ***Pixel Editor playback window Always On Top***

A new option has been added to the Pixel Editor to force the playback window on top of all other windows.

### ***SuperStar fonts modified***

Three [SuperStar font](#) files have been modified: The characters i, j, u, v, and w have been modified in 10-12x12\_Thin.custom.font and 10-12x12\_Thin.system.font, and the characters u, v, and w have been modified in 10-12x12\_Thin\_Vertical.system.font.

### ***New Pixel Editor effects***

Three new effects were added to the Pixel Editor: LinesVertical, LinesHorizontal, and Twinkle. LinesVertical can be used to create marquee-style chase effects on rooflines, arches and frames. You can use the Twinkle effect for a very slow twinkle, or a very fast strobe, and everything in between.

### ***Creating sequences directly in the Pixel Editor***

You can now create new sequences directly in the Pixel Editor using the File > New menu item. You no longer need to switch to the Sequence Editor to do this task. If your preview has props where the Sequence Method=Sequence Editor, the channels for those items will automatically be created in the LMS/LAS file and will be grouped by prop.

### ***Nested prop groups***

In the Pixel Editor, prop groups have a new arrangement option of "nested". In particular, this allows nested stars to be grouped together and sequenced as a single item. Using this arrangement, the Bar effect with direction=up moves from the inside out. Bars left/right will move around all of the nested props.

### ***Tracking marker on Pixel Editor's timeline/waveform***

As you move your cursor across the Pixel Editor's sequence grid, a marker is now displayed on the timeline/waveform.

### ***Channel conflict checks***

In the Pixel Editor's Preview Info warnings box, all props are now checked for channel conflicts. Previously only props with Sequence Method=Pixel Editor were checked.

### ***Repeat in picture and text effects***

For the Pixel Editor's picture and text effects, a repeat parameter was added. Default is "on" to emulate previous functionality. Repeat=off causes just one scroll of the picture or text across the screen.

### ***Minimum number of props decreased***

Changed the minimum number of props in a group in the Pixel Editor from 2 to 1. This allows you to create a preview group (a prop group where the arrangement setting=preview) for a single frame or wreath, which can be useful for certain effects like fire.

### ***Bulb size in effect thumbnails***

When effect thumbnails are displayed in the Pixel Editor, bulb size is now taken into account. This is especially helpful for RGB floods.

### ***Better thumbnails for Curtain and Fireworks effects***

Better thumbnails are now generated for Curtain and Fireworks effects in the Pixel Editor.

### ***New way to access prop and group definitions***

Prop and group definitions can now be viewed in the Pixel Editor by right-clicking on a prop name in the sequence grid and then selecting "View Prop Definition" from the pop-up menu. It is no longer necessary to go into preview design just to check on the definition of a prop.

### ***Effect Generator favorites improved***

In the Pixel Editor, icons are now displayed in the Effect Generator's favorites tree so that folders can be easily distinguished from effects. Also, organizing the favorites tree is now accomplished by right-clicking on any item in the tree. New actions have been added that allow items to be moved up or down, copied, exported to a file, or imported. There is also now a help icon in the favorites area - clicking on it provides detailed instructions on how to use and manage effect favorites.

### ***Preview Design behavior changed***

In the Pixel Editor's Preview Design, the prop list no longer scrolls if you modify a prop (as long as the prop name is unchanged).

### ***Additional columns in Preview Info***

Columns for Sequence Method and Dimming Curve have been added to the Pixel Editor's Preview Info grid.

### ***Default manual brightness in Effect Generator mixer***

When switching to manual brightness for the first in time in the Pixel Editor's Effect Generator's mixer, the default brightness value has been changed from 0% to 50%. Previously, when switching to manual brightness, nothing was displayed in the middle window because the brightness value was 0.

### ***Preview and Prop dropdowns wider***

The Pixel Editor's Effect Generator's Preview and Prop selection drop-downs were made wider, so that longer names are visible.

### ***Bug fixes***

- In some rare cases, [SuperStar](#) was reporting duplicate [channels](#) when comparing an [LOR channel](#) and a [DMX channel](#).
- When the maximum number of sequencing rows has been exceeded, [SuperStar](#) will now display an error message and suggest increasing the sequencing grid's "Max Length".
- Setting [SuperStar's](#) manual clip rectangle was only working correctly if you did the mouse drag from upper left to lower right.
- If you had DMX selected in [SuperStar's Configuration dialog](#) box, and had CCB selected in the [Layout dialog box](#), then "Export to Sequence Editor" was exporting invalid files.
- In [SuperStar's Layout dialog box](#), some labels were changed: "CCR's" is now "CCR in Normal Mode or CCB/CCP in Dual Normal Mode", and "CCB's" is now "CCB/CCP in Normal Mode".
- When creating an SD card for an [MP3 Director](#) in the [Hardware Utility](#), sequences that only contained lighting commands in Intensity Data could not be selected.
- Users who participated in the *original* S4 beta releases (4.0.0 - 4.0.38) and who had [Advanced licenses](#) were granted access as if they had purchased Pro. That access would have allowed the user to set the '[Enhanced Network](#)' for an LOR network ON. At the end of the Beta period, their licenses reverted back to 'Advanced', but the 'Enhanced Network' setting was still incorrectly set.
- If you selected 1000K for the speed of an [LOR network](#) in [Network Preferences](#), the "[Enhanced](#)" checkbox would automatically become checked (as 1000K is currently only supported for Enhanced networks). However, Enhanced networks are not supported if the [license level](#) is less than Pro, and so the network would not work, but also you would have no way to turn off the Enhanced setting.
- In [SuperStar](#), if you had a scrunched [visualization](#), and were doing [instant sequence](#), there were cases where it would only use red, green, and blue; if there were white strings they would never get any effects.
- [SuperStar's Pixel Extender](#) was being used in [CCR mode](#) if it was enabled. This has been changed so that the Pixel Extender only does something if in [Visualization mode](#).
- If a [sequence's](#) filename, or the name of the directory path it was in, contained any of various characters such as a parentheses, and the sequence were used in an [interactive group](#) in a [show](#), the sequence would not properly be loaded when the group's trigger was pressed.
- The [Sequence Editor's](#) New and Open dialog was displaying the Recent tab's right-click popup menu as a main menu (on the dialog's menu bar).
- If using a [visualization](#) of a mega-tree made with the S4 Visualizer Tree Wizard, the auto-clip region for [SuperStar](#) images was only using 12 rows of the mega tree. This caused images to get clipped to the first 12 rows.
- If the audio path was not in the default path, [SuperStar](#) was not storing the path properly in the



[sequence](#) file [exported](#) to the [Sequence Editor](#), and so the Sequence Editor would fail to find the audio file.

- An error message is now displayed when [SuperStar](#) cannot find the [visualization](#) file.
- On some computers, the Pixel Editor's text effect would display text in the entry box but not in the preview area. This has been fixed.
- If errors occur in the Pixel Editor while calculating intensity data, a more detailed error message is now displayed.
- For picture and text effects in the Pixel Editor, if movement is not "none", the initial positioning has been fixed so that the text or picture starts off-screen and scrolls on-screen.
- For picture and text effects in the Pixel Editor, Peak-A-Boo movement now starts immediately. Previously, the effect waited for a "peak-a-boo hold time" before the text or picture was first displayed.
- When the selected prop is changed in the Pixel Editor's Effect Generator, the current effect now restarts.
- The mouse wheel and keyboard shortcuts now work while a tooltip is displayed on the sequence grid in the Pixel Editor.
- A potential Pixel Editor crash after double-clicking on a blank cell in the sequence grid was fixed.
- A Pixel Editor crash when any arrow key is pressed and nothing is selected on the sequence grid was fixed.
- Preview Info warnings in the Pixel Editor now show network name instead of network number (i.e. Regular, Aux A, etc), and unit id's are now displayed in hexadecimal notation.
- A Pixel Editor crash in the Effect Generator when bulb size is invalid was fixed.
- The Pixel Editor's Visualizer import so that it no longer generates invalid bulb sizes was fixed.
- Fixed string assignments for the Fan shape clockwise layout (-CW) (previously the strings were reversed) in the Pixel Editor.
- When double-clicking on an effect favorite in the Pixel Editor to recall it, if that effect had manual brightness, the brightness value was not being restored.

## What's New in Version 4.2.10

- [IP Troubleshooter for PixCon16 devices](#)
- [Additional troubleshooting information in LOR Diagnostic](#)
- [Bug fixes](#)

### ***IP Troubleshooter for PixCon16 devices***

If a [PixCon16](#) is using [Network Settings](#) that are not compatible with the computer you are using, you may not be able to configure it. The PixCon16 will appear in the [list of devices](#), however selecting it will produce an error stating that the board cannot be configured. When this occurs, the Network Preferences now offers to start an [IP troubleshooter](#) which can try to fix the issue.

### ***Additional troubleshooting information in LOR Diagnostic***

[LOR Diagnostic](#) now collects additional information that may be useful for troubleshooting purposes, via Windows Management Instrumentation (WMI). It collects some by default, and also now has an "Advanced" screen that allows other WMI-based information to be collected.

### ***Bug fixes***

- The Pixel Editor's Fire, Fireworks and Meteor [effects](#) could have locked up (i.e. the effect freezes) during the intensity calculation that occurs when a sequence is loaded. Once this happened, those effects would be permanently frozen until the program was restarted.

- [SuperStar's](#) vertical matrix string pattern with the origin in the upper right or lower left was importing backwards.
- The Pixel Editor could crash in rare instances while starting up.

## What's New in Version 4.2.8

- [Favorite names in Pixel Editor tooltips](#)
- [Changed display for shimmer and twinkle in the Pixel Editor](#)
- [New Pixel Editor option "Playback window is always on top"](#)
- [Bug fixes](#)

### ***Favorite names in Pixel Editor tooltips***

If you hover over an effect on the Pixel Editor's grid, and that effect is a [favorite](#), the favorite's name is now shown in the tooltip.

### ***Changed display for shimmer and twinkle in the Pixel Editor***

The Pixel Editor now displays a hash pattern on [shimmer](#) and [twinkle](#) effects on [props](#) where the [Sequence Method](#) is "[Sequence Editor](#)".

### ***New Pixel Editor option "Playback window is always on top"***

The Pixel Editor has a new [menu](#) option: [Tools](#) > Preview Playback > Playback window is always on top. If you are displaying the preview in a separate window and you press one of the play buttons, when this option is enabled it will cause the playback window to immediately gain focus. Testing has shown that this will help on some computers, but on others it will cause playback to be worse (more jerky). Use with caution!

### ***Bug fixes***

- The [Light-O-Rama Control Panel](#) can be set to [automatically launch when Windows starts up](#). It was not doing this in exactly the manner that it should have, and if some other program (unrelated to Light-O-Rama) were doing it in the same incorrect way, that program and the Light-O-Rama Control Panel would interfere with each other's automatic launching settings.
- The first star channel in [SuperStar's Configuration dialog box](#) only allowed entries of 1-10 for the channel's [circuit ID](#). It has been changed to allow 1-11.
- In [Superstar](#), CCR mode half ribbons would not [export](#) in intensity data format correctly.
- In [SuperStar's Image mode](#), if you had manual clip set and did a left mouse click while holding the Shift key to get the color of a pixel, it would also set the manual clip rectangle to that one pixel. This was fixed so that you would now need to click and drag more than one pixel to do a manual clip rectangle.
- In [SuperStar's Scene mode or Image mode](#), if you do a left or right mouse click while holding the Ctrl key, it sets or clears all the pixels. A warning box was added to ask if you want that to happen.
- The Pixel Editor would hang while pasting when the number of rows in the clipboard was greater than the number of writable grid rows.
- Grid tooltips no longer display in the Pixel Editor when the [Effect Generator](#) is open.
- Speed 0 has been removed from the Pixel Editor's Meteor [effect](#), as it was not producing a useful result.
- The Pixel Editor's calculation of intensity data for groups of traditional strings has been fixed.
- Playback in the Pixel Editor is now halted when switching tabs (i.e. when moving between

sequences).

## What's New in Version 4.2.6

- [CCB and Firefli options in SuperStar](#)
- [Faster E1.31 Universe Definitions in Network Configuration](#)
- [New system tray icons for LOR Control Panel](#)
- [Tooltips in the Pixel Editor's sequence grid](#)
- [Improved favorites display in the Pixel Editor](#)
- [Bug fix](#)

### ***CCB and Firefli options in SuperStar***

The "CCB" and "Firefli" options are now back in [SuperStar's Layout dialog box](#).

### ***Faster E1.31 Universe Definitions in Network Configuration***

Now while editing a [universe](#) in the [Advanced mode](#) of the [Network Configuration](#) program, you can specify a total number of universes that should have these identical settings.

### ***New system tray icons for LOR Control Panel***

The [LOR Control Panel](#) now uses new icons in the system tray, which are visually more in line with the [new program icons](#) recently introduced in version 4.2.4:



### ***Tooltips in the Pixel Editor's sequence grid***

The Pixel Editor's sequence grid now displays [tooltips](#) similar to the way the [Sequence Editor](#) does. In fact it uses the same set of tooltip display preferences. So if you want to change the way the Pixel Editor is displaying tooltips on the grid, then you will need to open the Sequence Editor and select Edit > Preferences > Display Preferences from the menu. Updated tooltip preferences will be read by the Pixel Editor whenever you open a [sequence](#).

### ***Improved favorites Display in the Pixel Editor***

If the Pixel Editor's current effect is stored as a [favorite](#), the favorite's name is now displayed instead of the technical description below the Effect Generator button.

### ***Bug fix***

- When displaying [props](#) whose [sequence method](#) is "[Sequence Editor](#)" in the Pixel Editor's sequence grid, in some cases the [channel](#) name would show "no matching channel" even though the PE and SE physical channel information matched.

## What's New in Version 4.2.4

- [New PixCon16 Configuration field: Don't Create Universe Settings](#)
- [Pixel Extender can shrink as well as expand](#)
- [Decreased E1.31 comm usage](#)

- [CTB04 in Add Device](#)
- [New sample visualization files](#)
- ["Cool White" vs. "Warm White" in SuperStar](#)
- [New program icons](#)
- [Display order of props in the Pixel Editor](#)
- [Configurable filename suffixes in the Pixel Editor](#)
- [Bug Fixes](#)

### ***New PixCon16 Configuration field: Don't Create Universe Settings***

When updating the configuration of a [PixCon16](#) board, the [Network Preferences](#) program can automatically create the [E1.31 multi-cast settings](#) necessary to run the [universes](#) defined. However some users may have already created these settings and may not want them created again. Setting this option will bypass that automatic creation.

### ***Pixel Extender can shrink as well as expand***

The [Pixel Extender](#) feature in [SuperStar](#) can now shrink as well as expand. So now the "[Number of DMX Pixels](#)" setting in the [Configuration dialog box](#) can be from 10 to 170 instead of from 50 to 170.

### ***Decreased E1.31 Comm Usage***

In some situations, when the lights for a [DMX](#) universe using E1.31 are all off, the [Comm Listener](#) will now deliver fewer E1.31 packets than it had previously. This will result in less comm traffic on the ethernet network, especially during long stretches of time when the lights are all off (for example, idle time between [shows](#)).

### ***CTB04 in Add Device***

An [option to add a four-channel LOR device](#) (such as the CTB04) has been added to the [Sequence Editor's Add Device dialog](#).

### ***New sample visualization files***

Two new sample visualization files, `24x50Tree_8RowGlobe_BottomControllers.lee` and `24x50Tree_8RowGlobe_DMX_BottomControllers.lee`, have been added.

### ***"Cool White" vs. "Warm White" in SuperStar***

["Cool White" and "Warm White"](#) selections were added to the Configuration dialog box in [SuperStar](#). Some ribbons/strings are a cool white (they look bluish white when fully on) and some are a warm white (they look yellowish white when fully on). Set this setting appropriately to best get your lights to have colors that match the colors you saw on the computer screen when you made the sequence.

### ***New program icons***

The various programs now have new main icons. It should now be easier to tell apart the various programs in your task bar (and elsewhere). For example, here is an image of the taskbar with icons for the [Comm Listener](#), the [Sequence Editor](#), the [Hardware Utility](#), the Visualizer, and the Pixel Editor:



### ***Display order of props in the Pixel Editor***

In prior versions of the Pixel Editor, the order in which [props](#) were displayed in the sequence grid was fixed. You still can't change the order of individual props, but now you can change the order by type of prop. To do this, click on the "Props" button - located just to the left of the timeline, above the sequence grid. In the "Select Props" window you can change the "Display Order" drop-down selections to suit your needs. As an example, this feature can be used to move your beat track from the bottom of the grid to the top.

### ***Configurable file name suffixes in the Pixel Editor***

In prior versions of the Pixel Editor, when using File > Save As from the menu a suffix of "-Copy" was added to the end of the original file name. This suffix is now configurable by going to Tools > Preferences > Save As. One of the options is to add a suffix that contains the date and time, which makes it very useful for creating backup copies of your sequence.

### ***Bug fixes***

- When updating the configuration of a [PixCon16](#) board, the [Network Preferences](#) program may occasionally throw an error 523 - Update Failed. If you subsequently check the configuration of the board, you'll see that the configuration actually succeeded. This is due to an incorrect check that was being performed.
- In [SuperStar](#), [visEffects](#) would not work in [floating windows](#) after resizing the window.
- The number of matrix rows for a horizontal snake matrix in [SuperStar](#) was not correct. This made it so the default clipping rectangle for the [smooth effects](#) was often too small.
- In [SuperStar](#), a vertical snake matrix was not being imported correctly.
- The Pixel Editor no longer crashes if the "Arial" font is missing or corrupted, although you will be unable to add or edit props until the Arial font is restored.
- The logic that refreshes the Pixel Editor's sequence grid during playback has been improved. As a result, playback's "Force Refresh" option is no longer required and has been removed.

## **What's New in Version 4.2.2**

- [Change to starting the Control Panel while an instance is running](#)
- [Page Left and Page Right in the Sequence Editor](#)
- [Support for 340 pixels on a PixCon16 port](#)
- [Simplified PixCon16 configuration](#)
- [Faster response times when searching for and configuring PixCon16s](#)
- [New DMX addressing options in SuperStar](#)
- [Pixel Extender in SuperStar](#)
- [Bug Fixes](#)

### ***Change to starting the Control Panel while an instance is running***

There's nothing stopping a Windows user from trying to start a program any number of times, but only one instance of the [LOR Control Panel](#) should be running at any given time. So, in previous versions, if the Control Panel were started while another instance of it was already running, the newly-started instance would simply stop, allowing the already-running instance to continue being

the sole running instance.

In some situations, this could be confusing, because it might seem to the user that they told the Control Panel to start, and nothing happened. To address this issue, now, instead of just stopping, the newly-started instance will first send a message to the already-running instance, causing the already-running instance to display its [status window](#), and also to refresh its icon in the computer's system tray, in case it had disappeared for whatever reason.

### ***Page Left and Page Right in the Sequence Editor***

In the [Sequence Editor](#), the Ctrl-Left and Ctrl-Right keys now operate as Page Left and Page Right. Ctrl-Shift-Left and Ctrl-Shift-Right do the same but expand the selection instead of moving it. Also, although Page Up and Page Down functionality was already covered by the Page Up and Page Down keys, for the sake of consistency, Ctrl-Up and Ctrl-Down now operate as Page Up and Page Down (similarly, Ctrl-Shift-Up and Ctrl-Shift-Down as Shift-Page Up and Shift-Page Down).

Please note that unlike in the Page Up/Page Down case, there is not necessarily any relationship between a "page" and the cells. That is, for Page Up/Page Down, one "page" consists of a certain number of cell rows - i.e. a certain number of [channels](#). But for Page Left/Page Right, one "page" consists of a certain length of time, not a certain number of cell columns - i.e. a certain number of [timing](#) marks. Timing marks can be anywhere, willy-nilly, or even nowhere, and do not necessarily have any relation to the page. So, as compared to Page Up/Page Down, it may be more difficult to predict exactly where your selection will move or expand to after a Page Left/Page Right.

### ***Support for 340 Pixels on a PixCon16 port***

The [PixCon16](#) configuration now allows for a maximum of 340 [pixels](#) per port.

### ***Simplified PixCon16 Configuration***

Several changes have been made to the process and dialog boxes for [PixCon16 configuration](#) in an effort to simplify them. Boards that were configured with earlier versions of [Showtime](#) will be automatically converted to the new configuration. However there could be some incompatibility between the old version and the new. You should carefully review your boards configuration the first time it is edited in this new version.

To prevent future incompatibilities, once you have edited the configuration of a PixCon16 in the [Network Configuration](#), you should not use the PixCon16 assistant program in the future. If you do use the PixCon16 Assistant program, be sure to double check your configuration to ensure that settings were not changed.

### ***Faster response times when searching for and configuring PixCon16s***

The [Network Configuration](#) program used very conservative timing when searching for [PixCon16](#) boards and during the load/save of the board's configuration. Those times have been shortened and improve performance.

### ***New DMX addressing options in SuperStar***

Three new [DMX](#) addressing options were added to [SuperStar's Configuration dialog](#):

- **Tightly Packed:** Uses all 170 [channels](#) available in each universe. Strings can have transitions

to the next universe in the middle of the string.

- **Semi Packed:** Puts as many full strings as will fit into each universe. Strings will not have a transition to another universe in the middle of a string.
- **Not Packed:** Each string starts with a new universe.

### ***Pixel Extender in SuperStar***

The new Pixel Extender in [SuperStar's configuration dialog box](#) makes it so you can export 50 pixel CCR [sequences](#) to [DMX](#) strings of any length from 50 to 170 pixels. This will make all the 50 pixel CCR sequences that have been written transportable to displays that have DMX strings that have more than 50 pixels.

### ***Bug fixes***

- After [configuring](#) a [PixCon16](#) board, the user is asked if they would like to create the [E1.31](#) entries in the [Network Configuration](#) for the DMX Universes in use on the board. However in versions previous to this, the 4 bridge port entries were not created even if they were in use.
- Using Instant Sequence rapid fire on 13 or more rows would cause a crash in SuperStar.
- If a [DMX](#) fixture that was not part of a prop were used in [SuperStar](#), it could cause an invalid name to be put in for the fixture, leading to the [Sequence Editor](#) being unable to load the [exported sequence](#).
- If [SuperStar](#) were unable to load the [visualization](#) at startup, it would cause a "failed to load visualization" error every time it was launched. It will now instead change to use the default visualization (which is "Sample.lee").
- If you had entered an invalid number in the "Sensitivity" or "Length of Effects" fields in [SuperStar's Timing Map](#) dialog box, the invalid value would get saved to a file, and every time you launched or shut down SuperStar, you would get a warning message saying that the value needs to be in the range 1-10.
- The [Sequence Editor](#) is supposed to remember the last used paste mode even between separate runs of the program, but a bug was causing it to always start up as "Paste by Cell".

## **What's New in Version 4.2.0**

- [Warnings for incorrectly configured triggers](#)
- [New 1000K speed for LOR Networks](#)
- [New 1000K speed when creating SD cards for G3 MP3 directors](#)
- [Saving custom colors in SuperStar](#)
- [Flipping images in SuperStar](#)
- [Wait cursor during visualization loading](#)
- [New advanced option when creating SD cards for MP3 directors](#)
- [New 'comment' fields for Networks and Universes in Network Configuration](#)
- [PixCon16 in Insert Device dialog](#)
- [PixCon16 Version V1.4.8 Firmware Support](#)
- [New pasting options in the Sequence Editor](#)
- [Merge Intensity Data Files in SuperStar](#)
- [Floating sequencing grid in SuperStar](#)
- [Memory usage improvements in the Pixel Editor](#)
- [File References in the Pixel Editor](#)
- [Windows Jump List compatibility for the Pixel Editor](#)
- [Maximum font size increase in Text effect](#)
- [New repeat mode option in Curtain effect](#)
- [Pixel Editor's Preview List window is resizable](#)

- [Prop Copy window remembers last position](#)
- [RGB channels for Insert Device's DMX Universe option](#)
- [Hardware Utility support for 50W Cosmic Color Floods](#)
- [Exporting and importing Pixel Editor props](#)
- [Importing Visualizer files to existing Pixel Editor previews](#)
- [Accumulation in Snowflake effect](#)
- [Allow for some PixCon16 configuration updates with older software](#)
- [Maximum images in SuperStar increased](#)
- [Bug fixes](#)

### ***Warnings for incorrectly configured triggers***

If your trigger (no matter whether a [show startup](#) trigger or an [interactive group](#) trigger) is configured to use a [network](#) that does not have a comm port set in [Network Configuration](#), the [Verifier](#) will now warn you with the new [warning message number 53](#), "Trigger uses undefined network".

Also, since triggers are not supported on [LOR Enhanced networks](#), the Verifier will now issue the new [warning message number 54](#), "Trigger uses LOR Enhanced network", if a trigger using such a network is found.

Finally, despite the fact that triggers are not supported on LOR Enhanced networks, they can still be tested on such networks by using the [Hardware Utility](#). They will not, however, work during your [show](#). Therefore, if you have any LOR Enhanced networks designed, the Hardware Utility's [input testing screen](#) will warn you about this fact.

### ***New 1000K speed for LOR networks***

A new speed of [1000K](#) has been added for [LOR Networks](#) in the [Network Configuration](#). Currently only the [PixCon16 board](#) running on an [Enhanced LOR Network](#) can run at this speed.

### ***New 1000K speed when creating SD cards for G3 MP3 directors***

A new speed of [1000K](#) has been added to the [Hardware Utility](#) when creating [SD cards for G3 MP3 directors](#). To use the new speed, you must have a G3 MP3 director with updated [firmware](#). The only device that can currently run at 1000K is the [PixCon16](#) in Enhanced LOR mode.

### ***Saving custom colors in SuperStar***

In [SuperStar's Color Picker dialog box](#), you can now save custom colors.

### ***Flipping images in SuperStar***

You can now "Flip Left-Right" and "Flip Up-Down" for [images](#) in [SuperStar](#).

### ***Wait cursor during visualization loading***

When loading a [visualization](#) in [SuperStar](#), a wait cursor now appears.

### ***New Advanced Option when creating SD cards for MP3 director***

A new option has been added to the [Advanced Options](#) of the [SD Card creator](#) in the [Hardware Utility](#). The new option lets you optionally set the throughput efficiency of the MP3 director.



## ***New 'Comment' fields for Networks and Universes in Network Configuration***

A new comment field has been added for each [Network](#) or [Universe](#) that can be configured in the Network Configuration program.

## ***PixCon16 in Insert Device dialog***

The [Sequence Editor's Insert Device dialog](#) now has a [PixCon16 option](#), which can be used to insert [PixCon16 devices](#).

## ***PixCon16 Version 1.4.8 Firmware Support***

The software now supports version 1.4.8 firmware of the [PixCon16](#). This is a minor [firmware](#) revision that only changes how the status and power lights work, and includes no other new functionality.

## ***New pasting options in the Sequence Editor***

In previous versions of the [Sequence Editor](#), there was a "Paste from Foreground" option. If it were turned on, then when you pasted, only the copied effects that were not completely off would be pasted. This sort of control has now been expanded into the "Paste From/To" options: In addition to Paste from Foreground, you can now also Paste from Background (i.e. pasting only the copied effects that are completely off), and also Paste to Foreground (paste only onto effects that are not completely off) and Paste to Background (paste only onto effects that are completely off). You can even combine the "from" and "to"; for example, paste from foreground to foreground.

## ***Merge Intensity Data Files in SuperStar***

[SuperStar](#) now has support for [merging](#) intensity data files.

## ***Floating sequencing grid in SuperStar***

In [SuperStar](#), you can now put the sequencing grid and the [visualization](#) each in their own [floating window](#). Before, there were cases where the visualization would be very small. This gives control over the size of the region used for the sequencing grid, and the size of the region for the visualization. Also, if you have two monitors you can move the sequencing grid to one monitor and the visualization to the other monitor.

To activate the feature, click on the "View" menu and select "Floating Windows".

## ***Memory usage improvements in the Pixel Editor***

Memory used by the Pixel Editor has been dramatically reduced. This should allow you to easily open longer sequences with more pixels and more prop groups. Memory used is now proportional to the total length of the effects populated in the sequence.

## ***File References in the Pixel Editor***

There is a new menu option in the Pixel Editor: [Sequence > File References](#). This will open a window that lists all files referenced by Movie and Picture [effects](#). It also has an option to specify a new location for those files - which can be useful if you move your sequence directory.

### ***Windows Jump List compatibility for the Pixel Editor***

The Pixel Editor is now compatible with Windows' "Jump List" feature. If you pin the Pixel Editor to the task bar and right-click on it, you will see a list of recently opened [LMS/LAS files](#) from which you can select.

### ***Maximum font size increase in Text effect***

In the Pixel Editor's Text [effect](#), the maximum font size has been increased. This allows for larger and more readable text, especially for matrices with less than 10 rows.

### ***New repeat mode option in Curtain effect***

The Pixel Editor's Curtain [effect](#) has a new repeat mode option: `repeat_at_speed_rotate_colors`. This causes the curtain to display with a different color in your palette every time it opens.

### ***Pixel Editor's Preview List window is resizable***

The Pixel Editor's [Preview List window](#) is now resizable.

### ***Prop Copy window remembers last position***

When you open the Pixel Editor's "[Prop Copy](#)" window, it opens at the size and position that you last had it open.

### ***RGB Channels for Insert Device's DMX Universe option***

When adding a [DMX universe](#) through the [Sequence Editor's Insert Device dialog](#), you can now optionally add [RGB channels](#) instead of regular [channels](#).

### ***Hardware Utility support for 50W Cosmic Color Floods***

The [Hardware Utility](#) now is able to correctly identify 50W Cosmic Color Flood controllers.

### ***Exporting and importing Pixel Editor props***

The Pixel Editor now can [import](#) and [export](#) preview [props](#). This allows you to export props from one preview and import them into a different one. It also allows you to share your props with others.

### ***Importing Visualizer files to existing Pixel Editor previews***

The Pixel Editor has had the ability to import a Visualizer (.LEE) file into a new [preview](#). Now you can also import into an existing preview.

### ***Accumulation in Snowflake effect***

The Pixel Editor's "snowflake" [effect](#) has an additional parameter to control snow accumulation. Please note that in order to accommodate this change, the meaning of the first and second palette colors in the snowflake effect have changed. Now, the first color is always the main color and the second color is the highlight color. In versions 4.1.2 and prior, the first color was the highlight color the second color was main color for flake types larger than single-pixel flakes.

## ***Allow for some PixCon16 configuration updates with older software***

When needing to [update the configuration](#) of a [PixCon16](#), the [Network Configuration](#) program would look at the Firmware Revision of the board to decide if it could be used to update that board or not. However, in the future there could be [firmware updates](#) that do not require changes to the Network Configuration program. This would force a user to update LOR Showtime for no other reason than to use a new PixCon16 firmware.

Now if the board revision is found to be greater than 1.4.6, additional checks are performed to see if an older version of software can successfully update the board.

## ***Maximum images in SuperStar increased***

The maximum number of [images](#) in [SuperStar](#) has been increased from 1000 to 1500.

## ***Bug fixes***

- After version 3.12.2, the ['Advanced Settings' button](#) was inadvertently removed from the final options of writing an [SD card](#) in the [Hardware Utility](#). The button has been returned.
- If the SuperStar configuration file SSEdit.cfg did not exist when SuperStar was launched, the program would crash. This could happen on a fresh install to a computer that has never had the Light-O-Rama Software Suite installed on it.
- If a [sequence](#) having a [Windows shell command](#) were changed to no longer use any such command, the command would be eliminated from LOR's internal list of known commands. This would have the intended effect that the sequence would no longer cause the command to run, but it would also have an unintended side effect: If you were to restore a backup of your sequence save file, which still was supposed to use the command, that restored old version would also not run the command. Moreover, if any other sequences had been using the same command (which would have required manual modification of the save files), they also would no longer run it. Now, instead of eliminating the command from LOR's list of known commands, the command is merely eliminated from the sequence itself.
- In the [Sequence Editor](#), if you tried to copy, cut, or paste in a [loop level](#), a bizarre and minimally comprehensible error message would appear. It now more clearly states that you cannot copy, cut, or paste loop levels.
- If the user attempted to edit a [Network](#) or [Universe](#) that was using [advanced parameters](#) while in [Simple mode](#), the Network Configuration program could leak resources and/or refuse to end properly.
- The [Comm Listener port](#) could not be changed in the Network Configuration program while in [Simple mode](#).
- The [Comm Listener port](#), as well as the 'Send To' Port on a [DMX Universe](#) when using [E131](#) was not validated and could be set to nonsensical values. The value is now checked to ensure it is numeric and between 0-65535.
- In very limited circumstances after an upgrade from a beta version, the Network Configuration program would refuse to start and give a cryptic 'Runtime Error 380' and/or 'Invalid Property' error. This error has been resolved.
- Depending on the source [sequence](#), an [SD card](#) written by the [Hardware Utility](#) could have been incorrectly throttled leading to out of sync sequences when run on a MP3 director. SD cards created by earlier versions of S4 should be re-created with this version.
- In the [Insert Device dialog](#) of the [Sequence Editor](#), the [DMX Universe](#) option would not pay attention to the "Name" field. It would instead always name the [channels](#) as if you had selected a name of "DMX".
- When using the Advanced Rendering Engine, the Visualizer was ignoring the Max Opacity setting of RGB Flood Light fixtures. A bug fix in [Version 4.1.2](#) for the same root cause failed to fix the

problem for RGB floods.

- [Importing a visualization](#) into [SuperStar](#) would sometimes report nonexistent errors.
- In [SuperStar's](#) Configuration dialog box, the [unit ID](#) and start channel of the star were reverting to original numbers if you clicked on the "LOR" or "DMX" radio buttons.
- In [SuperStar](#), the "matrixlength" [keyword](#) was not working if the prop used row/column coordinates.
- In [SuperStar](#), group modify for scenes used in the star were not being modified.
- When [exporting](#) the [SuperStar](#) display as intensity files, all the [channels](#) in the 16 channel [controller](#) that controls the star were being exported. Now, only the six channels used to control the star are exported. This is important because if the other channels in the controller for the star are used to control other lights, then the blank intensity data for those channels would make them shimmer and blink.
- When [exporting](#) the [SuperStar](#) display in Legacy format, made it so that only the [channels](#) defined in the [visualization](#) file are in the export.
- In [SuperStar](#), when using [morphs](#) with a [visualization](#), only the 1a and 1b morph anchor labels were being displayed in the visualization. This has been fixed so that the 1a, 1b, 2a, and 2b labels are drawn. In addition, lines are drawn between the labels in the same manner as they are drawn in the sequencing grid. If using a matrix or tree made of RGB lights this can make it easier to specify morphs by clicking on the visualization instead of the sequencing grid.
- Bugs in the Pixel Editor's drawing of the red playback marker have been fixed. Users have a new menu option: Tools > Playback Options > Fast Playback Marker. Normally, this option should be enabled/checked, as it uses the least system resources. However, if you are using a tool such as Screencast-O-Matic, the red playback marker may still display incorrectly. In this case, turn the "Fast Playback Marker" option off (uncheck), and the grid and playback marker will display normally - even during screencast recording.
- If you built the sequence that is part of the Pixel Editor Introduction (video or PDF presentation), in the final version with the cross-fades the effects reset at the end of the ramp up and at the start of the ramp down. This is especially noticeable in the Countdown effect. This has been fixed - so the ramp-up, full intensity, and ramp-down are considered one continuous effect.
- Improvements to the Pixel Editor's Spiral effect: no more gaps on 100% thickness, fully consistent as rotation is changed, Show 3D can now trail either left or right, and spirals are spaced more evenly.
- [Animation sequences](#) (LAS files) with large numbers of pixels did not always play back in the Pixel Editor at the correct rate. This has been fixed.
- A Pixel Editor crash could occur while audio was being loaded if the audio contained a sample with the absolute minimum value. This has been fixed. It was noted in the "Open Beta Bug Reports" forum as bug SC08.
- Fixed a few remaining Pixel Editor screen layout issues on high resolution displays - any time Windows' "Text Resolution" setting is greater than 100%.
- The [firmware](#) for [PixCon16s](#) was using the LHX extension, however these firmware files can not be loaded by the [Hardware Utility](#), they must be loaded by the [Network Configuration](#) program. The extension was changed to NHX to prevent confusion.

## What's New in Version 4.1.2

- [Automatically switch to new timing grid](#)
- [New Candy-Cane shapes in Pixel Editor](#)
- [Consolidated list of props in Pixel Editor's Preview Info](#)
- [Bug Fixes](#)

### ***Automatically switch to new timing grid***

When [creating a new timing grid](#) in the [Sequence Editor](#), you can now optionally have the active [track](#) automatically switch to using the newly created [timing grid](#).

### ***New Candy-Cane shapes in Pixel Editor***

The Pixel Editor's [Prop Definition](#) window now has selections for candy-canes, both left and right facing.

### ***Consolidated list of props in Pixel Editor's Preview Info***

A consolidated list of all [props](#) with their associated channel information has been added to the Pixel Editor's [Preview Info](#) window (accessed from the [Tools](#) > Manage Previews menu). There is a Copy button that will put all of the channel information on the clipboard so it can be pasted into Excel, or a similar spreadsheet program.

### ***Bug fixes***

- When using the Advanced Rendering Engine, the Visualizer was ignoring the Max Opacity setting of Flood Light fixtures.
- In the Pixel Editor, if the user attempted to save a [color palette](#) with a name that already existed the program could crash.
- An error was introduced in 4.1.0 in the Pixel Editor when importing a Visualizer .LEE file with duplicate prop names.
- In the Pixel Editor, if the user changed the string type from 'Traditional' to 'RGB' in the [prop definition](#) window, the Pixel Editor could crash.

## **What's New in Version 4.1.0**

- [Pixel Editor documentation](#)
- [The Saved Palettes option of the Pixel Editor has moved](#)
- [Additional clip rectangle group modify support in SuperStar](#)
- [Enhanced naming in SuperStar](#)
- [Enhanced sparkle in Effect Generator](#)
- [Centering for bar effect](#)
- [Clarified Instant Sequence defaults](#)
- [Bug fixes](#)

### ***Pixel Editor documentation***

Documentation for the Pixel Editor, which was previously distributed as a standalone file, is now integrated in this help file.

### ***The Saved Palettes option of the Pixel Editor has moved***

Previously, there was a separate option the [Tools menu](#) where you could delete/copy/rename your [Saved Palettes](#) in the Pixel Editor. This function has been moved to inside the [Effect Generator's](#) 'Star' menu and called [Manage Palettes](#).

### ***Additional clip rectangle group modify support in SuperStar***

Support of clip rectangle group modify was added for [shockwave](#), [spiral](#), and [fan smooth effects](#) in [SuperStar](#).

### ***Enhanced naming in SuperStar***

The naming of the wrapped tree visualization file and the wrapped guide text file in [SuperStar](#) have been enhanced so that all parameters of the wrapped tree are encoded in the name.

### ***Enhanced sparkle in Effect Generator***

The slider for the sparkle setting in the Pixel Editor's [Effect Generator](#) has been changed so that the value can change over the course of the [effect](#).

### ***Centering for bar effect***

A "Center" parameter has been added to the Pixel Editor's bar [effect](#). Now the center point can be adjusted for expand and compress variations of the effect.

### ***Clarified Instant Sequence defaults***

In [SuperStar's Instant Sequence](#) dialog, the buttons "Set TCM Defaults 1" and "Set TCM Defaults 2" have been replaced by "Set Normal Defaults" and "Set Rapid Fire Defaults".

### ***Bug fixes***

- In some situations, for [sequences](#) that have [animations](#), deleting a controller or [channels](#) in the [Sequence Editor](#) would lead to various errors, for example a "subscript out of range" error. Such errors would not necessarily occur only in the Animator; the fact that the sequence had an animation would cause the problem elsewhere as well.
- The Pixel Editor's startup check for the correct version of OpenGL has been fixed. The user can no longer open sequences if the version of OpenGL is less than 1.5.
- The Pixel Editor would not correctly handle when a pixel string had more channels than the "max channels" setting.
- After a Visualizer import, a bug in [Prop Definition](#) could cause the Pixel Editor to crash.
- The Pixel Editor was assigning the wrong unit ID on CCRs during Visualizer import.
- The Pixel Editor was not correctly handling Visualizer import when one or more [channels](#) had a device type of "none".
- When loading a [sequence](#) file, the Pixel Editor would only read the first [track](#).
- The "More Info" button in the Pixel Editor's Sequence Editor migration tool now displays messages in a scrollable window. Previously, if there were a lot of messages, the window size could exceed the screen size.
- Display of the starting channel number in the Pixel Editor's [Prop Definition](#) is suppressed if the corresponding string number is skipped in the custom prop grid.

## **What's New in Version 4.0.38**

- [Undo and redo in the Pixel Editor preview design](#)
- [Pixel Editor prop definition window resizable](#)
- [Pixel Editor documentation](#)
- [Bug fixes](#)

### ***Undo and redo in the Pixel Editor preview design***

The Pixel Editor's preview design now has undo and redo capability. This applies to prop movement,

but not to adding or deleting props.

### ***Pixel Editor prop definition window resizable***

The Pixel Editor's prop definition window is now resizable.

### ***Pixel Editor documentation***

Documentation for the Pixel Editor is now available. It has not yet been worked into this help file document, but can be found on the web at:

<http://www.lightorama.com/help/LORPixelEditorHelp.pdf>

A copy of the document is also distributed by the installer. It can be found in the Light-O-Rama program files directory, which is typically, but not always, either C:\Program Files\Light-O-Rama or C:\Program Files (x86)\Light-O-Rama.

### ***Bug fixes***

- The Pixel Editor was unable to load some large sequences when attempting to migrate channels.
- Drawing of timing marks in the Pixel Editor was not working correctly on high DPI displays.
- The Pixel Editor would crash when the device type was set to Unconnected/None in the prop definition.
- Some bugs in the movement options of [SuperStar's Instant Sequence](#) dialog box were fixed.

## **What's New in Version 4.0.36**

- [Relaxed requirements for Cosmic Color Devices in Visualizer](#)
- [Better 'Force to Front' handling in the Visualizer](#)
- [Control Sequence Editor Play/Stop during Visualizer simulation](#)
- [Sequence Editor performance improvements](#)
- [Clip Rectangle in SuperStar](#)
- [Rotate Selected Image in SuperStar](#)
- [Prop rotation handle in the Pixel Editor](#)
- [Adjustable Pixel Editor background image brightness](#)
- [Zooming in the Pixel Editor](#)
- [Bug fixes](#)

### ***Relaxed requirements for Cosmic Color Devices in Visualizer***

In previous versions, when simulating Cosmic Color Devices, the Visualizer required that the fixture when assembled had exactly [50 pixels](#) with no gaps. CCDs now instead follow the relaxed rules that DMX Pixel Universe fixtures follow. That is, you can skip pixels and/or use less than 50 pixels.

### ***Better 'Force to Front' handling in the Visualizer***

When using the Visualizer's 'Force to Front' option along with channels that required the use of the [Listener](#), the Visualizer could not be set back into the background. This was because of periodic data messages the Listener is required to send, even if no data is changing. These periodic updates would force the Visualizer back to the top even if no [sequence](#) was currently running. Instead now the Sequence Editor sends a separate message to the Visualizer to tell it that you are starting play

of a sequence. This will only happen once when you start the sequence, allowing the Visualizer to be pushed back into the window stack afterward.

### ***Control Sequence Editor play/stop during Visualizer Simulation***

When the Visualizer is placed in Simulation mode, two new buttons have been added that allow you to start and stop playing the active sequence in the [Sequence Editor](#). To start the active sequence press the 'Play SE' button. This performs the same action as if you went to the Sequence Editor's 'Play' menu and then selected 'Start This Sequence'. To stop the play of a sequence, press the 'Stop SE' button.

### ***Sequence Editor performance improvements***

Version 4.0.34 introduced changes that decreased the [loading](#) times of [sequences](#) (for example, in the [Sequence Editor](#)). Unfortunately, these changes also increased the length of time that various other things took, including, notably, [saving](#), exporting, importing, and opening the [right-click popup menu](#) on a [channel group button](#). These things have been sped up again, including some that are now even significantly faster than they had been before version 4.0.34 slowed them down. For example, on a certain huge sequence on a certain machine, saving took about 16 seconds before 4.0.34, but 142 seconds in 4.0.34, and is now back down to about 16 seconds again; importing a certain huge configuration file took about 518 seconds before 4.0.34, 663 seconds in 4.0.34, and now takes about 85 seconds; opening the right-click popup menu took about seven seconds before 4.0.34, and about 39 seconds in 4.0.34, and is now basically instant.

### ***Clip Rectangle in SuperStar***

"Clip Rectangle" has been added to [SuperStar's](#) Image Group Modify dialog box.

### ***Rotate Selected Image in SuperStar***

"Rotate Selected Image" has been added to [SuperStar's](#) Image setup dialog box.

### ***Prop rotation handle in the Pixel Editor***

In the Pixel Editor's preview design, props are now displayed with a rotation handle to the right of the selected prop (similar to the Visualizer). Just grab the handle and drag it with your cursor to rotate the prop. Note that only one prop can be selected for the rotation handle to be displayed.

### ***Adjustable Pixel Editor background image brightness***

The brightness of the Pixel Editor's preview's background image can now be adjusted from the main window. With a sequence open, click on the small down arrow next to the preview name. Select "Background Image" from the dropdown menu, then select the desired brightness (10% - 100%). Note that this setting only affects image brightness during preview playback; image brightness during preview design is a separate setting.

### ***Zooming in the Pixel Editor***

Zoom in and zoom out buttons have been added to the Pixel Editor's sequence toolbar (the same buttons that are in the [Sequence Editor](#)). You can still zoom in and out using the previous methods - dragging over the waveform to zoom in, and right-clicking on the waveform to zoom out - but there are now two ways to zoom.



## Bug Fixes

- In the [Sequence Editor](#), in some situations, certain actions such as [grouping channels](#) would cause the [track](#) to stop being displayed.
- In some situations, [inserting channels](#) in the [Sequence Editor](#) would not work.
- Some movement patterns in [SuperStar's Instant Sequence](#) were not behaving properly.

## What's New in Version 4.0.34

- [Channel-related performance improvements](#)
- [Cosmetic changes for Network Configuration program](#)
- [Change Intensities](#)
- [New CB100D Firmware](#)
- [New CMB16D Firmware](#)
- [Verifier checks for recommended Show Player options](#)
- [Slider in Pixel Editor Effect Generator upgraded](#)
- [Bug fixes](#)

### Channel-related performance improvements

Changes have been made to improve performance related to [channels](#), [RGB channels](#), and other [channel groups](#). For example, a certain enormous [sequence](#) which previously took 143 seconds to load on a certain machine now takes 81 seconds on the same machine. The vast majority of the remaining time is taken by loading [effect events](#) within channels, as opposed to loading the channels themselves, and the [Smooth to Fades](#) tool can be put to good use on the effect events of this particular sequence: The same sequence, but modified via the Smooth to Fades tool, used to take 82 seconds to load before this performance improvement (as opposed to 143 without Smooth to Fades), and now takes 19 (as opposed to 81 without Smooth to Fades).

### Cosmetic changes for Network Configuration program

Various small changes have been made to the Network Configuration program to simplify its use. For example, the X10/Dasher and Options tabs have been combined into a single new tab called '[Misc](#)'. These changes are cosmetic only and do not change any functionality.

### Change Intensities

The [Sequence Editor](#) now has a [Change Intensities](#) command, which can be used to change the intensities in the selected area in a wide variety of ways. For example, you can add to or subtract from intensities, impose caps or floors, and scale them (for example, double them or halve them). The tool can be set up to apply to all [channels](#) or only to certain types of channels (for example, to [RGB channels](#)' red channels).

You can access the Change Intensities tool via the [Change Intensities submenu](#) of the [right-click context menu](#).

### New CB100D Firmware

Version 1.21 of the Cosmic Color Bulb/Cosmic Color Pixel [firmware](#) has been released. This version fixes a problem with [LOR Enhanced mode](#) and the last channel (310) of the unit not working when in [Extended ID Mode](#).

## ***New CMB16D Firmware***

Version 1.34 of the CMB16D 16 Channel DC controller [firmware](#) has been released. This new firmware will continuously read the status of the [address](#) switches so the [Hardware Utility](#) can no longer be used to update the Unit's ID. This change also allows for the CMB16D to now have a speed setting while in [stand-alone mode](#). Setting an address that starts with F (F0-FF) will actually make the unit's ID 01, and the second digit (0-F) will control the speed of the stand-alone program running from 0:Slow to F:Fast.

## ***Verifier checks for recommended Show Player options***

The [Show Player](#) options [Use Compressed Sequences](#) and [Show Player Memory Restarts](#) (both accessible via the [LOR Control Panel's right-click popup menu](#)) both, when enabled, give possible benefits while causing no drawbacks. They are thus both recommended to always be enabled. The only reason the option to disable them is given is as a sort of "safety" in the case of some hypothetical, unforeseen bug, so that if you have some very specific reason to believe that one of them is causing a problem, you can turn it off. The [Verifier](#) now checks to see whether or not they are enabled, and if not, issues warning messages saying so (messages number [51](#) and [52](#), respectively).

## ***Slider in Pixel Editor Effect Generator upgraded***

In the Pixel Editor's Effect Generator, many effects use a slider to control effect behavior. In this release, the slider has been upgraded to allow the setting of a start value (effective when the effect begins) and an end value (effective when the effect completes). This allows you to do such things as having a spiral slow down or speed up during the course of the effect.

The top of the slider (green) represents the start value. The bottom of the slider (red) represents the end value. By default, the start and end values are locked together. To specify different start and end values, the slider must be unlocked. This is done by double-clicking anywhere along the slider. When unlocked, the top and bottom pointers can be moved independently. To relock, just double-click the slider again.

## ***Bug fixes***

- In [SuperStar](#), strings of lights that are not CCDevices or DMX pixels were always being given the incandescent dimming curve. Now the strings use the LED dimming curve if they are RGB dumb strings or if they are specified as LED in the channel dialog box of the Visualizer.
- The [LOR Control Panel's status window](#) would not show log messages that occurred while the status window was itself not displayed.
- In rare circumstances, the [Pixel Console](#) of the [Hardware Utility](#) could refuse to control pixels on a DMX Universe, if an unrelated LOR Network adapter had a problem.
- When using the [Pixel Console](#) on an LOR unit in [Enhanced LOR Mode](#), the last pixel (#100) could not be fully controlled.
- The Pixel Editor requires video drivers supporting OpenGL version 1.5 or later. If a PC did not support this, the Pixel Editor would crash when opening a sequence. Now, the Pixel Editor instead detects this situation, gives the user an informative message when the Pixel Editor starts, and disables the opening of sequences.
- A bug in the movement of scenes when using the [Rapid Fire trigger](#) in [SuperStar's Instant Sequence](#) was fixed. If it was more than one pixel, the scenes could get messed up when traversing over an unused area.

## What's New in Version 4.0.32

- [Change Effect Type](#)
- [Test Tracks' Physical Lights](#)
- [Background image can be displayed during main window playback](#)
- [Bug fixes](#)

### ***Change Effect Type***

The [Sequence Editor's right-click context menu](#) now has a "Change Effect Type" submenu that can be used to change the [effect types](#) of all the events in the selected area of the [sequence](#), while keeping their intensities the same. For example, a [fade up](#) from 0% to 37% followed by an [intensity](#) of 37% can be changed to a [twinkling fade up](#) from 0% to 37% followed by a [twinkle](#) of 37%.

### ***Test Track's Physical Lights***

The [Sequence Editor's right-click context menu](#) on a [track](#) grid now has a new submenu "[Test Track's Physical Lights](#)". Using the various items in this submenu, you can make the physical lights for all of the [channels](#) in the track turn [on](#), [off](#), [shimmer](#), or [twinkle](#), or else do whatever the [sequence](#) says they are supposed to do at the time that you clicked in the track grid.

### ***Background image can be displayed during main window playback***

In the Pixel Editor, the background image for the preview can now be displayed during main window playback. This feature is controlled via a new menu option: Tools > Preview Playback > Show background image.

### ***Bug fixes***

- If the [Sequence Editor's "Test Physical Channels"](#) command were used on a [Cosmic Color Device](#), commands would be sent not only to its pixels, but also to its macro channels, potentially leading to strange results. The commands are now only sent to pixels, skipping the macro channels. However, note that it is possible to control an actual physical Cosmic Color Device from the Sequence Editor without the Sequence Editor knowing that it is a Cosmic Color Device; the macro channels will only be skipped if the Sequence Editor knows that the channel group represents a Cosmic Color Device (for example, if it had been added to the [sequence](#) as a CCD via [Insert Device](#)).
- If the [Sequence Editor's "Test Physical Channels"](#) command were used on a [channel group](#) or [RGB channel](#) (as opposed to on a single [channel](#)), it would be needlessly inefficient with the commands it sent to the lights over the comm line. This wouldn't have a noticeable effect in most cases, but it could possibly cause lagging if a very large number of channels were in the channel group.
- In the Pixel Editor's Visualizer import, LOR [unit IDs](#) greater than 09 were not imported correctly.
- In the Pixel Editor's Visualizer import, channel settings for bundles/superstrings were not used during playback, even though they were displayed properly in the prop setup window.
- In the Pixel Editor's prop setup window, the maximum allowed segments per line has been increased.
- During the Pixel Editor's sequence playback, pixels were often not square when playing back on the main window. Now, pixel dimensions are even recalculated if the playback window is resized during playback.

## What's New in Version 4.0.30

- ["Test Physical Channel" can be used on RGB channels and channel groups](#)
- [Smooth to Fades](#)
- [Bug fixes](#)

### ***"Test Physical Channel" can be used on RGB channels and channel groups***

The ["Test Physical Channel"](#) commands in the [Sequence Editor's right-click popup menu on channel buttons](#) used to apply only to actual [channels](#), as opposed (for example) for [RGB channels](#). You could use them on the individual channels comprising an RGB channel, but not on the RGB channel as a whole. You can now use these commands on RGB channels and other [channel groups](#), turning on or off all channels in the group in one fell swoop.

### ***Smooth to Fades***

Sometimes, [sequences](#) (especially those created with the help of various automatic tools) will have sections wherein a [channel](#) will have many very rapid consecutive [effect events](#). For example, "From time 0.00 to time 0.05, 10%; from time 0.05 to time 0.10, 30%; from time 0.10 to time 0.15, 40%; from time 0.15 to time 0.20, 70%". If done on many channels, this sort of thing can lead to laggy or bursty behavior. Moreover, it's often more or less indistinguishable (to the human eye) from the simpler "From time 0.00 to time 0.20, fade up from 10% to 70%", which is significantly more efficient. The [Sequence Editor](#) now has a ["Smooth to Fades"](#) tool which will attempt to automatically smooth out effects in this way, which can improve the performance of the sequence (reducing lagginess) and also decrease loading and saving time. You can get to the Smooth to Fades tool via the track grid's [right-click context menu](#).

### ***Bug fixes***

- The [Hardware Utility](#) would crash without warning when using the [Pixel Console](#) if the [Comm Listener](#) was not active and the REGular port was not defined as 'Enhanced'.
- Consecutive picture effects in the Pixel Editor would not display the correct images.
- When creating a new prop in the Pixel Editor, an error would occur if the user selected the string type as "strobe string 1 ch" or "multicolor string 1 ch" before selecting a color.

## What's New in Version 4.0.28

- [The Pixel Console in the Hardware Utility can now test PixCon16 and other devices running in ELOR mode](#)
- [Visualizer props imported into the Pixel Editor](#)
- [Sequence method defaults for importing Visualizer fixtures into the Pixel Editor](#)
- [Pixel Editor prop groups can contain any prop](#)
- ["More Info" buttons on Sequence Editor-to-Pixel Editor migration tool](#)
- [Bug fixes](#)

### ***Pixel Console in the Hardware Utility can now test PixCon16 and other devices running in ELOR mode.***

The [Pixel Console](#) in the [Hardware Utility](#) could previously only test PixCon16 devices when running in E1.31 (DMX over Ethernet). It can now also test PixCon16 boards, or any other LOR controller

that are connected to the REGular LOR Enhanced network running at 500K.

### ***Visualizer props imported into the Pixel Editor***

In the Pixel Editor's Visualizer import function, Visualizer props now get imported as Pixel Editor prop groups.

### ***Sequence method defaults for importing Visualizer fixtures into the Pixel Editor***

In the Pixel Editor's Visualizer import function, string, single bulb, and flood fixtures now default the Sequence Method to Sequence Editor. CCR and DMX fixtures default the Sequence Method to Pixel Editor.

### ***Pixel Editor Prop Groups can contain any prop***

Pixel Editor prop groups can now contain any prop, not just those with a Sequence Method of Pixel Editor.

### ***"More Info" buttons on the Sequence Editor-to-Pixel Editor migration tool***

"More Info" buttons were added on the Sequence Editor-to-Pixel Editor migration tool, to show exact channel mismatches.

### ***Bug fixes***

- In [SuperStar's Smooth Effects](#) dialog box, if the Enter key were pressed while the tab pane had the focus, the pane would go blank. It now does not go blank, and sets the current values to the screen.
- In [SuperStar's Smooth Effects](#) dialog box, if the Esc key were pressed while the tab pane had the focus, the pane would go blank. It now instead closes the dialog box.
- In [SuperStar's Smooth Effects](#) dialog box, if the Esc key were pressed while the tab pane did not have the focus, the dialog box would close, but the tab pane would remain. Now both go away.
- When [importing or exporting](#) a network configuration in the Network Preferences program, if the filename contained a special character (such as a space), the import or export could fail silently or the file could be saved with an incorrect filename.
- When changing the Unit ID or Universe ID in the [Pixel Console](#), the pixels displayed should have reset to show the first pixel. However this was not happening.
- When changing a DMX universe to use E1.31 in the [Advanced Network Configuration](#), if there were no previous settings the IP is set to Multicast with the correct address rather than Specify with an IP of 0.0.0.0.
- If the user previously configured a DMX Universe in the [Advanced Network Configuration](#), those values are used as the defaults for the next DMX Universe edited if that universe has no previous settings.
- The Pixel Editor would crash when opening some sequences.
- The Pixel Editor would sometimes have incorrect channel assignments on custom props.
- The Pixel Editor's preview playback would not update when in a separate window.
- The Pixel Editor's Effect Generator was not detecting the "none" effect correctly.

## **What's New in Version 4.0.26**

- [Physical channels can now be tested in the Sequence Editor](#)
- [Importing Visualizer files into the Pixel Editor](#)

- [Pixel Editor playback performance improved](#)
- [Bug fix](#)

### ***Physical Channels can now be tested in the Sequence Editor***

If you [right click on a physical channel](#) in the [Sequence Editor](#), you can now send an ON command directly to that [channel](#). This will allow you to test if you have properly configured and connected your equipment, and that you have correctly set the channel's parameters. The channel will remain ON until you select to turn the channel OFF, or you play a sequence.

### ***Importing Visualizer files into the Pixel Editor***

You can now import Visualizer files (\*.lee) into the Pixel Editor. In the Pixel Editor, select Tools > Manage Previews from the menu, then click on the "Import Visualizer" button. This functionality is preliminary - only fixtures get imported at this time. It is intended that in a future release, Visualizer props will also get imported as Pixel Editor prop groups.

### ***Pixel Editor playback performance improved***

The performance of sequence playback has been improved in the Pixel Editor.

### ***Bug fix***

- In the Pixel Editor, the timing mark display no longer bleed through if the user switches to another window/application during playback.

## **What's New in Version 4.0.24**

- [Hardware Utility can take control of ports from the Comm Listener](#)
- [PixCon16 can now be automatically configured as 1 UID/Universe per port](#)
- [Bug Fixes](#)

### ***Hardware Utility can take control of ports from the Comm Listener***

Only one program can have a comm port open at any given time. For ports associated with [LOR Enhanced networks](#) and [DMX networks](#), typically the [Comm Listener](#) will have the port open. In previous versions, this meant that if you wanted to use the [Hardware Utility](#) on such a port, you would have to ensure that the Comm Listener was not running, which is typically done via "[Unload Light-O-Rama](#)" in the [LOR Control Panel's right-click popup menu](#). Now, instead, when the Hardware Utility cannot open a port and it suspects that the reason might be that the Comm Listener has that port open, it now offers you the choice of whether or not it should ask the Comm Listener to temporarily give up control of the port. Thus, you can use the Hardware Utility on such ports without completely unloading the LOR Control Panel.

Two things should be noted: First, if you ask the Comm Listener to give up control of the port, then no program other than the Hardware Utility will be able to control lights on that port (until the Comm Listener retakes control of it). Notably, this means that if a [show](#) is running, any [lighting commands](#) from the show for the lights on that port will not take effect. Similarly with lighting commands from the [Sequence Editor](#) or Pixel Editor.

Second, the Hardware Utility does not really know that the Comm Listener is the culprit that is preventing it from opening the port; it just has a good guess that this might be the case. The culprit

might instead be some other program entirely; for example the Sequence Editor might have the port open, or even some program completely unrelated to Light-O-Rama. So, if the Hardware Utility asks you if you want it to ask the Comm Listener to give up control of the port, and you say yes, this might not cause the Hardware Utility to be able to take control of the port. In some cases, you might still have to (for example) close the Sequence Editor.

### ***PixCon16 can now be automatically configured as 1 UID/Universe per port***

When configuring the [PixCon16](#), the only way to automatically have the board assign ascending [Universe](#) or [LOR Unit IDs](#) previously was to use the 'Advanced' configuration and manually create the parameters for each port. The PixCon16 configuration can now perform this task automatically in [simple](#) or advanced mode. In simple mode, select the 'One UID/Universe per port' radio button. In Advanced configuration use one of the 2 buttons which automatically update all lower ports with ascending unit IDs.

### ***Bug fixes***

- When automatically creating Network Configuration while configuring a [PixCon16](#), not all DMX Universes in use were being created.
- In the [Hardware Utility](#) the 'Lights Off' button on the bottom right of the main screen was not turning all lights off on Cosmic Color devices

## **What's New in Version 4.0.22**

- [Prop creation is now optional when using the DMX Pixel Draw or CCR Pixel Draw Wizards](#)
- [PixCon16 can now be configured to run in LOR mode](#)
- [PixCon16 configuration can now optionally create DMX Network Configuration on save](#)
- [More robust PixCon16 communications for loading board configuration and updating firmware](#)
- [Bug Fix](#)

### ***Prop creation is now optional when using the DMX Pixel Draw or CCR Pixel Draw Wizards***

Previously, when finished drawing a DMX Pixel Universe or a CCR String, it was always required to create a new prop. However many times these wizards are used to continue adding pixels to existing fixtures. These wizards now ask if you want to create a new prop or not.

### ***PixCon16 can now be configured to run in LOR mode***

The [PixCon16](#) has 2 operation modes: It can be used as an E1.31 controller on an Ethernet network, or it can be used as an LOR controller on an LOR RS485 network. Now the user can specify which mode to use the board in, and will change its operation accordingly (Unit IDs instead of Universes, Circuit IDs rather than Channels, etc.)

### ***PixCon16 configuration can now optionally create DMX Network Configuration on save***

When the [PixCon16](#) is in E1.31 (DMX) mode, saving the configuration will bring up an option to automatically create the necessary DMX Network configuration changes. If the user selects yes, for each DMX universe in use on the board the system will create Multicast entries in the network configuration.

### ***More robust PixCon16 communications for loading board configuration and updating firmware***

Previous versions took a very conservative approach when reading or writing to the board, including during [firmware updates](#). Now the read/update process will retry more often and at a faster rate in an effort to reduce the number of errors the user has to deal with.

### ***Bug fix***

- When creating DMX Pixel Universes using a Wizard, the Visualizer would not correctly display fixtures with available pixels. Instead the wizard would crash and leave the Visualizer in an inconsistent state.

## **What's New in Version 4.0.20**

- [Bug Fix](#)

### ***Bug fix***

- The [Hardware Utility](#) main window was improperly sized allowing for controls that should have been hidden to be visible.

## **What's New in Version 4.0.18**

- [Sequence Editor's comm status more informative and more accurate](#)
- [Hardware Utility can now more easily test Cosmic Color Ribbons and Bulbs/Pixels](#)
- [Separate tab for traditional strings in prop definition window](#)
- [Custom bulb colors for traditional strings in the Pixel Editor](#)
- [Bulb shape and transparency in the Pixel Editor](#)
- [New Pixel Editor prop shape, "Bulbs"](#)
- [Increased maximum bulb size in the Pixel Editor](#)
- [Overriding default channel settings in the Pixel Editor](#)
- [Props comment field](#)
- [Renamed Pixel Editor sequence method](#)
- [Color selection palette hidden for effects that do not use it](#)
- [Movie effect support for uncompressed AVI files](#)
- [New default for Pixel Editor migration tool](#)
- [Custom Pixel Editor dimming curves](#)
- [Wait dialog while saving intensity files](#)
- [Bug fixes](#)

### ***Sequence Editor's comm status more informative and more accurate***

There is a small colored square in the bottom right corner of the [Sequence Editor](#) which indicates the status of various [networks](#): Blue means everything's OK, red means some sort of problem exists, and orange means other (for example, if Control Lights is off). This has been improved in several ways in this version of the Sequence Editor:

- In S3, it would only indicate the status of [LOR networks](#). In earlier beta releases of S4, it would actually indicate less than that: It would only indicate the status of non-[enhanced](#) LOR



networks. It now also indicates the status of non-enhanced LOR networks and of [DMX networks](#) (although see below for a caveat).

- Previously, if an error existed on some network, its tooltip would simply say that there is an error. It now indicates which network or networks have errors.
- Previously, starting play would in some cases make the panel turn from red to blue even if some network still had an error.
- It now updates in close to real time when some sort of status change happens.

Two things should be noted: First, for LOR enhanced networks and for DMX networks, the status describes whether or not the Sequence Editor is successfully communicating with the [Comm Listener](#); it does *not* necessarily indicate that the Comm Listener is successfully communicating with the network. Check the Comm Listener itself for that information. Second, only the statuses of LOR and DMX networks are taken into account at this time; the statuses of Dasher, X10, Digital IO and BSOFT Digital IO networks are not reflected.

### ***Hardware Utility can now more easily test Cosmic Color Ribbons and Bulbs/Pixels***

Previously, the [Hardware Utility](#) Test screen could only [test up to 32 circuits](#) on a device. Cosmic Color devices however can have 150 or more [circuits](#), which could lead to user confusion. Now when a Cosmic Color device, like the Cosmic Color Ribbon or Cosmic Color Bulb, is selected the test screen changes to testing the entire device with a particular color rather than circuit by circuit.

### ***Separate tab for traditional strings in prop definition window***

On the Pixel Editor's prop definition window, the details of setting up a traditional string have been moved to a separate tab from RGB strings.

### ***Custom bulb colors for traditional strings in the Pixel Editor***

In the Pixel Editor, traditional strings can now have a custom bulb color (defined with the rest of the string colors). Press the "Custom" button to set the color.

### ***Bulb shape and transparency in the Pixel Editor***

Bulb shape and bulb transparency were added to the Pixel Editor's props. These can be set in the preview design window after one or more props have been selected.

### ***New Pixel Editor prop shape, "Bulbs"***

The Pixel Editor has a new prop shape of "Bulbs". Each bulb in the prop can be individually positioned.

### ***Increased maximum bulb size in the Pixel Editor***

The maximum possible bulb size in the Pixel Editor has been increased so as to better accommodate flood lights.

### ***Overriding default channel settings in the Pixel Editor***

It is now possible to override the default channel settings for every channel in a prop with traditional

strings in the Pixel Editor. For example, a traditional megatree with red and green strings can now have a channel configuration of RRRR...GGGG.... Previously, it had to be RGRGRGRG....

### ***Props comment field***

The Pixel Editor has a new comment field for props, which you can use to enter your own notes about the prop.

### ***Renamed Pixel Editor sequence method***

The Pixel Editor's "Traditional" sequence method has been renamed to "Sequence Editor".

### ***Color selection palette hidden for effects that do not use it***

The color selection palette on the Pixel Editor's Effect Generator window is now hidden for effects that don't use the palette (e.g. Picture and Movie effects).

### ***Movie effect support for uncompressed AVI files***

The Pixel Editor's Movie effect can now read uncompressed AVI files produced by the ffmpeg program.

### ***New default for Pixel Editor migration tool***

The Pixel Editor's "Remove prop channel data from Sequence Editor" migration tool defaults to checked if the Pixel Editor and Sequence Editor channel counts match and the Has SE Events column is Yes.

### ***Custom Pixel Editor dimming curves***

You can now create your own dimming curves for the Pixel Editor, placing them in the "Pixel Editor \Curves" directory within your LOR data directory.

### ***Wait dialog while saving intensity files***

The Pixel Editor now shows a wait dialog while saving intensity files.

### ***Bug fixes***

- The Pixel Editor would hang after pressing play when the audio file was missing.
- The Pixel Editor would crash if a sequence was opened, closed, re-opened, and then the preview was changed. A memory leak related to this was also fixed.
- A bug in the Pixel Editor's onscreen playback of strobes was fixed.
- A Pixel Editor bug dealing with custom RGB props with multiple strings has been fixed.
- After a "Save As" was done in the Pixel Editor, the Pixel Editor file (LPE) had a timestamp that was current, but the new LMS/LAS file's timestamp was the same as the original file. Now both files will have a timestamp that is current.

## **What's New in Version 4.0.16**

- [Pixel Console in the Hardware Utility can now test DMX pixels](#)

- [Sequence Editor no longer turns off Control Lights when a port cannot be opened](#)
- [Bug fixes](#)

### ***Pixel Console in the Hardware Utility can now test DMX Pixels***

The [Pixel test Console](#) in the [Hardware Utility](#) has been improved to now be able to test DMX pixels. DMX Pixels can only be tested when the [Comm Listener](#) is running and if your software is [registered at the Advanced level](#) or higher.

### ***Sequence Editor no longer turns off Control Lights when a port cannot be opened***

In previous versions of the [Sequence Editor](#), if any particular comm port for an [LOR network](#) could not be opened, the Sequence Editor would automatically turn off Control Lights and therefore not attempt to control lights on any network. The reason for this was that it would be very resource-intensive to keep trying to open a comm port that just could not be opened, to a degree that would noticeably affect play. Now, instead, the Sequence Editor will leave Control Lights on, but not attempt to control the specific problematic network (or networks). If you find yourself in this situation, and you fix the problem with the comm port, you can get the Sequence Editor to attempt to open the port again by manually turning Control Lights off and then on.

### ***Bug fixes***

- For some DMX [visualizations](#), [SuperStar](#) would not export all of the pixels.
- In certain situations, the Visualizer when in normal rendering mode would not display all fixtures properly.
- When entering Simulation Mode in the Visualizer, DMX Pixel Universe fixtures were not being properly flagged as an error if they contained duplicate pixels.

## **What's New in Version 4.0.14**

- [Network Preferences Program can export/import network configurations](#)
- [Right click copy in the Pixel Editor](#)
- [Dragging effects in the Pixel Editor](#)
- [Overlapping channel warnings in the Pixel Editor](#)
- [New Pixel Editor prop types](#)
- [Control over beat interval range in SuperStar](#)
- [Bug Fixes](#)

### ***Network Preferences program can Export/Import network configurations***

There are two new buttons on the Network Preferences Advanced configuration that allow for the export and import of user network configurations. These functions can be used to keep multiple configurations on the same computer, or to move configurations between computers.

### ***Right-click copy in the Pixel Editor***

In the Pixel Editor, you can right-click on an effect thumbnail and select "Copy" from the popup menu. This puts the effect on the clipboard, from where it can be pasted anywhere on the grid.

### ***Dragging effects in the Pixel Editor***

In the Pixel Editor, you can drag an effect thumbnail onto a grid cell, and that cell will then be populated with that effect.

### ***Overlapping channel warnings in the Pixel Editor***

In the Pixel Editor's Preview Management window, clicking the "Info" button now lists warnings where channel assignments overlap (in addition to listing basic statistics about the preview). This is a great way to check whether you have any errors in creating your preview.

### ***New Pixel Editor prop types***

The Pixel Editor's prop types "Line-Horizontal" and "Line-Vertical" have been replaced with "Lines-Closed Shape", "Lines-Connected", and "Lines-Unconnected", which can be used to create a much larger variety of shapes. Any Line-Horizontal props in your preview will be automatically converted to a Matrix-Horizontal that is one string high. Line-Vertical props will be automatically converted to a Matrix-Vertical that is one string wide.

### ***Control over beat interval range in SuperStar***

When doing a "Create Timings" in [SuperStar](#), a dialog box now appears, giving control over the range that the beat interval can be. The default range is what it used to be a year ago so that Carol of the Bells is given a short beat interval that matches what is in the first SuperStar tutorial.

### ***Bug fixes***

- In some very limited cases, the Network Preferences program would produce an error stating that a COM port and a DMX adapter were in conflict but were not. This same bug could also manifest itself as an 'Error 9 - Subscript out of Range' error and crash when starting the Network Preferences program.
- If the user pressed ESC while in simulation mode using the Advanced Rendering Engine, Visualizer would completely exit rather than return to Edit Mode.
- The position of the Visualizer Advanced Rendering Engine window would not be remembered between executions.

## **What's New in Version 4.0.12**

- [Checkmark for currently selected waveform size](#)
- [Bug fixes](#)

### ***Checkmark for currently selected waveform size***

The Pixel Editor now shows a checkmark in the menu next to the currently selected waveform size.

### ***Bug fixes***

- In some situations, the [Light-O-Rama Control Panel](#) would issue an error message saying "Error in Form\_Unload: (91) Object variable or With block variable not set".
- Lighting commands for [DMX universes](#) would not be sent to the Visualizer unless "Control Lights" was enabled, even if "Control Visualizer" was enabled.
- Lighting commands for [LOR Enhanced networks](#) would be sent to the physical [controllers](#) if

- "Control Visualizer" was enabled, even if "Control Lights" was not enabled.
- The way that [SuperStar's](#) configuration is saved has been changed for better backward compatibility.
- On some computers, if the Pixel Editor's preview playback window lost the focus, the playback would be blank.
- The Pixel Editor would only allow one universe for custom props.
- Media files longer than twenty minutes were not loading in the Pixel Editor.

## What's New in Version 4.0.10

- [MP3 directors running DMX universes can now optionally leave lights on at the end of a sequence.](#)
- [Commands menu in LOR Control Panel](#)
- [Comm Listener starts even if no networks are configured to use it](#)
- [Pixel Editor migration tool to remove channel data from sequence](#)
- [Pixel Editor preview data now stored in LOR data path](#)
- [Pixel Editor Design & Playback window split into two windows](#)
- [Pixel Editor toolbar changes](#)
- [Pixel Editor preview playback changes](#)
- [Windows Media Player used for all Pixel Editor playback](#)
- [Bug fixes](#)

### ***MP3 Directors running DMX Universes can now optionally leave lights on at the end of a sequence.***

A new option has been added to [Hardware Utility](#) when creating [SD cards for MP3 directors](#) to either leave channels on [DMX Universes](#) at their current intensities or else turn them off when a [sequence](#) ends.

### ***Commands menu in LOR Control Panel***

The [Light-O-Rama Control Panel's right-click popup menu](#) is now also accessible from its [Status window](#), as the "Commands" menu. Generally speaking, this may (or may not) be more convenient in some situations, but it could be very useful in certain situations where Windows repeatedly keeps closing the popup menu automatically before you get a chance to select the menu item that you want to use from it.

### ***Comm Listener starts even if no networks are configured to use it***

In previous versions, the [Light-O-Rama Control Panel](#) would not start up the [Comm Listener](#) unless at least one network was configured in [Network Preferences](#) to use the Comm Listener. It now no longer requires any such networks to be configured. This allows commands to go through the Comm Listener to the Visualizer even if no networks at all are configured to use the Comm Listener.

### ***Pixel Editor migration tool to remove channel data from sequence file***

The Pixel Editor migration tool to remove [channel](#) data associated with Pixel Editor props from the [sequence](#) file (LMS or LAS file) is now operational. This tool should be used only after you have first imported your sequence using the Sequence Editor import and/or the xLights import. The benefit of this tool is that it eliminates any overlapping channels between the sequence file and the intensity file, which is necessary for proper playback outside of the Pixel Editor. It can also greatly reduce the size of your sequence file.

### ***Pixel Editor preview data now stored in the standard LOR data path***

The Pixel Editor previously stored the preview data file under the hidden AppData directory. It now stores it in the standard LOR data path, and no longer stores any data under AppData.

### ***Pixel Editor Design & Playback window split into two windows***

The Pixel Editor's Design & Playback window has been split into two separate windows, one for design and the other for playback. This was a prerequisite for solving other playback issues.

### ***Pixel Editor toolbar changes***

The Pixel Editor's toolbar above the sequence grid has been revamped to look more uniform. Also, playback buttons were added, as were some options that were previously in the Sequence menu.

### ***Pixel Editor preview playback changes***

The Pixel Editor's preview playback can now be hidden, shown on the main window, or shown on a separate window. Even when on a separate window, the grid remains interactive. The choice of which mode to use is under the new Tools > Preview Playback menu, and applies to all sequences.

### ***Windows Media Player used for all Pixel Editor playback***

Windows Media Player is now used for all media playback in the Pixel Editor. Previously, the displayed audio waveform (compressed audio) was used for playback on the main window, but this had low sound quality.

### ***Bug fixes***

- In [SuperStar](#), regular light string effects would not work in certain [visualizations](#).
- The [SuperStar](#) star was not getting marked properly if it also had row/column coordinates.
- The [Comm Listener](#) would ignore lighting [effects](#) for [DMX universes](#) that were not set up in [Network Preferences](#). As a result, the effects would not be displayed in the Visualizer.
- [SuperStar](#) has improved error reporting when importing [visualizations](#) with [DMX](#) pixels.
- In the Pixel Editor's Preview Design window for "Dumb RGB" and traditional strings, moving an end point on such a string would cause the drawn string to collapse to a single point.
- The Pixel Editor's media file search was not locating files in subdirectories under the default LOR media directory.

## **What's New in Version 4.0.8**

- [New CMB16D firmware](#)
- [Dumb RGB elements in groups](#)
- [Clockwise and counterclockwise pixel orders in Window Frame props](#)
- [Prop creation dialog change](#)
- [Bug fixes](#)

### ***New CMB16D firmware***

Version 1.33 of the [firmware](#) for the CMB16D has been released (filename CMB16-1-33.lhx). This new version has no effect on functionality; it is being released because the recently released previous version 1.32 would incorrectly be displayed in the [Hardware Utility](#) as being version 1.31.

## ***Dumb RGB elements in groups***

In the Pixel Editor, dumb RGB elements can now be members of a group.

## ***Clockwise and counterclockwise pixel orders in Window Frame props***

In the Pixel Editor, the user can now specify Window Frame props to use clockwise (CW) or counterclockwise (CCW) pixel order. Users who have created Window Frame props with previous beta versions will need to go back into those prop definitions and update the Start Location value to match their prop.

## ***Prop creation dialog change***

In the Pixel Editor's prop creation dialog, the number box next to the DMX radio button (max channel/circuit number) now applies to both DMX and LOR networks. In particular, this resolves an issue when defining props based on the CMB24DC card.

## ***Bug fixes***

- The [Comm Listener](#) is designed to shut down when the [LOR Control Panel](#) shuts down. In previous versions, this behavior relied upon the LOR Control Panel periodically sending "keep alive" messages to the Comm Listener; if the Comm Listener didn't receive such a message within a reasonable amount of time, it would shut itself down. This worked fine most of the time, but in some situations (typically involving very large [shows](#)), the LOR Control Panel would sometimes not get a chance to send such a message to the Comm Listener for a while, leading to the Comm Listener shutting itself down prematurely. Now, instead of relying on these messages, the Comm Listener periodically directly checks whether or not the LOR Control Panel is running.
- [SuperStar's](#) progress dialog box works smoother.
- In [SuperStar](#), play of a song sometimes wouldn't stop until the end of the song was reached.
- The [Verifier](#) is supposed to check for the existence and correct version numbers of various program files (in Verifier [message number 7](#) and [number 16](#) respectively), but it was not doing so for several relatively new files.
- The Network Preferences program could incorrectly identify two or more networks as being in conflict when they were actually not.
- The Pixel Editor now displays [unit IDs](#) in hex on the prop layout window.
- The Pixel Editor's "Control Lights" command was always using the default port to attempt to connect to the [Comm Listener](#), even if the Comm Listener were [configured to listen on a different port](#).
- The Pixel Editor could crash during migration of custom props.
- The preview calculation for [LOR channels](#) in the Pixel Editor was producing a range of 0-100 instead of 0-255, which made them appear dim (both as part of the preview and as part of the [Sequence Editor](#) migration). Users should rerun any Sequence Editor migrations they performed using version 4.0.6.

## **What's New in Version 4.0.6**

- [Highlighted thumbnail in Pixel Editor effects](#)
- [Comm Listener no longer requires FTDI drivers](#)
- [New firmware for CMB16D card](#)
- [New Pixel Editor Sequence Editor migration tool](#)
- [New Pixel Editor effect: Movie](#)

- [Performance improvements in the Pixel Editor](#)
- [Bug fixes](#)

### ***Highlighted thumbnail in Pixel Editor effects***

In the Pixel Editor's table of effect thumbnails, the current thumbnail is now highlighted, making it easy to distinguish which thumbnail is playing in the right-hand window.

### ***Comm Listener no longer requires FTDI drivers***

Previous versions of the [Comm Listener](#) required FTDI drivers to be installed on the computer, even if the Comm Listener weren't supposed to drive any lights that use FTDI-based adapters. It now no longer requires these drivers. If they are not installed, then the Comm Listener will not be able to control any lights on FTDI-based networks (such as [LOR Enhanced networks](#) and most types of [DMX networks](#)), but it will be able to control the Visualizer, and also control lights on [E1.31 networks](#).

### ***New firmware for CMB16D card***

Version 1.32 of the [firmware](#) for the CMB16D card has been released (filename CMB16-1-32.lhx). It now supports [500K comm speed](#) and [LOR Enhanced protocol](#).

### ***New Pixel Editor Sequence Editor migration tool***

The Pixel Editor has a new [Sequence Editor](#) migration tool. From the menu: Sequence > Migration Tools > Import from Sequence Editor. It will allow sequences for RGB props to be copied into the Pixel Editor. The result will be an exact pixel for pixel copy displayed as a single effect that spans the length of the [sequence](#) (one effect per imported prop). Portions of that single effect can then be removed and replaced with Pixel Editor effects as desired.

### ***New Pixel Editor effect: Movie***

The Pixel Editor has a new effect: Movie. This effect will play AVI movie files on your props (files with an ".avi" extension). This effect is a bit limited in that the AVI movie files must be "uncompressed". Various third-party programs (such as VirtualDub) can be used to produce such uncompressed AVI files.

### ***Performance improvements in the Pixel Editor***

The Pixel Editor has received some performance improvements: There has been some modest improvement in the preview calculation speed, and a large speed improvement to the Pinwheel effect (meaning it now takes far fewer CPU cycles to calculate).

### ***Bug fixes***

- In [SuperStar](#), if you attempted to export an intensity file to a directory other than the sequences folder, the empty \*.lms file got placed in the correct folder, but the associated intensity file always got placed in the sequences folder.
- When a [visualization](#) file would get a "ran out of sequencing rows" error, [SuperStar](#) would sometimes freeze.
- Preview of [text](#) on [SuperStar's](#) sequencing grid was being clipped to only the matrix in a [visualization](#) that contained a matrix and other lights. It will now display the preview of the text to



the entire sequencing grid.

- If the [Comm Listener](#) were configured to use some particular adapter, but it could not open that adapter, lighting commands sent to the Comm Listener for that adapter's network would build up without being processed until the adapter was successfully opened. This would result in the Visualizer unnecessarily not receiving the lighting commands either, and also potentially lead to an out-of-memory condition eventually.
- Ramp up effects on the left side of the Pixel Editor's grid were displayed incorrectly.
- In some cases, [Sequence Editor channels](#) were not being displayed in the Pixel Editor's grid even though they were selected after clicking the "Props" button.
- The Pixel Editor's xLights 3 import tool is now located under the Sequence > Migration Tools menu.
- [SuperStar](#) now remembers the clip rectangle state for [Smooth Effects](#) mode, [Image](#) mode, and [Text](#) mode.

## What's New in Version 4.0.4

- [New CMB24D firmware](#)
- [Bug fixes](#)

### ***New CMB24D firmware***

Version 1.05 of the [firmware](#) for the CMB24D card has been released (filename CMB24D-V1\_05.lhx). It has support for the [Enhanced LOR Protocol](#).

### ***Bug fixes***

- If you did not have an LOR USB dongle attached to the computer and attempted to start the [Pixel Console](#), it would crash the [Hardware Utility](#) with no error message.
- In the Visualizer if in one session you ran a simulation with the Advanced Rendering Engine and then switched options to the Regular engine, the simulation would not run.
- The Visualizer was not correctly reporting issues with simulations that used pixel universes. This could lead towards the Visualizer deleting fixtures coming out of simulation.
- One of the things that the Light-O-Rama Post Install utility does is to give you a chance to choose the directory that Light-O-Rama will (by default) use to store your data files (such as your [sequences](#) and visualizations). If you previously had chosen a data directory, then ran Post Install again and told it to use a different directory, it would copy your data from the old directory to the new. However, it would not copy all such data; in particular, data files that you had stored in subdirectories would not typically be copied over to your new data directory.

## What's New in Version 4.0.2

- ["Spokes" prop shape in Pixel Editor](#)
- [Pixel Editor pinwheel effect improvements](#)
- [Visualizer will back up S3 and earlier Editor Files before converting to S4](#)
- [Comm Listener identifies clients by name in log messages](#)
- [New Pixel Test Console for the Hardware Utility](#)
- [Tracks and props now remember whether or not they are hidden](#)
- [New sample visualization file](#)
- [Bug fixes](#)

### ***"Spokes" prop shape in Pixel Editor***

The Pixel Editor has a new predefined prop shape called "Spokes", for props that have spokes that radiate from a central hub.

### ***Pixel Editor pinwheel effect improvements***

The Pixel Editor's pinwheel effect has new controls: Two sliders to control the center of rotation, and one to control the length of the arms.

### ***Visualizer will back up S3 and earlier Editor Files before converting to S4***

The file format of Visualizer files has changed. When saving an S3 file in S4, the Visualizer will first back up the editor file. Should you choose not to move to S4, you can use this backup file to restore to an S3 format.

### ***Comm Listener identifies clients by name in log messages***

When issuing a log message about one of its clients (such as the [Sequence Editor](#) or [Show Player](#)), the [Comm Listener](#) would refer to the client via the IP socket that the client used to connect to the Comm Listener. For example, it might refer to a certain client as "Socket 127.0.0.1:57223". This is enough to uniquely refer to the client (at least until it disconnects and later reconnects), but it's not terribly informative for troubleshooting purposes. Now it additionally refers to the client by name (such as "Sequence Editor"), if the client has identified itself to the Comm Listener in that way. Please note that not all clients will necessarily identify themselves to the Comm Listener in all situations, so in some cases the Comm Listener will still only log the IP socket information.

### ***New Pixel Test Console in the Hardware Utility***

A [new testing console](#) that can more easily be used with Light-O-Rama RGB devices has been added to the [Hardware Utility](#).

### ***Tracks and props now remember whether they are hidden***

In the [Sequence Editor](#), when you opened a [sequence](#), all [tracks](#) and the props section would be unhidden, even if you had previously hid some of them while that sequence was open earlier. The sequence now remembers whether or not they should be hidden even after it is closed and reopened.

### ***New sample visualization file***

A new sample visualization file, 24x25Tree\_8RowGlobe\_dmxPixelTool.lee, has been added.

### ***Bug fixes***

- When the Pixel Editor was displayed on a secondary monitor, the timing marks would display incorrectly during prop playback.
- In the Pixel Editor, when creating custom props that skipped node numbers, the program would crash.
- In the Pixel Editor, when creating custom props that used the same node number more than once, the prop would display some nodes in the wrong locations.
- When loading certain [sequences](#) into the Pixel Editor, the program would crash. This would happen with sequences that had more than one [channel](#) assigned to the same physical circuit. It

would also happen with sequences that used the same channel name more than once.

- The version number displayed in the Pixel Editor's "About" box did not match the rest of the Light-O-Rama programs (it had an extra ".0" in it).
- The caption on the Pixel Editor's main window was missing some of the information displayed in the captions of other Light-O-Rama programs.
- In certain cases after unexpectedly disconnecting from and successfully reconnecting to the [Comm Listener](#), a client may not have correctly told the Comm Listener whether or not lights should be turned off the next time that it disconnects.
- In the Visualizer when using the Arch Wizard to create a pixel based fan, the fan was not properly created.
- When the Pixel Editor displayed effect thumbnails in the left window, thumbnails for Firestick props were bunched too close together. A similar problem could occur for horizontal lines.
- When a log message is added to the [LOR Control Panel's status window](#) and it is beyond the end of the visible portion of the log, the log should automatically scroll to the bottom in order to display the message. In certain situations, this was not happening.
- The Pixel Editor was requiring [unit IDs](#) for [LOR networks](#) to be entered using their decimal value. Now unit IDs are entered with their hex value, just like every other LOR program. **Users of version 4.0.0 will need to go back into each prop that is on an LOR network and update the unit ID to use the controller's hex value.**

## What's New in Version 4.0.0

- [Pro level license](#)
- [The Light-O-Rama Pixel Editor](#)
- [Intensity files](#)
- [Enhanced Light-O-Rama networks](#)
- [Speed improvement for converting channels to RGB channels](#)
- [Fading images and text in and out in SuperStar](#)
- [Visualizer now supports DMX RGB Pixel Universes](#)
- [Visualizer now supports inserting Symbol Fixtures with more than 256 Vertices](#)
- [Visualizer Wizard Updates](#)
- [Improved Pixel Ordering Display in Visualizer Draw Window](#)
- [Improved Visualizer performance while rendering](#)
- [Improved Visualizer Error Messages](#)
- [Improved Visualizer Shimmer and Twinkle Emulation](#)
- [New SuperStar parameters windows in Visualizer for Fixtures & Props](#)
- [Improvements for certain Comm Listener log messages](#)
- [New and updated firmware](#)
- ["4GB Patch" enabled by default](#)
- [New LOR PIXCON16 E1.31 based controller](#)
- [Cosmetic Control Panel changes](#)
- [MP4 media files](#)
- [Bug fixes](#)

### **Pro Level License**

There is now an additional [license level](#), "Pro", above Advanced. A Pro level license enables several new features designed to help with very large displays: The Light-O-Rama Pixel Editor, intensity files, and [enhanced Light-O-Rama networks](#).

### **The Light-O-Rama Pixel Editor**

The Light-O-Rama Pixel Editor is a new program which can be used to produce lighting effects for [sequences](#) in a visual way. It produces intensity files, which can efficiently support large lighting displays.

### ***Intensity Files***

Intensity files are a new way to store lighting commands. An intensity file, generated by the Light-O-Rama Pixel Editor or the [Light-O-Rama SuperStar Sequencer](#), is associated with a [sequence](#), and will play at the same time that the associated sequence plays. Instead of storing lighting commands in the traditional high-level way (such as "[fade up](#) over the next five seconds from 0% to 100%"), an intensity file stores large blocks of instantaneous intensity values for potentially many circuits. This allows the intensity file to be very efficient during play, and so enables better support for very large lighting displays.

Only [Light-O-Rama controllers](#) and [native DMX devices](#) can be used in an intensity file, and the Light-O-Rama controllers must be on [enhanced LOR networks](#). The [LOR Comm Listener](#) must be running in order for the lights to be controlled. This feature only works under the Pro [license level](#).

### ***Enhanced Light-O-Rama Networks***

A [Light-O-Rama network](#) can now be set to be an "[enhanced](#)" network. This causes the network to use a new communications protocol (an extension of the standard Light-O-Rama communications protocol) which can deliver lighting commands for many channels efficiently. If an intensity file is used, any [LOR controllers](#) from the intensity file must use an enhanced LOR network, but enhanced LOR networks also support effects defined directly in a [sequence](#).

The [Hardware Utility](#) can also write SD cards for [G3 Directors](#) for Enhanced Networks. Again, all controllers connected to a port must support the Enhanced Protocol, and the G3 directors [firmware](#) will need to be updated to at least version 5.32.

Not all Light-O-Rama controllers support the enhanced protocol, and some may require firmware updates in order to do so. The [LOR Comm Listener](#) must be running in order for lights on an enhanced network to be controlled when using a computer. Enhanced LOR Networks only work under the Pro [license level](#).

### ***Speed Improvement for Converting Channels to RGB Channels***

In the [Sequence Editor](#), [converting channels to RGB channels](#) would get slower and slower as the [sequence](#) got larger and larger, and eventually the sequence would become large enough that the conversion would take a very long time. This has been sped up significantly.

### ***Fading Images and Text In and Out in SuperStar***

You can now fade [images](#) and [text](#) in and out in [SuperStar](#), using PreRamp and PostRamp times (see [here for images](#) and [here for text](#)).

### ***Visualizer now supports 'DMX RGB Pixel Universes'***

The Visualizer now supports a 'DMX RGB Pixel Universe' fixture. This fixture allows for up to 170 RGB pixels to be part of a single fixture which is defined as a DMX Universe.

### ***Visualizer now supports inserting Symbol Fixtures with more than 256 vertices***

Previously the Visualizer was limited to creating a single fixture for a symbol. This limited the selection of a font glyph to one that had less than 256 vertices. The Visualizer will now create a prop and as many fixtures as needed for a single glyph, up to a maximum of approximately 16,000 vertices.

### ***Visualizer Wizard Updates***

- All drawing wizards that could previously be used with Cosmic Color Devices have been updated to be able to use the new DMX Pixel Universe fixtures as well.
- A new wizard for drawing DMX Pixel Strings has been added.
- A new option for 'Snake' layouts has been added to the Matrix Wizard, as well as a new selection that will show pixel ordering while the wizard is running.
- Maximums for the Tree, Arch, and Matrix wizards have all been increased. Trees and Arches can now be up to 64 segments. A matrix can be either 64 pixels wide or high depending on the orientation.

### ***Improved Pixel Ordering display in Visualizer Draw Window***

Pressing SHIFT while pointing at a CCR or DMX Pixel Fixture in the drawing area will 'blink' the pixels in the order they are assigned. The speed of the blink can be controlled in the The Visualizer's Options window, Tab 2.

### ***Improved Visualizer performance while rendering***

A new advanced rendering engine has been added to the Visualizer to greatly enhance performance of the program while simulating many channels, especially RGB bulbs. The new rendering engine takes advantage of the hardware acceleration available on nearly all modern video cards. This new engine is experimental, however it has been tested on several different cards. The new engine is enabled by default, however it can be disabled if needed.

### ***Improved Visualizer Error Messages***

When entering simulation mode, the Visualizer would give cryptic error messages if it was unable to assemble Cosmic Color Devices into meaningful groups. Those error messages have been improved and expanded to include DMX Pixel Universes.

### ***Improved Visualizer Shimmer and Twinkle emulation***

The Visualizer will now more closely emulate how a real controller presents [shimmers](#) and [twinkles](#). Due to differences between actual hardware clock speed and the visualizer, slight differences will remain, however the look is much improved over S3.

### ***New SuperStar parameters windows in Visualizer for Fixtures and Props***

A new dedicated window has been added to both Fixtures and Props in the Visualizer to store [SuperStar parameters](#). Previously, these parameters were placed as a keyword in the comments of a fixture/prop. They now have a dedicated area for ease of use.

### ***Improvements for certain Comm Listener log messages***

Certain log messages that were output by the [Comm Listener](#), associated with errors or other information about TCP/IP sockets, would include in their output some numbers that were essentially meaningless from the point of view of the end user. They now instead output the IP address and port of the socket.

### ***New and updated firmware***

Several new and updated pieces of [firmware](#) have been released:

- CCB100D-V1\_20.lhx (CB100D Cosmic Color Pixel/Bulb Controller) : Added support for [Enhanced LOR networks](#), and fixed a bug where the bulb self test did not correctly run while the reset button was held on the controller.
- CCR150D-V1\_19.lhx (CR150D Cosmic Color Ribbon): Added support for [Enhanced LOR networks](#).
- CMB24D-V1\_02.lhx (CMB24D): This is the first version of firmware for this device that has been distributed with the LOR software suite.
- CTB04Dg3-V1\_01.lhx (the new 4 channel CTB04g3 AC controller; also used in the new LOR400Wg3 and LOR400ELLWg3 controllers).
- CTB08Dg3-V1\_02.lhx (the CTB08Dg3 controller card and the LOR800Wg3 controller): Added support for [Enhanced LOR networks](#).
- CTB16PCg3-V1\_08.lhx (the CTB16PCg3 card and the gen3 residential controllers): Added support for [Enhanced LOR networks](#).
- CTB32Lg3-V1\_12.lhx (the CTB32L card and the LOR16xxWg3 light controllers). Added support for [Enhanced LOR networks](#).
- DC\_MP3\_V4-20.lhx (DC-MP3): This version of the firmware makes triggered shows start faster.
- iDMX1000\_V1\_50.lhx (the iDMX1000 controller). Fixed a problem with missed effects when running at 115.4K. Added support for 500K. Added support for [Enhanced LOR networks](#).
- MP3g3-V5\_32.lhx (G3 MP3 Dual Network Director): Supports [Enhanced LOR networks](#), and fixes two bugs: (1) In some cases, the firmware would believe that the sound and lights were extremely out of sync when they were not. This would cause error detection code to be triggered which would stop the song that was playing and move on to the next song. (2) In some cases, the firmware would ignore a show's schedule. Instead, a show would start as soon as the SD card was inserted.
- RF-V4\_v2-10.lhx (RF-V4 Easy Light Linker): This release allows the RF-V4 to use 115K comm speed.
- uMP3g3-V5\_32.lhx (G3 Mini Director): Supports [Enhanced LOR networks](#), and fixes two bugs: (1) In some cases, the firmware would believe that the sound and lights were extremely out of sync when they were not. This would cause error detection code to be triggered which would stop the song that was playing and move on to the next song. (2) In some cases, the firmware would ignore a show's schedule. Instead, a show would start as soon as the SD card was inserted.

### ***"4GB Patch" enabled by default***

In recent times, many customers with very large [sequences](#) who have been running into memory-related issues have been using a third-party tool known as the "4GB Patch" to modify the [Sequence Editor](#) and [Show Player](#) executable files. The effect of this is that Windows will allow the patched programs to use more memory than it would allow for the unpatched programs. Whenever a customer using the 4GB Patch upgraded to a new version of Light-O-Rama, they would have to remember to use the 4GB Patch on the new versions of the two executable files, or else they would start running into memory-related issues again.

Now, though, the Light-O-Rama installer distributes the Sequence Editor and Show Player executable files as if they had been patched using the 4GB Patch. Users therefore should no longer

need to run the 4GB Patch on these programs.

Just in case something unexpected occurs because of this, the installer also distributes unpatched versions of the executables. The patched versions are what are used by default, without the user needing to take any action. If for whatever reason you want to use the unpatched versions, though, they can be found in the Light-O-Rama program files directory (which is typically, but not always, either C:\Program Files\Light-O-Rama or C:\Program Files (x86)\Light-O-Rama). They are called LORSequenceEditor-Unpatched.exe and LORMonitor-Unpatched.exe. To start using them, shut down your running programs, then rename the default patched versions out of the way (for example, rename LORSequenceEditor.exe to LORSequenceEditor-4GBPatched.exe), and then copy the unpatched versions into their place (for example, copy LORSequenceEditor-Unpatched.exe to LORSequenceEditor.exe).

## ***The LOR PixCon16 E1.31 Controller***

The [LOR PixCon16](#) is the first [E1.31](#) and newest controller offering from Light-O-Rama. The board can control up to 16 170-pixel strings using various different chipsets, as well as be a bridge for 4 separate DMX universes all running on Ethernet.

## ***Cosmetic Control Panel Changes***

The order of menu items in the [LOR Control Panel's right-click popup menu](#) has been changed so as to hopefully more clearly group sets of similar items. Also, the Control Panel would say things like "Light-O-Rama is Disabled" to mean that [scheduled](#) play of [shows](#) was not currently [enabled](#); this has been changed to the hopefully less confusing "Scheduled Play is Off".

## ***MP4 Media Files***

The [Sequence Editor](#) now allows MP4 files to be used as the media files for [musical sequences](#). Please note that not all such files will work on all computers; for example, a particular MP4 (or some other type of media file) may be encrypted with DRM or may require a codec or filter that is not present on the computer.

## ***Bug Fixes***

- Using a Wizard other than the Channel Wizard could cause the Visualizer to leak resources.
- When using the Arch Wizard, changing from Arch to Fan or vice-versa the minimum number of segments was not being set correctly. This could lead to errors in the wizard which were caught and dealt with, but which should not have occurred.
- When using the Tree Wizard, the Pixels Per Segment spin control did not accelerate the longer the user pressed the up/down buttons.
- The Matrix Wizard was generating errors whenever the form was re-sized. This led to errors in the wizard which were caught and dealt with, but which should not have occurred.
- Deleting a Prop did not always remove the Prop's definition from the program. In essence, a prop with no fixtures was saved/loaded each time. Any prop that is deleted now also deletes the prop's definition.
- If a [sequence](#) file could not be loaded due to an invalid end centisecond for one of its [effect events](#), the [Sequence Editor](#) would issue an error message mistakenly quoting the event's start centisecond instead of its end centisecond.
- Some memory leaks (in various programs) associated with interacting with the Windows shell have been fixed. Most of these seem unlikely to have actually caused memory to leak in practice, but in theory they might have. One would definitely cause memory to leak in practice, but a

relatively small amount.

- When the [LOR Verifier](#) was checking for [warning 32](#) ("[Channel](#) in [tracks](#) of conflicting length"), it would display its progress percentage incorrectly, sometimes even displaying progress above 100%.
- The [Simple Show Builder](#) and the [MP3 tab](#) of the [Hardware Utility](#) would incorrectly allow for more than 99 [sequences](#) to be added to a [show](#). [Hardware Directors](#) can only handle a maximum of 99 sequences in a single show.
- The Network Preferences program was not correctly deleting old versions of the network configuration from the registry. This was due to a recent change in how Microsoft allows access to the registry.
- In the Visualizer, when simulating devices with [Unit IDs](#) greater than 100 (hex 64), a channel could be incorrectly activated on a different channel on the next higher network.
- The Network Preferences program could incorrectly flag two ports as being in conflict even if they were not. If the ports were in conflict, there was also a chance that the incorrect ports/adapters were reported.
- The Network Preferences program could experience unintended behavior if the column header in any of the list displays were clicked.
- If the [Sequence Editor](#) or [Show Player](#) stopped while a [sequence](#) was playing, any [DMX](#) lights that happened to be on at that time would remain on indefinitely.

## 2.2 What's New in Version 3.x.x

- [What's New in Version 3.12.2](#)
- [What's New in Version 3.12.0](#)
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### What's New in Version 3.12.2



- [New SuperStar license level: 60 CCR](#)

### ***New SuperStar license level: 60 CCR***

[SuperStar](#) now supports a new license level for up to 60 CCRs. The highest previously existing license level supported up to 40.

## **What's New in Version 3.12.0**

- [MP3g3 Directors can now output to DMX devices](#)
- [MP3 File Loading Speed Improvements for MP3 Directors](#)
- [New MP3g3 Show Time Director Firmware](#)
- [Initial firmware for Single Network Mini MP3 Director](#)
- [Improvements for busy sequences being run on MP3 Directors](#)
- [New Options and Features in SuperStar Instant Sequencing](#)
- [New Pre-ramp and Post-ramp options for SuperStar images](#)
- [New SuperStar Morph Option](#)
- [New Wrapped Tree for SuperStar](#)
- [Bug Fixes](#)

### ***MP3g3 Directors can now output to DMX devices***

[MP3g3 Directors](#) can now output to both [LOR](#), [DMX](#), or a combination of the two devices. All the devices must be the same on a particular port, but a particular port can run LOR or DMX devices now. You must use the [Hardware Utility](#) to write the [sequence](#) to the SD card, and the MP3g3 director must be updated to version 5.28 of the [firmware](#).

### ***MP3 File Loading Speed Improvements for MP3 Directors***

The [Hardware Utility](#) can now optionally [strip unnecessary header information](#) from an MP3 while creating an SD card, improving sequence loading speed on MP3 directors.

### ***New MP3g3 Show Time Director Firmware***

A new version of the [firmware](#) for the MP3g3 Show Time Director, MP3g3-V5\_28.lhx, allows for the use of DMX or LOR devices on a port.

### ***Initial firmware for Single Network Mini MP3 Director***

The initial version of [firmware](#) for the Single Network Mini MP3 Director, uMP3g3-v5\_28.lhx, has been released. This version of firmware supports both LOR and DMX512 output (DMX512 output requires version 3.12.0 of the [Hardware Utility](#)).

Even though this is the first release of firmware for this particular device, the version number is 5.28 so as to keep in sync with the version number of the Dual Network ShowTime MP3 Director (MP3g3-V5\_28.lhx).

### ***Improvements for Busy Sequences Being Run on MP3 Directors***

The [Hardware Utility](#) and the [Simple Show Builder](#) will now throttle busy sequences so that they

better stay in sync with audio. Once the bandwidth of a port on an [MP3 director](#) is exceeded, the amount of sequence data written to the card is reduced until the director can catch back up with the sequence. Previously MP3 directors would continue to send all data out the port, regardless of the bandwidth available. During particularly busy sequences, the director would fall back further and further. Once a sequence falls behind now, all subsequent commands are discarded until the director finishes sending the queued data.

## ***New Options and Features in SuperStar Instant Sequencing***

The SuperStar [Instant Sequencer](#) now has new options including new custom colors, new movement options, and a new trigger type.

## ***New 'Pre-ramp' and 'Post-ramp' options for SuperStar Images***

The user can now specify pre and post ramp options when using [images](#) in the SuperStar editor.

## ***New Superstar Morph Option***

The user now has the option to not shrink a [visualization](#) when doing a [morph](#).

## ***New 'Wrapped Tree' for SuperStar***

The Superstar Sequencer now can use [Wrapped Trees](#) in [Visualization](#) sequences.

## ***Bug Fixes***

- In the [Hardware Utility](#) when creating an SD card for an MP3 Director that used triggers, immediately trying to [create another show](#) using a different trigger could overwrite the wrong show number.
- The [Hardware Utility](#) incorrectly identified the CCB100D as having [stand-alone capability](#). It does not.
- If [SuperStar](#) was in [Visualization](#) mode and a smooth effect color is set to white, if the color is changed to something that is not white, the bar in the time layers would stay white.
- If [SuperStar](#) was in [Visualization](#) wrap around mode and also in scene mode there were cases where the first pixel turns black with a yellow border.
- If [SuperStar](#) was in [Visualization](#) wrap around mode sometimes only the left half would have pixels set.
- In some cases, [SuperStar](#) could create [instant sequences](#) that go beyond the end of a song. This is caused issues since the [Sequence Editor](#) fails to play the exported sequence if there are effects that go beyond the end of the song.
- In some cases, [SuperStar](#) would crash when creating a Quick [Visualization](#).
- In [SuperStar](#), when opening an .sup file the [Instant Sequence](#) settings were being cleared.
- In [SuperStar](#), if a fixture was multi-color and had no channels assigned it was still being drawn as if it were active.
- In [SuperStar](#) non-CCR strings would sometimes display in dark gray on the screen when clicking on the "VisEffect" checkbox.
- For [SuperStar](#), increased the maximum value of the [Sequencing Grid](#) Max Length from 200 to 360 in the Import [Visualization](#) dialog box,
- For [SuperStar](#), changed the valid range of morphs to be -50 to 360.
- In some instances, [SuperStar](#) was not checking the length of the row it was sequencing.
- For [SuperStar](#) the limit of Maximum Detection lines was increased from 24 to 36 in the Import [Visualization](#) dialog box.

- In [SuperStar](#) if the user clicked twice very quickly on the Play or Play All button, the program Beeped, played and then crashed at the end of the Play.
- In [SuperStar](#), if in [Visualization](#) mode and a [smooth effect](#) color was set to white, and then the color was changed to something that is not white, the bar in the time layers would stay white.

## What's New in Version 3.11.2

- [Changes to Edit menu keyboard shortcuts](#)
- [Verifier checks for old MC-P compatibility mode](#)
- [Optional speed improvements for saving in the Sequence Editor](#)
- [Manual creation of compressed sequences](#)
- [Bug fixes](#)

### ***Changes to Edit Menu Keyboard Shortcuts***

The menu items Undo Settings and Use Internal Media in the [Sequence Editor's](#) Edit menu did not have shortcut keys assigned to them. To give them shortcut keys, the menu items "Turn on Loops" and "Select" were changed to "Turn on Loop Levels" and "Select Zone", which allowed them to be moved to the shortcut keys "v" and "z", thus freeing up "s" and "l" for Undo Settings and Use Internal Media, respectively.

### ***Verifier Checks for Old MC-P Compatibility Mode***

The [Verifier](#) now checks to see whether [old MC-P compatibility mode](#) has been enabled. This compatibility mode is required for certain [controllers](#), but they are rare, and if it is enabled, it can cause significant overhead on your [network](#). The Verifier therefore warns you if it detects that this mode is enabled.

### ***Optional Speed Improvements for Saving in the Sequence Editor***

When the [Sequence Editor](#) saves a [sequence](#), it actually saves it to a temporary file first, and then attempts to reload that temporary file. Only if the load is successful will it actually overwrite the existing "real" sequence file with the newly saved temporary one. This is intended to minimize the potential for a save where something went wrong to cause the user to lose a good (earlier) save. This behavior is now optional, via the Verify Load option in the Saving Preferences menu. It is still recommended to have this behavior enabled, but if you work with very large sequences that take significant amounts of time to load and save, and are willing to take the risk of a corrupted save overwriting your previous good save file, you might want to turn it off in order to speed up saving.

The Sequence Editor also creates a compressed sequence whenever it saves a sequence, but you can now optionally disable this behavior via the Export Compressed option in the Saving Preferences menu. Again, it is still recommended to have this behavior enabled, but if you work with very large sequences that take significant amounts of time to save, you might want to turn it off in order to speed up saving. If you do choose to turn it off, it is highly recommended that you manually ensure that your sequences each have an up-to-date compressed sequence before starting your [show](#). You can do so via the Export as Compressed command from the File menu.

### ***Manual Creation of Compressed Sequences***

By default, the [Sequence Editor](#) creates a compressed sequence whenever it saves a [sequence](#), but this behavior can be disabled via the Export Compressed option in the Saving Preferences menu. If you choose to disable that option, it is highly recommended that you manually ensure sure that your

sequences each have up-to-date compressed sequences before starting your [show](#). You can now manually create a compressed sequence for a single sequence via the new Export as Compressed menu item on the File menu, or manually create compressed sequences for a show or for the entire [schedule](#) via the [Sequence Compressor](#) program.

## Bug Fixes

- The [LOR Verifier](#) would incorrectly report that three files (AdjMmsEng.dll, amp3dj.ocx, and Asoedmms.ocx) had unexpected version numbers.
- [SuperStar's](#) Play 8 Seconds and Play All buttons were not staying depressed when used in visualization mode, and the other buttons were not being grayed out.
- [SuperStar's](#) Configuration dialog box will now give a message if the range of [unit IDs](#) for a [network](#) is invalid.
- In [SuperStar](#), if the [row visualization](#) had a fixture that was not in the real visualization, it sometimes would not get reported as a warning.
- If you modified a [morph](#) in [SuperStar](#) and then played a part of the sequence, the start and end coordinates of the morph would get set to -1 after stopping play of the sequence.
- [SuperStar](#) might have crashed if you put a [smooth effect](#) in the right half of a [visualization](#) that was in [wrap around mode](#).
- [SuperStar](#) might have crashed when playing a [shockwave effect](#) using a [visualization](#) in [wrap around mode](#), especially if the shockwave had a large leading or trailing edge.
- Various Light-O-Rama programs used to depend upon the Microsoft library "SCRRUN.DLL". If this library was missing or misconfigured, various strange problems would occur. An example is that keyboard maps would not function in the [Sequence Editor](#). In recent times, this library seems to be missing or misconfigured more and more frequently on customers' computers, and so Light-O-Rama no longer depends upon this library.
- [SuperStar](#) now checks in the Configuration dialog box to make sure that entries for the star [unit ID](#), first CCR unit ID, and the ranges of the [networks](#) are all valid.
- If Windows had been running for about 25 days or more without having been shut down, the [Hardware Utility](#) would sometimes not be able to [write the time to an SD card](#).

## What's New in Version 3.11.0

- [Cosmic Color Array support](#)
- [Channel priority](#)
- [Named timing grids kept even if empty and not in use](#)
- [New card and controller support in the Hardware Utility](#)
- [Easy Light Linker configuration change](#)
- [SuperStar font update](#)
- [SuperStar CCR string segments increase](#)
- [Sequences can be removed from the Recent Sequences list](#)
- [Paste options moved to their own portion of the Tools Panel](#)
- [Memory and speed improvements for sequences](#)
- [Control over number of recorded undo items](#)
- [Changing input types with InputPup devices](#)
- [New MP3g3 Show Time Director firmware](#)
- [New CTB32LD/LOR160xWg3 firmware](#)
- [Bug fixes](#)

## Cosmic Color Array Support

[Cosmic Color Arrays](#) are now supported in the [Sequence Editor](#), via the [Insert Device dialog](#) and

also in [channel grouping](#).

### ***Channel Priority***

In most cases, if two lighting effects for two different channels on the same [controller](#) are supposed to happen at the same time, it does not matter which of the two commands is sent to the controller first. However, in some cases, it does matter: For example, a macro command for a [Cosmic Color Device](#) should be sent before a command for a regular channel on that CCD (presuming the two commands are supposed to take effect at the same time). In the past, this was determined based upon the [circuit number](#) of each channel. However, with the introduction of Cosmic Color Arrays, this is no longer possible, as their special channels use different circuit numbers than the special channels of other CCDs. So, the concept of "[channel priority](#)" has been added, to explicitly set which channels take priority over which others. Please note: If you have created a Cosmic Color Device (or Array) channel group in the sequence, channels within that group will automatically have their priorities set appropriately. You only need to manually set the priority yourself if you have not included those channels in a CCD/CCA channel group in the sequence.

### ***Named Timing Grids Kept Even If Empty and Not In Use***

Previously in the [Sequence Editor](#), if you [changed](#) which timing grid a track was using, and the old timing grid was empty (i.e. had no timings) and was not in use by any other track, that old timing grid would be discarded. This is now only done if, additionally, that old timing grid does not have a [name](#).

### ***New Card and Controller Support in the Hardware Utility***

The [Hardware Utility](#) now recognizes the CTB08Dg3 card, and the LOR800W which uses that card.

### ***Easy Light Linker Configuration Change***

[Easy Light Linker](#) (ELL) configuration has been changed in the [Hardware Utility](#): Support was added for the new LOR-RF-V5, which supports 115200 kbps. Also, previously, the LOR-RF-V4 only supported speeds up to 57600, but with the introduction of the LOR-RF-V5, there will be a new release of firmware for the LOR-RF-V4 that will enable it to run at 115200 as well.

### ***SuperStar Font Update***

Several of [SuperStar's fonts](#) have been updated:

- 6-6x6\_Thin\_Vertical.system.font
- 8-8x8\_Thin\_Vertical.system.font
- 10-12x12\_Bold\_Vertical.system.font
- 10-12x12\_Thin\_Vertical.system.font

### ***SuperStar CCR String Segments Increase***

The number of CCR string segments that can be used in an [imported visualization](#) in [SuperStar](#) has been increased from 124 to 160.

### ***Sequences Can Be Removed from the Recent Sequences List***

[Sequences](#) can be removed from the [Sequence Editor's](#) Recent Sequences list. To do so, right-

click on the file you wish to remove, and a popup menu will open. The menu will have an entry to remove the file from the list.

### ***Paste Options Moved to Their Own Portion of the Tools Panel***

The Clipboards subpanel of the Tools Panel in the [Sequence Editor](#) used to contain controls for both clipboards and for paste options. The paste options have now been moved to their own subpanel. This will hopefully make them a little easier to get at when many clipboards are present, by collapsing the Clipboards subpanel.

### ***Memory and Speed Improvements for Sequences***

Various memory and speed improvements related to [sequences](#) have been made. For example, one particular very large sequence which took about 2 minutes 15 seconds to load, consuming about 420 MB of memory, now takes about a minute and a half and about 160 MB.

### ***Control Over Number of Recorded Undo Items***

The [Sequence Editor](#) only remembers a certain number of changes (per [sequence](#)) for undoing and redoing. This number can now be changed, via the Undo Settings dialog. For most users, the default value will be fine, but users with large sequences who make large changes to those sequences might want to place a smaller limit on the number of remembered changes so as to help avoid running into memory-related issues.

### ***Changing Input Types with InputPup Devices***

The [Hardware Utility](#) will now allow changing input types (NO/NC) with InputPup devices.

### ***New MP3g3 Show Time Director Firmware***

A new version of the [firmware](#) for the MP3g3 Show Time Director, MP3g3-V5\_25.lhx, fixes a bug where animation sequences (non-musical sequences) would not run if two [networks](#) were specified in the file.

### ***New CTB32LD/LOR160xWg3 Firmware***

A new version of the [firmware](#) for CTB32LD/LOR160xWg3 controllers, CTB32LG3-V1\_12.lhx, fixes a bug where most [standalone sequences](#) would not operate properly.

### ***Bug Fixes***

- In the [Hardware Utility](#), sometimes the ELL icon would show up when an [MP3 director](#) was connected but no [ELL](#) was on the network.
- [Smooth effects](#) in [SuperStar](#) would not export beyond 4 minutes 21 seconds of a song.
- The [LOR Verifier](#) would report an "error 7" on the file "audioconv.ocx", meaning that the file was missing. This is because the file is no longer used by the current version of Light-O-Rama software, and therefore is no longer distributed. That check has now been replaced with checks for new libraries used by the current version of software.
- In [SuperStar's Visualization mode](#), the Pixel Resolution macro was not being supported for auxiliary [networks](#).
- On some computers, [SuperStar](#) would have a repaint problem that would happen when you replayed a sequence to the computer screen.

- [Import visualization](#) in [SuperStar](#) had various issues relating to mapping lights to the sequencing grid.
- [Text](#) with a ramp in [SuperStar](#) could create channel commands for channel 151 when exported, resulting in white flashes on the CCR.
- In [SuperStar](#), the selection rectangle would not get drawn around [text](#) actions that had a trailing ramp.
- [SuperStar](#) would crash when saving a file with a very large image.
- Only one star could be set when applying a star scene in [SuperStar](#).
- If you had more than one [sequence](#) open in the [Sequence Editor](#), and they were not maximized (with respect to the Sequence Editor itself, as opposed to with respect to the screen), and you attempted to close them via their "X" buttons, the last one would not close.
- Musical sequences are not allowed to have loop levels, but the [Sequence Editor](#) would allow you to add a media file to an animation sequence that had loop levels, which would lead to various issues. Now the Sequence Editor will offer to remove the loop levels, and will not add the media file unless the loop levels are removed.
- In [SuperStar](#), selecting or moving an effect in the time layers in a large sequence could take 30 seconds or more and cause the program to appear to crash.
- If you moved two [smooth effects](#) that have the same start time up or down a layer in [SuperStar](#), one of them could disappear.
- If you tried to use a [sequence](#) containing a loop that looped back more than 255 times as a [standalone sequence](#), the [Hardware Utility](#) would refuse, giving a not-too-helpful error message that merely said "Overflow". The Hardware Utility will still refuse, but it will now give an error message that is, hopefully, more helpful.
- There could be a flicker at the end of the tail on a [visEffect](#). The flicker would only be seen in the [exported](#) file.
- Moving endpoints of a group of [morphs](#) in [SuperStar](#) wouldn't move to the upper sequencing rows if using half ribbons in CCR mode.
- A light in a [QuickVis](#) visualization would fail to draw if the QuickVis was large and had to be shrunk to fit on the [SuperStar](#) screen.

## What's New in Version 3.10.14

- [Bug fixes](#)

### **Bug Fixes**

- The [Sequence Editor](#) could sometimes report that a media file is not present when in fact it is present. This could cause an error within the Sequence Editor or any of its tools. This problem usually manifested itself when adding a track to a new [sequence](#). However, any part of the Sequence Editor that requires media could also have had this issue.
- CCRs laid end to end horizontally did not [import](#) properly in [SuperStar](#).
- [SuperStar](#) would crash on some computers if the first effect in a sequence was the smallest star in the SuperStar star.
- When modifying a [text mask](#) in [SuperStar](#), it would always display an error.
- In [SuperStar](#), visualizations with draw objects that have the same [unit ID](#) would display the square in the sequencing grid as disabled, and [instant sequence](#) would not properly define effects to the row.
- A matrix of CCR props would sometimes not [import](#) in the proper order in [SuperStar](#).

## What's New in Version 3.10.12

- [Bug fixes](#)

### ***Bug Fixes***

- Text and images sometimes would not clip properly when played to a [visualization](#) in [SuperStar](#).
- Some [visualizations](#) would not [import](#) properly in [SuperStar](#).

## What's New in Version 3.10.10

- [Help file available in EPUB format](#)
- [Bug fixes](#)

### ***Help File Available in EPUB Format***

An EPUB (e-book) version of the Light-O-Rama help file is now available, and is published along with the installer as well as on the Light-O-Rama website.

### ***Bug Fixes***

- Importing a prop into a visualization that was empty (that is, which had no fixtures) would cause the object selection area to disappear from the Visualizer.
- If [Play Again](#) was used in the [Sequence Editor](#) before [Play](#) (without "Again") had ever been used, play would hang.
- If a large sequence with a ribbon located at the bottom was [exported](#), [SuperStar](#) would crash.
- If [SuperStar](#) was launched into [CCR mode](#), the "[star in use](#)" setting would get set to "no", and the star channels would get played to ribbons, and you wouldn't be able to add star channel effects either.
- Visualization errors in [SuperStar](#) no longer get reported at launch if you are in [CCR mode](#). Also, visualization file errors are not reported when loading a CCR mode sequence.
- Some dialog boxes in [SuperStar](#) would allow the start time of an effect to be after the end time.

## What's New in Version 3.10.8

- [New device in Insert Device: CMB24D](#)
- [Continued improvements to media handling](#)
- [VisEffects](#)
- [Import Visualization Pair](#)
- ["Reverse" keyword for pixel layout in CCR fixtures](#)
- ["Myorder" keyword for order of fixtures](#)
- [Bug fixes](#)

### ***New Device in Insert Device: CMB24D***

The [Insert Device dialog](#) of the [Sequence Editor](#) now supports an additional device: The [CMB24D](#). It is a 24 channel controller; you can tell the Insert Device dialog to treat it either as 24 channels or as 8 RGB channels.

### ***Continued Improvements to Media Handling***

The [Sequence Editor](#) will continue to attempt to create two different internal media formats, for different purposes. However, should one of those conversions fail, the Sequence Editor will no longer refuse to create or open a [sequence](#). Instead, the user is simply informed that one or both of the conversions failed. The Sequence Editor will then choose the best file to use for whatever



purpose based upon which of the three files exists and/or the user-specified options. If a format that is required for a particular use could not be created, that use will simply not be available. For example, the Beat Wizard requires that a particular internal media file be created; if it could not be created for a particular sequence, then the Beat Wizard cannot be used for that sequence, and a warning will be presented if you attempt to use it.

A new option, Use Internal Media, has been added to the Edit menu. This option is set per sequence and is saved when the sequence is saved. It allows you to control whether or not Light-O-Rama attempts to use the internal formats with the sequence. It is recommended that this option be on. The option defaults to being on, except when a sequence created using an earlier version of Light-O-Rama is loaded (so that media handling behaves for these sequences as it did in earlier versions, unless you choose otherwise). More details can be found at "Use Internal Media".

## **VisEffects**

[SuperStar](#) now supports "[visEffects](#)". This gives the ability to apply [morphs](#) to the [visualization](#) instead of to the sequencing grid, and allows a smooth coordinated sweep across all the lights in the visualization.

## **Import Visualization Pair**

You can now [import a pair of visualizations](#) into [SuperStar](#), as a "Row Visualization" and a "Real Visualization". The Row Visualization is to be laid out in rows according to how you want the lights mapped to the sequencing grid. The Real Visualization should be laid out how the light display actually appears.

## **"Reverse" Keyword for Pixel Layout in CCR Fixtures**

[SuperStar](#) now supports a new [keyword](#), "reverse", for the layout of pixels in a CCR fixture.

## **"Myorder" Keyword for Order of Fixtures**

[SuperStar](#) now supports a new [keyword](#), "myorder", controlling the order of fixtures.

## **Bug Fixes**

- Musical sequences whose media files had names that included multiple consecutive periods (such as "1983... (A Merman I Should Turn To Be).mp3") would not successfully play.
- In [SuperStar](#), if you clicked on an effect in one of the effect lists and then hit play, the effects wouldn't get rebuilt and played for the new location you are at.
- The movement and color of [instant sequence](#) effects in [SuperStar](#) would get reinitialized every 10 seconds.
- The grid setting and star in use setting could change when changing between [SuperStar's](#) CCR mode and [Visualization](#) mode.
- After changing from [SuperStar's Visualization](#) mode to CCR mode, you could not add a scene to the star.
- Export of large sequences could cause [SuperStar](#) to crash.
- On some computers with older versions of Windows Media Player, no matter what play speed was selected in the [Sequence Editor](#), the [sequence](#) would always play at normal speed.
- In [SuperStar](#), rendering a fast rotating [fan](#) with thin [blades](#) would play fine on the computer screen, but would [export](#) as a dot.
- In [SuperStar](#), a [fan](#) longer than ten seconds would play fine on the computer screen, but when

[exported](#) would last less than ten seconds.

- If a [soundboard interactive group](#) were set up in a [show](#), and contained a single [sequence](#) on a particular trigger, and that trigger were tripped while that sequence was playing, an error message would occur ("ERROR STARTING SEQUENCE (This key is already associated with an element of this collection)"). The sequence would not start, and could no longer be started during the current run of the show.
- [Text masks](#) in [SuperStar](#) were not working for [imported visualizations](#) using a matrix made up of fixtures.
- [SuperStar's smooth effects](#) would not play to white mono-color lights.
- Shimmers produced in [SuperStar](#) would not stay the same color while shimmering.
- If a CCR with no assigned base [unit](#) is in an [imported visualization](#), [SuperStar](#) will issue a warning.
- You can now open a file in [SuperStar](#) by double clicking on the file in Windows. Previously, [SuperStar](#) would crash while attempting to open the file if you did this.
- In an [imported visualization](#) in [SuperStar](#), props of two or three fixtures would be in reverse order.
- In an [imported visualization](#) in [SuperStar](#), the trailing ramp of an [image](#) would not clip the maxrix CCRs.

## What's New in Version 3.10.6

- [Bug fixes](#)

### **Bug Fixes**

- If you [exported](#) a [sequence](#) from [SuperStar](#), and then opened that sequence in the [Sequence Editor](#), made a change to it, and saved it, the Sequence Editor would warn you that the sequence was created by an older version of Light-O-Rama.
- If [SuperStar](#) were already in [visualization](#) mode, and you opened a .SUP file that referenced a visualization file that did not exist, [SuperStar](#) could crash.

## What's New in Version 3.10.4

- [Additional networks in SuperStar](#)
- [Bug fixes](#)

### **Additional Networks in SuperStar**

The number of [networks](#) in CCR mode in [SuperStar](#) has been increased from 4 to 8. Note that in Visualization mode, you can have the full 16 networks.

### **Bug Fixes**

- A fast double click in the object selection area could lock up the Visualizer.
- In [SuperStar](#), if the "white" color control is nonzero, and you scroll some text or images using a [visualization](#), the text or image in the [exported](#) sequence could skip and jump in some cases.

## What's New in Version 3.10.2

- [Bug fixes](#)

### **Bug Fixes**

- In [SuperStar](#), the [clipboard](#) could not be saved to a file.
- The [Sequence Editor](#) would sometimes give an "invalid procedure call or argument" error when attempting to save a [sequence](#).
- The [Sequence Editor](#) would have problems with MIDI files, most prominently being unable to create new musical sequences based on MIDI files.
- Sometimes an [imported visualization](#) in [SuperStar](#) would get resized too large, and its bottom would get chopped off.

## What's New in Version 3.10.0

- [Sorting in the Keyboard](#)
- [Copy and Print in the Keyboard Preferences dialog](#)
- [Better memory usage in SuperStar](#)
- [New and updated fonts in SuperStar](#)
- [Updated SuperStar visualizations](#)
- [Eight channel Gen3 controller support in Hardware Utility](#)
- [Improved network detection in the Visualizer](#)
- [LOR Control Panel can restart the Show Player](#)
- [Show Player can automatically shut down and restart in certain situations](#)
- [Show Player will decache sequences if memory usage is too high](#)
- [Visualizer Keywords in SuperStar](#)
- [Duplicate RGB channel assignment warning in SuperStar](#)
- [More DMX adapters supported](#)
- [LOR Diagnostic shows more information](#)
- [Copy and save in LOR Diagnostic](#)
- [Beat Wizard, VU Wizard and Waveform Display support more media types](#)
- [Better support for variable bit rate MP3s](#)
- [Optionally play only audio while sequencing a video sequence](#)
- [Show entire head at start of morph](#)
- [Acceleration for morphs](#)
- [Smooth effects in SuperStar](#)
- [Support for more \(and less\) channels in the Hardware Utility](#)
- [Firmware updates](#)
- [Extend length of effects in instant sequence](#)
- [Instant sequence and timing map dialog settings saved](#)
- [Bug fixes](#)

### ***Sorting in the Keyboard Preferences Dialog***

The Keyboard Preferences dialog in the [Sequence Editor](#) would previously display the list of keyboard preferences in order of the keys - for example, an entry associated with the A key would be listed before an entry associated with the B key. Now, the list can be sorted either in that order or in order of operation - for example, an entry that causes the "Apply Fade Down" operation to be performed would be listed before an entry that causes the "Copy Timing" operation to be performed.

### ***Copy and Print in the Keyboard Preferences Dialog***

In the [Sequence Editor's](#) Keyboard Preferences dialog, there are now new buttons to copy the list of keyboard preferences to the Windows text clipboard and to print the list.

### ***Better Memory Usage in SuperStar***

When building a sequence, [SuperStar](#) now uses about half as much memory as it used to.

### ***New and Updated Fonts in SuperStar***

Five new vertical [fonts](#) were added to [SuperStar](#), and two fonts were updated with new asterisk characters. The new fonts are:

- 6-5x6\_Thin\_Vertical.system.font
- 6-6x6\_Thin\_Vertical.system.font
- 8-8x8\_Thin\_Vertical.system.font
- 10-12x12\_Bold\_Vertical.system.font
- 10-12x12\_Thin\_Vertical.system.font

And the updated fonts are:

- 10-12x12\_Thin.custom.font
- 10-12x12\_Thin.system.font

### ***Updated SuperStar Visualizations***

Two sample visualization files for [SuperStar](#), SuperStar\_ControllersBottomLeft.lee and SuperStar\_ControllersTopLeft.lee, have been updated.

### ***Eight Channel Gen3 Controller Support in Hardware Utility***

The [Hardware Utility's Advanced Configuration screen](#) used to support only 16 or 32 channel controllers. It now also supports 8 channel Gen3 controllers.

### ***Improved Network Detection in the Visualizer***

On a very limited number of machines, the Visualizer would be unable to detect the available network adapters. If the detection fails, an alternate method is now used.

### ***LOR Control Panel Can Restart the Show Player***

In previous versions of Light-O-Rama, if the [schedule](#) was [enabled](#) but the [Show Player](#) was not running (for example, if it were stopped via Windows Task Manager), the [LOR Control Panel](#) would simply change so that the schedule was [disabled](#). Now, it will instead attempt to restart the Show Player. This may also help get the [show](#) running again more quickly if the Show Player crashes, but not necessarily: In at least some cases the Show Player might still be "running" in a technical sense until the user dismisses a Windows message box saying that the Show Player had crashed.

### ***Show Player Can Automatically Shut Down and Restart in Certain Situations***

If no [show](#) is playing, and if no show is [scheduled](#) to start playing within the next sixty seconds, and the [Show Player](#) is using over a hundred megabytes of memory (commit charge size), it will automatically shut itself down (and will then be automatically restarted by the [LOR Control Panel](#), assuming the schedule is still [enabled](#)). 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.

This behavior can be disabled (so that the Show Player will never shut itself down automatically) by

unchecking "[Show Player Memory Restarts](#)" in the LOR Control Panel's [right-click popup menu](#).

### ***Show Player Will Decache Sequences If Memory Usage Is Too High***

During a [show](#), whenever a [sequence](#) is about to start, the [Show Player](#) checks how much memory (commit charge size) it is using. If it is using over a gigabyte of memory, it will attempt to reduce memory usage by decaching sequences that it has previously loaded, until it drops down below 900 megabytes (or until it has no more sequences which it can decache). This is so as to prevent it from caching more and more sequences until it finally runs out of memory and crashes.

If it winds up needing to play one of the decached sequences again, this means that it will have to reload that sequence. Therefore, the sequences are decached in an order intended to minimize loading time:

1. If a sequence is currently playing, it will not be decached.
2. If the Show Player knows for sure that a sequence is about to be played, it will not be decached. Please note, though, that the Show Player may not always know for sure that a sequence is about to play, even if you know it, and so in certain situations you may occasionally see a sequence be decached soon before being played.
3. Sequences that are in sections of the show that are already finished are considered highly decacheable, and will be decached before any other sequences. For example, if the [Shutdown section](#) of the show is playing, then any sequences in the [Musical](#) or [Animation](#) sections are considered very decacheable, since they will never be played again during this run of the show.
4. Compressed sequences are considered more decacheable than non-compressed sequences, since compressed sequences can be loaded much more quickly than non-compressed sequences.
5. Two compressed sequences, or two non-compressed sequences, are compared to each other based upon the number of times that they have been played and the amount of memory that they took to load. Generally speaking, all else equal, a smaller sequence is more decacheable than a larger sequence, since it can be loaded more quickly. However, for any specific pair of sequences, the larger might be decacheable if the smaller sequence were played sufficiently more often.

### ***Visualizer Keywords in SuperStar***

You can now control various behaviors of how [SuperStar](#) will [import a visualization](#) by putting certain [keywords](#) in the comments areas of props or fixtures in the visualization. For example, you can mark a prop in the Visualizer so that when SuperStar imports the visualization, it will put the prop's lights in certain specific locations in the sequencing grid.

### ***Duplicate RGB Channel Assignment Warning in SuperStar***

If you have RGB lights with duplicate channel assignments in an [imported visualization](#), [SuperStar](#) will warn you.

### ***More DMX Adapters Supported***

Two more DMX adapters, the DMXKing UltraDMX Micro and the DMXKing UltraDMX RDM Pro, have been added to the [list of supported DMX adapters](#). Both should be configured in [LOR Network Preferences](#) to use the "ENTTEC DMX USB Pro" protocol.

### ***LOR Diagnostic Shows More Information***

In the past, [LOR Diagnostic](#) would display certain specific entries from the Light-O-Rama portion of the Windows registry. If Light-O-Rama started using a new registry entry, and LOR Diagnostic was not updated to include it, the information simply wouldn't be displayed at all. It now still shows those specific entries, but also shows raw data from the entire LOR portion of the registry, so that the information is present even if LOR Diagnostic is not specifically updated to include it.

### ***Copy and Save in LOR Diagnostic***

The [LOR Diagnostic](#) utility now has buttons enabling you to copy the utility's output to the Windows clipboard or to save it to a file.

### ***Beat Wizard, VU Wizard, and Waveform Display Support More Media Types***

The [Sequence Editor's Beat Wizard](#), [VU Wizard](#), and [Waveform Display](#) now support more media types, including video files. It also now has better support for the types that it supported in the past - for example, they would be unable to handle certain MP3s, issuing an error message such as "Cannot init conversion".

### ***Better Support for Variable Bit Rate MP3s***

In past versions, if your musical sequence used a variable bit rate MP3, and you wanted to use certain features in the [Sequence Editor](#) (such as starting play somewhere in the middle of the sequence instead of at the natural start of the sequence), you would need to convert the MP3 to use a constant bit rate (using a third party audio editor such as Audacity), or it would not work properly. Now, you may be able to do this without converting to a constant bit rate. Note that it's possible that you may still have to convert in some cases, so keep tools like Audacity in mind just in case.

### ***Optionally Play Only Audio when Sequencing a Video Sequence***

The [Sequence Editor's Video Preferences](#) dialog now has [an option which can be used to make the Sequence Editor play only the audio track of a video file in a musical sequence](#), as opposed to also showing the actual video.

### ***Show Entire Head at Start of Morph***

In [SuperStar](#), there is now an option to [show the entire head at the start](#) of a [morph](#). This can be used, for example, to have a morph start out 50 pixels long, and get progressively shorter until it disappears at the end.

### ***Acceleration for Morphs***

In [SuperStar](#), [morphs](#) can now be set up to [accelerate](#) (or decelerate). This can be used, for example, to make a morph going up that slows down, or a morph going down that speeds up, as if under the influence of gravity.

### ***Smooth Effects in SuperStar***

[SuperStar](#) now has three "[Smooth Effects](#)": [Shockwave](#), [Spiral](#), and [Fan](#).

### ***Support for More (and Less) Channels in the Hardware Utility***

The [main test screen](#) of the [Hardware Utility](#) now supports 32 channels, rather than 16 as in the past. This allows the use of this screen (rather than the [console](#)) to test the DIO32 (in native address mode) and the new CMB24D (which is a 24 channel Direct Current (DC) card).

The [advanced configuration screen](#) previously only supported 16 and 32 channel cards. It has been updated to support the new CTB08Dg3, an eight channel card.

### ***Firmware Updates***

Several new firmware updates are included:

- CCB100D-V1\_16.lhx
- CCR150D-V1\_17.lhx
- CTB16PG3-V1\_07.lhx
- CTB32LG3-V1\_11.LHX
- DIO32\_V1-32.LHX
- mDC\_MP3\_V4-22.lhx

The CCB100D and CCR150D firmware includes additional support for [500K](#). The CTB16PG3 and CTB32LG3 firmware includes support for "noisy AC" (less chance of flicker on noisy power). The DIO32 and mDC\_MP3 firmware contain many changes that have previously been posted online, but never before distributed with the software installer.

### ***Extend Length of Effects in Instant Sequence***

[SuperStar](#) now has an additional option for [instant sequences](#): "[Extend Length of Effects](#)". This option will extend the length of each effect up to the start of the next effect. This makes the instant sequence less "blinky".

### ***Instant Sequence and Timing Dialog Settings Saved***

[SuperStar](#) now saves the settings used in the [Instant Sequence](#) and [Timing Map](#) dialog boxes.

### ***Bug Fixes***

- In [SuperStar](#), if you created a sequence in [Instant Sequence](#), then clicked on "roll dice" and "sequence all", it would not erase the existing sequence before creating the next sequence. You would end up with multiple sequences stacked on top of each other.
- Some memory leaks related to [sequences](#) have been fixed.
- If you attempted to add an effect in [visualization mode](#) in [SuperStar](#), and the fixtures involved did not contain any of the colors in the effect, an error would be displayed and you would not be allowed to add the effect. This error would prevent you from using group modify to move pixels on [scenes](#). This error has been changed to a warning, and you are allowed to proceed if you want.
- After moving a selected group of effects in [SuperStar](#), the first active selection could have been moved. This would result in group modify thinking that some attributes had been changed when they had not.
- In [SuperStar's Import Visualization](#) dialog box, if you type a value for "[max length](#)" and then click

OK, it would not use the value that you had typed in.

- If you add a prop in [SuperStar](#) with a row and column specified, and then add a prop without a row and column specified, it would use the row and column of the first prop for both props.
- A memory leak in [SuperStar](#), related to the conversion of an MP3 to a WAV file, has been fixed.
- Non-CCR RGB strings would not process correctly in [SuperStar](#) if there were more than 48 pixels.
- If [SuperStar's](#) sequencing row max length was more than 50, and if the total number of 50 pixel CCRs was more than 24, it would make the sequence row count be 24.
- If [SuperStar's](#) sequencing row max length was more than 50, the location of the SuperStar star was not being calculated properly.
- The time progress display while [SuperStar](#) was playing a sequence would flicker.
- If two channel commands overlapped in [SuperStar](#), the channel would play differently in SuperStar than it would in the [exported sequence](#).
- If the [SuperStar fonts](#) directory contained more than twelve fonts, SuperStar would hang.
- If the text in a [SuperStar text action](#) contained a double quote character ("), everything after that character would disappear when you saved the .sup file and reloaded it.
- If no method returns an available network adapter for the Visualizer, the "Local Loopback" adapter is automatically used.
- When [writing a show to an SD card](#) via the [Hardware Utility](#), you could type in [the dropdown box which is supposed to allow you to select the show number](#). Doing so would cause the show number to be 0.
- The "cleanup [sequence](#)" in the [Musical section](#) of a [show](#) was not paying attention to the Musical section's "Turn used lights off at the end of each sequence" option. It would instead always turn the used lights off, no matter whether the option was enabled or not.
- If you open a [SuperStar](#) sequence and it fails to open the associated audio file, the time layers would be blank. This has been fixed to default to a five minute length.
- The [Hardware Utility](#) might have crashed if an error occurred while [selecting a COM port](#).
- When [importing a visualization](#) in [SuperStar](#), sometimes the morph selection points would disappear, and the next time you used them, a spurious line would get drawn.
- The [LOR Diagnostic](#) utility was displaying incorrect information about the configured [LOR networks](#), and no information about configured [DMX universes](#).
- If the name of a [DMX adapter](#) began with a number, the [Network Preferences program](#) would list its name right justified instead of left justified on the [DMX tab](#).
- On some computers, various Light-O-Rama programs would refuse to run, saying that "Light-O-Rama is not correctly installed", despite LOR having been installed.
- Undo and redo in [SuperStar](#) would sometimes not work properly; sometimes redo would not restore all effects that had been undone, and sometimes undo or redo would cause SuperStar to crash.

## What's New in Version 3.9.0

- [Comm speed changes](#)
- [Hardware Utility support for two networks in G3 MP3 Directors](#)
- [Hardware Utility support for 500K speed in G3 MP3 Directors](#)
- [Increased range of allowable sequencing grid lengths in imported visualizations](#)
- [New functions added in SuperStar dialogs](#)
- [Warning for channels needing a higher license level](#)
- [Verifier can be used on a single show or a single sequence](#)
- [New CCB/CCP firmware: Version 1.15](#)
- [New CCR firmware: Version 1.10](#)
- [New CTB32LG3/LOR160xWG3 firmware: Version 1.08](#)
- [New CTB16PCG3 firmware: Version 1.05](#)
- [New G3-MP3-Director Firmware: Version 5.22](#)
- [Bug fixes](#)



## ***Comm Speed Changes***

[Light-O-Rama networks](#) were previously able to use communication speeds up to 115.4K. New Generation 3 controllers, Cosmic Color Bulbs, Cosmic Color Ribbons, and Cosmic Color Pixels are now able to support 500K, approximately four times faster. You can set your network to use 500K in the [LOR tab](#) of the [Network Preferences](#) program. You may have to update your firmware to take advantage of this new feature.

Also, network speeds are no longer referred to as distances. Instead, the actual speed of the connection is used. "Long Range" is now called "19.2K", "Average" is now "57.6K", and "Short Range" is now "115.4K".

## ***Hardware Utility Support for Two Networks in G3 MP3 Directors***

Previously, a [Light-O-Rama MP3 Director](#) was able to control a show on a single [LOR network](#). The new Generation 3 MP3 Directors are able to control two separate networks, and the [Hardware Utility](#) has been updated to support this new functionality.

## ***Hardware Utility Support for 500K Speed in G3 MP3 Directors***

Previously, a [Light-O-Rama MP3 Director](#) was able to support communications speeds up to 115.4K. The new Generation 3 MP3 Directors are able to additionally support 500K, approximately four times as fast as earlier controllers. The [Hardware Utility](#) has been updated to support this new functionality. You may have to update your firmware to take advantage of this new feature.

## ***Increased Range of Allowable Sequencing Grid Lengths in Imported Visualizations***

When [importing a visualization](#) into [SuperStar](#), you can now set the [maximum sequencing grid length](#) anywhere from 25 to 200, rather than the previous 50 to 100.

## ***New Functions Added in SuperStar Dialogs***

Various new functions were added to some of [SuperStar's](#) dialog boxes: "Move pixels" was added in the [scene group modify](#) dialog box; "Move endpoints" and "Reverse direction" were added in the [morph group modify](#) dialog box; "Use Head Color" was added in the [morph](#) dialog box.

## ***Warning for Channels Needing a Higher License Level***

When opening a [sequence](#) in the [Sequence Editor](#), a warning is presented if the sequence contains channels that your [license level](#) cannot control. This warning appears only once per Sequence Editor session.

## ***Verifier Can Be Used on a Single Show or a Single Sequence***

The [Light-O-Rama Verifier](#), which can be used to check for various problems with your [schedule](#), [shows](#), and [sequences](#), used to check your schedule, the shows that are on that schedule, and the sequences that are in those shows. It still can do that (and still does it by default), but now you can also ask it to check just a single show (regardless of whether it is scheduled or not), or a single sequence (regardless of whether it is in a show or not).

Note, though, that it's possible that two sequences which each pass individual checks from the Verifier without any problems might still have problems when used together within a single show. So it's always a good idea to run the Verifier against their show, and especially against the entire schedule, at least once before going live with your show.

### ***New CCB/CCP Firmware: Version 1.15***

This new firmware for Cosmic Color Bulbs and Cosmic Color Pixels supports 500K communications speed.

### ***New CCR Firmware: Version 1.10***

This new firmware for Cosmic Color Ribbons supports 500K communications speed.

### ***New CTB32LG3/LOR160xWG3 Firmware: Version 1.08***

This new firmware for CTB32LG3/LOR160xWG3 has the following changes:

- Support for 500K communications speed.
- Support for LED Display sharing with the new G3-MP3-Director when the director is attached rather than the regular Display Daughter Card.
- A bug was fixed in standalone mode when the unit is used as a director for other controllers while running a standalone sequence.

### ***New CTB16PCG3 Firmware: Version 1.05***

This new firmware for CTB16PCG3 controllers supports 500K communications speed.

### ***New G3-MP3-Director Firmware: Version 5.22***

The G3-MP3-Director is a new device that will replace the DC-MP3.

### ***Bug Fixes***

- In [SuperStar](#), a [visualization](#) with a matrix of CCRs sometimes would not clip effects to stay within the CCR matrix. This was especially noticeable when playing [image actions](#) on the CCR matrix.
- In [SuperStar](#), if you saved an [archive file](#), and then opened it, you could no longer [export](#) it with the demo version.
- If you did a [Create QuickVis](#) on a combination of CCR controllers and standard 16 channel controllers, then [SuperStar](#) would place the first row of 16 channel controllers on top of the last row of CCR controllers.
- In [SuperStar](#), only the end points of RGB light strings (strings where all the lights are the same RGB color) were being drawn. This has been fixed to draw bulbs along the entire string.
- When pressing the Play or Paste button in [SuperStar](#), some unnecessary screen redraws were done. These have been removed.
- Selection of an RGB fixture was not working in [SuperStar](#).
- If you change from CCR mode to Vis mode, [SuperStar](#) will now automatically rename the file by appending "\_vis" to the end of the name. This is to prevent cases where you would otherwise lose the star channels in a sequence that was done in CCR mode.
- If the [Sequence Editor](#) had hold of an audio file while [SuperStar](#) tried to create timings using that audio file, SuperStar would crash.
- If you are in "Full Range" color mode in [SuperStar](#), and you set the color controls with the color

picker dialog box, red and green could be set to 130. This caused constant "integer out of range" errors because the color fields in the dialog boxes had values out of range.

- In the Animator, if the file that was supposed to be used as the background image of the animation did not exist, the "Remove Image" button would be grayed out, thus giving no straightforward way to remove the reference to the image from the animation.
- When trying to create a new musical sequence in the [Sequence Editor](#), media files with the extension "m4a" would not be shown unless the dropdown box controlling the types of media files displayed was changed from "All Supported Files" to "MPEG Audio".
- Added support for non-continuous lines in a light string in a [visualization](#) in [SuperStar](#).
- Added support for "superstar cool" and "superstar warm" to indicate the dimming curve to use in [SuperStar](#).
- On a large resolution screen, you could have ended up with more than ten rows in the time layers in [SuperStar](#).
- In [SuperStar](#), if using an [imported visualization](#) using up and over CCRs, or wedge CCRs, images got clipped to the first half of the sequencing rows.
- One of the things that the [Verifier](#) checks is whether or not any LOR program files (such as the [Sequence Editor](#)) are missing. There were a few such program files that it was not checking for.
- [ServoDog controllers](#) were not being properly detected by the [Hardware Utility](#).
- If an international character was used in the name of an audio file in [SuperStar](#), and the [sequence](#) was [exported](#), the [Sequence Editor](#) would fail to open the sequence.
- In some situations, a [SuperStar](#) sequence could be erased if you saved after clicking "New Document".
- A memory leak, which could affect any program using a [sequence](#) but which was most noticeable in the [Show Player](#) during [shows](#) that were using non-compressed sequences, has been fixed.
- In [SuperStar](#), after a paste of a group of effects and nudging the pasted effects around, sometimes a "group modify" would modify more than it should.
- When changing configuration or layout information, [SuperStar](#) would crash if SSEdit.cfg was "read only" (this would typically only happen if the Lightorama directory were placed in an area that the operating system does not allow write access to). This has been fixed so that SuperStar will instead display an error message advising that configuration and layout information could not be saved.

## What's New in Version 3.8.0

- [M4A Support](#)
- [Hiding Fixture/Prop Names](#)
- [Default Channel Names Options](#)
- [Protected Sequences on SD Cards](#)
- [Bug Fixes](#)

### ***M4A Support***

M4A media files are now supported in musical sequences.

### ***Hiding Fixture/Prop Names***

A new option has been added to hide fixture/prop names in the Visualizer when something is selected in the editor. This can reduce editing screen clutter.

### ***Default Channel Name Options***

When creating new channels on a fixture in the Visualizer, there are now options to default the

channel name to one or more of the Fixture Name, Channel Order Number, or RGB Color (if applicable).

### ***Protected Sequences on SD Cards***

Protected sequences can now be used on [SD cards](#) via the [Hardware Utility](#) or the [Simple Show Builder](#).

### ***Bug Fixes***

- When upgrading to a new version of Light-O-Rama, existing [SuperStar](#) custom [fonts](#) would be overwritten with those from the installer. Only the system fonts, not the custom fonts, should have been overwritten (both should be installed if not already present).
- After double clicking a .LEE file in Windows, the Visualizer's toolbar icons were sometimes not correctly enabled.
- Pressing Delete a second time while the Visualizer's "Are You Sure?" dialog was presented caused a second "Are You Sure?" dialog to pop up. After responding to both of them, the simulation data could be left in a corrupted state.
- If you reduced the number of CCRs in a [SuperStar](#) sequence, saved, relaunched, and selected a [scene](#), the program would hang.
- In [SuperStar's visualization](#) mode, if you opened a sequence that uses an invalid visualization path, the program would hang.
- In [SuperStar](#), if a [visualization](#) had a matrix of CCRs, and some other CCRs as well, then [image actions](#) could be seen on the other CCRs.
- If there was more than one prop with CCRs in it, [SuperStar](#) would add them in the order found in the visualization. They are now sorted and added according to the row they are on.

## **What's New in Version 3.7.0**

- [Easier Visibility of Morph Paths](#)
- [Max Length of Sequencing Rows](#)
- [Wrap Around Mode](#)
- [Tree Wizard Improvements](#)
- [Performance of Creation of Standalone Sequences Improved](#)
- [Bug Fixes](#)

### ***Easier Visibility of Morph Paths***

In [SuperStar](#), a line is drawn from 1a-2a and 1b-2b for [morph](#) anchor points. This makes it easier to see the path that the morph is going to take.

### ***Max Length of Sequencing Rows***

[SuperStar](#) now has a "[Max Length](#)" setting to set the length of sequencing rows from 50 to 200. This allows the sequencing rows to be longer, so all fixtures on a row in a visualization will fit on one row.

### ***Wrap Around Mode***

[SuperStar](#) now has a "[wrap around mode](#)", designed to be used with 360 degree trees to make it easier to have an effect start and end in a particular place.

## ***Tree Wizard Improvements***

The Tree Wizard in the Visualizer has been streamlined. This includes a new option for a top radius, and several new CCR bundle types.

## ***Performance of Creation of Standalone Sequences Improved***

The creation of standalone sequences (for example, in the [Hardware Utility](#) for an [MP3 Director](#)) has been made significantly faster. For example, a certain very large [sequence](#) that used to take over twenty minutes to convert to a standalone sequence on a certain computer now takes approximately one minute on that same computer.

## ***Bug Fixes***

- If [SuperStar](#) had never been run on a particular computer before, or its configuration had never been changed, and you attempted to change the rotation on a new sequence (not on a sequence loaded from a file), SuperStar would hang in certain cases.
- If [SuperStar](#) had never been run on a particular computer before, or its configuration had never been changed, and you attempted to bring up the [Layout dialog box](#) and change to half ribbons, the text would be clipped so that only the first ribbons got text on them.
- In [SuperStar's](#) CCR mode, if you added white text, it would have a red shadow on it.
- When a [visualization](#) was used in [SuperStar](#), in some situations the file would be renamed to `_vis.sup`.
- In [SuperStar's visualization](#) mode, if the "Star in Use" setting was "Yes", effects would get offset by four rows.
- In [SuperStar](#), if the regular [network](#) was not being used, but had [unit IDs](#) in the same range as an Aux network that was being used, channels for those unit IDs would have incorrectly used the regular network instead of the Aux network.
- In the Visualizer, after inserting a prop from a file, the prop/fixture buttons and/or the list of props/fixtures shown on the main editing window could be wrong.

## **What's New in Version 3.6.0**

- [Vertical Mode in Import Visualization](#)
- [Bug fixes](#)

### ***Vertical Mode in Import Visualization***

- [SuperStar's Import Visualization](#) dialog now has an optional "[vertical mode](#)" sequencing grid orientation, which can be used to more easily deal with displays that are taller than they are wide (such as a visualization of an RGB megatree).

## ***Bug Fixes***

- A bug in [SuperStar](#) was fixed related to the drawing of floods and bulbs in a visualization.
- [Instant Sequence](#) was producing white effects for CCRs, but not for RGB lights. It will now treat strings of RGB lights the same as CCRs.
- [SuperStar](#) now supports reversing the order of fixtures in a prop if necessary in order to support a matrix of RGB lights that are not a Cosmic Color Device.
- Having an "&" character in a fixture or prop name in a visualization exported to a [sequence](#) by [SuperStar](#) sometimes caused an "unterminated entity" error when the exported sequence file was opened in the [Sequence Editor](#).

## What's New in Version 3.5.0

- [E1.31 supported](#)
- [New Network Configuration program](#)
- [Play efficiency improvements](#)
- [New "QuickVis" files in SuperStar](#)
- [Improved handling of half-ribbon matrix arrays in imported visualizations](#)
- [Maximum Detection Rows setting for imported visualizations](#)
- [Improved error reporting when importing visualizations](#)
- [Change to names of channels in exported visualizations](#)
- [Morphs across entire sequencing grid after importing visualization](#)
- [Can select individual pixels in CCR visualization in SuperStar](#)
- [New mouse selection abilities in SuperStar visualizations](#)
- [Can select start and end points of morphs in SuperStar visualizations](#)
- [Start and end marks of morphs more easily identifiable](#)
- [Dimming curves in exported visualizations](#)
- [Support for duplicate fixtures in SuperStar visualization mode](#)
- [Improved Instant Sequence effects](#)
- [Improved balance across comm networks](#)
- [Arches with less than four segments](#)
- [Default grid color in Visualizer's options dialog](#)
- [Cancelling out of Visualizer's wizard to create fixtures](#)
- [Increase pointer precision in Visualizer by holding Shift](#)
- [Move only horizontally or vertically in Visualizer by holding Ctrl](#)
- [Suppress "Is this the port for shows" in the Hardware Utility](#)
- ["Color by time" in Instant Sequence](#)
- [Too-frequent SuperStar warning removed](#)
- [SuperStar group delete efficiency improved](#)
- [Bug fixes](#)

### ***E1.31 Supported***

E1.31 protocol, also known as "streaming DMX over ACN", is now supported for [DMX devices](#). This allows native DMX devices to be hooked up to LOR over an ethernet network, rather than over a serial port. Note that one or more E1.31 gateway devices, which convert E1.31 to standard DMX, would be required between your computer and your DMX devices.

### ***New Network Configuration Program***

A new program, the [Light-O-Rama Network Preferences](#) program, has been made. This program can be used to set up your various network settings, such as for your [Light-O-Rama networks](#), [DMX universes](#), X10 network, and so on.

This new program replaces the [Sequence Editor's](#) Network Preferences dialog. It can be launched through the Sequence Editor's Preferences menu, the [Light-O-Rama Control Panel](#), or as a standalone Windows program.

### ***Play Efficiency Improvements***

Several efficiency improvements were made related to playing [sequences](#), both at the startup of play and during play itself. These would be most noticeable on very large sequences, or sequences

using many events on [DMX](#) channels.

### ***New "Quick Vis" Files in SuperStar***

[SuperStar](#) now has the ability to create "[Quick Vis](#)" files, which are simple visualizations, enabling you to use SuperStar's [Instant Sequence](#) feature without actually having a "real" visualization.

### ***Improved Handling of Half-Ribbon Matrix Arrays in Imported Visualizations***

[SuperStar's](#) handling of half-ribbon matrix arrays in [imported visualizations](#) has been improved.

### ***Maximum Detection Rows Setting for Imported Visualizations***

[SuperStar's](#) [imported visualizations](#) feature now has a new "maximum detection rows" setting, which enables you to control how many rows the lights from the visualization will be imported into.

### ***Improved Error Reporting when Importing Visualizations***

[SuperStar's](#) error reporting has been improved in situations when an error occurs while [importing a visualization](#).

### ***Change to Names of Channels in Exported Visualizations***

When [SuperStar](#) would export a [visualization sequence](#), the names of exported channels used to just be the names of the visualization's channels. Now they are the visualization channel names plus the visualization fixture names.

### ***Morphs across Entire Sequencing Grid after Importing Visualization***

After [importing a visualization](#) into [SuperStar](#), the unused portion of a sequencing row is drawn in dim green and is selectable. This makes it possible to apply only one [morph](#) across the entire sequencing grid.

### ***Can Select Individual Pixels in CCR Visualization in SuperStar***

Individual pixels can now be selected in a CCR [visualization](#) in [SuperStar](#).

### ***New Mouse Selection Abilities in SuperStar Visualizations***

You can now select in [SuperStar visualizations](#) using Ctrl-left click and Ctrl-drag.

### ***Can Select Start and End Points of Morphs in SuperStar Visualizations***

You can now specify the start and end points of a [morph](#) in a [visualization](#) in [Superstar](#).

### ***Start and End Marks of Morphs More Easily Identifiable***

The start and end marks of a [morph](#) in [SuperStar](#) are now cyan and magenta to help identify them. Formerly, they were both white.

### ***Dimming Curves in Exported Visualizations***

When [exporting](#) a [visualization](#) in [SuperStar](#), an LED dimming curve is used for CCRs and RGB devices, while an incandescent dimming curve is used for all other lights.

### ***Support for Duplicate Fixtures in SuperStar Visualization Mode***

[SuperStar's visualization mode](#) now supports duplicate fixtures.

### ***Improved Instant Sequence Effects***

The effects generated by [SuperStar's Instant Sequence](#) are now limited by the size of each sequencing row. This improves Instant Sequence effects to make them a bit more in sync and a bit less choppy.

### ***Improved Balance across Comm Networks***

The buffer size for writes to serial port [devices](#) has been increased, as has the associated timeout value. These changes improve balance across communications networks.

### ***Arches with Less than Four Segments***

The Visualizer's Arch Wizard previously wanted four or more segments; otherwise the arch would not actually look like much of an arch. It now appears more archlike even with less than four segments.

### ***Default Grid Color in Visualizer's Options Dialog***

The Visualizer's Options dialog now supports the default grid color option.

### ***Cancelling Out of Visualizer's Wizard to Create Fixtures***

The Visualizer's dialog to create fixtures now has a cancel button, giving the user the opportunity to cancel out of the process.

### ***Increase Pointer Precision in Visualizer by Holding Shift***

Holding the Shift key while moving the mouse in the Visualizer now reduces the cursor speed, thus making more precise cursor movements easier.

### ***Move Only Horizontally or Vertically in Visualizer by Holding Ctrl***

Holding the Ctrl key while moving the mouse in the Visualizer will now limit cursor movement to either horizontal or vertical, depending upon the basic direction the mouse was moving at the start of movement.

### ***Suppress "Is this the port for shows?" in the Hardware Utility***

When the user selects a different COM port in the "Manual Select" dropdown box of the [Hardware Utility](#), the system asks if the newly selected port was "the LOR Show Port". If "Yes" was selected, the [Regular network](#) was set to use that port. A "Don't show this again" option has been added to that dialog, so that the user will not see it over and over, if desired.



## **"Color by Time" in Instant Sequence**

[SuperStar's Instant Sequence](#) feature now supports a "[color by time](#)" option, which enables you to specify an absolute length of time (such as "four seconds") that it will take for effects in a theme to change color.

## **Too-Frequent SuperStar Warning Removed**

When creating a new [Instant Sequence](#) in [SuperStar](#), it would often give a warning about not being able to undo your action. This warning has been removed.

## **SuperStar Group Delete Efficiency Improved**

[SuperStar's](#) group delete function has been optimized to be faster when deleting a large number of effects.

## **Bug Fixes**

- Lock and Unlock on the Visualizer's right-click context menu were not working correctly.
- The Visualizer incorrectly allowed for multiple unselected fixture/prop deletes when using the DEL key.
- In [SuperStar](#), shrinking a [visualization](#) to fit the screen would not always work correctly.
- Various "[import visualization](#)" bugs were fixed in [SuperStar](#).
- If you [imported a visualization](#) in [SuperStar](#), the first and last boxes on the first sequencing row would be set to white, yet if you tried to add a scene, you would get an error saying that no pixels were selected. This has been fixed so that no sequencing row boxes are selected after the import of a visualization.
- When the [Light-O-Rama Control Panel](#) launched another program (such as the [Schedule Editor](#)), the program would start minimized.
- When checking that the [networks](#) used by channels were configured, the [Verifier](#) would not check if the network was a [DMX universe](#).
- The first effect in a [SuperStar Instant Sequence](#) would not start out at the right color.
- When doing an [Instant Sequence](#) on a [visualization](#) using [SuperStar's](#) Color Wheel, and a row of fixtures did not contain a color, there were cases where the row would not receive any visible effects for long periods of time.
- In [SuperStar's Import Visualization](#), there were cases where fixtures were not being recognized.

## **What's New in Version 3.4.0**

- [SuperStar supports images and text when in visualization mode](#)
- [Timing change in SuperStar's "forward" and "reverse"](#)
- [Expanded WAV support in SuperStar](#)
- [Visualizer can make itself shown in front of all other windows](#)
- [SuperStar's export limit based on number of channels](#)
- [Large visualizations shrunk to fit in SuperStar](#)
- [Bug fixes](#)

## **SuperStar Supports Images and Text when in Visualization Mode**

[Images](#) and [text](#) are supported in [SuperStar](#) while in [Visualization](#) mode. Note that it only makes sense to use images in text in a visualization if you have a grid of lights. To use text, the grid must be at least 5x5.

### ***Timing Change in SuperStar's Forward and Reverse***

When clicking on the Forward and Reverse buttons on the group of tape recorder buttons on [SuperStar's toolbar](#), it now scrolls forward or backward one second (it used to scroll two).

### ***Expanded WAV Support in SuperStar***

If the header in a WAV file is of an unknown format, [SuperStar](#) now uses default values to open the WAV file. This is an unusual case, but it means that there are some WAV files that will now play properly whereas they would fail to play previous to this change.

### ***Visualizer Can Make Itself Shown in front of All Other Windows***

A new option, "Force Simulation Window to Front", has been added to the Visualizer's Com/Ref options tab (tab number 6). When this option is enabled, whenever the Visualizer receives data and is in Simulation mode, the Visualier window will force itself to be shown in front of all other windows. This option is off by default.

### ***SuperStar's Export Limit Based on Number of Channels***

When in [visualization mode](#), [SuperStar](#) now limits export based on the number of channels instead of on the number of sequencing rows. For example, if you have a 2 CCR license, it will now allow export of up to 300 channels when in visualization mode.

### ***Large Visualizations Shrunk to Fit in SuperStar***

If a [visualization](#) imported into [SuperStar](#) is too big, it is now shrunk to fit within the screen.

### ***Bug Fixes***

- If in one of [SuperStar's](#) small views, sometimes the sequencing grid was too wide.
- If a sequence were opened in one of [SuperStar's](#) small views, the numbers at the left of the time layers wouldn't display properly.
- [SuperStar's](#) effect bar representing a scene for the star could have ended up being any color. This has been fixed so that the bar is always white.

## **What's New in Version 3.3.0**

- [Setting SuperStar's color control for images](#)
- [Cosmic Color Bulb Support](#)
- [Support for flipped Cosmic Color strings in Insert Device](#)
- [Bug fixes](#)

### ***Setting SuperStar's Color Control for Images***

When drawing an [image](#) in [SuperStar](#), you can set the color of the color control to the color of an image pixel by holding the Shift key and left-clicking the pixel with your mouse.

### ***Cosmic Color Bulb Support***

Support for Cosmic Color Bulb devices has been added to the [Sequence Editor's Insert Device](#)

[screen](#) (in the [Cosmic Color Device section](#)) and to the [Hardware Utility's CCR/CCB Configuration screen](#).

### ***Support for Flipped Cosmic Color Strings in Insert Device***

Cosmic Color Devices have a hardware setting option where the pixel numbers can be "flipped" - i.e. instead of pixel #1 being closest to the device and pixel #50 being furthest from it, pixel #50 is closest and pixel #1 is furthest. The [Sequence Editor's Insert Device screen's Cosmic Color Device section](#) now has an option to list RGB channels in the device being created from 1 to 50 or from 50 to 1, so as to more easily match up the [sequence](#) as shown on the screen with the actual hardware device.

### ***Bug Fixes***

- In [SuperStar](#), sometimes the length of an archive file would become five minutes instead of the length of the original audio file.
- In the Visualizer, if the user pressed the Enter key on the Prop Properties screen, the last fixture selected to be part of the prop may not have been saved correctly.
- When using the Visualizer's Prop Properties box, the system could occasionally throw a logged error. The system correctly recovered, but the error should not have happened in the first place.
- When using the Visualizer's Channel Wizard on RGB props along with a reference file with RGB channels, the second and subsequent fixtures assigned to the prop could have incorrect channel assignments.
- In [SuperStar](#), sometimes if you modified the image an an [image action](#) and then played the sequence, it would hang.
- Some [morphs](#) in [SuperStar](#) could have had missing pixels.

## **What's New in Version 3.2.4**

- [Play startup speed improved in the Sequence Editor](#)
- [SuperStar filename changes](#)
- [SuperStar exported timing grid changed](#)
- [Bug fixes](#)

### ***Play Startup Speed Improved in the Sequence Editor***

The amount of time that the [Sequence Editor](#) takes to start playing a [sequence](#) has been reduced (this is most noticeable on very large sequences).

### ***SuperStar Filename Changes***

The names of various file types that [SuperStar](#) creates have been changed: [Export](#) files are now "\_sup.lms" instead of ".sup.lms"; vis files are "\_vis.lms" instead of ".vis.lms"; archive files are "\_archive.lms" instead of ".archive.lms". Also, exported files are named ".lms" regardless of whether they have an associated media file, with the expectation that the user will soon add a media file to them.

### ***SuperStar Exported Timing Grid Changed***

The timing grids of [sequences exported](#) from [SuperStar](#) have been changed from 0.10 seconds to 0.05 seconds.

## **Bug Fixes**

- If you chose a color such as yellow-white in [SuperStar's instant sequencing](#) in CCR mode, you would only see occasional yellow.
- In some cases, when "loop at end" was on and the play range started close to the end of the [sequence](#), play would not start properly in the [Sequence Editor](#).
- On some Windows 7 computers, every time the Visualizer was started, it would ask the user if they wanted to associate .LEE files to the program.

## **What's New in Version 3.2.0**

- [Running sequences displayed in LOR Control Panel](#)
- [New DMX adapter supported](#)
- [Simple Show Builder defaults to "All Files"](#)
- [SuperStar ".vis.sup" files](#)
- [SuperStar ".archive.sup" files](#)
- [New option for creating trees in the Visualizer](#)
- [Effect type options for the tail of a morph in SuperStar](#)
- [Added group modify for scene effect type in SuperStar](#)
- [Updating Visualizer channels by name](#)
- [SuperStar supports DMX for visualizations](#)
- [SuperStar supports multiple networks for visualizations](#)
- [Visualizer from the command line](#)
- [Visualizer files registered with Windows](#)
- [Paste Multiple can paste to the end of a group](#)
- [Sequence Editor remembers the directory of the last sequence opened or saved](#)
- [Ending drawing via the keyboard](#)
- [Tooltips for channel group expander buttons](#)
- [Control Panel remembers whether schedule is enabled or not after shutting down](#)
- [Bug fixes](#)

## ***Running Sequences Displayed in LOR Control Panel***

During a [show](#), the [LOR Control Panel's status window](#) now shows information about the various [sequences](#) that are running.

## ***New DMX Adapter Supported***

The LOR USB485-ISO is now officially supported for use as a [DMX adapter](#). It should use the "Raw DMX" protocol.

## ***Simple Show Builder Defaults to "All Files"***

When selecting the [sequences](#) to use in the [Simple Show Builder](#), the user is given a choice of which sequences should be displayed so as to be able to choose from: "16 Channels", "32 Channels", and "All Files". The first two are not really based upon the number of channels in the sequence; rather, they are based on the name of the file (for example, if "16 Channels" is selected, all files with "16" in their names are displayed).

Previously, the default would be "16 Channels". Since many people make sequences without any having "16" in their filenames, this would result in a blank list being displayed, often leading to confusion as to why the Simple Show Builder was not listing the sequences. To prevent this, the

Simple Show Builder now defaults to "All Files" instead of "16 Channels".

### ***SuperStar ".vis.sup" Files***

If you load a [SuperStar](#) sequence file and then import a visualization, the filename of the SuperStar sequence file is changed to end with ".vis.sup" instead of ".sup". For example, a SuperStar sequence named "AwesomeSequence.sup" will be changed to "AwesomeSequence.vis.sup" upon importing a visualization.

### ***SuperStar ".archive.sup" Files***

If a [SuperStar](#) sequence file's name ends with ".archive.sup", SuperStar will not let you change the file using "Save". Instead, it will prompt you to use "Save As". If you then use "Save As", it will rename the file to not have "archive" in the name. This is to help prevent changing an archive file.

### ***New Option for Creating Trees in the Visualizer***

The Visualizer's Tree Wizard can now also create trees that start at the center pole and go to the base. Previously, it could only create trees where the initial point was on the base.

### ***Effect Type Options for the Tail of a Morph in SuperStar***

When doing a [morph](#) in [SuperStar](#), you can now do a shimmer or a twinkle on the tail of the morph.

### ***Added Group Modify for Scene Effect Type in SuperStar***

"Modify Effect Type" was added as a check box in [SuperStar's](#) Scene Group Modify dialog box. Previously, you could set the effect type individually, but could not set it to a group.

### ***Updating Visualizer Channels by Name***

When using a reference file, the Visualizer now gives you the option to update channels based on the channel's name or the channel's key. Previously, the only update available was "by key". Now when updating by name, the Visualizer can update the Device, Network, Unit, Circuit, and Channel Color to what was loaded in the reference file(s). Updating by name will help those people who change the physical layout of their channels.

### ***SuperStar Supports DMX for Visualizations***

Previously, [SuperStar](#) supported only [Light-O-Rama controllers](#) for [imported visualization files](#). [DMX](#) is now also supported.

### ***SuperStar Supports Multiple Networks for Visualizations***

Previously, [SuperStar](#) supported only one [network](#) for [imported visualization files](#). It now supports multiple networks.

### ***Visualizer from the Command Line***

The Visualizer can now accept filenames on the command line. If you specify a filename on the command line, the Visualizer will attempt to load it, skipping the "On Startup..." option. If it is not successful, the "On Startup..." option will be used.

### ***Visualizer Files Registered with Windows***

The Visualizer now registers the ".lee" filename extension with Windows, so if you double click a .lee file in Windows, the Visualizer will start and load that file automatically.

### ***Paste Multiple Can Paste to the End of a Group***

When selecting the number of times to paste vertically, the [Sequence Editor's](#) Paste Multiple dialog used to give a choice between pasting an explicit number of times (such as 3 or 7) and "Paste all the way to the end of the sequence", which would paste vertically as many times as it took to get to the last channel in the track. It now also gives the option to paste to the end of any channel group or groups that contain the first channel being pasted to.

### ***Sequence Editor Remembers the Directory of the Last Sequence Opened or Saved***

When a [sequence](#) is opened or saved in the [Sequence Editor](#), the Sequence Editor now remembers the directory of the sequence, so that the next time a new sequence is saved, or the next time the Existing Sequence tab of the New and Open dialog is used, it will default to that directory.

### ***Ending Drawing via the Keyboard***

Previously, the only way to end a drawing in the Visualizer's editing window was to double click. You can now also end a drawing by pressing either the End key or the Enter key.

### ***Tooltips for Channel Group Expander Buttons***

In the [Sequence Editor](#), if you hover your mouse over the expander button for a channel group (the small "+" or "-" button to the left of a channel group button), a tooltip will pop up saying the name of the channel group it is for, and whether left-clicking on the button will cause the group to expand or collapse.

### ***Control Panel Remembers Whether Schedule Is Enabled or Not After Shutting Down***

The [LOR Control Panel](#) has always had the ability to [start up automatically](#) upon the computer being started (and the Windows user logged on), and if the [schedule](#) had been [enabled](#) when the computer was shut down, it would automatically enable the schedule upon being started as well. However, if the Control Panel were unloaded via "[Unload Light-O-Rama](#)", it would not automatically enable the schedule upon being started again. Now, when it is started up, it enables the schedule or not based on whether or not it was enabled the last time it had been running.

### ***Bug Fixes***

- In [SuperStar](#), exported CCR sequences have the RGB values "balanced" so that the colors on the actual CCRs match the colors on your computer screen (think of this as a color correction made to the RGB values). This was being done when in CCR mode, but when in visualization mode, exported CCRs were not having their RGB values balanced.
- A [SuperStar](#) scene that used the Twinkle effect did not show that effect on the computer screen (note that the effect did happen on the actual CCRs themselves).
- After selecting effects in [SuperStar](#), Ctrl-C would not copy the effects that you had just selected.

- If you created a [SuperStar](#) sequence in CCR mode using the star, and then imported a visualization, the channels for the star did not appear on the sequencing grid, and made it impossible to change the star channels.
- If two different effects in [SuperStar](#) attempt to control a channel at the same time, SuperStar throws out the shortest command. However, this was not being done for the commands in an exported sequence. The result was that sequences with overlapping channel commands played back differently in SuperStar than they did from an exported sequence.
- After using a wizard, the Visualizer would correctly show Prop mode. However, pressing the "Fixture" button on the main screen sometime did not correctly change into Fixture mode.
- Pressing the "Default" button on the Visualizer's Tree Wizard could incorrectly set the number of pixels per segment, which could then cause an error.
- If you make a selection in [SuperStar's](#) star channel grid, selections in the CCR channel grid will be cleared, and vice-versa. Previously, the existing selection would not be cleared, which could lead to confusing effects.
- In [SuperStar](#), if you loaded a sequence with timings, and then loaded one without timings, the timing map would get stuck in Imported Timings mode, and attempting to set the frequency spectrum would not work.
- If you loaded a channel configuration file as a reference in the Visualizer, and then chose to update existing channels, the channel colors for matching virtual channels could be set incorrectly.
- When "[Disable Shows Immediately](#)" was done in the [LOR Control Panel](#), the lights on [native DMX universe devices](#) would not be turned off.
- If the [Sequence Editor's](#) "Channel Button Colors" setting were set to anything besides "None", the color of the [channel buttons'](#) fonts would vary during play even if "Vary Color of Channel Button Fonts" were turned off in the Play Preferences dialog.
- The [Sequence Editor's](#) Edit menu's keyboard shortcut for Set Paste Mode was changed from M to O, because M was already in use for Paste Multiple, which led to it being impossible to open the Set Paste Mode menu via the keyboard.
- After a "[Disable Shows Immediately](#)" was done in the [LOR Control Panel](#), in some cases a message would appear in the status log saying "tmNextAction\_Timer Error: Object variable or With block variable not set".
- When selecting a [show](#) file to [schedule](#) in the [Schedule Editor](#), the "file type" dropdown box of the file browsing dialog would allow either "Show Files" (which was the default) or "All Files". Selecting "All Files" would allow you to schedule some sort of file other than a show file, which would not accomplish what you were hoping (since the [Show Player](#) only supports scheduled shows, not any other sort of scheduled thing). The Schedule Editor now only allows you to schedule shows.
- If a track were hidden, and that track were selected from the [Sequence Editor's track dropdown list](#) (in the [Tracks and Timings toolbar](#)), the track would become the active track (as it should), but it would remain hidden and the display would not move to show it.
- In [SuperStar](#), if you [imported a visualization file](#) and picked a recent file to open such as "Untitled.sup", the program would advise that it changed the name to "Untitled.vis.sup". However, if you do a Save As, the name would default to "Untitled.sup" instead of "Untitled.vis.sup".
- When exporting a file in [SuperStar](#), if you typed in a name such as "MySequence", it would give an error saying that the file name has to end in ".lms" or ".las". This has been fixed so that the appropriate file extension automatically gets appended to such a file name.
- In [SuperStar](#), an [image that was moved](#) a short distance would stay on the screen too long.
- In [SuperStar](#), if you added some macros, selected those macros, deleted them, and then tried to undo the group delete, they would not get restored. Also, if you selected a group of effects that include some macros and did a group delete, it would not always undo properly, and in some cases would cause SuperStar to crash.
- Sometimes when [importing a visualization file](#) that contained RGB fixtures into [SuperStar](#), the channels for that fixture were not red, green, and blue.

- The controller for the star in [SuperStar](#) was always being placed in the Regular [network](#); it can now be placed in any network.
- If the Visualizer attempted to load a file that previously existed but was now missing, the error message presented was not clear. The error message now explicitly says that the file is missing, rather than the generic "XML error".
- If you [deleted](#) the currently displayed timing grid in the [Sequence Editor](#), it would continue to be displayed until you manually displayed another.
- When [exporting](#) a [SuperStar](#) sequence, if the name of the media file contained the "&" character, an error would occur when trying to load the exported [sequence](#) in the [Sequence Editor](#).
- When saving a [morph](#) in [SuperStar](#), the end intensity level for white was always the same as the start intensity level for white.
- In some situations, as the [Show Player](#) was starting (after having [enabled shows](#)), the [LOR Comm Listener](#) would shut down. This would happen when the Show Player took longer than the Comm Listener would expect to start up, which might happen, for example, if the computer had the third-party Universal Library and InstaCal installed for controlling digital IO cards. The Comm Listener now gives the Show Player a longer amount of time to start up before deciding to shut itself down.
- On some computers, the [LOR Comm Listener](#) would occasionally get in a state where it would shut down and then restart over and over, fairly rapidly. A change was made to fix this in at least some situations.
- In [SuperStar's](#) Timing Map dialog box, if you deselected "Also Set TCM" and changed the TCM settings, it would set the TCM settings back to what they were before you changed them.
- Ball Tree (RGB light strings where the color of the whole string of lights changes together) was not playing back properly in [SuperStar](#).
- In the [Sequence Editor](#), if "Loop at End" is turned on, and the play range includes the end of the [sequence](#), and the sequence is a musical sequence, the loop would be done back to the beginning of the sequence rather than to the beginning of the play range.
- If a [sequence](#) contained more than one channel, then on the Channel Configuration screen, the tab key would move the focus from control to control in a strange order.
- When you zoomed channels in or out in the [Sequence Editor](#), any channel group expander buttons on the screen would not be redrawn into their proper new positions until you did something like hover over them.
- In some situations, a clipboard removed from the [Sequence Editor](#) would still be partially visible in the list of clipboards, leading to errors if it were selected.

## What's New in Version 3.1.4

- [Bug Fix](#)

### **Bug Fix**

- In most cases, the [LOR Control Panel](#) would slowly leak memory resources, eventually leading to strange behavior such as [shows](#) stopping or crashing.

## What's New in Version 3.1.2

- [Bug Fix](#)

### **Bug Fix**

- [SuperStar](#) could crash at startup time. This has been fixed.

## What's New in Version 3.1.0



- [Expand All and Collapse All for channel groups](#)
- [New DMX adapters supported](#)
- [Performance of ENTTEC DMX USB Pro adapters improved](#)
- [Scrunching the SuperStar sequence grid for imported visualizations](#)
- [Instant Sequencing with imported timings](#)
- [Increased limit on SuperStar's number of fixtures per prop](#)
- [SuperStar exports grouped CCR devices](#)
- [Sample SuperStar clipboard files added](#)
- [Bug fixes](#)

### ***Expand All and Collapse All for Channel Groups***

In the [Sequence Editor](#), clicking on a channel group's expander button expands or collapses the channel group - that is, it makes the channel group's children visible, or hides them. In addition to this, now you can expand or collapse the channel group and all of its descendants:

Holding the Shift key while clicking on a collapsed group will expand it and all of its descendants except for RGB channel descendants; holding both Ctrl and Shift while clicking on a collapsed group will expand it and all of its descendants including RGB channel descendants.

If the group is expanded, holding Shift (or both Ctrl and Shift) while clicking will collapse it and all of its descendants.

### ***New DMX Adapters Supported***

The LOR USB485B and the Lynx adapters are now officially supported for use as [DMX adapters](#). The LOR USB485B should use the "Raw DMX" protocol, and the Lynx should use the new "Lynx" protocol.

### ***Performance of ENTTEC DMX USB Pro Adapters Improved***

One of the [supported adapters](#) for [native DMX devices](#), the ENTTEC DMX USB Pro, is capable of offloading some CPU utilization from the computer driving the DMX devices through it. Previous versions of Light-O-Rama did not take advantage of this capability, but it does as of this version.

### ***Scrunching the SuperStar Sequence Grid for Imported Visualizations***

A new option has been added to [SuperStar's Import Visualization dialog](#), allowing you to "scrunch" the sequencing grid for your visualization. This allows you to pack the most light fixtures possible into each sequencing row. For example, if you have the 2 CCR [license level](#), and you are getting an error message saying that your visualization can only have 2 green sequencing grid rows or less during export, then you can try importing your visualization again and selecting the "Scrunch the Sequence Grid" option, then try exporting again.

### ***Instant Sequencing with Imported Timings***

Previous to this release, in [SuperStar](#), you could import timings, but could only use them for visual reference. They can now be used to create an instant sequence. You can import up to three timing channels, which will become the top three timings. After importing timings, if you open the Timing Map dialog box, you will see that the "All Freqs" row of timings has been renamed to "Imported".

### ***Increased Limit on SuperStar's Number of Fixtures per Prop***

[SuperStar's](#) limit on the number of fixtures allowed in a prop has been increased from 32 to 64. This brings the limit up to the same limit as in the Visualizer.

### ***SuperStar Exports Grouped CCR Devices***

[SuperStar](#) now exports CCRs as grouped CCR devices. This makes it much easier to see the entire sequence in the [Sequence Editor](#).

### ***Sample SuperStar Clipboard Files Added***

Twenty new sample system clipboard files have been added to [SuperStar](#). Click on the Edit menu and select "Load/Save Clipboard", and you will see the new files, such as "Sys - BubblesRiseAndPop.scb", "DiamondExpanding.scb", and "Sys - SharkFinForHorizontalRibbons.scb". To use one, select it from the list, click on "Load Clipboard from File", and then click on "Paste". The effects will be pasted into your sequence starting at the time you have selected.

### ***Bug Fixes***

- When using the Visualizer's "Insert Fixture from Symbol" command, the symbol inserted may have been missing a segment from the last point defined back to the first.
- When starting a simulation in the Visualizer with more than 255 virtual channels, a warning is now shown that only the first 255 will be used.
- The Visualizer now prevents errors when loading images that are too large, or starting a new simulation with a blank background that is too large. The absolute maximum size is now 2500x2500.
- If you cancelled the creation of a new visualization in the Visualizer, you would incorrectly be prompted for a save filename. Since no visualization was created, there was nothing to save.
- If you loaded a file with a bad signature into the Visualizer, any new file created in that session could also be marked as bad.
- Depending on the size of fonts in Windows, text in the Visualizer's Options dialog may have been cut off.
- In some situations, using certain keyboard functions (such as Ctrl-Z to undo) in the [Sequence Editor](#) would cause the display to jump to another location (such as to the bottom of the channel list).
- The Visualizer's Channel Wizard did not correctly assign channels when using the [DMX device type](#).
- In some cases, if an error occurred while the Visualizer was loading a prop file, existing prop and fixture data could be corrupted.
- Importing a channel configuration file would fail if one of the channels in the channel config file was a subsequence and that subsequence's sequence file was missing or otherwise unloadable.
- In the [Tapper Wizard](#), if "[Insert a timing into the timing grid for each tap](#)" were checked, and "[Insert effects into a channel](#)" were unchecked, and taps were collected and then applied to the [sequence](#), starting over with new taps would not be able to collect more taps than the originally collected number unless the Tapper Wizard were exited and reopened first.
- The [Sequence Editor](#) would crash if a port number greater than 32767 were entered into the Visualizer Preferences dialog.
- For large audio files (for example, an audio file that is half an hour long), the [Beat Wizard](#), [VU Wizard](#), and [Waveform Display](#) would sometimes fail with an error saying that memory could not be allocated.

- In the [Sequence Editor](#), when pasting from a saved clipboard which happens to be locked, the clipboard would automatically unlock.
- When exporting a file in SuperStar, if the audio file was an MP3 file, the filename would get exported as SSEditAudioFile.wav. This has been fixed to use the MP3 audio file name.
- [SuperStar's](#) effect bars in the time layer were sometimes white when they were supposed to be colored.
- In [SuperStar](#), [Light-O-Rama controllers](#) were assumed to never have more than 16 channels. They can now have up to 512.
- Orange, yellow, and purple lights were not being sequenced by [SuperStar's Instant Sequence feature](#).
- [SuperStar](#) was not handling duplicate channels in a visualization (i.e. channels that are assigned to more than one light fixture). Now, they are displayed in dark gray, and cannot be selected or sequenced.
- [SuperStar](#) was not properly detecting rows in visualizations with props that do not contain any lights.
- Sometimes, not all channels in a visualization were being read properly by [SuperStar](#).
- [SuperStar](#) was not exporting macro commands when in visualization mode.
- If you load and play an audio file in [SuperStar](#), then open and play a sequence using the same audio file in the [Sequence Editor](#), you could get an error in SuperStar saying to shut down the other program. If you then shut down the Sequence Editor, and try to play the audio file again, it would not play (even if you tried to load the audio file again).
- [SuperStar's](#) Configuration Dialog box previously listed "Unit Nbr" and "Unit ID". A [controller's](#) "Unit Nbr" was the decimal number that equated to the controller's [unit ID](#) (which is a hexadecimal number). This ended up being confusing, and so now only the unit ID is listed. This is now consistent with the rest of the [Light-O-Rama software suite](#).

## What's New in Version 3.0.2

- [Bug fix](#)

### **Bug Fix**

- When the [Hardware Utility scans for connected controllers](#), it could confuse CTB16PC, CCF, and CCB100 controllers with each other.

## What's New in Version 3.0.0

- [The Light-O-Rama Visualizer](#)
- [The Light-O-Rama SuperStar Sequencer](#)
- [Channel Groups](#)
- [Native DMX Devices](#)
- [Paint Sequence](#)
- [Compressed Sequences](#)
- [Variables in Windows shell commands](#)
- [New paste modes](#)
- [Dimming curves](#)
- [Hide or unhide a track by left-clicking its track bar](#)
- [Select columns or rows via the right-click context menu](#)
- [Protected sequences](#)
- [Custom keyboard maps](#)
- [Reversing pixel order in CCRs/CCBs](#)
- [Effect tools' keyboard shortcuts shown in toolbar tooltips](#)

- [Control over channel button colors while not playing](#)
- [Several view settings for sequences are now persistent](#)
- [Tools Panel can be completely hidden](#)
- [Control over channel names in "Insert Device"](#)
- [Channel names in "Insert Device" indicate network for auxiliary networks](#)
- [Subsequences changed on disk automatically reloaded](#)
- [Additional clipboard management capability](#)
- [Locking channels in tracks](#)
- [Additional info in channel button tooltips](#)
- [Sequence grid tooltips show channel color](#)
- [Time ranges in Beat Wizard and VU Wizard automatically set to play range](#)
- [VU Wizard shows percent of time above threshold](#)
- [New "Change Controller" dialog](#)
- [Add Controller dialog allows selection of network](#)
- [Additional Mouse Scroll Wheel Support](#)
- [Sequence and track names are printed](#)
- [Control Panel's menu reorganized](#)
- [Performance of "Repeat" improved](#)
- [Memory usage of undo recording improved](#)
- [Verifier speed improved for channel conflict check](#)
- ["Channel Property Grid" renamed to "Channel Configuration"](#)
- [Bug Fixes](#)

### ***The Light-O-Rama Visualizer***

The Light-O-Rama Visualizer is a new program in the [Light-O-Rama software package](#). It is intended to give a visual representation on your computer screen of how your lights will look during a [sequence](#) or during your [show](#).

Please note that the Animator, which has a similar purpose, is still supported, so that existing sequences continue to work with it. However, the Visualizer is more fully featured than the Animator, so consider using the Visualizer instead of the Animator, especially for new sequences.

### ***The Light-O-Rama SuperStar Sequencer***

The [Light-O-Rama SuperStar Sequencer](#) is a new program in the [Light-O-Rama software package](#). It can be used as a sort of front end for the [Light-O-Rama Sequence Editor](#), creating sequences visually rather than via a channels-versus-time grid.

Note that existing Light-O-Rama [licenses](#) do not cover SuperStar (except in demo mode). In order to fully use SuperStar, your license will have to be upgraded to have SuperStar support.

### ***Channel Groups***

The [Insert Device dialog](#) can now optionally create devices as channel groups, instead of as raw channels and/or RGB channels. A channel group is a set of channels and/or RGB channels that can be collapsed down to a single row in the display, or expanded to show rows for all (or some) of its members.

### ***Native DMX Devices***

Light-O-Rama now supports control of [native DMX devices](#).

Note that only the Advanced license level supports this.

## ***Paint Sequence***

The new Paint Sequence tool can be used to paint effects from another [sequence](#) into the current sequence. This can be used to accomplish things similar to what can be accomplished with subsequences, in a potentially clearer and easier way, without the extra complication of subsequences.

## ***Compressed Sequences***

It may take a significant amount of time to load a large Light-O-Rama [sequence](#). When loading one in the [Sequence Editor](#), in order to view or modify it, this may be an inconvenience, but the real issue is loading one in the [Show Player](#): When the Show Player has to load a large sequence, it may cause a noticeable pause in your [show](#) as the sequence loads.

To resolve this issue, this release of Light-O-Rama introduces the concept of compressed sequences. A compressed sequence is a separate save file, associated with a 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.

## ***Variables in Windows Shell Commands***

In previous versions of Light-O-Rama, the Windows shell command associated with a [sequence](#) was a static thing - it would be executed exactly as you had typed it. Now, they are instead templates; you can type in pieces that will be executed exactly as you typed them, just as before, but you can also type in variables, which will be replaced with run-time information, such as the name of the song that is being played.

## ***New Paste Modes***

The [Sequence Editor](#) previously offered two different modes for pasting: paste by cell and paste by time. There are now two additional new modes: stretch to fit and repeat to fit. Stretch to fit stretches (or compresses) the copied effects so that they fit into the area that you select, while repeat to fit repeats (or cuts off) the copied effects so that they fit into the area that you select.

## ***Dimming Curves***

Gen3 [Light-O-Rama Controllers](#), and pre-Gen3 LOR controllers with Gen3 firmware installed, support customizable dimming curves. A dimming curve determines the output of a circuit from the intensity setting sent to that circuit; for example, some pieces of hardware (such as strobe lights) should never be dimmed, and so a dimming curve can be set for such a device that sets the output at 100% for any intensity of 50% or above, and at 0% for any intensity lower than 50%. Another example is that different types of bulbs (such as incandescents versus LEDs) may naturally get brighter or dimmer at different rates when going from one intensity to another, and so different dimming curves can be used to even them out, making fades on them appear more similar to each other.

You can control what dimming curve is used for what circuit via the [Hardware Utility's](#) new [Advanced Configuration screen](#).

### ***Hide or Unhide a Track by Left-Clicking Its Track Bar***

In previous versions of the [Sequence Editor](#), both left-clicking and right-clicking on a track's track bar would cause that track bar's popup menu to open. Right-clicking still does, but left-clicking now instead hides or unhides the track.

### ***Select Columns or Rows via the Right-Click Context Menu***

In previous versions of the [Sequence Editor](#), you could select an entire row or rows, or an entire column or columns, via the Edit menu's Select Rows and Select Columns menu items. Now, you can also do this via the [right-click context menu](#).

### ***Protected Sequences***

The [Sequence Editor](#) can now be used to create protected sequences, which are [sequences](#) whose sequence grids cannot be viewed or (generally speaking) modified, but which can still be played, control lights, be [scheduled](#) in [shows](#), and so forth.

### ***Control Over Channel Button Colors While Not Playing***

In previous versions of the [Sequence Editor](#), while a [sequence](#) was not playing, [channel buttons](#) would be displayed as grey (or black for RGB channels). Now, it still operates that way by default, but the Channel Button Colors submenu on the View menu gives you two other options: to be displayed using the channel's full color, or to be displayed using the channel's color at the time of the start of the current selection.

### ***Reversing Pixel Order in CCRs/CCBs***

The [Hardware Utility's CCR/CCB Configuration screen](#) now supports reversing the pixel order of a Cosmic Color Device (so that pixel 50 is closest to the controller, rather than pixel 1).

### ***Custom Keyboard Maps***

The behavior of keyboard keys in the Sequence Editor can now be configured, via the new Keyboard Preferences dialog.

### ***Effect Tools' Keyboard Shortcuts Shown in Toolbar Tooltips***

If one of the effect tools on the [Tools toolbar](#) has a keyboard shortcut that applies that tool, and only applies that tool, it is displayed in the tooltip for that effect tool's button on the toolbar.

### ***Several View Settings for Sequences Are Now Persistent***

In the [Sequence Editor](#), several view settings for [sequences](#) are now persistent. That is, for example, if you change the width of the [channel buttons](#) for a sequence, they will automatically be that size whenever you open that sequence in the future (unless you explicitly change their size again).

This information is automatically remembered outside of the sequence file itself (but associated with it), so you do not have to save the sequence file when you make a change to such a setting. Also, there had been some such settings which already were persistent, but used the sequence file, so

that you would have to save the sequence whenever you altered them; these now are instead automatically persisted outside of the sequence file.

The following view settings are now persisted in this manner:

- The width of the channel buttons
- Whether the channel buttons are displayed or not
- The height of a row of the grid (and of the channel buttons)
- The width of the grid per unit of time
- The zoom setting of the Animator
- Whether the Animator's controls are shown or hidden
- The [zoom level](#) of the [waveform display](#)

### ***Tools Panel Can Be Completely Hidden***

The [Sequence Editor's](#) Tools Panel can now be completely hidden, so that not even the narrow bar with its wrench icon is displayed, via "Tools Panel" on the View menu.

### ***Control Over Channel Names in "Insert Device"***

The [Sequence Editor's Insert Device](#) dialog used to give no control over the names of the channels that it would create. You can now specify the base name (such as changing the default "SD" for a Servo Dog device to "Animatronic Rudolph", resulting in channel names like "Animatronic Rudolph 03.7" for [unit](#) 03 [circuit](#) 7 instead of "SD 03.7"). You can also specify that the unit ID should not be included at all (resulting, for example, in "Animatronic Rudolph 7" for circuit 7).

### ***Channel Names in "Insert Device" Indicate Network for Auxiliary Networks***

When creating channels, the [Sequence Editor's Insert Device](#) dialog would not include any indication of the channel's [network](#) in the channel's name. For example, a channel for [unit](#) 03 [circuit](#) 7 of a Servo Dog device would be called "SD 03.7" no matter what network it was on. Now, if the channel is on an auxiliary network, it will additionally include that network's identifier. For example, "SD C03.7" would indicate that the channel is on the Aux C network, while a plain "SD 03.7" would indicate that the channel is on the regular network.

### ***Subsequences Changed on Disk Automatically Reloaded***

If a [sequence](#) containing a subsequence was loaded, and then the subsequence was changed and saved, and the parent sequence then played, it would play as if the subsequence had not been changed. It will now instead play using the newly saved contents of the subsequence.

### ***Additional Clipboard Management Capability***

In previous versions of the [Sequence Editor](#), if a saved clipboard were changed, the changes would automatically be resaved when the Sequence Editor was closed. This is still done, but there is now a new menu item on a clipboard's popup menu to manually resave it, and an option on the Clipboard Preferences menu to automatically resave. Similarly, there is now a new menu item to reload a saved sequence (in case the contents of its save file were changed outside of the Sequence Editor), and an option on the Clipboard Preferences menu to do so automatically. These changes are intended to ease the use of clipboards by third party tools.

Additionally, a new menu item to remove a clipboard from the list of clipboards has been added.

## ***Locking Channels in Tracks***

The channels of a track can now be locked, meaning that you will be unable to add channels to the track, remove channels from it, move channels within it, or modify settings (such as device type and unit) within it, unless you unlock the track first. To lock or unlock a track, use "Lock Track" (or "Unlock Track") from the track bar's popup menu.

## ***Additional Info in Channel Button Tooltips***

In previous versions of the [Sequence Editor](#), the tooltip that would open when the mouse hovered over a [channel button](#) would show the name of the channel. It now shows additional information, such as the [unit](#) and [circuit](#).

## ***Sequence Grid Tooltips Show Channel Button Color***

In the [Sequence Editor](#), the tooltip that opens when the mouse is hovered over the sequence grid now displays the color of the channel of the row that the mouse is hovering over.

This new behavior can be turned off via "Use Channel Colors" in the Display Preferences dialog.

## ***Time Ranges in Beat Wizard and VU Wizard Automatically Set to Play Range***

In previous versions of the [Sequence Editor](#), when the [Beat Wizard](#) or [VU Wizard](#) was opened, it would automatically be set to operate on "[the entire song](#)". It will now instead be automatically set to operate on the play range (the [freeform play range](#) if one exists, or the play range as set on the Play menu if not).

Note: This behavior can be overridden, for these wizards and also the [Tapper Wizard](#), via the "Use Play Range for Wizards" option on the Play Preferences dialog. If this option is not enabled, then the wizards will default to using the time range of the entire song.

## ***VU Wizard Shows Percent of Time above Threshold***

The [VU Wizard](#) now displays the percent of time that is above the specified threshold, with the specified settings.

## ***New "Change Controller" dialog***

The new Change Controller dialog (which can be accessed from the Channel Configuration screen) presents a list of the [controllers](#) in a track, and allows you to select one and change its physical settings. For example, you could use this dialog to quickly change all channels for the [Light-O-Rama controller](#) 03 on the Regular [network](#) to instead be controller 07 on the Aux C network. *Note: The "Channel Configuration" screen used to be known as the Channel Property Grid.*

## ***Add Controller Dialog Allows Selection of Network***

The Channel Configuration screen's Add Controller dialog now allows the [network](#) of the [controller](#) to be selected (for those device types that have networks). *Note: The "Channel Configuration" screen used to be known as the Channel Property Grid.*

## ***Additional Mouse Scroll Wheel Support***



The mouse scroll wheel is now supported in the [Schedule Editor](#) and in the [Sequence Editor's](#) Channel Configuration screen. *Note: The "Channel Configuration" screen used to be known as the Channel Property Grid.*

### **Sequence and Track Names are Printed**

When the "Print" function is used in the [Sequence Editor's](#) Channel Configuration screen, the printout now includes the name of the [sequence](#) and of the track. *Note: The "Channel Configuration" screen used to be known as the Channel Property Grid.*

### **Control Panel's Menu Reorganized**

In previous versions of the [Light-O-Rama Control Panel](#), some of the menu items on its [popup menu](#) were paired with each other. For example, to control whether or not the Control Panel should be automatically launched whenever the computer starts up, there was a ["Launch at startup"](#) menu item and also a "Do not launch at startup" menu item. This could be a bit confusing, as the way that you could tell (for example) that the Control Panel would be launched at startup was that the "Launch at startup" menu item was greyed out, so that you couldn't select it.

Now, instead, such pairs have been replaced by single menu items, which can be checked or unchecked. For example, if "Launch at startup" is checked, the Control Panel will launch at startup, and if it is not, it will not; there is no longer any "Do not launch at startup" menu item.

### **Performance of "Repeat" Improved**

The [Sequence Editor's](#) ["Repeat"](#) function is now quicker than it used to be, and also uses less memory than it did.

### **Memory Usage of Undo Recording Improved**

The [Sequence Editor](#) now uses significantly less memory than it used to in order to record events for later undoing/redoing.

### **Verifier Speed Improved for Channel Conflict Check**

[One of the possible issues](#) that the [Light-O-Rama Verifier](#) can check for is whether a [sequence](#) has two different channels with the same physical settings (such as [unit](#) and [circuit](#)). In the past, this check could take quite a while to perform on large sequences; it has now been speeded up considerably. For example, for a certain sequence, the Verifier running on a certain computer would need ten minutes to perform this check. It now needs only about a second, for the same sequence on the same computer.

### **"Channel Property Grid" Renamed to "Channel Configuration"**

The Channel Property Grid has been renamed to "Channel Configuration".

### **Bug Fixes**

- The tooltip for the [Sequence Editor's](#) ["Custom Shimmer"](#) button was inappropriately labeled.
- If multiple [sequences](#) were open in the [Sequence Editor](#), and they were not maximized, switching from one sequence to another by directly clicking on a sequence would correctly activate that

sequence, but would not update the row of sequence tabs to show that that sequence is now active.

- A bug in an earlier Beta release of the software, which was not released to the general public, would sometimes cause a [sequence](#) to accumulate "extra" RGB channels, which were not present in any of the sequence's tracks. These RGB channels weren't noticeable to a user, and they would not affect the behavior of the lights, but their presence in a sequence could cause certain operations, such as deleting channels, to be much slower than normal, for that particular sequence. Such operations have now been sped up.
- Clipboards that were loaded from saved clipboard files would always paste as if "Paste from foreground" was enabled.
- If both the [Sequence Editor](#) and the active [sequence](#) were maximized, and neither vertical scroll bar (the one to scroll between tracks and the one to scroll within a track) were present, and the program was running on the rightmost monitor, then when selecting an area by clicking and dragging, you would be unable to scroll to the right while selecting.
- When loading a clipboard, if you selected the clipboard file's name by double clicking it in the file browsing dialog, and the mouse happened to be over a [sequence](#), then after the clipboard loaded, a phantom mouse click would be applied to the sequence. So, for example, if the Fade Up tool was selected, a fade up would be applied to the spot on the sequence where your mouse happened to be.
- The Delete Controller dialog used to be unable to distinguish between different [LOR controllers](#) that happen to have the same [unit ID](#) on different [networks](#).
- If a [show](#) has a [jukebox interactive group](#), and the trigger associated with that group is pushed while a [sequence](#) from that group is playing, the trigger should not cause the sequence to be interrupted and the next sequence in the group to be played. This worked fine. However, it would cause the sequence that is considered to be "next" to be changed. For example, if the group contains three sequences, A, B, and C, and A is playing when the trigger is pushed, A would continue playing (as it should), but after A ended, if the trigger were pushed again, C, not B, would play.
- When [creating](#) a new musical sequence, if you set the number of channels to zero, and then specify that the channels should be created via a channel configuration file instead of via the specified number of channels, the [Sequence Editor](#) would tell you that you need to specify more than zero channels, and then crash.
- In the [Sequence Editor](#), when the time range of a track is scrolled, the time ranges of any other tracks in the [sequence](#) should scroll with it. However, this did not occur unless those other tracks had already been displayed at least once since the sequence was loaded or created. It also would not occur during play except when those other tracks were displayed.
- On the [Hardware Utility's LOR MP3 tab](#), if no MP3 controller were connected, the "Set" button (to set the unit's time) should be greyed out. In most cases, it was, but if no comm port existed (as opposed to merely no comm port being selected) it was not greyed out, and so could be pushed. Pushing it in such a situation would result in a crash of the Hardware Utility.
- When the track list of a [sequence](#) is changed in the [Sequence Editor](#) - for example, if a track is moved to another position - any tracks that had been hidden would automatically unhide.
- In the [Sequence Editor](#), when a file was chosen from a file browsing dialog by double clicking on the file, sometimes the sequence grid that was "beneath" the dialog would act as if it had been clicked. For example, an effect tool might be applied to the grid, or a [Channel Settings dialog](#) would open.
- If a track was hidden, moving it up in the list of tracks would cause it to become the first displayed track.
- If a clipboard was saved in the [Sequence Editor](#), and the clipboard's name was invalid in certain ways, the Sequence Editor would crash.
- If an iDMX1000 controller was selected in the [Hardware Utility's Test Console](#), the "Current Channel Range" display would be incorrect.
- The "[Move to Track Number...](#)" menu item on a [channel button's popup menu](#) was enabled even if

there was only one track.

## 2.3 What's New in Version 2.x.x

- [What's New in Version 2.9.4](#)
- [What's New in Version 2.8.12](#)
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- [What's New in Version 2.8.8](#)
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- [What's New in Version 2.0.8](#)
- [What's New in Version 2.0.4](#)
- [What's New in Version 2.0.0](#)

### What's New in Version 2.9.4

- [Up to sixteen Light-O-Rama networks supported](#)
- [Old MC-P only affects the Regular Light-O-Rama network](#)
- [Feedback for attempting to copy or cut to a locked clipboard](#)
- [Vary color of channel button fonts](#)
- [Unqualified file name used on Sequence Editor tabs](#)
- [Standalone sequences no longer download commands for auxiliary networks](#)
- [Bug Fixes](#)

#### ***Up to Sixteen Light-O-Rama Networks Supported***

Previous versions of Light-O-Rama could support [Light-O-Rama controllers](#) on up to four different [networks](#) ("Regular", "Aux A", "Aux B", and "Aux C"). This has been increased to sixteen (in addition to the original four, "Aux D" through "Aux O").

#### ***Old MC-P Only Affects the Regular Light-O-Rama Network***

[Old MC-P compatibility mode](#) is required if you have certain old [Light-O-Rama controllers](#) (MC-P controllers purchased prior to November 15, 2003). This compatibility mode causes significant overhead on the communications protocol. In previous versions of Light-O-Rama, if you turned on Old MC-P compatibility mode, it would affect all of your Light-O-Rama [networks](#). Now, instead, it only affects the Regular Light-O-Rama network; it does not affect any auxiliary Light-O-Rama networks. So, you can now put all of your old MC-P controllers on the Regular network, and your other controllers on other networks, so that they are not affected by the communications protocol overhead.

### ***Feedback for Attempting to Copy or Cut to a Locked Clipboard***

In the [Sequence Editor](#), if the currently selected clipboard is locked, copying or cutting does nothing. This is so as to avoid accidentally overwriting the data on a clipboard that you want to keep. However, there is nothing stopping you from hitting "Ctrl-C" or "Ctrl-X", attempting to copy or cut, and in previous versions of Light-O-Rama, doing so would give you no indication that something was amiss until you later attempted to paste, and wound up pasting whatever had previously been on the clipboard, instead of what you thought you had just copied or cut. Now, the Sequence Editor will beep, to indicate that the attempted copy or cut did not take effect.

### ***Vary Color of Channel Button Fonts***

In the [Sequence Editor](#), you can control whether or not the color of [channel buttons](#) changes during play (based upon the lighting effects happening on those channels). In early versions of Light-O-Rama, the text on the buttons was always black, and stayed black no matter what, which meant that sometimes the text was not readable.

In a relatively recent release, this was changed so that the color could be either black or white, depending upon which gives a more readable contrast with the background color of the button itself. However, some users found it to be distracting when a channel button's font would switch between black and white during play, and so you can now control whether or not this happens.

You can control it temporarily (until the next time the Sequence Editor is started) via the Vary Color of Channel Button Fonts item on the Play menu, or set your default preference (which will take effect every time the Sequence Editor is started) via Also vary their font colors on the Play Preferences dialog.

### ***Unqualified File Name Used on Sequence Editor Tabs***

When the [Sequence Editor](#) has multiple [sequences](#) open, it displays a tab strip across the top, with one tab per sequence. Each tab has the name of an open sequence; clicking on a tab causes that sequence to be displayed. In previous versions, the name of the sequence would include its directory name, if the sequence was not stored in the default directory for sequences. This could lead to some very wide tabs. Now, only the unqualified filename, without any directory information, is displayed.

The fully qualified filename can still be found via "Sequence Info", on the View menu.

### ***Standalone Sequences No Longer Download Commands for Auxiliary Networks***

If a [sequence](#) that used multiple [Light-O-Rama networks](#) was downloaded to a standalone [controller](#) (via the [Hardware Utility's MP3 tab](#) or via the [Simple Show Builder](#)), previous versions of Light-O-Rama would warn you of that fact, because standalone controllers only send commands out over a

single comm line, and therefore the multiple networks would all get amalgamated into a single one when downloaded. Now, instead, only commands for controllers on the Regular Light-O-Rama network are downloaded.

### **Bug Fixes**

- The [Hardware Utility](#) previously used [Old MC-P compatibility mode](#) when it should have not done so, and did not use it when it should have.
- On some computers, the Clipboards panel would not show its full height, leading to most of its functionality being unavailable due to being offscreen.
- Downloading large [sequences](#) for standalone [controllers](#), such as via the [Hardware Utility's MP3 tab](#), was much slower than it had been; its speed has now been increased.
- Depending upon how Windows is set up, the [LOR Control Panel](#) would sometimes be unable to launch the various other LOR applications (such as the [Show Player](#)).
- The [Hardware Utility](#) and [Simple Show Builder](#) would previously allow you to download any type of media file for a [standalone sequence](#), such as WAV files or WMA files, despite the fact that only MP3 files are supported by the [controllers](#). They will now give an error message if you attempt to download a media file other than an MP3 file.

## What's New in Version 2.8.12

- [Sequence Editor Can Keep Lights On at End of Play, and Turn Them Off Manually](#)
- [Bug Fixes](#)

### ***Sequence Editor Can Keep Lights On at End Of Play, and Turn Them Off Manually***

In previous versions of Light-O-Rama, the [Sequence Editor](#) would automatically turn off all lights in a [sequence](#) when that sequence finished playing. It can now optionally keep them turned on, via the new "Lights Off at End" menu item in the Play menu. The lights can subsequently be turned off manually via "Lights Off Now".

### **Bug Fixes**

- If, while importing a channel configuration file, you double-clicked the channel configuration's filename in the file browsing dialog, and if your mouse was over a sequence grid at the time, then after the file was imported, depending upon where your mouse was, this could have caused the grid to behave as if you clicked your mouse on it. For example, if you were over a [channel button](#), the [Channel Settings dialog](#) for that channel could have opened.
- If DMX effects were used in a [sequence](#), and the [Sequence Editor's](#) Vary Color of Channel Buttons setting was turned on, then during play, for certain DMX effects, the sequence grid could temporarily go blank as displayed in the Sequence Editor (though the behaviour of your actual lights would not be adversely affected).
- In certain situations, such as after an undo, the selected channel from the channel dropdown list in the Animator would spontaneously change to being the first channel in the list.
- If you manually edited certain registry settings related to disk file paths (note: doing this is not recommended) which Light-O-Rama normally sets itself, leaving off a backslash at their ends would lead to unexpected results.
- If an RGB channel (as opposed to one of its constituent channels) was used to draw in the Animator, and that RGB channel was deleted from the [sequence](#), the cells of the Animator using that RGB channel would not be blanked out.

- If a constituent channel of an RGB channel (as opposed to the RGB channel itself) was used to draw in the Animator, then in certain situations, the cells of the Animator using that constituent channel could have been blanked out inadvertently.
- In certain situations, very small fades (for example 0% to 1%) over relatively long spans of time would cause other effects to spontaneously appear on the channel.
- The Color Fade tool would give an option to insert DMX effects even if DMX editing was disabled.
- If the Color Fade tool was used to make DMX effects, and those DMX effects were themselves fades, they would not be sent to the controllers. They now are sent, but (as of the time of this writing) LOR hardware does not support fading DMX effects, and so they are converted to regular fades.

## What's New in Version 2.8.10

- [The Advanced OpenGL Settings Dialog](#)
- [Bug Fixes](#)

### ***The Advanced OpenGL Settings Dialog***

The new Advanced OpenGL Settings dialog can be used, experimentally, to try to investigate or work around strange graphics issues. However, this is not recommended; such problems can typically be better resolved in other ways, such as updating your computer's graphics card's drivers.

### ***Bug Fixes***

- The Set Paste Mode submenu in the [Sequence Editor's](#) Edit menu did not have a shortcut key associated with its Paste from Foreground option.
- On some computers, selecting a [sequence](#) from the [Sequence Editor's](#) Windows menu would cause a portion of the display to remain showing the previous sequence, until something like a refresh was done.
- When the Chase tool was used with Paste from Foreground turned off, and the chase was done either from the bottom left to the top right or vice versa, in some cases it would not properly overwrite existing effects outside of the actual things being chased with off effects.
- The "+" key is supposed to invoke the [Repeat](#) tool, but only the "+" key on the standard part of the keyboard was doing so, while the "+" key on the numeric keypad did nothing.
- When more than one [sequence](#) was open in the [Sequence Editor](#), and they were maximized, clicking on the "X" to the right of the menu bar would close the active sequence (as it should), but that sequence's tab would remain open in the row of sequence tabs. Subsequently clicking on that tab, for the closed sequence, would cause the Sequence Editor to crash.
- Stopping play of a [sequence](#) in the [Sequence Editor](#) would sometimes cause the column of cells that happened to be at the time of the start of play to become selected.

## What's New in Version 2.8.8

- [Bug Fixes](#)

### ***Bug Fixes***

- Various things in the Animator, such as drawing and erasing, were much slower than normal.
- When a [sequence](#) was loaded, the Animator would not remember whether its controls were hidden for that sequence or not.
- Attempting to [write](#) a musical sequence to an SD card (for a standalone controller) would result in a "subscript out of range" error message.

## What's New in Version 2.8.6

- [RGB Channels](#)
- [Color Fade Tool](#)
- [Repeat Tool](#)
- [Intelligent Fade Tool](#)
- [Fill Tool](#)
- [Chase Tool](#)
- [Paste from Foreground](#)
- [Insert Device](#)
- [Tools Panel](#)
- [Recent Tools](#)
- [Saved Tools](#)
- [Clipboards](#)
- [Sequences Created with Equally Spaced Timings in Freeform Grids](#)
- [Select Multiple Files in the Hardware Utility's MP3 Tab](#)
- [Tabbed Sequences Display](#)
- [Tools Menu Hotkeys Changed](#)
- [Keyboard Editing Keys Changed](#)
- [Off Effect via Delete Key](#)
- [Keyboard's Background/Foreground Selectors' Behavior Changed](#)
- [Shimmer and Twinkle Display Update](#)
- [Text of Channel Buttons Changes Color During Play](#)
- [Offline Registration Utility](#)
- [Bug Fixes](#)

### **RGB Channels**

An RGB channel represents a light or string of lights that can change colors - for example, a pixel on a Cosmic Color Ribbon. It consists of three "normal" channels, representing the three component colors - red, green and blue. Previously, to sequence such a device, you would have to sequence those three channels for the three component colors individually - that is, you would set up the [sequence](#) to have those three channels, and you would (for example) set the red channel to fade up, the green channel to hold steady, and the blue channel to fade down.

Now, you still can sequence the three component channels individually, but instead you could simply add an "RGB channel" to the sequence, and use it to deal more directly with the resulting colors. For example, instead of telling the red channel to fade up, the green channel to hold steady, and the blue channel to fade down, you would simply tell the RGB channel to fade from cyan to yellow.

### **Color Fade Tool**

The Color Fade tool is a new tool that can be used to tell RGB channels how to behave. For example, to specify that the RGB channel should fade from cyan to yellow over a certain time range in a sequence, you would select the Color Fade tool, with its colors set to cyan and yellow, and apply the tool to that time range of the sequence.

The Color Fade tool can also be used to do fills, by clicking the selected area instead of clicking and dragging.

## ***Repeat Tool***

The [Repeat tool](#) takes whatever is contained in the selected area of the [sequence](#) and makes a new copy of it immediately following the selected area. Using the tool again (without changing what area of the sequence has been selected) will make another new copy immediately following the first, and using it again will make a third new copy immediately following the second. This can be repeated as many times as you like, making as many back-to-back copies of the selected area as you want.

## ***Intelligent Fade Tool***

The Intelligent Fade tool is similar to the Fade Up and Fade Down tools. However, using it makes *either* a fade up *or* a fade down, depending upon whether you click and drag left to right or right to left.

It can also be used to do fills, by clicking the selected area instead of clicking and dragging.

## ***Fill Tool***

If you apply the Fill tool to an area that has no effects (i.e. the lights are off in that channel at that time), it will automatically make a fade from the intensity that precedes the empty area to the intensity that follows the empty area. For example, if there is a fade up from 0 to 75, followed by the lights being off, followed by a fade down from 50 to 25, and you apply the Fill tool to the area where the lights are off, it will change that area so that it becomes a fade down from 75 to 50.

The Fill tool can also be used in a similar way on RGB channels, where it will change an empty area so that it fades from the color preceding the empty area to the color following the empty area.

The Fill tool behaves a little differently than most other tools. With most tools, if you click and drag an area, that area will be selected, and when you let up on the mouse button, that tool will be applied to the selected area. The Fill tool, however, does not select an area, and it is applied as soon as you click, and as soon as you drag to a new area, too. This, combined with the fact that the Fill tool does nothing if it's used on an area that already has an effect, hopefully makes it quick and easy to fill a large and complicated area of the sequence just by clicking once and dragging around to the appropriate spots without letting go of the mouse button.

## ***Chase Tool***

The Chase tool takes a pattern and "chases" it through the selected area. That is, when you click on a spot in the [sequence](#), and then drag through other channels and through time, then when you let go of the mouse button, it will take the pattern in the selected area's corner where you initially clicked and copy it through the remaining channels in the selection, offsetting it a little bit in time with each subsequent channel.

## ***Paste from Foreground***

"Paste from Foreground" is a new pasting option. When it is turned on, any portions of the clipboard's copy buffer that have "off" effects won't actually be pasted when you select "Paste". That is, copied "off" effects won't overwrite what you already have in your [sequence](#).

## ***Insert Device***

The [channel button popup menu](#) now gives a new way to add channels to a [sequence](#): "[Add Device](#)".



When this is selected, a [dialog](#) will open asking the type of [device](#) to add (such as an LOR/CTB 16 or a Cosmic Color Ribbon) and some settings for that device (such as its [unit ID](#)). The appropriate number of channels will then be added to the sequence, and they will automatically be populated with the appropriate unit IDs, [circuit IDs](#), and so forth.

## **Tools Panel**

The left-hand side of the [Sequence Editor](#) now has a new Tools Panel, with a few subpanels ("Saved Tools", "Recent Tools" and "Clipboards"). The panel can be pinned to the display so that it is always open, or it can be hidden so that it appears only as a small tab on the left of the Sequence Editor, with the full panel sliding out when the mouse goes over that tab. The individual subpanels can also be collapsed or expanded.

## **Recent Tools**

The Recent Tools subpanel of the Tools Panel on the left-hand side of the [Sequence Editor](#) shows buttons representing the tools that were used recently (such as "Fade Up 25-75", "Shimmer Down 100-0", or a color fade). Clicking on one of the buttons will make that tool the currently active tool.

Not all tools are put on the Recent Tools subpanel's list; only those that would take more than one mouse click to activate are put there. For example, "Toggle" and "Shimmer" do not get put on the list, since you could activate those in a single mouseclick (from the Tools toolbar).

Right-clicking on a tool's button enables you to put the tool on the Saved Tools list.

## **Saved Tools**

The Saved Tools subpanel of the Tools Panel on the left-hand side of the [Sequence Editor](#) is similar to the Recent Tools subpanel, except that it shows only those tools that you have decided to save. Once you put a tool on the Saved Tools list, it will remain there (until you explicitly remove it), even after the Sequence Editor has been stopped and restarted.

## **Clipboards**

In previous versions of the [Sequence Editor](#), there was only a single clipboard for copying and pasting. Now, the Sequence Editor *starts* with a single clipboard, but you can easily add more of them, and quickly switch between which one is in use at the moment, using the new Clipboards subpanel of the Tools Panel on the left-hand side of the Sequence Editor. That is, you now can have several different things copied at the same time, all of which can be pasted into your sequence.

The Clipboards subpanel also allows you to save a clipboard, so that its contents will be available to be pasted even after you stop and restart the Sequence Editor, and to lock a clipboard, so that it cannot be copied to (but still can be pasted from), to prevent accidental overwriting of a clipboard that you want to keep.

It also allows quick access to pasting options such as Paste by Cell, Paste by Time, and Paste from Foreground.

## **Sequences Created with Equally Spaced Timings in Freeform Grids**

Previously, if you chose to create a [sequence](#) with equally spaced timings (such as "a timing every tenth of a second"), the sequence's first timing grid would be a fixed timing grid. You can now

optionally make it either a fixed timing grid or a freeform timing grid.

### ***Select Multiple Files in the Hardware Utility's MP3 Tab***

You can now select multiple files simultaneously in the [Hardware Utility's MP3 tab](#) (by using standard Windows methods, such as Shift-click).

### ***Tabbed Sequences Display***

When more than one [sequence](#) is open, the [Sequence Editor](#) now shows a single one of them, maximized, with tabs across the top having the names of the open sequences. Selecting any particular tab will cause the Sequence Editor to switch to display that sequence.

If you want to see multiple sequences at once, you can unmaximize the currently displayed sequence.

### ***Tools Menu Hotkeys Changed***

Several hotkeys for various menu items on the Tools menu have been changed, to try to minimize overlap and to give unique hotkeys to as many "high profile" tools as possible.

### ***Keyboard Editing Keys Changed***

The keys assigned to several [keyboard editing](#) shortcuts have been changed, to make room for new functions (such as the Chase tool and Fill tool).

### ***Off Effect via Delete Key***

One changed keyboard editing shortcut which it is worth explicitly pointing out (because it has been requested by several people) is that the Delete key will now apply the "Off" tool to the selected area.

### ***Keyboard's Background/Foreground Selectors' Behavior Changed***

Previously, background and foreground effects mode could be enabled by certain keystrokes. To turn them off, there was a different keystroke for enabling "regular" effects. Now, instead of keystrokes to enable those modes, there are keystrokes to toggle them between being enabled and disabled.

### ***Shimmer and Twinkle Display Update***

In the sequence grid, shimmer and twinkle effects are now displayed as a little heavier than they used to be, to hopefully make them more easily recognized.

Note that this change is only from the point of view of how they look displayed on your screen in the [Sequence Editor](#); their behavior on your actual lights is unchanged from what it was before.

### ***Text of Channel Buttons Changes Color During Play***

During play, the [Sequence Editor](#) can be set up to change the colors of [channel buttons](#) to represent the current intensity of the associated channel. The text of the channel name on that channel button, however, was always black. Depending upon the color of the channel and its current intensity, this could sometimes make the button difficult or even impossible to read. Now, the color

of the text of a button will be either black or white, depending upon which would be easier to read at that moment for that channel.

## Offline Registration Utility

Previously, if a user had a computer that was not connected to the internet, they could only register that computer by calling in to Light-O-Rama Customer Support. LOR Customer Support had a program called the "[Offline Registration Utility](#)" which they then used to get the user's computer activated.

This program is now distributed by the LOR installer, along with all the other programs (such as the Sequence Editor). So, if a customer has two machines, one of which is connected to the internet but the other of which is not, they can register their offline computer by using the Offline Registration Utility on the *online* computer, without calling in to LOR Customer Support.

Offline registration via LOR Customer Support is still available, in case (for example) the customer has only one computer, and it is not connected to the internet.

## Bug Fixes

- In the [Sequence Editor](#), when "Paste by Cell" was set, and a copy and paste was done including an event that was not completely coincident with a cell, in some situations the events pasted wouldn't appropriately match the events copied completely.
- In the [Sequence Editor](#), dragging a [channel button](#) in order to move that channel would not work properly if the visible channel range was scrolled up or down while dragging.
- Various issues were fixed when converting a [sequence](#) from being a musical sequence to an animation sequence, and vice versa.
- When the DMX Tool, Fade Tool or Intensity Tool windows were closed by clicking on their "X" buttons, the next time that they were displayed, they would be displayed in an entirely new location instead of in the spot where they had been when they were closed.
- The ["Paste" button](#) on the [Sequence Editor's toolbar](#) would not be enabled until after a copy (as opposed to a cut) had been done. That is, if you started up the Sequence Editor and immediately did a cut, the Paste button would still be greyed out even though you had cut something.
- If you double-clicked somewhere on the New and Open dialog, for example to open a [sequence](#) by double-clicking its filename, then depending upon where your mouse was, when the dialog closed and the sequence opened, it could have caused something to happen such as a [channel's settings dialog](#) being opened, or the current tool being applied to a cell in the sequence.

## What's New in Version 2.7.6

This version fixes the following bugs:

- The [Schedule Editor](#) only displayed a thin portion of its vertical scroll bar.
- In certain situations, the [Sequence Editor](#) could possibly crash after having undone the [adding of timings](#).

## What's New in Version 2.7.4

- [Show on demand](#)
- [Show Player can preload sequences](#)
- [Shows can be shut down gracefully](#)
- [LOR Control Panel improvements](#)

- [Shuffle mode options](#)
- [Maximum Light-O-Rama circuit number is now 512](#)
- [New iDMX1000 firmware: version 1.41](#)
- [New DIO32 firmware: version 1.30](#)
- [New DC-MP3 firmware: version 4.10](#)
- [Bug fixes](#)

## **Show On Demand**

You can now 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](#).

Please note that this feature is available only for license levels Basic Plus and higher.

## **Show Player Can Preload Sequences**

In previous versions of Light-O-Rama, when the [Show Player](#) played a [show](#), a [sequence](#) in that show would not be loaded until the first time it was used in the show. Depending upon the size of the sequence and the power of the computer, it could take a human-noticeable amount of time to load a sequence, so this could lead to undesired delays between sequences (the first time they are played during a given run of a show).

This is still the default behavior, but you can now optionally [set the show to preload sequences](#), so that they will all be loaded as the first step in the show, before any of them are played.

## **Shows Can Be Shut Down Gracefully**

In previous versions of Light-O-Rama, selecting "Disable Shows" from the [Light-O-Rama Control Panel's menu](#) would cause the currently running [show](#) to stop immediately, abruptly stopping any [sequences](#) that happened to be playing. This can still be done (by selecting "[Disable Shows Immediately](#)"), but you can now shut down a show gracefully instead (by selecting "[Disable Shows Gracefully](#)").

This will cause the show that happens to be playing (if any) to be put into shutdown mode; any song that happens to be playing will be allowed to finish, after which the show's [Shutdown section](#) will run. When the Shutdown section finishes, the show will stop, and shows will be disabled.

## **LOR Control Panel Improvements**

Several improvements were made to the [Light-O-Rama Control Panel](#):

- The "Current" and "Scheduled" sections of its [status window](#) were often mostly redundant (if the currently playing [show](#) was the show that was [scheduled](#) to be playing at the current time). The "Scheduled" section has now been replaced by a "Next" section, which shows what will happen after the current show.
- Those sections would update only after a noticeable delay of several seconds. They now update in a much more real-time fashion.
- Similarly, the first log messages that were displayed would be delayed; they are now real-time.
- The Control Panel's light bulb icon in the system tray now is different colors depending upon the state of the system: If [scheduled shows](#) are enabled, it is blue; if they are disabled, but [shows on demand](#) are enabled, it is orange; if shows are disabled entirely, it is red.
- Several new log messages were added, hopefully giving a more informative view into what the

[Show Player](#) is doing.

### ***Shuffle Mode Options***

In previous versions of Light-O-Rama, when the [Musical Section](#) of a [show](#) was set to shuffle the [sequences](#) instead of playing them in order, any sequence could be randomly chosen to play at any time. This meant that, for example, the same sequence could play twice (or more) in a row, or some particular sequence could be played a second time before some other particular sequence was played even once.

The [Show Editor](#) now allows you to control the way that sequences are shuffled: You can choose whether or not a single sequence is allowed to be played twice in a row, and you can choose whether or not all sequences must be played once before some sequence is played a second time.

Existing show files will continue to behave in the same manner as they did before (unless and until you change their settings): a sequence can be repeated back-to-back, and can be played a second time before all other sequences have been played once.

The default for new shows is exactly the opposite: no sequence will be played twice in a row, and no sequence will be played a second time before all sequences have been played once.

### ***Maximum Light-O-Rama Circuit Number Is Now 512***

In previous versions of Light-O-Rama, the maximum allowable [circuit number](#) for a [Light-O-Rama controller](#) was 256. It is now 512. At the present time, this is primarily useful for controlling DMX devices.

### ***New iDMX1000 Firmware: Version 1.41***

A new version of the firmware for the iDMX1000 has been released (version 1.41). It contains the following enhancements:

- It now has native address support (i.e. there is no longer a need for multiple unit IDs for a single iDMX1000). The old method of having a single iDMX1000 use multiple unit IDs is still supported, as "legacy mode". An iDMX1000 will be in native mode or legacy mode depending upon the unit ID it is set to: If its unit ID ends in a "0" (such as "10", "20", or "30"), it will be in legacy mode, where it actually uses sixteen unit IDs of sixteen channels each (e.g. setting the unit ID to 10 will cause it to use unit IDs 10 through 19 and 1A through 1F). If its unit ID ends in anything other than a zero, it will use only that single unit ID, but it will support all its channels on that single unit ID.
- Previously, only DMX addresses up to 256 were supported. Now, addresses up to 512 are supported (but only in native mode).
- Previously, only 64 "intelligent channels" were supported at a time - i.e. only 64 channels could simultaneously be doing shimmers, twinkles, and/or fades. Now, 128 intelligent channels are supported at a time.

### ***New DIO32 Firmware: Version 1.30***

A new version of the firmware for the DIO32 motherboard has been released (version 1.30). This version adds native address support - that is, there is no longer a need to use multiple unit IDs for a single DIO32; it can now support all channels on a single unit ID.

Please note that in order to take advantage of this new functionality, you will not only have to use the new firmware, but you will also have to change a jumper on the board which tells it whether to operate in native mode or legacy mode. Please refer to your DIO32 documentation for details.

### ***New DC-MP3 Firmware: Version 4.10***

A new version of the firmware for the DC-MP3 has been released (version 4.10). It contains the following enhancements and fixes:

- Previously, an individual sequence could only last for up to ten minutes. It can now last up to 44 hours.
- Previously, only certain manufacturer's SD cards were supported. A much larger variety is now supported (list to be compiled - although it will more likely be a list of unsupported cards rather than a list of supported cards).
- Support for SD cards with the FAT32 file system was added.
- Support for SDHC (high capacity) SD cards was added.
- Previously, shows could be set to play every hour or every half hour; they now can also be set to play every 15 minutes or every 10 minutes.
- Digital output (DO) pins 1 through 6 now operate. They react to commands for unit ID F0, channels 1 through 6. They only react on the DC-MP3 that is controlling the show; for example, they will not react on a DC-MP3 controlled via the PC network.
- Under some circumstances, shows would start at midnight, without having been scheduled to do so. This has been fixed.

### ***Bug Fixes***

- Protection against several possible crashes was added to the [Light-O-Rama Control Panel](#). Although it is not known if any of these actually caused any crashes, it is known that some customers have had the Light-O-Rama Control Panel crash.
- When [disabling shows](#), or when [unloading Light-O-Rama](#), the [LOR Control Panel](#) would hang frozen for a noticeable amount of time before becoming responsive again (in the case of disabling shows) or closing (in the case of unloading).
- The [Light-O-Rama Control Panel's status window](#) would sometimes incorrectly state that the next show would start at 12:00 AM on Sunday.
- Sometimes, lighting commands were quickly repeated back-to-back. This would not cause any noticeable problems with how the sequence looked, but it did cause a minor increase in network traffic, or standalone/SD sequence file size.

## **What's New in Version 2.6.2**

- [Light-O-Rama Diagnostic distributed by installer](#)
- [Bug fixes](#)

### ***Light-O-Rama Diagnostic Distributed by Installer***

The Light-O-Rama Diagnostic is a troubleshooting tool that displays various information about your Light-O-Rama configuration. It used to be available only as a separate download from [lightorama.com](http://lightorama.com), but now is installed as a standard part of the [Light-O-Rama Software Package](#).

### ***Bug Fixes***

- On Windows 98 SE machines, running a [show](#) of sufficient length would eventually cause an error

message to pop up, saying that an error occurred in "Formhook\_aftermessage". Clicking "OK" would close the error message, but it would soon pop up again, and again and again. If it was left without clicking "OK" to close it, eventually the show would stop abnormally.

- In the [Sequence Editor](#), "Sequence Info", from the "View" menu, would sometimes display the incorrect directory of the media file associated with a musical sequence.
- If a channel was set up to be a subsequence, and the [sequence](#) file assigned to it did not exist or otherwise could not be loaded, then loading of the main sequence would fail when the loading of the subsequence failed. The result of this was that the main sequence could not be opened, and so the problem could not be fixed by modifying the subsequence filename associated with the channel. Now, the main sequence will successfully load, and the missing subsequence will simply not do anything during play. Note that the [Light-O-Rama Verifier](#) will still show this error.
- If you set the name of a channel to include an ampersand, then in the [Sequence Editor](#), the name would be displayed on the [channel's button](#) improperly. The ampersand would be missing, and the character after it would be underlined (indicating that it could be used as a hotkey for that button).
- If the [Sequence Editor](#) was used on a computer with multiple monitors, and the cursor was hovered over a spot on a sequence grid that was on a monitor to the right of the primary monitor, the tool tip would pop up in the wrong place (on the far right side of the primary monitor).
- Hitting the escape key closes most dialogs, but it did not close the [Beat Wizard](#), [VU Wizard](#), or [Tapper Wizard](#).

## What's New in Version 2.6.0

- [Undo/redo recording can be disabled](#)
- [All license levels now use unencrypted save files](#)
- [Hardware Utility shows version of connected MP3 Director's firmware](#)
- [New DC-MP3 firmware: Version 3.3](#)
- [New Servo Dog firmware: Version 1.02](#)
- [Bug fixes](#)

### ***Undo/Redo Recording Can Be Disabled***

Certain very large operations in the [Sequence Editor](#) could take a very long time to do. For example, skewing a track involves changing all of the timings, effects, and loops in the track; in a large [sequence](#) with many channels, this could take a prohibitively long time. Much of the time spent is actually due to recording the changes so as to later be able to undo and redo them.

For situations like this, undo and redo recording can now be disabled, via the Edit menu. You will not be able to undo any changes that were made while undo recording was disabled, but the changes that you make will be made more quickly.

### ***All License Levels Now Use Unencrypted Save Files***

In previous versions of Light-O-Rama, when a [sequence](#) was saved using either a [Basic license](#) or else the unlicensed Demo version of the software, the sequence file would be encrypted instead of being saved in plain XML. Now, this encryption is done only for the unlicensed Demo version; a Basic level license (or any other level license) will cause files to be saved unencrypted.

### ***Hardware Utility Shows Version of Connected MP3 Director's Firmware***

Previously, the [Hardware Utility's LOR MP3 tab](#) would show whether an MP3 Director was connected or not. Now, if one is, it additionally shows the MP3 Director's firmware version.

### ***New DC-MP3 Firmware: Version 3.3***

Version 3.2 of the DC-MP3 firmware (DC\_MP3\_V3-3.lhx) adds one new feature and fixes two bugs:

- Output number 8, which was previously unused, will now be high (+5 volts) when a show is active, and zero when no show is active.
- When a sequence started playing, in some rare cases the music and the lights would start off significantly out of sync with each other.
- A bug was causing trigger number 6 to interact with trigger number 3 in some cases.

### ***New Servo Dog Firmware: Version 1.02***

Version 1.02 of the Servo Dog firmware (ServoDog\_V1-02.lhx) fixes a bug where if channels 1 and 8 were in digital output mode, there would be crosstalk causing random results.

### ***Bug Fixes***

- Certain ways of scrolling through the channel list in the Animator window were not working.
- Skewing a track would not work if the timing grid currently in use by the track was a fixed timing grid.
- In the [Servo Dog Utility](#), when a channel button was clicked, if another channel button had previously been selected, there was a chance that the configuration of the channel that was clicked would be set to the same values as the configuration of the channel that had previously been selected.
- In the [Hardware Utility](#), controllers that were connected via Easy Light Linkers were not showing up in all cases.

## **What's New in Version 2.5.6**

- [Bug fixes](#)

### ***Bug Fixes***

- If a [show](#) was [scheduled](#) starting on Saturday and ending on Sunday, instead of playing through, it would continuously shut down and restart. A common symptom of this is that the first [sequence](#) in the show's [musical section](#) would play over and over.

## **What's New in Version 2.5.4**

- [Bug fixes](#)

### ***Bug Fixes***

- X10 controllers were not successfully being controlled in some situations.
- When a [sequence](#) was loaded, the zoom level of its [waveform display](#) was being set to a default value, rather than to the zoom level the sequence had been saved with.

## **What's New in Version 2.5.2**

The following changes were made in this version:



- [LOR Control Panel's status window now displays a log](#)
- [Support for configuring Cosmic Color Ribbons](#)
- [Circuit IDs greater than 16 supported](#)
- [The Light-O-Rama ServoDog Utility](#)
- [Bug fixes](#)

## ***LOR Control Panel's Status Window Now Displays a Log***

The [Light-O-Rama Control Panel's status window](#) now displays a log of what is occurring with [shows](#). For example, it displays messages indicating that a show or a [sequence](#) is stopping or starting, that an error occurred playing a sequence, and that an [interactive trigger](#) was detected.

## ***Support for Configuring Cosmic Color Ribbons***

The [Hardware Utility's Configuration screen](#) now supports [configuring Cosmic Color Ribbons](#).

## ***Circuit IDs Greater than 16 Supported***

In previous versions, the [circuit IDs](#) of [Light-O-Rama controllers](#) could range from 1 to 16. They now can range from 1 to 256 instead.

Note that not all Light-O-Rama controllers have more than sixteen circuits, and of those that do, not all support this new feature yet (instead, they use more than one [unit ID](#), each with sixteen possible circuit IDs). Currently, the only Light-O-Rama controller that can be set to use more than sixteen circuit IDs for a single unit ID is the Cosmic Color Ribbon. Support for this feature in some other controllers is planned for the future, at which time firmware upgrades may be necessary to take advantage of it.

## ***The Light-O-Rama ServoDog Utility***

The [Light-O-Rama ServoDog Utility](#) is a new program which can be used to configure Light-O-Rama ServoDog controllers.

## ***Bug Fixes***

- If an error opening a comm port occurred when the [Hardware Utility](#) was being started, this could lead to strange errors later, such as the Hardware Utility unexpectedly closing in certain situations.
- If the [musical section](#) of a [show](#) contained [sequences](#) that could not be played due to errors, then in some situations the first sequence of the musical section of the show might repeat several times in a row.
- On some computers, when a Light-O-Rama program (such as the [Sequence Editor](#)) was started, it would open in [Demo mode](#) very frequently, despite having previously been [activated](#) (and without having upgraded to a new version).
- In the [Sequence Editor](#), if you clicked the space bar to start play while the mouse button was down, then when play ended, you would be in "mouse dragging" mode, no matter whether you subsequently released the mouse button or not.
- If you used a countdown in the [Tapper Wizard](#), sometimes the song would not start after the conclusion of the countdown.
- Various problems would occur if you set the default Sequences and Audio directories to be top level directories of a drive (for example, "C:\Sequences" and "C:\Audio" rather than "C:\LOR

\Sequences" and "C:\LOR\Audio").

- In some situations, deleting a track from a [sequence](#) would cause the [track dropdown list](#) and the [timing grid dropdown list](#) to misbehave.

## What's New in Version 2.4.10

The following changes were made in this version:

- [Exporting/importing channel configuration with tracks improved](#)
- [Commands sent to Holiday Lights Designer regardless of licensing level](#)
- [Hardware Utility supports DIO32 servo configuration](#)
- [Refresh command made quicker](#)
- [Bug fixes](#)

### ***Exporting/Importing Channel Configuration with Tracks Improved***

In previous versions of Light-O-Rama, exporting and importing channel configuration from and to [sequences](#) that have more than one track could lead to strange, and probably undesired, results. This was due to the interaction between channels that were in more than one track of the sequence and channels that were in more than one track of the configuration file. If the positions of such channels did not match up between the sequence and the configuration file, then the resulting settings of those channels would be changed in a predictable, but probably undesired, way.

In this version, the method of importing has been altered, so as to give (hopefully) better results:

Unlike in previous versions, the first step to importing channel configuration, before any channels are actually imported from the configuration file, is now to check the sequence for channels that are in more than one track. If any such channels are found, then all copies of each channel, except for the first of each channel, are removed from the sequence.

Next, channels are imported from the configuration file. But unlike in previous versions, if a channel is in more than one track of the configuration file, instead of overwriting the settings of an existing channel in the sequence every time the channel is encountered in the configuration file, that is only done on the first encounter of the channel. Instead, on subsequent encounters of the same channel, a copy of the appropriate channel from the sequence is inserted into the track at the appropriate position.

This has two potential side effects to watch out for (although both of these seem minor compared to the side effects caused in previous versions):

First, if a track in the sequence is composed entirely of channels from previous tracks, and the channel configuration file has no track in the same position, then all channels will be removed from that track. Since the track has no channels, it will then be removed from the sequence. However, note that these channels have not been removed from the sequence - they have only been removed from the track. They are still in the earlier tracks.

Second, a channel from the sequence with no corresponding channel in the configuration file could get "pushed down" towards the bottom of the sequence's track, if the channel configuration file contains channels in that track which are copies of channels from earlier tracks.

### ***Commands Sent to Holiday Lights Designer Regardless of Licensing Level***

Different [licensing levels](#) can control different numbers of [controllers](#); for example, the Basic level can control two controllers, while the Advanced level can control an unlimited number of controllers. If a [sequence](#) contains a lighting effect for a controller that the license level cannot control, the effect is simply not sent to the controller.

In previous versions, this also applied to sending commands to Holiday Lights Designer: lighting effects could be sent to Holiday Lights Designer only if they could be sent to an actual controller, based on the license level. Now, lighting effects can always be sent to Holiday Lights Designer, regardless of the licensing level.

### **Hardware Utility Supports DIO32 Servo Configuration**

The [Hardware Utility](#) can now be used to [configure the DIO32 for servos](#).

### **Refresh Command Made Quicker**

The [Hardware Utility's Refresh](#) command, used to scan a [Light-O-Rama network](#) for [controllers](#), now works more quickly than it did before.

### **Bug Fixes**

- If a [show](#) contains some [sequences](#) in a "[Magic Toy](#)" [interactive group](#), and a trigger in that group is triggered, any playing sequences that happen to be from that same interactive group should be, but were not, stopped, before the newly triggered sequences start.
- The Channel Property Grid would allow you to remove the last channel from a track, which would lead to undesired behavior. It now no longer allows the last channel to be removed from a track.
- There must be a channel in every track; Light-O-Rama should prevent you from removing the last channel from a track. Due to bugs, though, it's possible that the last channel could be removed from a track; in such a case, if the [sequence](#) were saved, it could not thereafter be reloaded. In this version, the sequence can now be loaded, but any tracks without channels will automatically be removed from the sequence during the load.
- [Input triggers](#) would work correctly only for the first eight [circuits](#) of a [controller](#). They now work on the full sixteen.

## **What's New in Version 2.4.8**

The following changes were made in this version:

- [Tapper Wizard improvements](#)
- [Animator's twinkle effect made more realistic](#)
- [Fade Tool Settings and Intensity Tool Settings can be toggled on and off](#)
- [New keyboard shortcuts for selecting the current tool](#)
- [Keyboard editing while using the Animator made easier](#)
- [File saving made safer](#)
- [Track bar of active track highlighted](#)
- [Bug fixes](#)

### **Tapper Wizard Improvements**

The [Tapper Wizard](#) was improved in several ways:

- It now knows about timing grids. You can select an existing grid to use, or create new grids to

use, from within the Tapper Wizard itself.

- Inserting timings and inserting lighting effects can now be done independently of each other - you can do either or both.
- You can play a particular part of a song, rather than the whole song. When the Tapper Wizard is first opened, its play range will automatically be set to the active track's [freeform play range](#), if there is one, or to its normal play range (such as play full sequence or play visible screen) if not.
- You can set the play speed, either to normal speed, half speed, or double speed.
- It can be used repeatedly without closing, with or without tapping again. For example, after applying your taps to the sequence, you could collect a whole new set of taps, or you could apply your existing taps to the sequence again, in a new way (such as applying them to a different channel, or with different flash and fade times), all without ever closing the Tapper Wizard.
- It supports undo and redo within itself; you do not have to close the Tapper Wizard to undo or redo its changes.
- It no longer relies on helper forms to collect information (such as the length of time that a flash should take); this information is now set via fields on the Tapper Wizard itself.
- The settings that you choose, such as whether to use a countdown, how long that countdown should be, whether to use the mouse, the keyboard, or both, what kind of effects or timings should be inserted, and so forth, are remembered, so that you do not have to change them every time that you enter the Tapper Wizard.

### ***Animator's Twinkle Effect Made More Realistic***

Recent efficiency improvements to the Animator increased the speed it could redraw at. This had the side effect of making its twinkle effects twinkle too quickly, almost looking like shimmers. The Animator's twinkle effect has now been slowed back down, to more closely resemble the twinkle effect on [actual lights](#).

Please note that this change does not affect the way that twinkle behaves on your lights at all; they will behave exactly as they always have. It only affects how twinkle is represented in the Animator (which is an approximation, not an exact representation, of how it looks on actual lights).

### ***Fade Tool Settings and Intensity Tool Settings Can Be Toggled On and Off***

In previous versions, clicking of the [Fade Tool Settings toolbar button](#) would open the Fade Tool Settings dialog, as would clicking on the Tools menu's Fade Tool Settings item. The only way to close the dialog was to click on its Windows close button, or to use the escape key. Now, the toolbar button (or the menu item) can be used as a toggle - clicking it once shows the dialog; clicking it again hides it.

A similar change was made for the Intensity Tool Settings dialog.

### ***New Keyboard Shortcuts for Selecting the Current Tool***

When editing [sequences](#) via the [keyboard](#), previous versions would allow you to hit the Enter key to apply the current tool to the selected area of the sequence. Alternatively, to apply a different tool, you could hit some other key, specific to that tool; this would leave the current tool the same as it was. For example, if the current tool was the shimmer tool, you could hit Enter to apply a shimmer, or "T" to apply a twinkle.

However, the current tool itself could not be selected except via the [toolbar](#), or menu items on the Tools menu. It can now be selected via the keyboard as well, by using Shift in addition to the desired effect's normal key. For example, Shift-T will change the current tool to change the current tool to be the twinkle tool. Note that this leaves the sequence itself untouched (but you can still hit

Enter to apply the current tool to the sequence, or one of the specific keys to apply some other tool).

Due to this change, certain existing keyboard shortcuts had to be remapped. Specifically, Shift-S, Shift-T, Shift-I, Shift-U and Shift-D used to change the current custom tool to be a custom shimmer, twinkle, intensity, fade up, or fade down, respectively. These have been replaced with Ctrl-Shift-S, Ctrl-Shift-T, Ctrl-Shift-I, Ctrl-Shift-U, and Ctrl-Shift-D, respectively.

### ***Keyboard Editing while Using the Animator Made Easier***

When you click on a control in the Animator, after that control's operation has completed, the focus is now immediately given back to the sequence grid. The effect of this is that you can continue using the [keyboard](#) to edit the sequence without needing to mouse-click on it every time you change something in the Animator.

### ***File Saving Made Safer***

Previously, when the [Sequence Editor](#) saved a [sequence](#), it would delete the backup file of that sequence, then rename the existing save file to the backup, then write a new version of the save file, then verify that it could load the new version of the save file. If it could not load the new version, it would give a warning message saying so, and giving the name of the backup file.

Instead, it now writes the sequence to a temporary file, then verifies that it can load that temporary file. Only if it can load the temporary file does it then proceed to delete the backup file, rename the existing save file to the backup, and finally rename the temporary file to the real save file name.

### ***Track Bar of Active Track Highlighted***

In the [Sequence Editor](#), the track bar of the currently active track in a [sequence](#) is now colored green, so as to make it easily distinguishable from the other tracks.

### ***Bug Fixes***

- In the [Sequence Editor](#), if the total time of a track was increased, and that track was currently using a fixed timing grid, an error message would pop up saying that timings cannot be added to fixed grids.
- If the Windows option "Hide extensions for known file types" was turned on, the New and Open dialog's "Existing Sequence" tab would not properly display the type of each file.

## **What's New in Version 2.3.8**

This version fixes the following bugs:

- In the [Sequence Editor](#), when the [mouse](#) was moved to the left of the channel bar, an error message would sometimes pop up, saying "Invalid centisecond for finding timing", followed by a negative number. This would always happen when the mouse was dragging, and sometimes happen otherwise.
- On some computers running Windows Vista, installation would fail, giving an error about Microsoft's MDAC component.

## **What's New in Version 2.3.6**

This version fixes the following bug: Upon upgrade from a previous version of Light-O-Rama, if the user chose a different directory to store sequence and audio files than was chosen for the previous version, the post-install process would neglect to copy the files from the old directory to the new one.

## What's New in Version 2.3.4

The following changes were made for Light-O-Rama version 2.3.4:

- [Timing grids](#)
- [The Light-O-Rama Verifier](#)
- [Beat Wizard and VU Wizard improvements](#)
- [Initial play of sequences sped up](#)
- [Events straddling the start of a play range are played](#)
- [New and Open dialog improvements](#)
- [New musical sequence's initial channels can be based on a channel configuration file](#)
- [New musical sequence's artist, album, and song names pulled from MP3](#)
- [Support for normally closed input triggers](#)
- [Interactive triggers can be tested in the Hardware Utility](#)
- [Maximum and minimum intensities read from controller](#)
- [Extra Information in sequence grid tooltips](#)
- [Control Panel's status window can be minimized](#)
- [Fades are smoother in the Animator](#)
- [Animator CPU utilization improved](#)
- [Animator redraw throttling configurable](#)
- [Zooming with the Animator's autosize mode](#)
- [Bug fixes](#)

### ***Timing Grids***

A timing grid is a collection of timings. A [sequence](#) can have more than one timing grid, but only one (per track) is displayed at any given time. You can quickly change which timing grid is displayed at any time by selecting from the [Tracks and Timings toolbar's timings dropdown list](#).

There are two types of timing grids: fixed timing grids, which have timings at equal distances from each other, and which cannot have timings added, removed, or moved, and freeform timing grids, which can have timings anywhere, and which can have timings added, removed, or moved.

Timing grids are intended to better fulfill a role that was fulfilled in previous versions of Light-O-Rama by tracks: Allowing different sets of timings to be used on the exact same channels.

For example, perhaps you have a song for which you would like some lighting effects sequenced to the sound of the bass drum, and other lighting effects sequenced to the sound of the lead guitar. You could simply add timings for both, but this could make it easy to forget which timing is for which instrument; it could also make the display seem too cluttered with timings.

To solve this problem in previous versions of Light-O-Rama, you could duplicate the track to a new track, so that you had two different tracks in the sequence, both with the same channels as each other. The two tracks could use different timings, one track representing the bass drum and the other representing the lead guitar.

You can still do that in this new version of Light-O-Rama, but you can now instead solve the problem

by using timing grids. Instead of adding a second track, you could add a second timing grid. One timing grid would represent the bass drum, and the other would represent the lead guitar. You could quickly switch which timing grid is displayed using the Tracks and Timings toolbar's timings dropdown list, changing back and forth between drum and guitar as appropriate, all with only a single track.

The Tracks and Timings toolbar also has a [timings button](#); clicking on it will open a popup menu with various timings grid-related options, such as adding a new timing grid or deleting an existing one.

When this new version of Light-O-Rama opens a sequence created with a previous version (in which there was no such thing as a timing grid), it will automatically create one freeform timing grid per track in the sequence.

### ***The Light-O-Rama Verifier***

The new [Light-O-Rama Verifier](#) program can be used to check for certain types of problems with your Light-O-Rama configuration, [schedule](#), [shows](#), and [sequences](#). By using the Verifier, you may be able to fix these problems before they cause any issues when your show is played.

### ***Beat Wizard and VU Wizard Improvements***

In previous versions, the [Beat Wizard](#) and the [VU Wizard](#) would always add timings, regardless of whether they were also adding effects or not. They can now add timings and effects independently of each other.

Also, when inserting effects, they can now optionally snap them to the timings being used.

### ***Initial Play of Sequences Sped Up***

The amount of time that it takes for a [sequence](#) to start playing the first time after it is loaded (or after it is changed or the play range is changed) has been decreased.

### ***Events Straddling the Start of a Play Range Are Played***

In the [Sequence Editor](#), if the play range is set to anything other than the full [sequence](#), and an effect event starts before the play range starts but ends during (or after) the play range, previous versions of Light-O-Rama would not control the lights based upon that event. Instead, now, the portion of the event within the play range is sent to the lights (for example, if the event is a fade up from 0% to 100% from 36 seconds to 38 seconds, and the play range starts at 37 seconds, the lights will be sent a command to fade up from 50% to 100%).

### ***New and Open Dialog Improvements***

Several improvements were made to the [Sequence Editor's](#) New and Open dialog:

In previous versions, the dialog was a fixed size, which could not be changed. It can now be resized or maximized, and will remember its sizing and positioning even after the Sequence Editor is closed and restarted.

The dialog's Existing Sequence tab used to always show a list of folders and sequences in a single way. It now has an option to change the view, similarly to Windows Explorer. For example, if the "Details" view is selected, then in addition to file names, details such as file sizes and modification

dates will be displayed. Clicking on a column header in the "Details" view will sort the files by that column; clicking on it again will sort in reverse order. The dialog will remember the selected view and sorting behavior even after the Sequence Editor is closed and restarted.

The Existing Sequence tab now also has a "Search" box. If you type something into this box, only files with that somewhere in their name will be listed. Wildcard characters (\*, ? and #) are supported in the search box.

The [Standard Toolbar's "Open" button](#) would previously always open the dialog to the "Existing Sequence" tab. It now instead opens it to whichever of "Existing Sequence" or "Recent Sequence" was most recently used.

### ***New Musical Sequence's Initial Channels Can Be Based on a Channel Configuration File***

When you create a new musical sequence, the [New Musical Sequence dialog](#) now lets you base the initial channels for the [sequence](#) off of the contents of a channel configuration file, rather than simply specifying a number of channels.

### ***New Musical Sequence's Artist, Album, and Song Names Pulled from MP3***

If you create a musical sequence based on an MP3 file, the [New Musical Sequence dialog](#) automatically uses the artist, album and song names from the MP3 itself (if the MP3 is tagged with this information). You can still change these in the dialog if you wish.

### ***Support for Normally Closed Input Triggers***

Previous versions of Light-O-Rama only supported normally open circuits for use as [input triggers](#). Normally closed circuits are now supported as well, via the [Hardware Utility's LOR controller configuration screen](#).

You may need to [update the firmware](#) of your controller in order to take advantage of this new feature.

### ***Interactive Triggers Can Be Tested in the Hardware Utility***

The [Hardware Utility's LOR controller testing screen](#) can now be used to [test input triggers](#) from [LOR controllers](#).

### ***Maximum and Minimum Intensities Read from Controller***

The [Hardware Utility's LOR controller configuration screen](#) can now read the [maximum and minimum intensity settings](#) of a [Light-O-Rama controller](#) from the controller itself.

You may need to [update the firmware](#) of your controller in order to take advantage of this new feature.

### ***Extra Information in Sequence Grid Tooltips***

The tooltip displayed in the [Sequence Editor](#) when the [mouse](#) hovers over a cell in a [sequence](#) now includes more information than before, including details on the effect event being hovered over.



You can configure various settings about the tooltips, such as how long they take to open and how they close, via the Display Preferences dialog.

### ***Control Panel's Status Window Can Be Minimized***

The [status window](#) of the [Light-O-Rama Control Panel](#) can now be minimized to the Windows task bar.

### ***Fades Are Smoother in the Animator***

The Animator used to display fades in a somewhat jerky manner, only updating the display after the color of a cell has changed by a fairly significant amount. Depending upon the speed of the fade, this would lead to fades more as steps through several intensities rather than as actual fades (note that this only affected the appearance of the Animator, not the appearance of any real lights that you had hooked up via [controllers](#)). Fades should now appear more smoothly in the Animator.

### ***Animator CPU Utilization Improved***

Various changes were made to the Animator to decrease the amount of CPU time that it takes to display the animation.

### ***Animator Redraw Throttling Configurable***

During play, the Animator only redraws the animation every so often, rather than every time that something changes. This is to try to ensure that it does not use too much CPU time. In the past, the amount of time between redraws was a certain constant value; now, you can modify it in the Display Preferences dialog, to try to strike an appropriate balance between CPU usage and smoothness of display for your individual computer.

### ***Zooming with the Animator's Autosize Mode***

When the Animator's controls are hidden, expanding and contracting the Animator's window is supposed to also automatically resize the drawing area within the window. However, due to certain sizing requirements, the drawing area can only be certain possible sizes for any given animation. So, when the window was manually resized by clicking and dragging a side or a corner, the drawing area would remain the same size, until the window got large enough to hold the next possible size, at which time the drawing area would "jump" to the new size.

To make this autosizing quicker and easier, the ability to manually resize by dragging a side or a corner of the window has been replaced by "zoom" buttons on the toolbar, which will immediately resize the window (and the drawing area) to the next possible size.

### ***Bug Fixes***

This release fixes the following issues:

- If the same [show](#) had been [scheduled](#) twice back-to-back, it would have simply continued playing rather than stopping and restarting.
- If a channel was set up to represent a subsequence, changing the subsequence file associated with the channel would not cause the channel's main [sequence](#) to be marked as having unsaved changes.
- If a musical sequence based on a MIDI file was playing in the [Sequence Editor](#), and was paused

or stopped before its natural end, and the sequence had used the [MIDI File Wizard](#), then the Sequence Editor would not send out MIDI commands saying to stop sounds. This caused whatever notes happened to be playing when the sequence was paused or stopped to continue playing indefinitely.

- If the [VU Wizard](#) were used to toggle cells on and off during part of a song, as opposed to the entire song, it would sometimes get the toggling backwards, turning on cells that should have been turned off, and vice versa.
- If the [VU Wizard](#) were used to toggle cells on and off during part of a song, as opposed to the entire song, it would not necessarily get the state of the first or the last cell in the range correct.
- If the [VU Wizard](#) were set up such that the entire selected area of the song was below the specified peak threshold, an error box would appear, saying "Subscript out of range".
- If an animation had a background image, and the Animator's controls were hidden, resizing the window would not necessarily keep the image's proportions as they were.
- If the Animator's controls were hidden, resizing the window would only automatically resize the animation if it had a background image.
- The menu items on the Wave Form submenu of the [Sequence Editor's](#) View menu would not become checked until one of them (or the [View Waveform](#) button on the [Standard Toolbar](#)) was clicked.
- When the [Sequence Editor's](#) New and Open dialog is first opened, its dropdown list of folders did not include all of the immediate child folders of "My Computer".
- In the [Hardware Utility's Test Console](#), clicking the "All Off" or "All On" buttons would move the intensity sliders appropriately, but would not update the text boxes beneath them to say the new intensities.
- If Windows suspended while the [Sequence Editor](#) was open, and a USB adapter was in use for an [LOR comm port](#), then when Windows resumed, the Sequence Editor would be locked up.
- The [Hardware Utility](#) would shut down without warning if "Lights Off" or "All Off" were pressed while the [LOR comm port](#) was set to a port number that could not be initialized.
- The [Hardware Utility](#) would shut down without warning upon trying to initialize an X10 CM-11A device on a port that had (till that point) been assigned to [LOR devices](#).

## What's New in Version 2.1.6

This version fixes the following bugs:

- If the [waveform display](#) were used with a completely silent audio file, the [Sequence Editor](#) would crash.
- If a [sequence](#) had a Windows shell command, and it were saved to a different filename than it had been loaded with, future changes to the Windows shell command in one of the two sequences would affect the Windows shell command in the other sequence as well.
- [Shows scheduled](#) by the [Simple Show Builder](#), and run via the PC, would not necessarily end at their appropriate time.

## What's New in Version 2.1.4

This version fixes the following bugs:

- In certain situations, adding a [sequence](#) to an [MP3 Player Showlist](#) would fail, with an error message saying "Path/File Access error".
- [Sequences](#) downloaded to an [MP3 director](#) would have their final lighting effect cut off prematurely.
- The [Sequence Editor's](#) New Musical Sequence Preferences dialog would not allow you to change the default timings to certain values ("MIDI File Wizard", "Beat Wizard", and "VU Wizard") if you opened the dialog via the "New Musical Sequence Preferences" menu item on the Preferences

submenu of the Edit menu.

## What's New in Version 2.1.2

The following changes were made for Light-O-Rama version 2.1.2:

- [Licensing](#)
- [Custom fade/intensity twinkles and shimmers](#)
- [Triggered interactive sequences](#)
- [Show startup options](#)
- [Windows shell commands](#)
- [DMX intensity](#)
- [The New and Open dialog](#)
- [Keep lights on at end of play](#)
- [Automatic channel settings for newly created sequences](#)
- [Events can be dragged with timings](#)
- [Change in behavior for mouse switching tracks](#)
- [Animation sequences in the musical section cut off at end of show](#)
- ["Max Units" in Hardware Utility changed to "Max Unit ID"](#)
- [Bug fixes](#)

### ***Licensing***

The [Light-O-Rama Software Package](#) must now be registered with a valid license in order to unlock its full potential. There are several different license levels, each with different features available. Additionally, Light-O-Rama can be run without a license, as a Demo version; the Demo version cannot be used to actually control lights, though.

Existing customers who have purchased earlier versions of the Light-O-Rama software package are entitled to a free license of the highest level ("Advanced").

For details about registering and about the features available with the different licenses, please see [Registering Light-O-Rama](#) and [Feature Comparison](#).

### ***Custom Fade/Intensity Twinkles and Shimmers***

In previous versions of Light-O-Rama, twinkling or shimmering the lights could only be done at full intensity. You can now use new custom tools to twinkle or shimmer the lights while fading them up or down, or at some intensity other than full intensity.

Existing [Light-O-Rama controllers](#) may need [firmware upgrades](#) to take advantage of this new feature; if a custom twinkle or shimmer is sent to a controller without the upgrade, it will react as if it were a "regular" twinkle or shimmer - i.e. it will twinkle or shimmer at full intensity.

### ***Triggered Interactive Sequences***

In addition to being able to control lights, some [Light-O-Rama controllers](#) can now act as input triggers. This allows [sequences](#) to be played on demand during a [show](#) - for example, your display may have a group of buttons that people can press, each of which will cause a different song to be played.

For details, please see the help file page "[Interactive Groups](#)".

## ***Show Startup Options***

In previous versions of Light-O-Rama, the [sequences](#) in a [show](#) would start playing immediately at the show's [scheduled](#) start time. There is now more flexibility with regards to 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 be started until that button is pushed.

For details, please see "[Show Startup Options](#)".

## ***Windows Shell Commands***

Your [sequences](#) can now be configured so that, whenever one is played, Light-O-Rama will execute any arbitrary Windows command that you associate with that sequence.

An example of how this might be useful: If you broadcast the songs playing during your [show](#) over the radio, and have hardware allowing you to broadcast RDS ("Radio Data System") information, you can now set your sequences up so that, whenever one is played, Light-O-Rama will tell Windows to tell your RDS program to broadcast the name of the song for that sequence.

For details, please see the help file page "Windows Shell Commands".

## ***DMX Intensity***

A new effect, "DMX Intensity", has been added. This can be used to specify 256 possible intensities (from 0 to 255), rather than the regular 101 possible intensities (from 0 to 100). This is useful for DMX devices, which can take up to 256 possible intensities.

Note: The DMX intensity tool is not available by default in the [Sequence Editor](#) - for example, by default, no toolbar button will be displayed for it. To enable the tool, select "Allow DMX Editing" from the DMX Preferences menu.

## ***The New and Open Dialog***

The [Sequence Editor's](#) new "New and Open dialog" allows you to create a new [sequence](#), or open an existing one. This dialog is opened by default when the Sequence Editor starts up (although this behavior can be suppressed), and also when something like "New" or "Open" is selected from the File menu or the [Standard toolbar](#).

## ***Keep Lights On at End of Play***

For most sections in a [show](#), you can now use the [Show Editor](#) to specify whether or not [sequences](#) in that section will automatically turn their lights off when they end playing.

There are two exceptions: First, the [Background section](#) does not allow this setting. Second, the [Interactive section](#) allows you to control this for each [interactive group](#) individually, rather than for the section as a whole.

## ***Automatic Channel Settings for Newly Created Sequences***

When creating a new musical sequence or new animation sequence, you now have the option to automatically configure the channels in the new [sequence](#) to use standard [Light-O-Rama](#)

[controllers](#). The first channel will be set up to use Light-O-Rama [unit 1 circuit 1](#), the next unit 1 circuit 2, and so forth, then on to unit 2, and so forth. All such channels will be configured to use the regular [LOR network](#).

### ***Events Can Be Dragged with Timings***

When a timing is dragged in the [Sequence Editor](#), to change the time it is at, there is now an option to also drag any effect events that start or end at that timing along with it.

This option is controlled via the Edit menu's "Drag Events with Timings" checkbox.

### ***Change in Behavior for Mouse Switching Tracks***

Switching to another track via the [mouse](#) in the [Sequence Editor](#) now causes the selected area for that track to be set to the cell that was clicked, even if that cell is within what used to be the selected area for that track. In particular, if a tool other than "Select" is enabled, that tool will be applied to the new selection, not the old one.

### ***Animation Sequences in Musical Section Cut Off at End of Show***

In previous versions, when a [show](#) reached its [scheduled](#) end, if a [sequence](#) from the [musical section](#) of the show happened to be playing, that sequence would continue playing to its natural end before the [shutdown section](#) of the show would begin. Now, that is only the case for musical sequences; if the sequence is an animation sequence, it will abruptly stop at the scheduled end of show, regardless of the fact that it is in the musical section of the show.

### ***"Max Units" in Hardware Utility Changed to "Max Unit ID"***

When the [Hardware Utility](#) is asked to automatically detect [units](#), it must individually search for each possible [unit ID](#). This may take some time to do. To speed this up, the Hardware Utility allowed you to specify a maximum number of units to search for, in a box labelled "Max Units". For example, if you set "Max Units" to "3", the Hardware Utility would search for a controller with unit ID 01, another with unit ID 02, and a third with unit ID 03. It would not check for any unit IDs past 03. However, this often led to the following confusion:

Unit IDs are given in hexadecimal notation. So, for example, the next unit ID after 09 is not 10, but 0A. That is followed by 0B, 0C, 0D, 0E, and 0F, and only then does 10 come. So, if a person's highest unit ID was 10, they might be misled to thinking that they should input "10" into "Max Units". But "Max Units" was merely a count, not an ID, meaning that the Hardware Utility would only search for the first ten possible unit IDs, i.e. 01 through 09 and 0A. Therefore, unit 10 would not be found (as it is actually the sixteenth possible unit ID).

To get rid of this common source of confusion, "Max Units" was changed to "Max Unit ID". So now, for example, entering "10" will search for unit IDs 01 through 09, unit IDs 0A through 0F, and unit ID 10.

### ***Bug Fixes***

This release fixes the following issues:

- If the [Play Again button](#) on the [Standard Toolbar](#) of the [Sequence Editor](#) were hit quickly two times in succession, an error message box would appear.

- If the "[turn a channel on and off](#)" feature of the [VU Wizard](#) were used on only part of a musical sequence, it would correctly turn the channel on and off in that part, but would additionally turn everything in the channel *past* that part off.
- In certain situations, when scrolling through tracks in the [Sequence Editor](#), the track bar for some tracks would not be displayed, and instead part of the previously displayed channel grid would be displayed where the track bar should have been.
- If certain Light-O-Rama entries in the Windows registry were mistakenly deleted (for example, by a third-party registry cleaning program), and a musical sequence were modified and saved, the name of the sequence's media file would not be saved along with it, and you would be unable to modify the sequence again to tell it the name of the media file. This effectively means that the musical sequence would be "transformed" into an animation sequence. This no longer occurs. Note, though, that Light-O-Rama still might not be able to play the sequence, as those registry entries tell it where to look for media files. But after the issue with registry is corrected, Light-O-Rama will now play those musical sequences as normal.
- If a [sequence](#) had a channel that was set up to be a [Light-O-Rama controller](#), but did not have its [unit ID](#) set, that sequence would not play in the [Show Player](#).
- Removing a channel that was in more than one track from a track would not cause the [sequence](#) to be marked as having unsaved changes.
- If paste by cell is enabled, and effect events copied from a larger cell are pasted to a smaller cell, those events are "shrunk" to fit into the smaller cell. If such an event had to be shrunk to less than a centisecond in length, pasting would fail, giving an error message "Start time cannot be less than end time". Now, events shrunk to less than a centisecond are simply skipped when pasting.
- When creating an SD card for an [MP3 Director](#), a valid COM port is no longer required.
- Some machines were having problems [downloading standalone sequences](#) to [controllers](#). The reliability of downloading has now been improved.
- When [setting a unit ID](#) via the [Hardware Utility](#), the dropdown boxes allowing you to select a [unit ID](#) only show unit IDs from 01 up to the unit ID specified in the Hardware Utility's "Max Unit ID" setting. Previously, though, changing "Max Unit ID" would not change the values listed in the dropdown boxes, until the Hardware Utility was closed and then restarted. Now, the new values will be available immediately, without needing to close and restart.

## What's New in Version 2.0.16

The following changes were made for Light-O-Rama version 2.0.16:

- [Simple Show Builder updated](#)
- [Bug fixes](#)

### ***Simple Show Builder Updated***

Previous releases of Light-O-Rama version 2 included the same [Simple Show Builder](#) as was used in Light-O-Rama version 1. It therefore could not be used with [sequences](#) that were created using the version 2 [Sequence Editor](#).

Simple Show Builder has now been updated so that it can be used with sequences that were created using either version 1 or version 2.

### ***Bug Fixes***

This release fixes the following issues:

- Various tools such as the [Beat Wizard](#), [VU Wizard](#), and [Waveform Display](#) had problems with certain audio files, resulting in an error message saying "Can't init conversion" appearing, after which these tools would be unusable with those files. This release fixes this issue (at least in the known situations that it happened in).
- The [Beat Wizard](#) would crash when used with certain audio files on some customers' machines.
- If either "Close All Files" or "Close All Files Except This" was used, and one of the [sequences](#) being closed had its Animator window open, an error message would pop up saying "Error Loading Animation Form".

## What's New in Version 2.0.14

The following changes were made for Light-O-Rama version 2.0.14:

- [New play ranges](#)
- [Freeform play mode](#)
- [Space Bar to play; enter to apply tool](#)
- [Subdividing cells](#)
- [Skewing tracks](#)
- [Waveform height](#)
- [Waveform display modes](#)
- [Waveform colors](#)
- [Bug fixes](#)

### ***New Play Ranges***

Two new play ranges have been added to the [Sequence Editor](#): "From Selection" plays from the start of the selection to the end of the sequence, and "To Selection" plays from the start of the sequence to the end of the selection.

### ***Freeform Play Mode***

You can now use the keyboard to select an arbitrary time range for future playing. Please see "[Freeform Play Mode](#)" for details.

### ***Space Bar To Play; Enter To Apply Tool***

In the [Sequence Editor](#), the space bar can now be used to start a [sequence](#) playing, and then to stop it. If a [freeform play range](#) has been selected, that range will be played; otherwise, play will be in "from selection" mode - that is, it will start at the start of the current selection, and go until the end of the sequence. This can be used to effectively pause and unpause play.

In previous versions of Light-O-Rama, the space bar was used to apply the current effect tool to the selected cells. That is now done using the enter key instead.

### ***Subdividing Cells***

The [Sequence Editor](#) can now subdivide the selected cell or cells into a new number of cells (which you select). Each cell is subdivided into the specified number of cells, and all of the new cells within any particular old cell will be of the same length (or as close to the same length as possible).

For example, if you select two cells, the first from 3 seconds to 7 seconds, and the second from 7 seconds to 7.5 seconds, and ask the Sequence Editor to subdivide them into two cells each, you

will wind up with four cells: From 3 to 5, from 5 to 7, from 7 to 7.25, and from 7.25 to 7.5.

This can be done via "Subdivide Timings" on the Timings submenu of the Edit menu, or via "[Subdivide Timings](#)" on the [right-click context menu](#).

## ***Skewing Tracks***

The Edit menu of the [Sequence Editor](#) now has a new menu item, "Skew Track". This lets you move all of a track's events, timings, and loops by a specified amount of time, either to the left (i.e. earlier in time) or to the right (i.e. later in time).

## ***Waveform Height***

In previous versions of Light-O-Rama, the [waveform](#) of a musical sequence was either displayed or not. Now, if it is displayed, it can be displayed at two different heights: full height and half height. Full height is the same as the height that was used in previous versions of Light-O-Rama.

Half height and full height (and "off") can be selected from the Wave Form submenu of the View menu.

## ***Waveform Display Modes***

The [waveform](#) of a musical sequence can now be [displayed in three different ways](#): "full mode", showing zero volume at the center and loud volumes above and below it; "fold mode", showing zero at the bottom and folding the two halves of full mode onto the top; "top mode", showing zero at the bottom and the top half of full mode above it. "Full mode" is the same as the way the waveform was always displayed in previous versions of Light-O-Rama.

To set the display mode, right-click on the waveform, and select the desired mode from the listed choices in the popup menu.

## ***Waveform Colors***

The colors used to display the [waveform](#) of a musical sequence are now configurable. To choose new colors, right-click on the waveform, and select "[Change Colors](#)" from the popup menu.

## ***Bug Fixes***

This release fixes the following issues:

- In the Channel Property Grid, if a channel was set up with a device type but no unit number and/or circuit number, it might later be displayed (in both the Channel Property Grid and the [Channel Settings dialog](#)) as if it had a unit number and/or circuit number set (although it still did not).
- When printing from the Channel Property Grid, unit numbers of some [Light-O-Rama controllers](#) would be mislabelled, as would device types of certain [non-Light-O-Rama controllers](#).
- If a [sequence](#) was changed, but not yet saved, and "Revert to Saved" was selected from the File menu, the sequence would be properly reloaded, but could not be played again until it was closed and reopened.
- Several dialog windows had a problem where, if the dialog was closed by hitting the enter key rather than by clicking the OK button, changes to the last field modified might not be acted upon.
- If a channel was in two or more tracks, and had a shimmer effect, the effect would not be displayed properly in the Animator.



- If a [sequence](#) was playing in the [Sequence Editor](#), and some other sequence was not playing but had its Animator open, clicking on that Animator's play button would set off a string of errors. Now, instead, it simply does not start play (while the other sequence is playing).
- A problem with undoing and redoing changes in [sequences](#) with loops was fixed.
- Highlight Current Event on the Play menu is supposed to control whether or not the current event is displayed with a thick border (as if it were the selection) during play. It did so, but it also mistakenly controlled whether the selection was displayed or not while play was *not* happening.
- If a musical sequence's media file did not have its "Ready for Archiving" flag turned on (in the file's properties in Windows Explorer), the [Sequence Editor](#) would not play the [sequence](#), complaining that the media file could not be found.
- If the [Sequence Editor](#) played a musical sequence at quarter, half, double or quadruple speed, and the directory its media file was in contained a period in its name, sometimes the wrong media file would be played.

## What's New in Version 2.0.12

This release fixes the following issues:

- A [show](#) would pause indefinitely if the [Show Player](#) was asked to play a musical sequence whose media file was missing.
- Musical sequences played during the [startup](#) and [shutdown](#) sections of a [show](#) would control the lights, but would not play audio.
- Commands for X10 channels were often getting lost.

## What's New in Version 2.0.8

This release contains the following bug fixes:

- The [Tapper Wizard's](#) dropdown list allowing you to select the track to use did not work properly, leading to the taps being put into whatever track had been selected at the time that the Tapper Wizard was opened, rather than into the one that was selected in the list.
- The [VU Wizard's](#) option to operate on only a portion of the song, as opposed to the entire song, did not work properly.
- Importing channel configuration into a [sequence](#) did not mark that sequence as having unsaved changes.
- Communication with the [controllers](#) is kept alive during the loading of [sequences](#). This is to fix an issue where, after the loading of a large sequence, the PC would have to resynchronize with the controllers due to communication having been paused. This resynchronization could have taken some time, causing strange effects immediately after synchronization.
- If an error occurs while communicating with the [controllers](#), Light-O-Rama tries to reestablish communications, in the hopes that the error was merely a temporary glitch. However, for certain types of errors, it would not try to do so, leading to the communications being permanently down.

## What's New in Version 2.0.4

Version 2.0.4 fixes a bug where X10 channels were not being controlled during [shows](#).

## What's New in Version 2.0.0

The following new features, changes, and fixes have been made for Light-O-Rama version 2.0.0:

- [Tracks](#)
- [Sequence-in-sequence play](#)
- [Background and foreground effects](#)
- [Universal undo and redo](#)
- [Channel positioning](#)
- [Mouse scroll wheel support](#)
- [Pasting timings between sequences](#)
- [Video playback](#)
- [Intensity and fade presets](#)
- [The Beat Wizard](#)
- [The VU Wizard](#)
- [Recording of individual instruments in the MIDI File Wizard](#)
- [Multiple Light-O-Rama networks](#)
- [More media support](#)
- [Animator background image](#)
- [The Channel Property Grid](#)
- [Pasting effects: by time or by cell](#)
- [Holiday Lights Designer support](#)
- [XML sequence files](#)
- [Microsoft Windows Vista support](#)
- [Animator window CPU usage decreased](#)
- [Animator's maximum rows and columns increased](#)
- [Sequence Editor's keyboard support improved](#)
- [New look for the shimmer effect](#)
- [Channel settings form directly accessible via the channel's button](#)
- [Bug fixes and internal improvements](#)

## Tracks

Previously, a [sequence](#) was composed of channels, loops, and timings. Now, instead, a sequence is composed of tracks. Tracks, in turn, have channels, loops, and timings.

Two tracks in the same sequence can have different channels, or they can share channels with each other. They have different sets of loops and timings than each other. In an animation sequence, tracks can be of different lengths than each other.



### Two tracks, with the same channels, in one sequence

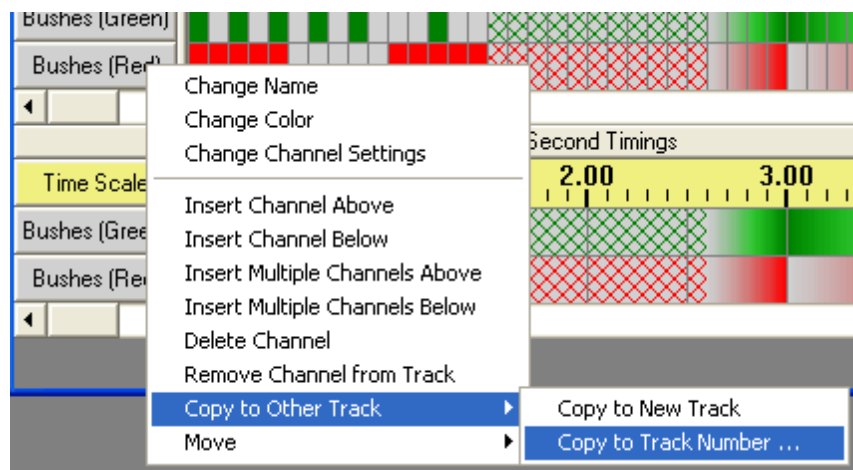
A brief example of how this may be useful:

In a musical sequence, you may want to have some timings representing a bass drum, other timings representing a guitar, and yet another representing something totally unrelated to the song. Before tracks, in Light-O-Rama version 1, you could add all of these timings to your sequence, but it might be difficult to remember, while building the sequence, which timings were for which purpose. The more unrelated timings that you added to the sequence, the more confusing the sequence as a whole would become.

Now in Light-O-Rama version 2, instead, you can build a single sequence with multiple separate tracks, each with only one of those sets of timings, making each set of timings cleaner and simpler to understand. Plus, you can share channels between two or more tracks, have different channels in different tracks, or both.

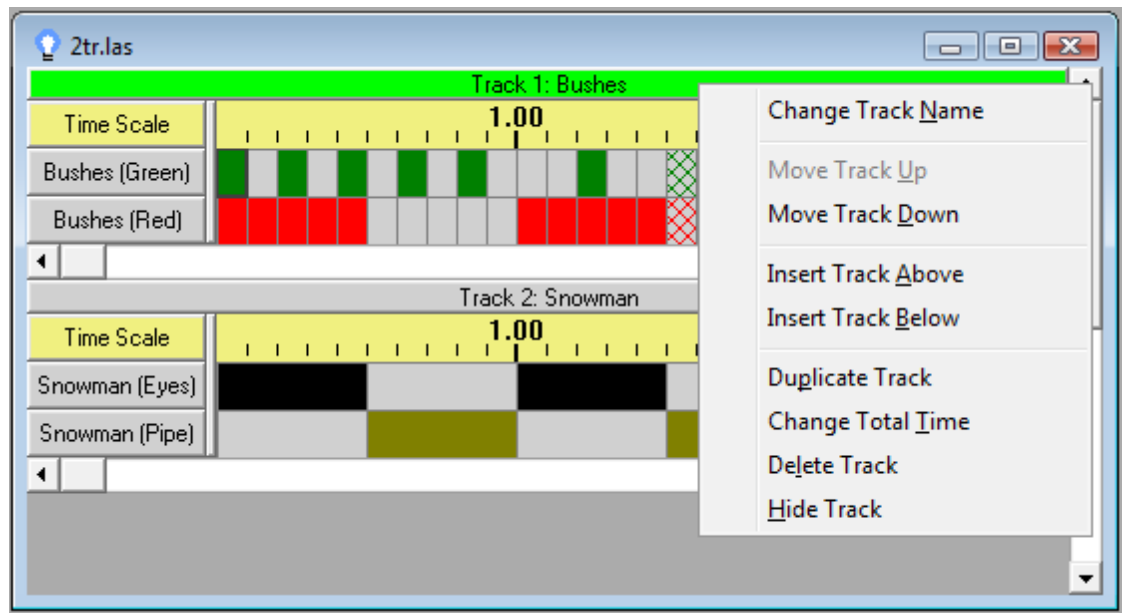
Sequences are initially created with a single track. Another track can be added via the Edit menu's "Add New Track" or "Duplicate Track" items (the latter of which will share all channels in the current track with the new track), or via new items on the [channel buttons' popup menus](#) ("[Copy to New Track](#)" and "[Move to New Track](#)").

To share an individual channel between multiple tracks, do *not* simply set two different channels to use the same unit number, circuit number, et cetera, as this will likely have unexpected and undesired results. Instead, use the "[Copy to New Track](#)" or "[Copy to Track Number ...](#)" function on the [channel's popup menu](#):



**Share a channel with another track by copying it to the other track**

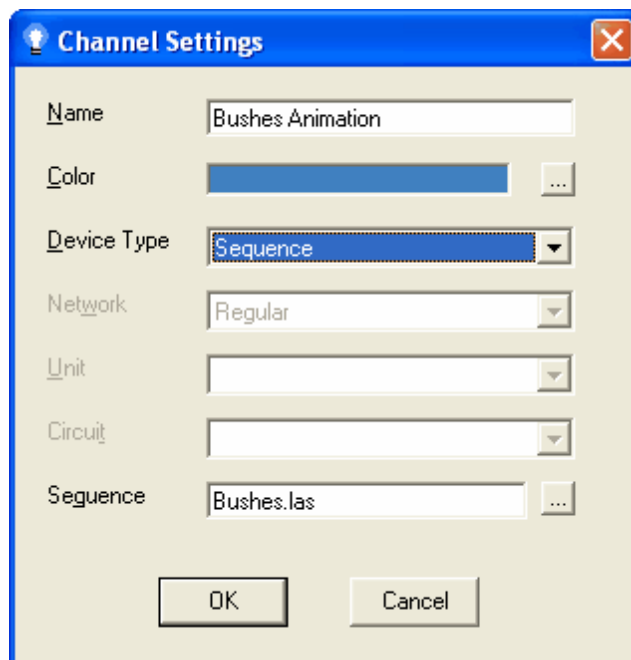
If a sequence has more than one track, the tracks are separated in the display by a track bar, labelled (for example) "Track 1" or "Track 2". If the track has been given a name, it will also be displayed here (for example, "Track 2: Front Yard Mini-trees"). Clicking on this bar gives a popup menu containing various track-related items:



Click on a track bar for various track-related menu items

### Sequence-in-Sequence Play

A channel in a [sequence](#) can now be set to represent another sequence (rather than representing a physical circuit), known as a "subsequence". This is done in the [Channel Settings](#) dialog, by changing the "Device Type" to "Sequence" (rather than to "Light-O-Rama Controller", "Digital IO Card", or so forth), and choosing the filename of the sequence in the "Sequence" box:



Channel settings for sequence-in-sequence play

A subsequence will play only when the channel that it is a subsequence of is turned on, and will continue playing as long as the channel is on. If the channel is turned off and then turned back on,

the subsequence will start over from its beginning.

**TIP:** Don't try to control the same physical circuit with both a channel in a subsequence and a channel in the main sequence. Doing so will probably cause unexpected results, as the two channels will vie for control of the circuit.

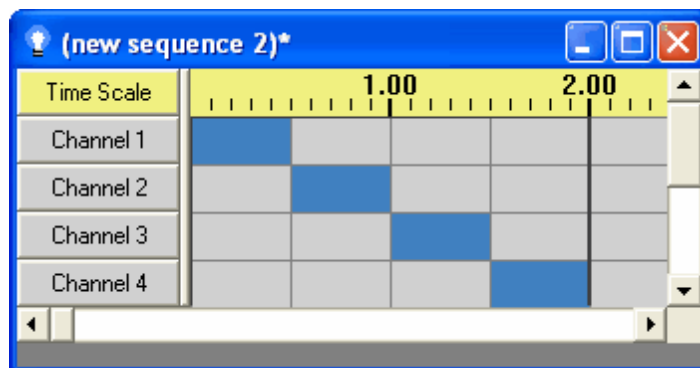
### ***Background and Foreground Effects***

Turning on background effects or foreground effects in the [Sequence Editor](#) will affect the behavior of tools (such as "Fade Up", "Twinkle", "Set Intensity", et cetera) in the following manner:

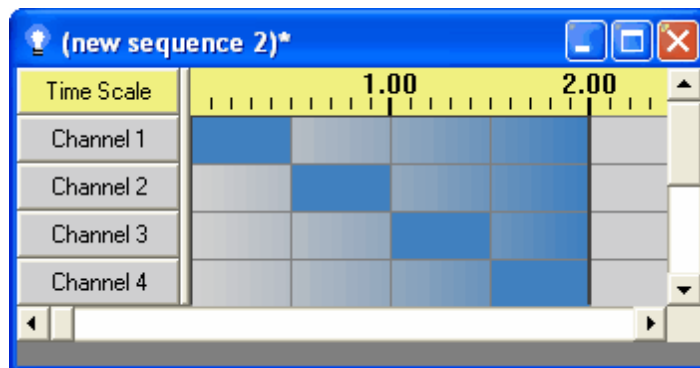
If "Background Effects" has been turned on, the tool only applies to those selected cells that are completely off (that is, at intensity zero for their entire duration).

If "Foreground Effects" has been turned on, the tool only applies to those selected cells that are *not* completely off.

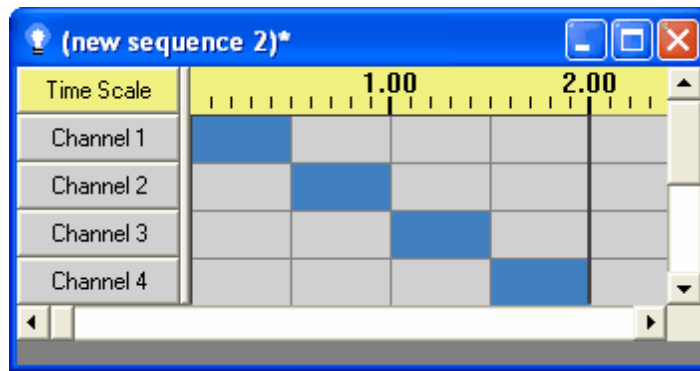
Some examples:



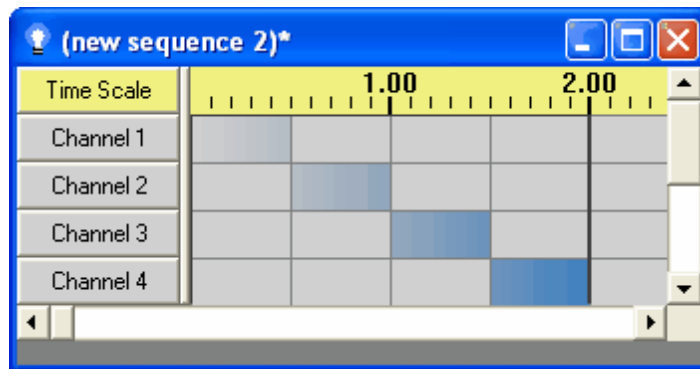
Before a background fade up



After a background fade up



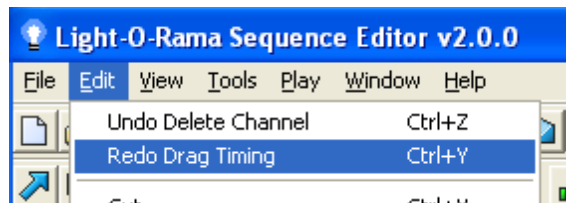
Before a foreground fade up



After a foreground fade up

## Universal Undo and Redo

The [Sequence Editor](#)'s undo and redo used to only work for the [effect tools](#) (such as "on", "off", "fade up", "twinkle", and so forth). You can now undo and redo a much wider variety of things - adding channels, moving timings, changing loops, drawing in the Animator, and many others.



Examples of things that can be undone and redone

## Channel Positioning

Channels can now be moved up and down in the [Sequence Editor](#). There are two ways to do this: First, the [channel buttons](#)' [right-click popup menu](#) now includes "[Move Up](#)" and "[Move Down](#)", which will move the channel by one spot. Second, a [channel button](#) can now be mouse dragged to a new position.

## Mouse Scroll Wheel Support

The [mouse](#) scroll wheel now works in the [Sequence Editor](#). Scrolling with the wheel causes the displayed channels in the active sequence to scroll.

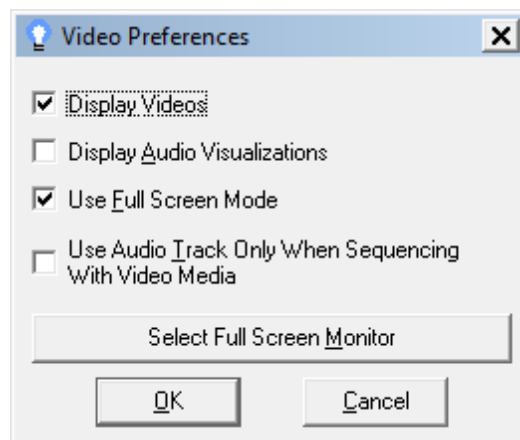
## Pasting Timings between Sequences

Previously, timing ranges copied from a [sequence](#) could only be pasted into that same sequence. Now, a timing range copied from one sequence can be pasted into a different sequence.

## Video Playback

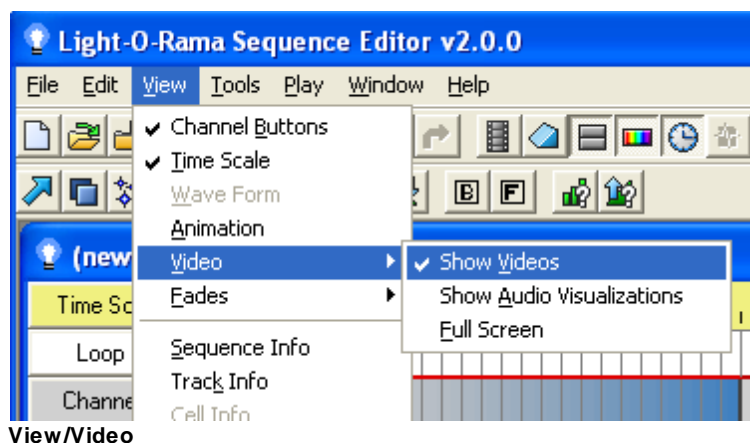
The [Show Player](#) and the [Sequence Editor](#) can now use video files (in addition to the previously available audio files) to create [sequences](#). The video output can be displayed during play.

In the Sequence Editor's Edit/Preferences menu, there is now a new item called "[Video Preferences](#)", which gives control over how video files will be used (both in the Sequence Editor and during [scheduled shows](#)):



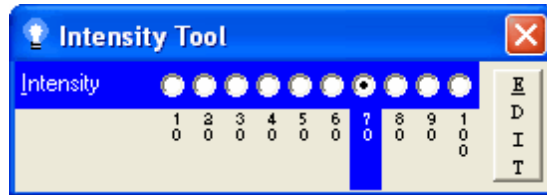
Edit/Video Preferences

These options can also be temporarily changed in the Sequence Editor via the View/Video menu. However, changes made this way will only affect the Sequence Editor (not the Show Player), and will only last during the current use of the Sequence Editor - that is, the next time that the Sequence Editor is started, the video preferences as set in "Edit/Preferences/Video Preferences will be used again).

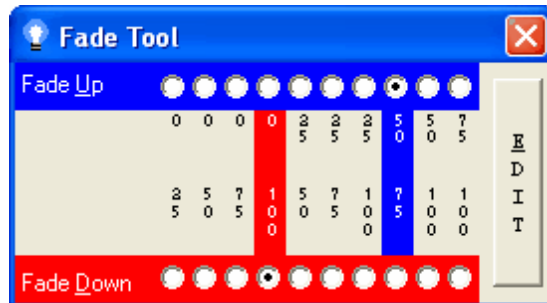


## Intensity and Fade Presets

The [Sequence Editor](#)'s Set Intensity, Fade Up and Fade Down tools now have ten preset values (or ranges). The old "Tool Options" dialog was replaced with the [Fade Tool Settings](#) and [Intensity Tool Settings](#) dialogs to set these presets:

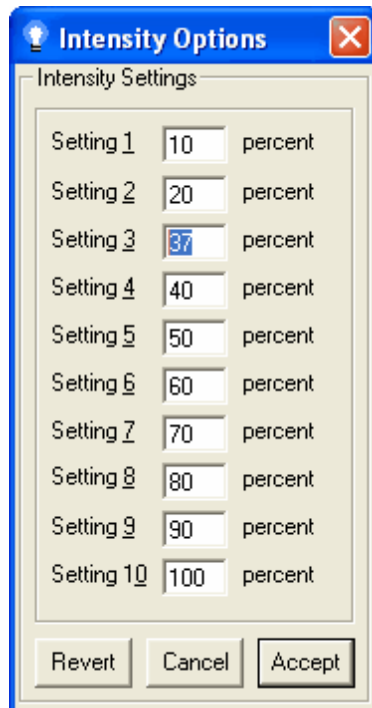


Intensity Settings, with 70% selected



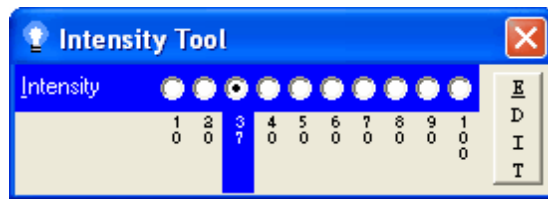
Fade Settings, with fade up 50-75% and fade down 100-0% selected

The Sequence Editor comes with default preset values (such as 10%, 20%, and so forth) build in; if you want to change any of the presets, you can do so by clicking the settings tool's "EDIT" button:



Changing an intensity preset to 37%





The preset has now been changed to 37%

The values of the presets for both intensities and fades can also automatically be set using Load Intensities and Fades from Current Sequence, of the Tools menu. This will figure out the most commonly used percentages for both intensities and fades existing in the current [sequence](#), and set the preset values to them.

### ***The Beat Wizard***

The [Sequence Editor](#)'s new [Beat Wizard](#) can be used to automatically analyze a song to try to determine its beat, and to populate a musical sequence with timings or effects based upon that beat. The Beat Wizard can be found in the Sequence Editor's Tools menu. It is also available as one of the options for [creating a new musical sequence](#), and for creating a new track.

The Beat Wizard

## The VU Wizard

The [Sequence Editor](#)'s new [VU Wizard](#) is a VU meter-like tool that can be used to automatically populate a musical sequence based upon peaks in the audio. The VU Wizard can be found in the Sequence Editor's Tools menu, and is also available as one of the options for creating a new musical sequence, and for creating a new track.

**VU Wizard**

**Time Range**

☒ The entire song (0:00.00 to 6:32.88)

☐ Just part of the song:

From: 0:00.00 To: 6:32.88 Update

**Attack and Decay**

Attack: 65.2 milliseconds

Decay: 65.2 milliseconds Update

Presets: VU Meter Peak Program Meter Peak Meter

**Peak Threshold**

Time On: 54%

☒ Total

☐ Left

☐ Right

**Preview**

Start  Time: 0:00.00 / 6:32.88

**What To Do with Peaks**

Using this track: Track 1

And these timings: (Unnamed timing grid)

Or add a new timing grid: New Fixed Grid New Freeform Grid

☒ Insert a timing into the track whenever the peak threshold is crossed

☐ Turn a channel on when above the threshold, and off when below:

Unit 01.1

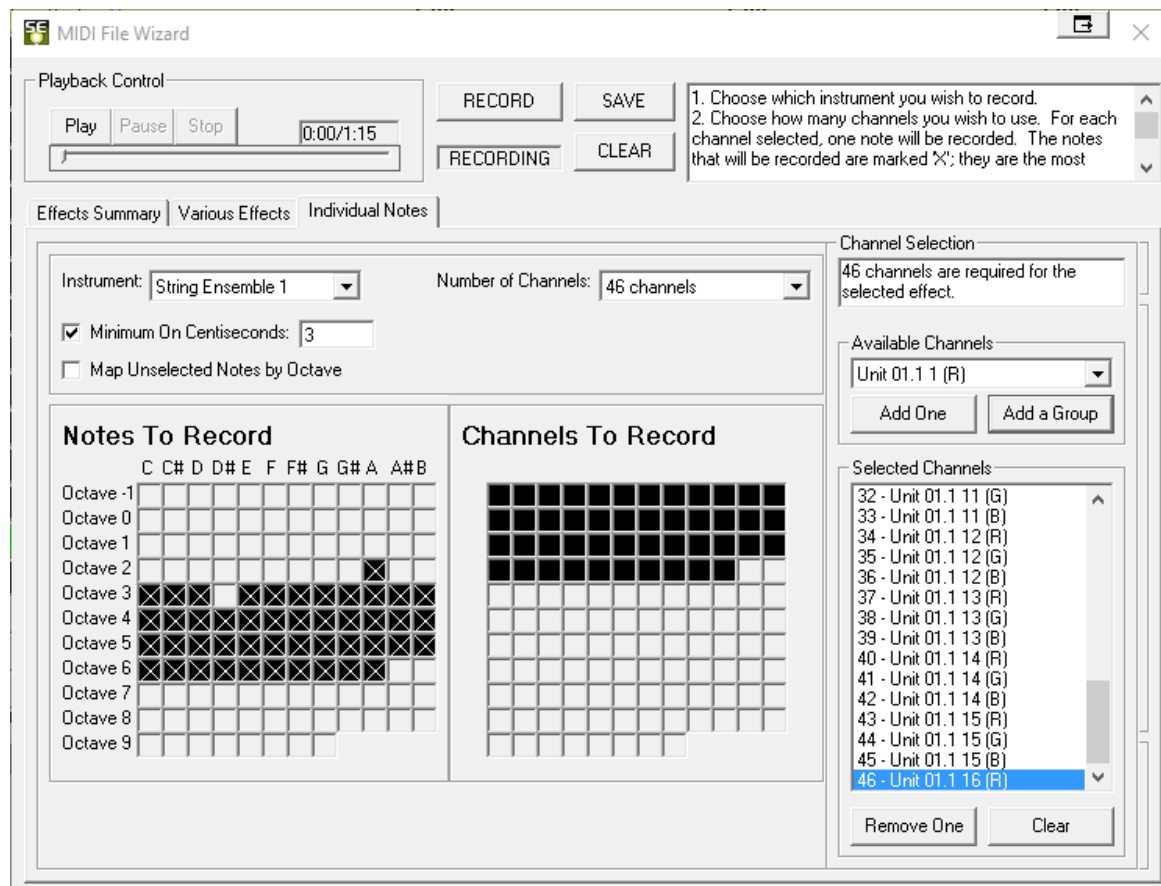
☐ Snap effects to timings within 4 hundredths of a second

Apply and Exit Apply Exit Undo Redo

The VU Wizard

### ***Recording of Individual Instruments in the MIDI File Wizard***

The [MIDI File Wizard](#) can now automatically create lighting effects for a musical sequence based on the notes played by individual instruments in a MIDI file.

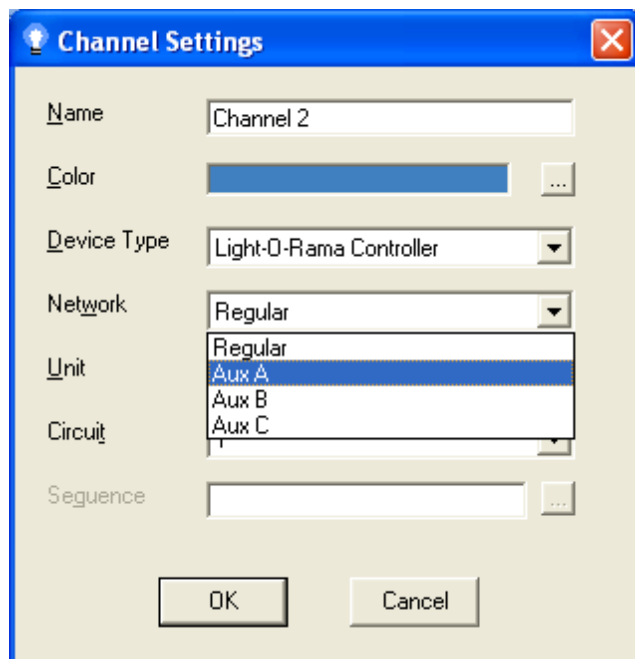


The MIDI File Wizard's can automatically create lighting effects based on the notes played in a MIDI file

### Multiple Light-O-Rama Networks

Previously, only a single COM port could be used for Light-O-Rama controllers. Now, up to four [Light-O-Rama networks](#) can be used simultaneously on the same computer, on different COM ports.

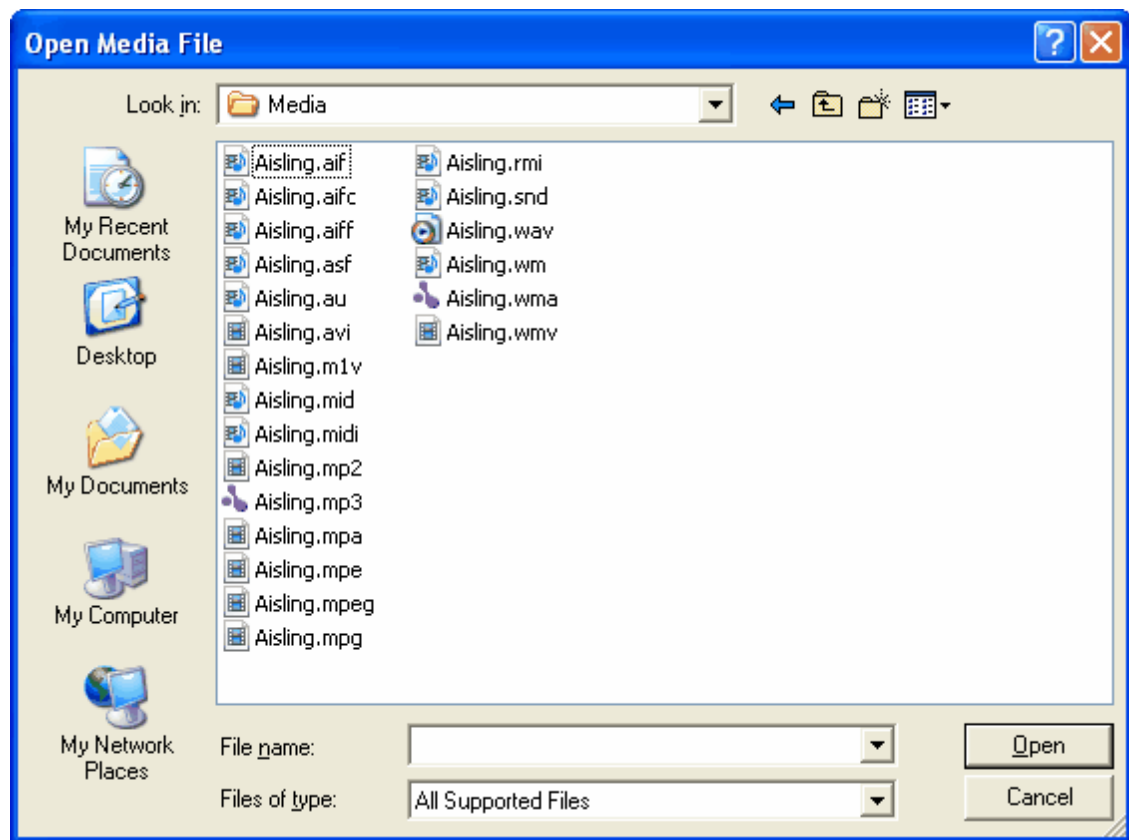
The same unit and circuit number can be used on multiple networks simultaneously and independently, with different effects happening on the different networks.



Up to four different networks can be used for LOR controllers

### ***More Media Support***

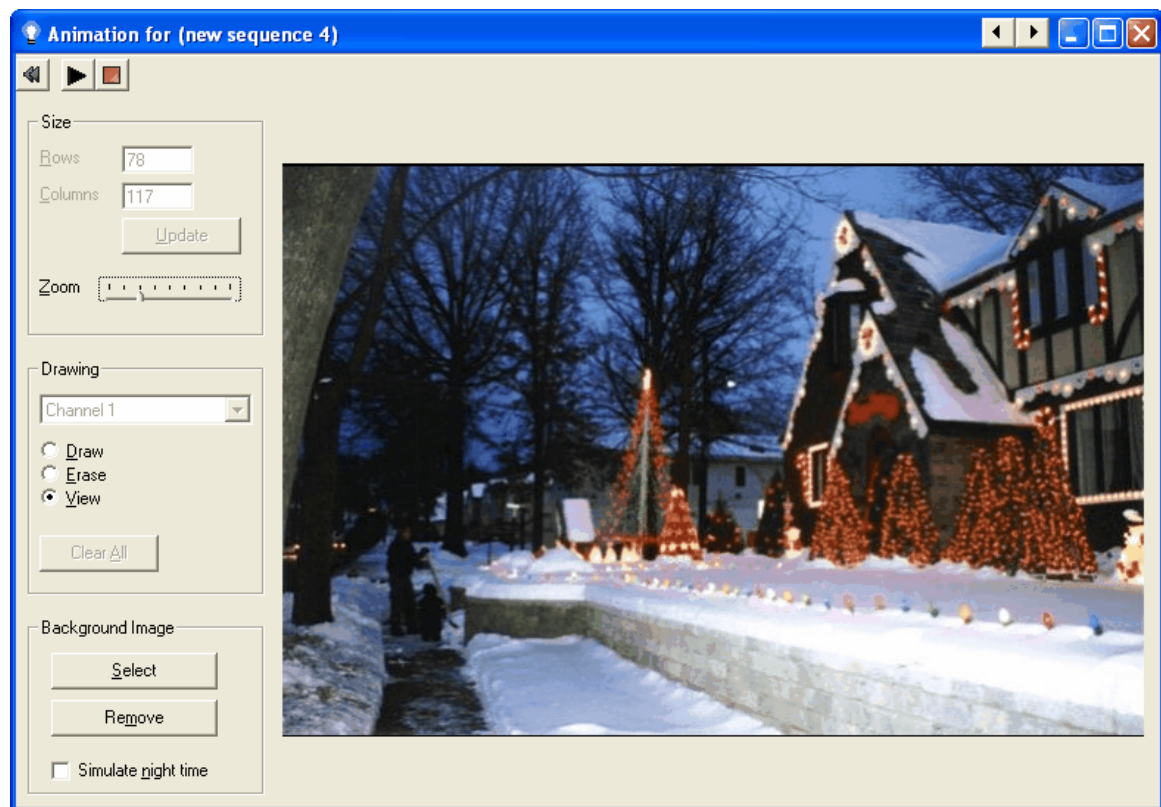
Various new media file types (including Windows Media Files and certain types of videos) are now supported for musical sequences.



Various supported media types

### ***Animator Background Image***

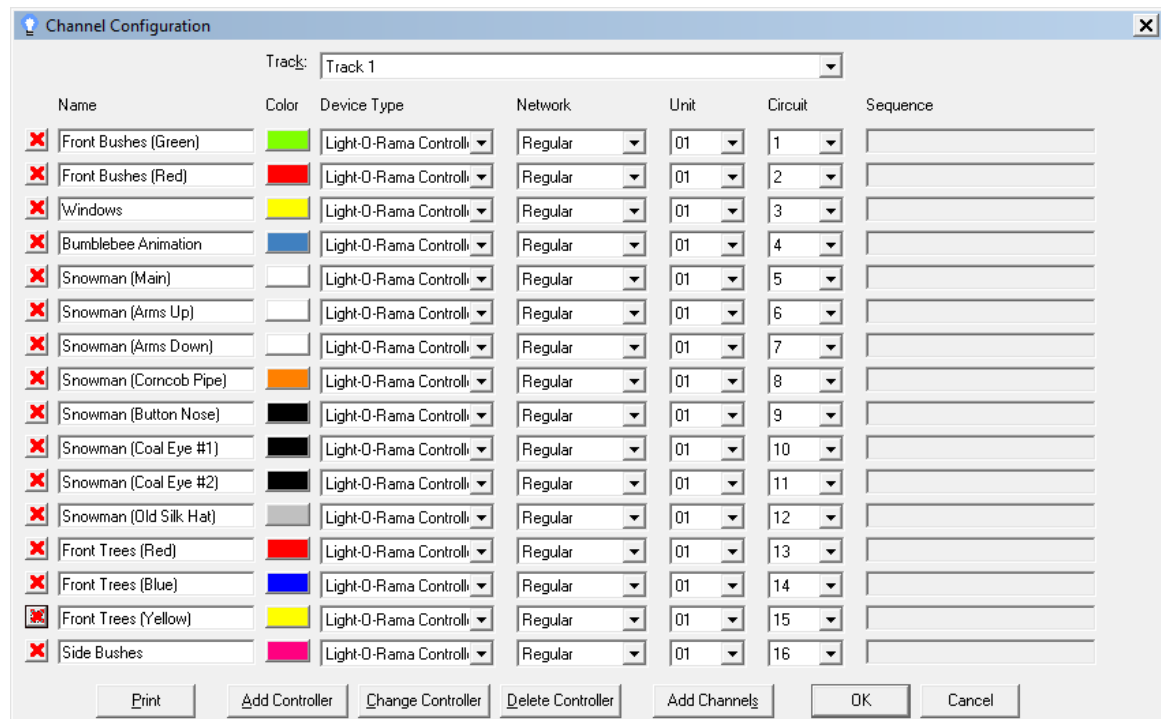
A [sequence](#)'s animation can now be set up to have a background image, such as a picture of a house on which Christmas lights are to be placed.



The Animator, with a background image

### ***The Channel Property Grid***

The [Sequence Editor's](#) new Channel Property Grid is a window showing information about all of the channels in a sequence (their color, device type, unit number, et cetera), and allowing changes to those properties in a (hopefully) convenient manner. This can be accessed via the Sequence Editor's Tools menu.

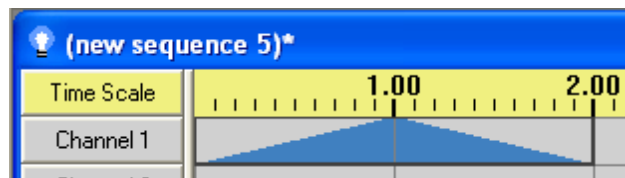


The Channel Property Grid

### Pasting Effects: By Time or By Cell

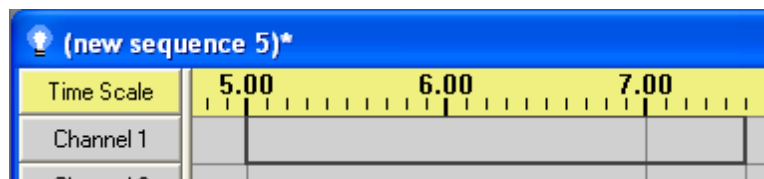
When pasting effects in the [Sequence Editor](#), you can now choose to insert the events into the destination based upon either the length of the copied events or else the relative lengths of the copied and destination cells.

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:



Events to be copied

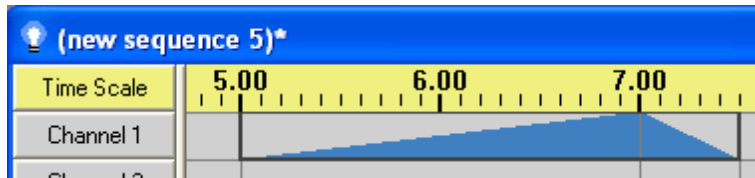
These events will be copied, and pasted to the time starting at 5 seconds. There are timings at 5 seconds, 7 seconds, and 7.5 seconds:



Where they will be pasted to

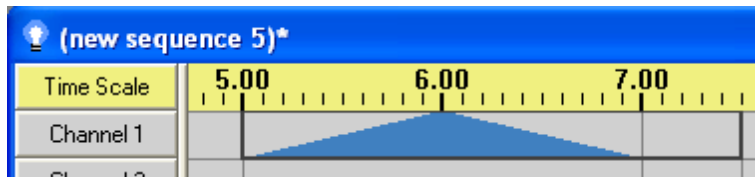
If "Paste by Cell" is selected, then there will be a fade up from 5 to 7, and a fade down from 7 to 7.5 (this is the same way that pasting always behaved in version 1 of Light-O-Rama):





After pasting by cell



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


You can switch between these two modes by selecting "Set Paste Mode" in the [Sequence Editor's](#) Edit menu.

## ***Holiday Lights Designer Support***

Light-O-Rama can now interact with Holiday Lights Designer , a third-party application by Holidaysoft .

Holiday Lights Designer  can be used to virtually place lights and decorations on images of your home or business, and Light-O-Rama can now send Holiday Lights Designer  commands during play to make those virtual lights behave as your real lights would during a show.

To send commands to Holiday Lights Designer , first set the Holiday Lights Designer Preferences in the [Sequence Editor](#) under the Edit menu. After this is done, commands can be sent from the Sequence Editor by turning on "Control Holiday Lights Designer" in the Play menu, or from the [Show Player](#) by selecting "Holiday Lights Designer On" in the [Light-O-Rama Control Panel](#).

Version 4.0 or above of Holiday Lights Designer  is required to take advantage of Light-O-Rama interaction.

For more information about Holiday Lights Designer , please see the [Holidaysoft website](#).

## ***XML Sequence Files***

[Sequence](#) files (and channel configuration files) are now saved as XML files. LOR 2 understands both these new sequence files and the old LOR 1 style sequence files.

If an LOR 1 file is modified and saved by LOR 2, it is automatically updated to the new LOR 2 style. This means that LOR 1 will no longer understand the updated file. However, to be safe, a copy of the original LOR 1 save file is automatically created, and labelled as an LOR 1 file. For example, if the LOR 1 sequence file "lights.las" is converted to an LOR 2 file, then a copy of the original LOR 1 file will be created, named "lights.las.v1.bak".

## ***Microsoft Windows Vista Support***

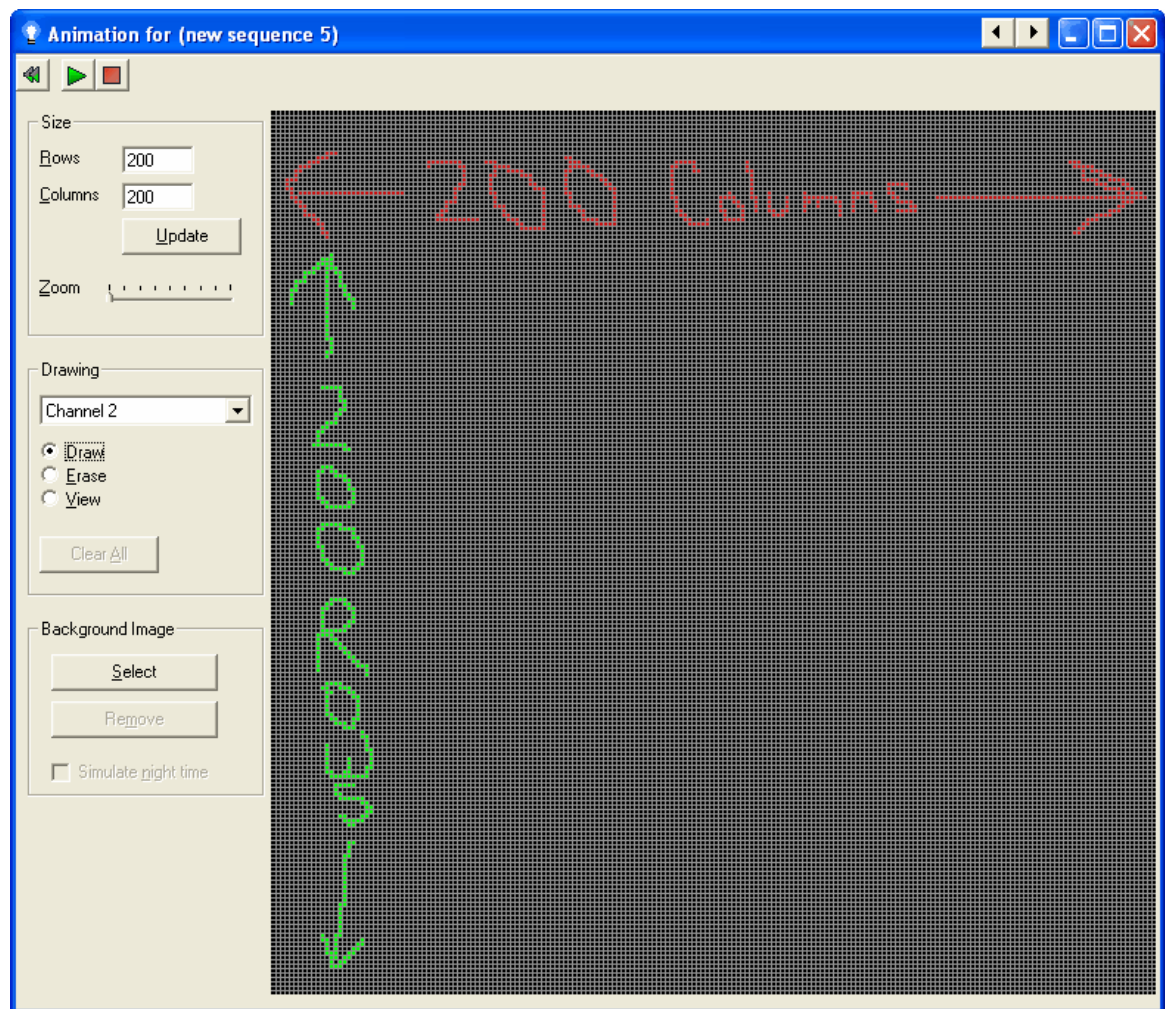
Various changes were made to better support Light-O-Rama on the Microsoft Windows Vista operating system.

### ***Animator Window CPU Usage Decreased***

The [Sequence Editor](#)'s Animator window now uses significantly less CPU during play than it used to.

### ***Animator's Maximum Rows and Columns Increased***

The Animator window now supports up to two hundred rows and columns:



Animation with 200 rows and 200 columns

### ***Sequence Editor's Keyboard Support Improved***

Several changes were made to make [using the keyboard](#) easier in the [Sequence Editor](#). For example:

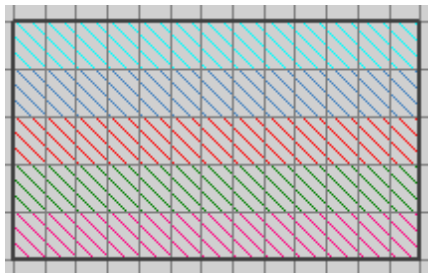
- The "enter" key now chooses the "OK" button on most forms;

- The "escape" key now chooses the "Cancel" button on most forms;
- The "tab" key circulates between controls in a more sane order;
- Many Alt-key shortcuts were added to various forms;
- The various menus were reorganized so as to cause less conflict among their various items' shortcut hotkeys.

### ***New Look for the Shimmer Effect***

The shimmer effect is now drawn (in the [Sequence Editor](#)) using diagonal lines, instead of the previous vertical lines. This will hopefully make them stand out more against the background of vertical lines which represent timings.

Note that this change is simply for display of the sequence in the Sequence Editor; the actual appearance of the shimmer effect on controlled lights is unaffected by this.



Some channels with shimmer effects

### ***Channel Settings Form Directly Accessible via the Channel's Button***

In the Sequence Editor, left-clicking and right-clicking on a channel button used to both bring up a context menu of channel-related functions (such as adding, deleting, and moving channels). Right-clicking still does that, but left-clicking now brings up the channel's settings form instead:

The Channel Settings form

### ***Bug Fixes and Internal Improvements***

Several bug fixes have been made, including but not limited to the following:

- If a show includes a musical cleanup sequence, it is supposed to be played after each song. Instead, it was being played only at the end of the show, just before the first shutdown sequence.
- Some musical sequences, when played in the Sequence Editor, would reach the end of their audio file, but would not cause the Sequence Editor to exit from play mode.
- Certain audio files would not play their audio.
- The Sequence Editor incorrectly determined the total length of certain audio files.
- When a musical sequence was played in the Sequence Editor using the "Visible Screen" play range, the display would sometimes jump to an adjacent portion of the sequence, rather than remaining on the initially visible portion of the sequence.
- Attempting to delete the first timing in a sequence (at time zero) would cause the Sequence Editor to crash.
- Attempting to resize multiple timings (simultaneously) using the Sequence Editor's "Resize Timings to ..." function (on the right-click popup menu) would cause the Sequence Editor to crash if the sequence happened to be more than 5:27.67 long.
- When the Sequence Editor displayed fades using gradual changes in colors (as opposed to when it displayed them using ramps), it would sometimes draw the end of a fade event past where it should have been.
- The Tapper Wizard's option to not use a countdown before the song begins did not work.
- When a sequence was playing at a speed other than the normal speed (for example, through the "Play Speed" menu item in the Sequence Editor, or due to a loop that was set up to increase or decrease speed each time through), if a fade up or a fade down was done, the lights would not properly take the speed of the sequence into account when determining how quickly to fade. For example, a fade up from 0 to 100% that normally takes one second, played at half speed, should fade up from 0 to 100% in two seconds. Instead, it would fade up from 0 to 100% in the first second, and then remain at 100% for the entire second second.
- When the Cleanup or Delay portion of a show was modified in the Show Editor, the Save button would not become enabled.
- The Sequence Editor's audio waveform display (and its positioning line) did not exactly match up with the time of the rest of the display. This was especially noticeable at very high zoom levels.
- When moving a timing in a sequence by clicking and dragging it in the Sequence Editor, sometimes the timing *before* the selected one would be moved.
- When a musical sequence was opened in the Sequence Editor, and the "View Wave Form by Default" option was selected, if the sequence's audio file no longer existed (or otherwise could not be opened), the Sequence Editor would crash.
- If a musical sequence was played in the Sequence Editor, and the sequence's audio file no longer existed (or otherwise could not be opened), nothing would appear to happen. The Sequence Editor now instead shows an error message box describing the problem.

Various internal improvements have been made as well.

## 2.4 What's New in Version 1.x.x

- [What's New in Version 1.5.0](#)
- [What's New in Version 1.4.0](#)

### What's New in Version 1.5.0

The following new features, changes, and fixes have been made for Light-O-Rama version 1.5.0:

- [Tapper Wizard Behavior Change](#)
- [Channel Deletion Fix](#)
- [Channel Button Feedback during Loops Fixed](#)
- [Animator Fix](#)

### ***Tapper Wizard Behavior Change***

When the [Tapper Wizard](#)'s "toggle" and "snap to existing events" options are used together, both the beginning time and the end time of each toggle are snapped to existing events. This causes the combination to behave in a way that is probably more similar to what most people would expect.

### ***Channel Deletion Fix***

Various problems occurred when the last channel in a [sequence](#) was deleted. These have been fixed.

### ***Channel Button Feedback during Loops Fixed***

When the [Sequence Editor](#) was used to play a [sequence](#) with a loop, and the end of the loop was reached, just before going back to the beginning of the loop, the [channel buttons](#)' color displays would sometimes briefly act upon the event just after the loop. This has been fixed. Note that it did not affect the actual display of lights; it only affected the display within the Sequence Editor itself.

### ***Animator Fix***

If the Animator was sized so that scroll bars were necessary, the "draw" and "erase" functions would act upon the wrong cells. This has been fixed.

## **What's New in Version 1.4.0**

- [Time Scale](#)
- [Copy and Paste Timings](#)
- [Animation Saved in Channel Configuration Export](#)
- [Right-Click in Animator Now Erases](#)
- [Duration in Status Bar](#)
- [Play Again](#)
- [Several Zoom Improvements](#)
- [Delete Selected Events](#)
- [Animator Efficiency](#)
- [Manual Stop Stays in Position](#)
- [Program's Main Window Remembers Its Position](#)
- [Bug Fixes and Internal Improvements](#)

### ***Time Scale***

In the [Sequence Editor](#), at the top of each sequence, a time scale is optionally displayed. Also, during play, the button to the left of this scale now displays the current time offset.

Whether the time scale is displayed or not for any particular sequence can be controlled via the View menu, or via a button on the [toolbar](#). It can be turned on or off by default using the Display

Preferences dialog on the Edit menu.

### ***Copy and Paste Timings***

In the [Sequence Editor](#), you can now copy and paste timings - that is, make new cells having the same duration and relative positions as some existing timings.

To copy a set of timings, select the range of cells that you want to copy, and then copy them in one of three ways:

- Select "Copy Timing" from the Edit menu;
- Select "[Copy Timing](#)" from the [right-click context menu](#);
- Using the [keyboard](#), hold the "Shift" key and simultaneously hit the "Delete" (or "Del") key.

Once these timings are copied, you can paste them in one of several ways:

- Via the right-click context menu:
  - "[Paste timing at \(the centisecond that was right-clicked\)](#)";
  - "[Paste timing at ...](#)", which brings up a dialog box asking the centisecond to paste to (defaulting to the centisecond that was right-clicked);
  - "[Paste timing multiple](#)", which is similar, but also asks how many times you would like to paste the timings consecutively, or if you wish to keep pasting them all the way to the end of the file.
- Via the Edit menu, using "Paste Timing". This is the same as the right-click menu's "Paste timing multiple", except that the starting centisecond defaults to the start of the current selection, rather than the right-clicked centisecond.
- Using the keyboard, hold the "Shift" key and simultaneously hit the "Insert" (or "Ins") key. This is the same as "Paste Timing" from the Edit menu.

### ***Animation Saved in Channel Configuration Export***

When a [sequence](#)'s channel configuration is saved (using "Export Channel Configuration" from the Edit menu of the [Sequence Editor](#)), the sequence's animation is saved along with it. When the channel configuration is later imported into another sequence (using "Import Channel Configuration" from the same menu), the user is given the option to import the animation as well.

### ***Right-Click in Animator Now Erases***

The right mouse button can now be used to erase cells in the Animator.

### ***Duration in Status Bar***

The status bar along the bottom of the [Sequence Editor](#) now shows not only the total time and selected time range, but also the duration of the selected time range.

### ***Play Again***

You can now tell the [Sequence Editor](#) to "play again". This causes it to play the last thing that you asked it to play, regardless of the current play settings. For example, if you choose a certain time range, with the play range set to "Selection", the Sequence Editor will play that selection. After play ends, you may fix some problem that you noticed, which causes the selected time range to change. If you wanted to play the same time range again, previously, you would have to re-select that time

range. Now, you can instead simply hit "Play Again".

There are two ways to do this: Via the "Play Again" item of the Play menu, and via a new [toolbar](#) button.

### ***Several Zoom Improvements***

Several zoom improvements have been made in the [Sequence Editor](#):

- The "Zoom In" and "Zoom Out" buttons on the [toolbar](#) have been replaced by individual buttons for "Zoom Channels In", "Zoom Channels Out", "Zoom Time In", and "Zoom Time Out".
- Preferred zoom settings can now be saved or restored via the [Zoom Preferences](#) dialog on the Edit menu. The saved zoom preferences are used by default when opening or creating new sequences.
- [Keyboard](#) shortcuts now exist to zoom in various directions: Alt-Up and Alt-Down to zoom channels in and out, and Alt-Left and Alt-Right to zoom time in and out. Also, Alt-Page-Up and Alt-Page-Down to go to the minimum or maximum channel zoom settings, and Alt-Home and Alt-End for the minimum and maximum time zoom settings.

### ***Delete Selected Timings***

In the [Sequence Editor](#), several timings can now be deleted at once, by selecting a range of timings and choosing "[Delete Selected Timings](#)" from the [right-click context menu](#).

### ***Animator Efficiency***

The Animator has been made more efficient, using less CPU during play. This improves the jerkiness that was seen on some machines during play while the Animator window was open.

### ***Manual Stop Stays in Position***

When you manually stop play of a [sequence](#) (as opposed to letting it stop by reaching its natural end), the [Sequence Editor](#) now continues to display the screen that was being displayed when play was stopped.

### ***Program's Main Window Remembers Its Position***

When you start the [Sequence Editor](#), its main window is now opened in the same position that it was in the last time it was closed.

### ***Bug Fixes, Internal Improvements***

Several bug fixes and internal improvements have been made.

## **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](#).

The following chart summarizes what features are available with each license level, with detail on each coming after 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 support 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
<a href="#">Number of LOR Units Supported</a>	0	2	4	8	UNLIMITED	UNLIMITED
<a href="#">Number of Grid Views Supported</a>	2	2	2	4	UNLIMITED	UNLIMITED
<a href="#">Full Access XML Data Storage</a>	No	YES	YES	YES	YES	YES
<a href="#">Beat Wizard</a>	(demo mode)	(demo mode)	YES	YES	YES	YES
<a href="#">VU Wizard</a>	(demo mode)	(demo mode)	YES	YES	YES	YES
<a href="#">Video Playback (Windowed Mode)</a>	No	No	YES	YES	YES	YES
<a href="#">Show On Demand</a>	No	No	YES	YES	YES	YES
<a href="#">Schedule Shows Based on Day of Year</a>	(demo mode)	(demo mode)	YES	YES	YES	YES
<a href="#">Startup Sequences in Shows</a>	(demo mode)	(demo mode)	(demo mode)	YES	YES	YES
<a href="#">Shutdown</a>	(demo mode)	(demo mode)	(demo mode)	YES	YES	YES



FEATURE	DEMO	BASIC	BASIC PLUS	STANDARD	ADVANCED	PRO
<a href="#">Sequences in Shows</a>						
<a href="#">Background Sequences in Shows</a>	(demo mode)	(demo mode)	(demo mode)	YES	YES	YES
<a href="#">Sequence in Sequence</a>	(demo mode)	(demo mode)	(demo mode)	(demo mode)	YES	YES
<a href="#">MIDI File Wizard</a>	(demo mode)	(demo mode)	(demo mode)	(demo mode)	YES	YES
<a href="#">Triggered Interactive Sequences</a>	(demo mode)	(demo mode)	(demo mode)	(demo mode)	YES	YES
<a href="#">Show Startup Options</a>	No	No	No	No	YES	YES
<a href="#">Execute Windows Shell Commands</a>	No	No	No	No	YES	YES
<a href="#">Full Screen Video Playback</a>	No	No	No	No	YES	YES
<a href="#">Multiple Networks</a>	No	No	No	No	YES	YES
<a href="#">Create Protected Sequences</a>	No	No	No	No	YES	YES
<a href="#">DMX Intensity</a>	No	No	No	No	YES	YES
<a href="#">Native DMX Devices Supported</a>	No	No	No	No	YES	YES
<a href="#">Dasher Controllers Supported</a>	No	No	No	No	(S4, not S5)	(S4, not S5)
<a href="#">X10 Controllers Supported</a>	No	No	No	No	(S4, not S5)	(S4, not S5)
<a href="#">Digital IO Cards Supported</a>	No	No	No	No	(S4, not S5)	(S4, not S5)
<a href="#">BSOFT Digital IO Cards Supported</a>	No	No	No	No	(S4, not S5)	(S4, not S5)
<a href="#">Motion Effects</a>	Create Favorites	Create Favorites	Create Favorites	Create Favorites	Create Favorites	Create favorites and use in sequences
<a href="#">Intensity Files and Enhanced Networks</a>	No	No	No	No	No	YES

## 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 [tracks](#); however, certain license levels will only support a limited number of tracks in any given sequence. The Demo, Basic, and Basic Plus levels support two tracks per sequence, Standard supports four, and Advanced and higher support an unlimited number of tracks per sequence.

You will not be able to add new tracks to a sequence if it already has the maximum supported number. However, you can still open sequences that have more tracks (for example, a sequence that was created by someone who has a higher license level than you do). In this case, the extra tracks will be displayed in the Sequencer, but you will not be able to modify them, and any [lighting effects](#) in those tracks' [channels](#) will not actually control your lights during play.

## 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. 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.

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 (Windowed Mode)

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 (or audio visualization) will only be displayed for license levels Basic Plus and higher. License level Basic will not display video (or audio visualization).

Additionally, your license level may or may not support video playback in full screen mode; see "[Full Screen Video Playback](#)" for details.

## 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

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.

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.

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](#)".

## Full Screen Video Playback

When a [musical sequence](#) is based upon a video file (such as a WMV file), the Advanced license level or higher can show the video in full screen mode (and similarly, it can show full screen audio visualizations for musical sequences based upon audio files).

Lower license levels cannot show full screen video (or full screen audio visualizations), but they may still be able to show video and visualizations in a window instead of in full screen. See [Video Playback \(Windowed Mode\)](#) for details.

## 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.

## 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.

## 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](#).

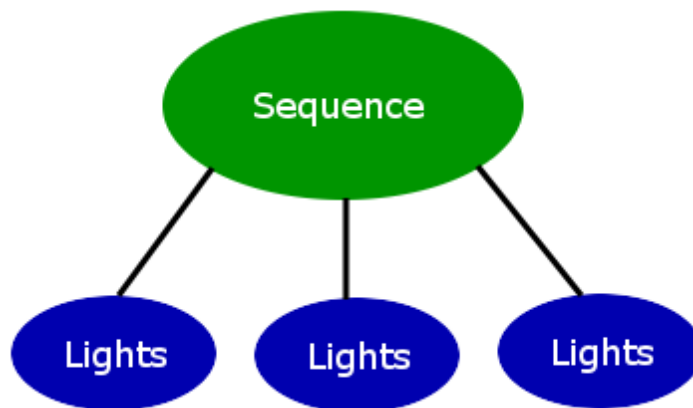
## Intensity Files and Enhanced Networks

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.

# 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:

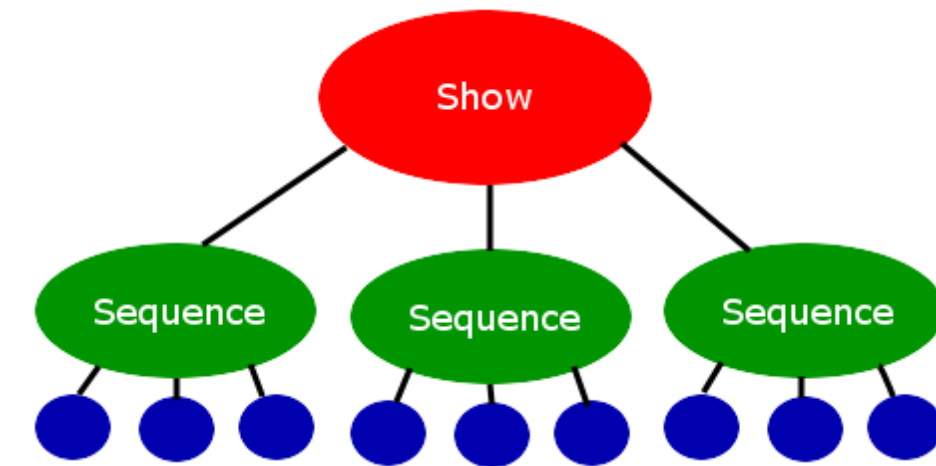
At the lowest level, a [sequence](#) contains commands to be sent to your Light-O-Rama [hardware](#), which will actually control your lights. For example, a sequence might contain a command to turn on one string of lights while making another string twinkle, and two seconds later, fading the first string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



A sequence contains commands to control lights

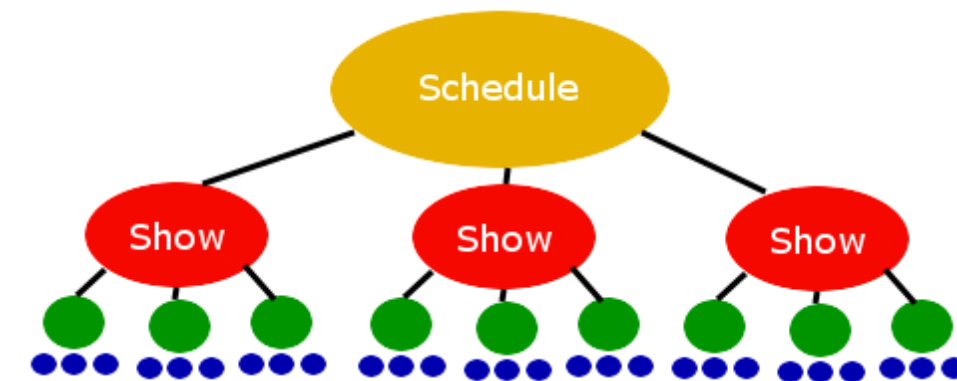
Typically, people build a sequence per song that they want in their display (known as [musical sequences](#)), each one containing all of the lighting commands for its particular song. People also build [animation sequences](#), not associated with any particular song, and often build one for each independent 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.



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.

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](#)". Additionally, for RGB devices, capable of changing color, three independent channels (a red, a green and a blue) can be grouped together into a single [RGB channel](#).

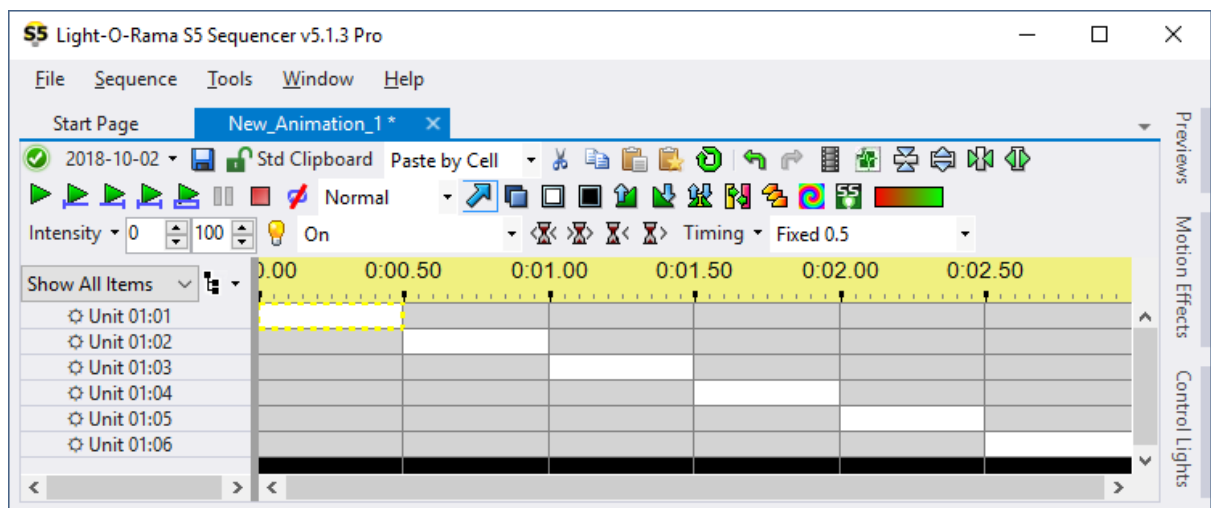
There are two types of sequences: [animation sequences](#) and [musical sequences](#). Musical sequences are associated with songs (or sound effects, videos, et cetera); the lights can be made to turn off and on (and do other [effects](#)) in sync with the music. Animation sequences are not associated 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.

The Light-O-Rama [Sequencer](#) is used to create and modify sequences. After creating sequences with the Sequencer, you can package sequences together into a [show](#), using the [Show Editor](#), and then [schedule](#) shows to be played at certain times using the [Schedule Editor](#). The [Show Player](#) (if enabled, via the "Enable Schedule" on the Light-O-Rama [Control Panel](#)) will monitor your schedule and play your shows at the appropriate times.

For example, here is a simple sequence, containing six channels, as represented in the Sequencer. As time passes (from left to right), you can see that the first channel is turned on, then it is turned off and the second channel is turned on, then *that* is turned off and the third channel is turned on, and so forth, through the six channels:

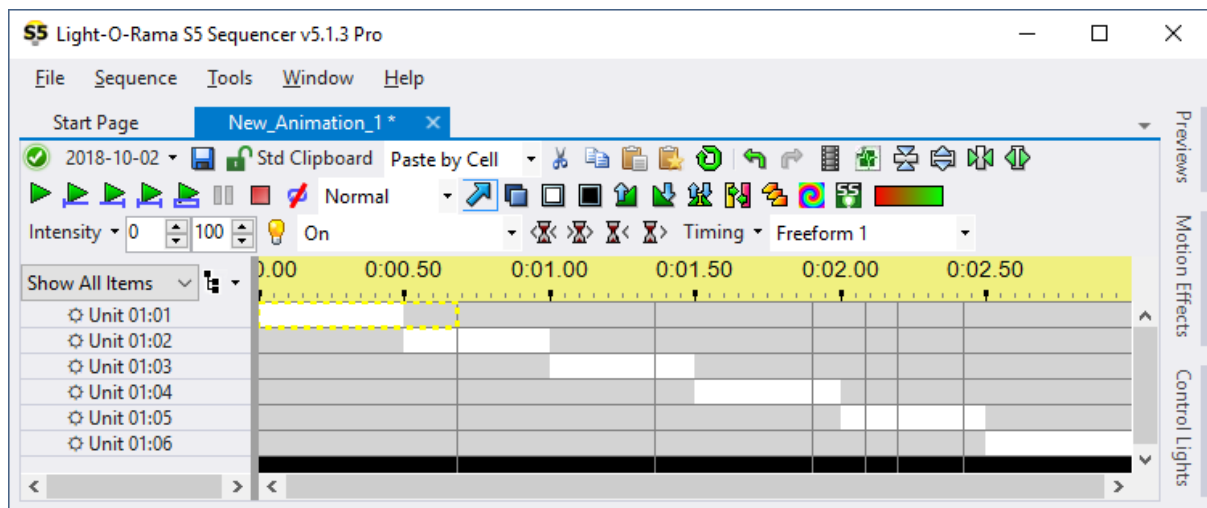


A simple sequence, with lights turning on and off, chasing through six channels

The vertical lines in the 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](#). A sequence can have more than one timing grid; which one is currently displayed can be controlled via the "Timings" dropdown box in the [Tracks and Timings toolbar](#). For example, the timing grid currently displayed in the sequence shown above has a timing every half a second, and is shown in the dropdown box as "Fixed Grid: 0.50". "Fixed Grid" in this means that the timings are all a certain length of time apart, and that they cannot be moved, deleted, or added to; "0.50" is that length of time (in this case, half a second).

In addition to "fixed" timing grids, a sequence can also have "[freeform](#)" timing grids. In a freeform timing grid, timings can be at any location, and can be moved, added, and deleted. For example, here is the same sequence, but now with a freeform timing grid displayed:



The same 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.

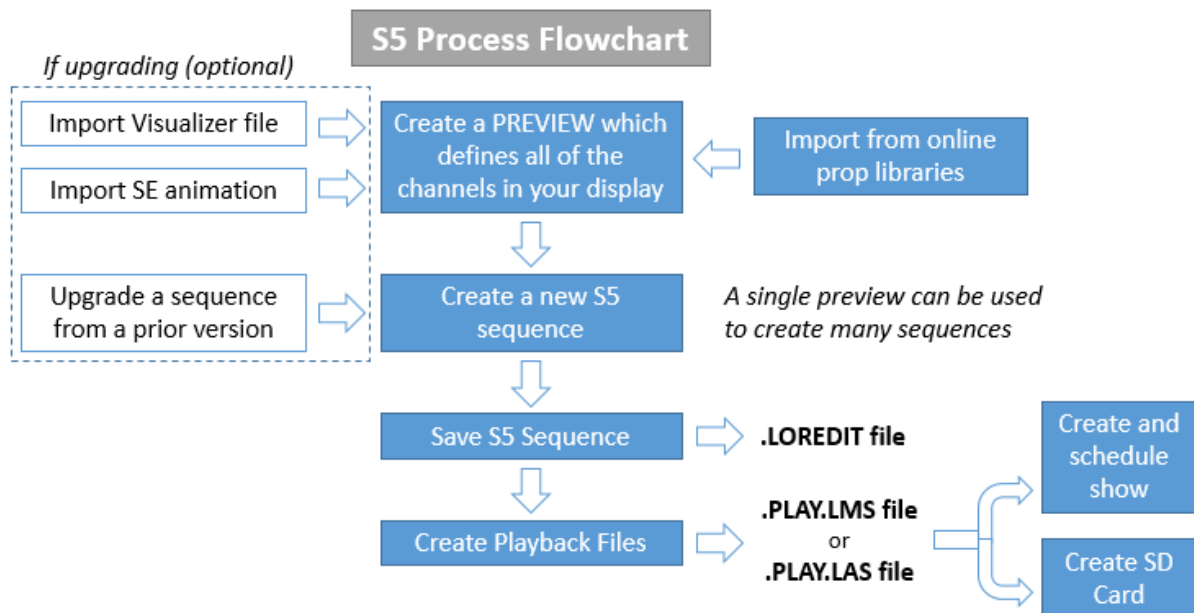
For example, perhaps you might want a sequence to have some effects that are following the drumming in a song, and other effects that are following the lead guitar. You could simply add timings representing both the drumming and the guitar to a single timing grid, but if you do, it could be difficult 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 dropdown 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.

A sequence can contain multiple [grid views](#). A grid view is a group of [channels](#). Each grid view can have its own channels, or can share channels with other grid views, or both. Each grid view can be switched to display any particular timing grid at any time, independently of every other grid view.

Animation sequences (but not musical sequences) can be set up to use [loops](#). 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.

A sequence can also contain another sequence as a [subsequence](#). 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.

Each sequence must have a [preview](#) associated with it. This lets you draw how your lights will be laid out. When you play a sequence in the Sequencer and display its preview, the drawing will behave just like your lights will - your drawing will turn on and off, fade up and down, and so forth.



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

- [The Sequencer](#)
- [Previews](#)
- [Animation Sequences](#)
- [Musical Sequences](#)
- [Grid Views](#)
- [Channels](#)
- [RGB Channels](#)
- [Timings](#)
- [Effects](#)
- [Loops](#)
- [Subsequences](#)

#### 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.

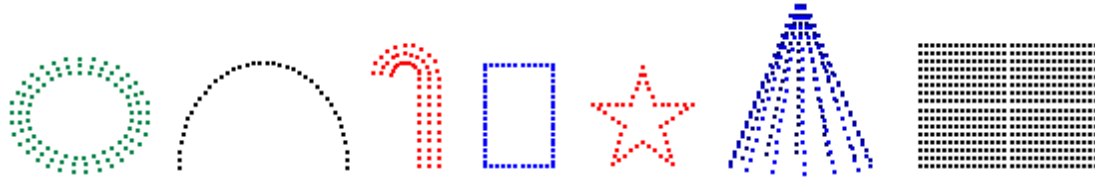
A preview can be a quick rough sketch, or a detailed, highly realistic depiction of your display. It is up to you to decide how much effort you want to put in to it. In any case, the preview must define every channel that will be controlled by your sequences.

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.



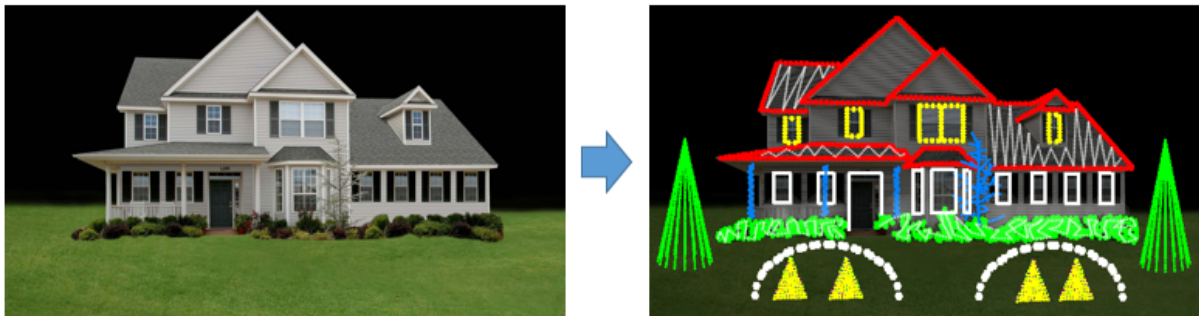
A sample of some of the shapes that come built-in to S5

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.

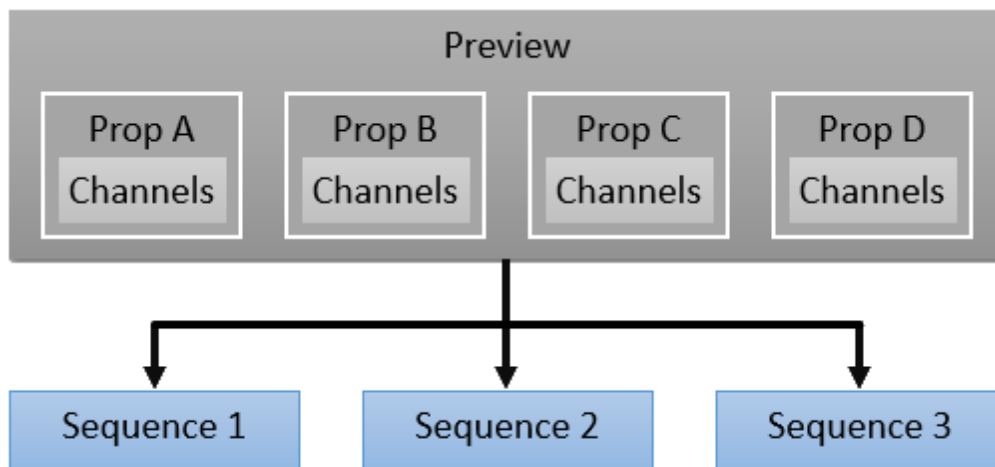
## Background Image

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.

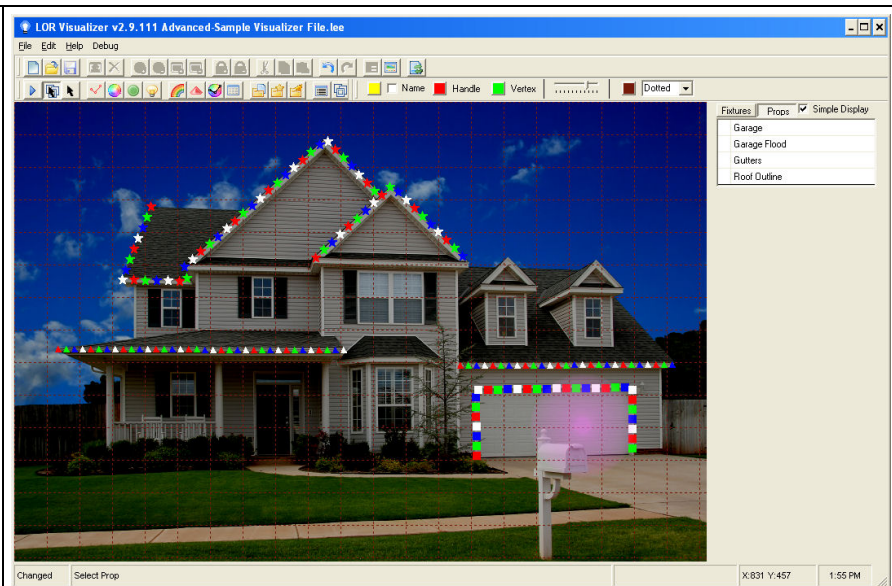


## Importing a Preview

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

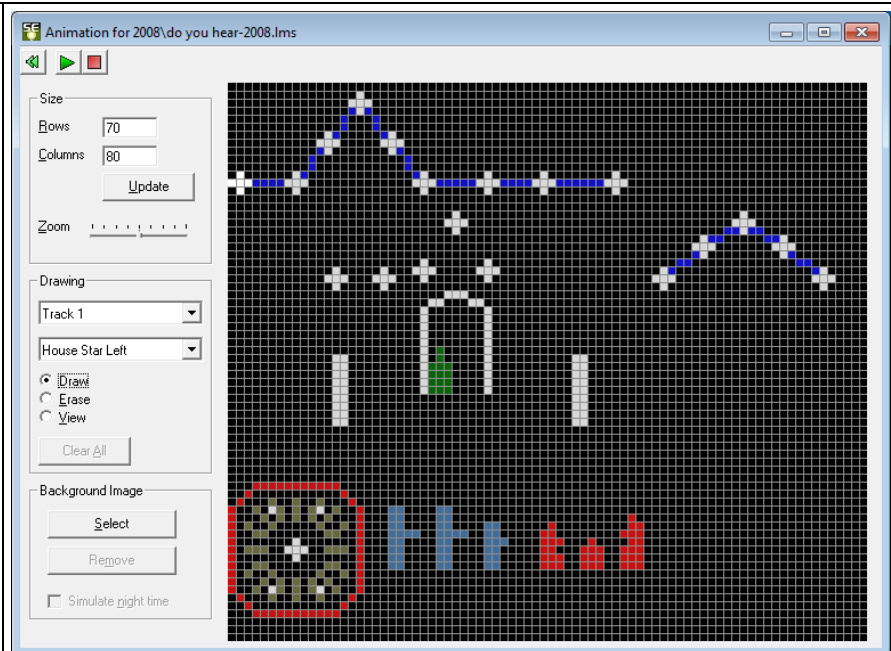
### Import an S4 Visualizer file

You can perform the import from the Preview Management window, when upgrading a sequence, or from within Preview Design



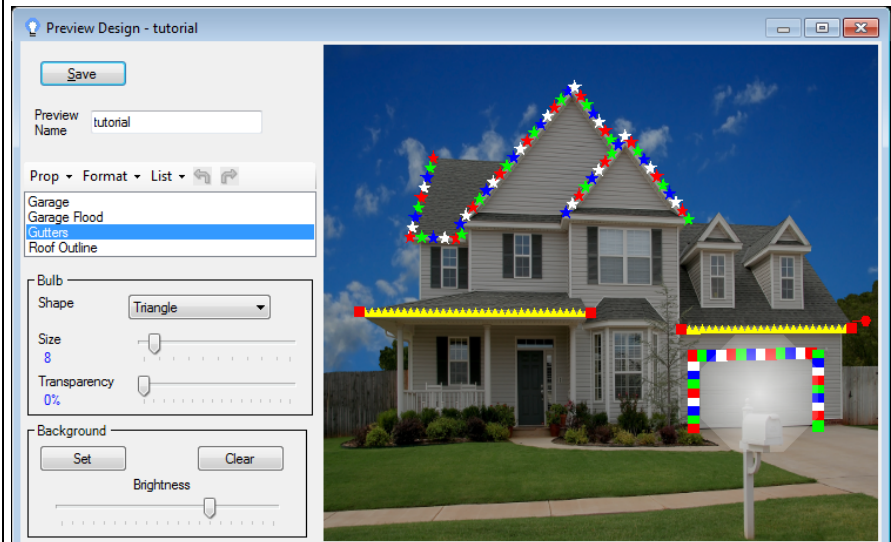
Import a block-style animation defined in a legacy sequence

You can perform the import from the Preview Management 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



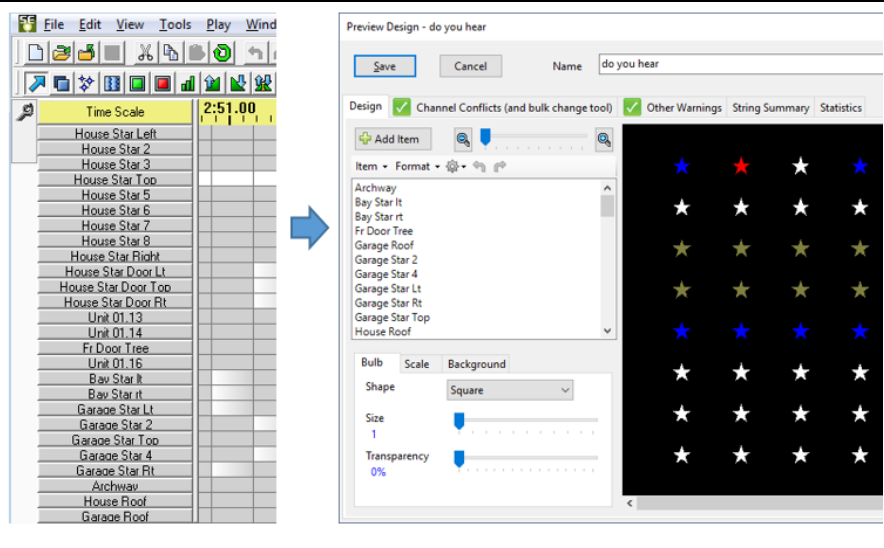
Import a preview from an S5 sequence sent to you from someone else

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



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.



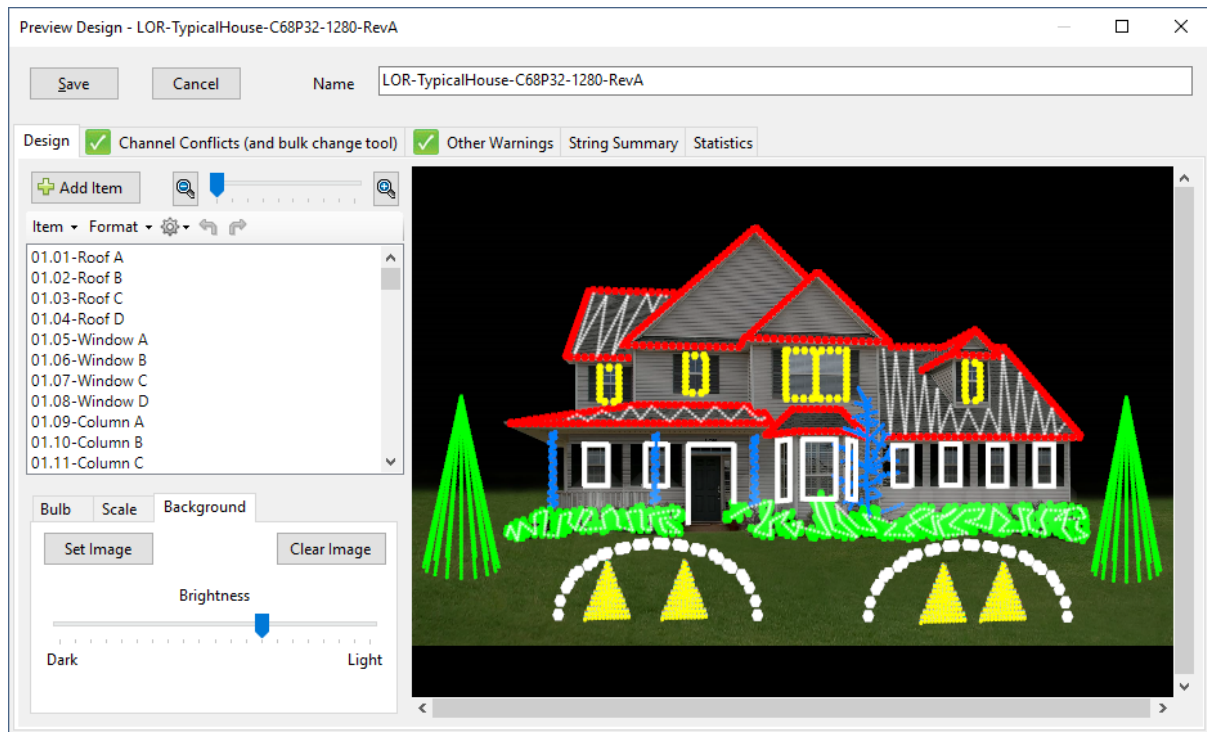
## The Preview Design Window

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.





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](#).



New Animation Sequence

Sequence Author (cannot be changed later):  
Matt Brown

Select Preview

A preview defines all of the display elements and channels in your sequence

Existing Preview Quick Preview

2017 class sample

Length of animation (not including loops):  
1:00.00 ☐ Use Loops

Initial Timing

☒ Tenth second intervals  
☐ Half second intervals  
☐ One second intervals  
☐ Custom interval  
0.05  
☐ Create an empty freeform timing grid

Default number of motion effect rows for pixel props: (requires PRO license) 1

☒ Save these choices as defaults

Create Cancel

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.
- 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](#).

New Musical Sequence

Sequence Author (cannot be changed later):  
Matt Brown

Select Preview

A preview defines all of the display elements and channels in your sequence

Existing Preview Quick Preview

LOR-TypicalHouse-C68P32-1280-RevA

Music

File name Wizards In Winter.mp3

Artist Trans-Siberian Orchestra

Title Wizards In Winter (Instrumental) (Album Version)

Album The Lost Christmas Eve

Initial Timing

Use a Wizard to create timings

☒ Not now, maybe later

☐ Use the MIDI Wizard

☐ Use the Tapper Wizard

☐ Use the Beat Wizard

☐ Use the VU Wizard

Create equally spaced timings

☐ Tenth second intervals

☒ Half second intervals

☐ One second intervals

☐ Custom interval

0.05

Default number of motion effect rows for pixel props: (requires PRO license) 1

☒ Save these choices as defaults

Create Cancel

The New Musical Sequence dialog

#### 4.1.4 Channels

A channel is a part of a [sequence](#), representing a particular circuit on a particular [controller](#), which you have lights hooked up to. The [Sequencer](#) can be used to assign [effects](#) to channels, to make the lights turn on and off, fade, shimmer, twinkle, and so forth.

Channels have several properties that define exactly which string of lights they relate to:

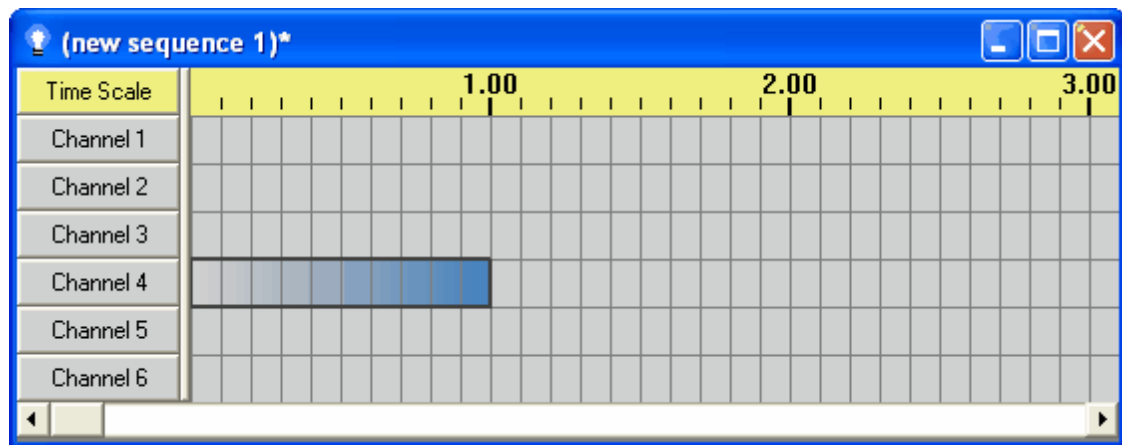
- Device type, which is the type of [controller](#) (for example, a [Light-O-Rama controller](#) or an X10 controller);
- Network, which is the COM port that this channel's controller is hooked up to the PC over;
- Unit, which is the unit ID of the controller, allowing different controllers to be distinguished from each other;
- Circuit, which represents one particular string of lights hooked up to the controller.

Not all device types have all of these properties - for example, X10 controllers have a unit ID, but no circuit number. Please see the help pages on the various types of [controllers](#) for details.

Additionally, there is a "special" device type: a [subsequence](#). A channel set up with this device type does not represent a strand of lights. Instead, it represents another sequence, that the main sequence can turn on and off at different points in time.

Channels also have names and colors associated with them. These have no effect on the way that your lights will look; they only effect how the sequence is displayed in the Sequencer. It could be convenient to set them up in meaningful ways. For example, you might want to name the channel associated with a string of red lights running through the bushes in your front yard as "Front Bushes (Red)", and set its color to some shade of red.

In the Sequencer, channels are represented as horizontal rows. On the left side of a row is a [channel button](#), labelled with the name of the channel; on the right side is a grid showing what effects are assigned to the channel at what times. For example, the following sequence has six channels, and they are named, simply, "Channel 1" through "Channel 6". One of them ("Channel 4") has an effect: a fade up, from zero seconds to one second:



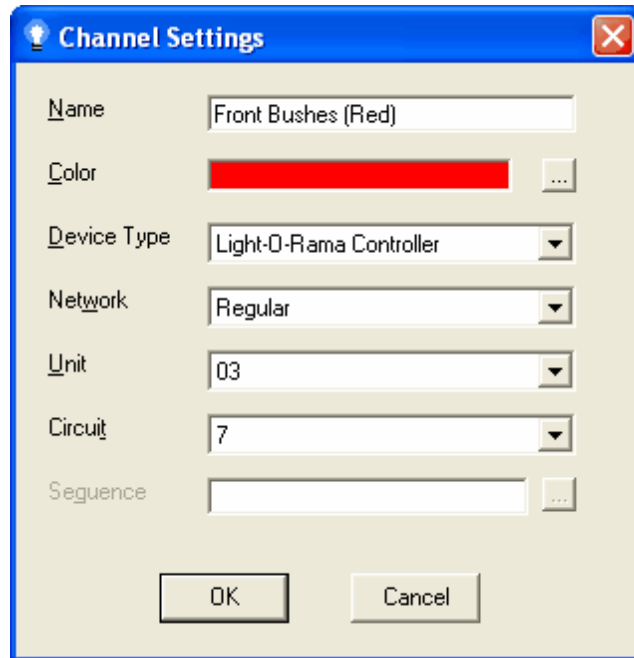
A sequence with six channels - one on each row - and a fade up on the fourth channel

To turn a channel on or off at a certain time, or do other effects such as fades or twinkles, select the [effect](#) that you want, and click on the cell or cells for the times that you want that effect to take place. See [Editing Sequences Using the Keyboard](#) and [Editing Sequences Using the Mouse](#) for more details on this.

Between the channel buttons and the grid is a thick grey vertical bar. You can change the size of the channel buttons by clicking and dragging this bar. Clicking the bar (without dragging) will hide the channel buttons entirely; clicking it again will make them reappear. You can also control whether

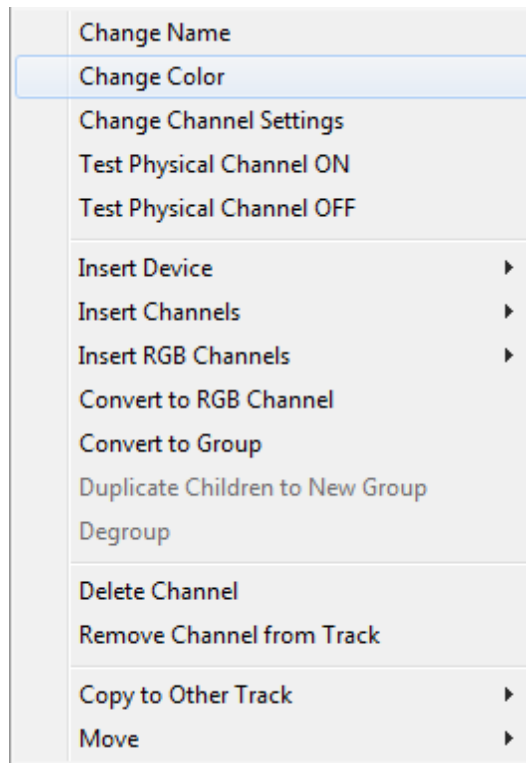
channel buttons are displayed or hidden from the View menu, and from the [standard toolbar](#), and set your default preference in the Display Preferences menu.

Clicking on a channel's button brings up the [Channel Settings](#) dialog. This allows control over various things like the channel's name, color, unit, and circuit:



The Channel Settings dialog

Right-clicking on a channel's button brings up a [popup menu with various channel-related tools](#):



**The Channel Button Popup Menu**

Channel buttons 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.

When you play a sequence in the Sequencer, its channel button 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. If you do not wish to see the channel buttons change color during play, you can turn it off temporarily in the Play menu or the [standard toolbar](#), or set your default preference in the Display Preferences menu.

The Channel Configuration screen can be used to view and change many channels' settings at once:



The Channel Configuration screen, showing several channels simultaneously

A channel can be in a single [track](#), or shared among more than one track. By default, there is one track in a sequence, and all channels in the sequence are in that track. To share a channel between tracks, do *not* simply set up two different channels having the same unit number, circuit number, et cetera in the two tracks; this will have unexpected and undesired results, as the two different channels will compete with each other for control of the same circuit. Instead, share a channel by copying it to the other track. There are several ways to do this; see the help page on [tracks](#) for details.

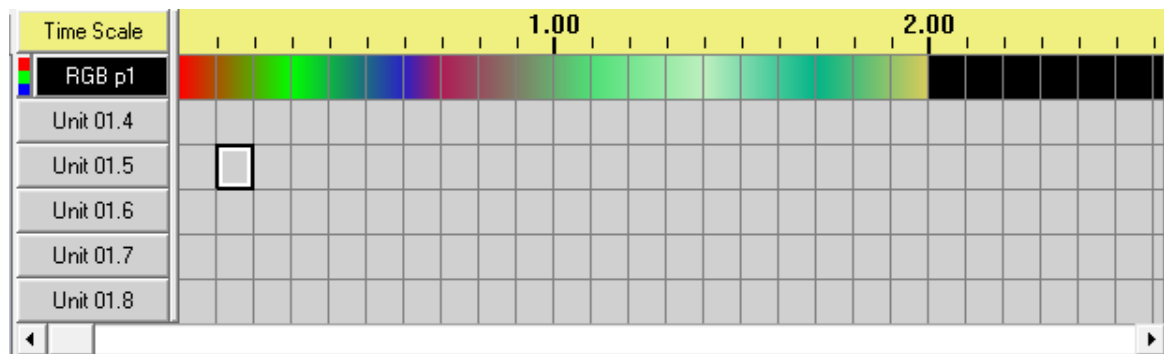
For RGB devices, which can change colors, three separate channels (a red, a green, and a blue) can be grouped together into a single [RGB channel](#).

For more detailed information on how to create and modify channels in the Sequencer, please see:

- [Channel Buttons](#)
- [Channel Settings](#)
- [Channel Buttons' Popup Menu](#)
- The Channel Configuration Screen

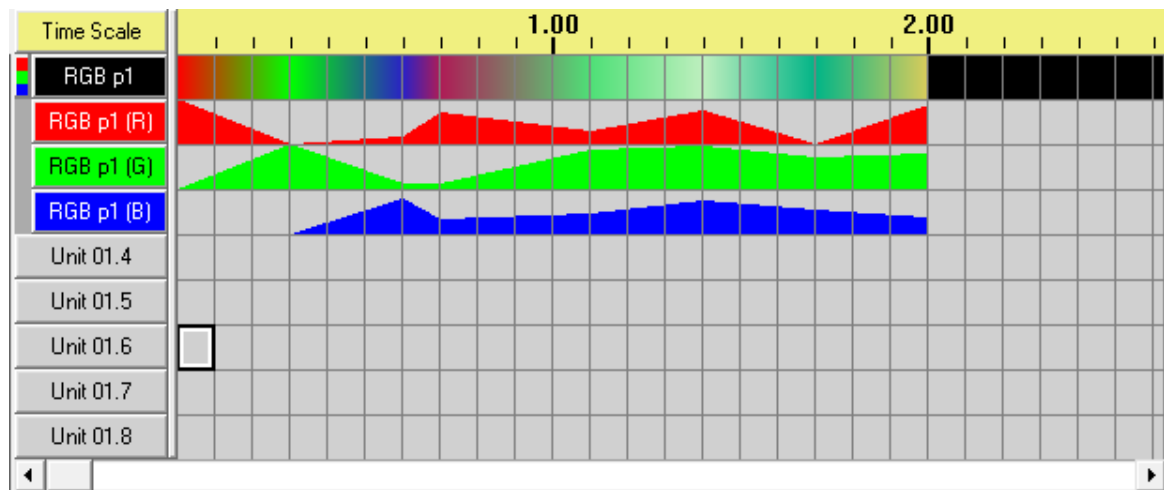
#### 4.1.5 RGB Channels

An RGB channel is a group of three [channels](#) - a red channel, a green channel, and a blue channel - representing a single pixel on an RGB device (which can change colors), such as a pixel on a Cosmic Color Ribbon. In the [Sequencer](#), an RGB channel is represented by a black row in a [sequence](#) (as opposed to normal channels, which are represented by grey rows). [Lighting effects](#) on an RGB channel are represented in the row as colors:



**A sequence with an RGB channel followed by several normal channels**

To the left of an [RGB channel's button](#) is a small button with red, green, and blue stripes. Clicking on this button will expand the view of the RGB channel so that its constituent red, green, and blue channels can also be seen (and clicking it again will collapse the view to hide those constituent channels):



**The same sequence, with the view of the RGB channel expanded so that its constituent channels can be seen**

The RGB channel's lighting effects can be modified by applying tools (such as Shimmer or Toggle or Fade Up) to its constituent channels, but they can also be modified directly by using the Color Fade tool on the RGB channel itself. 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.

An important thing to note here, though, is that the colors displayed on your screen in the Sequencer are not necessarily the same colors that will appear on your actual RGB device, and in some cases may actually be very different. Different RGB devices may produce different colors when their constituent R, G, and B channels are sent 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.

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 20 to 80 (because the effect



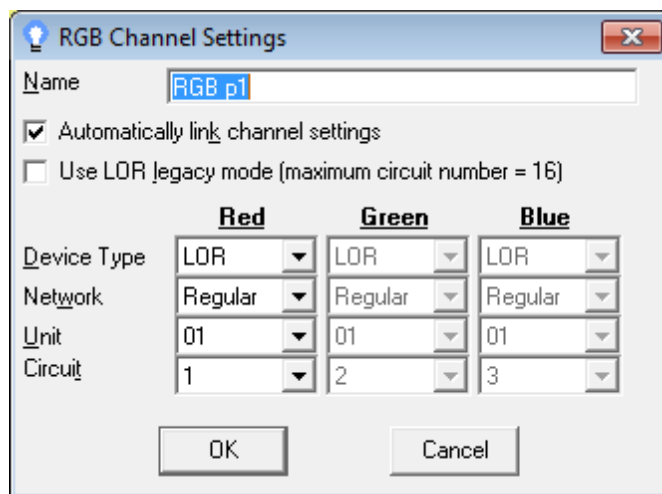
preceding the empty area ended at intensity 60, and the effect following the empty area started at 80). On an RGB channel, the Fill tool will instead cause a color fade from the preceding color to the following color, hopefully allowing you to quickly set up smooth color transitions across several different 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 Shimmer or Toggle or Fade Up, can also be applied to RGB channels. Doing so will cause the tool to be applied to each of the RGB channel's constituent channels. For example, applying the Fade Up tool, with intensities 0 to 100, to an RGB channel will cause each of the red, green, and blue channels to fade up from 0 to 100, thus making the RGB channel itself fade from black to white.

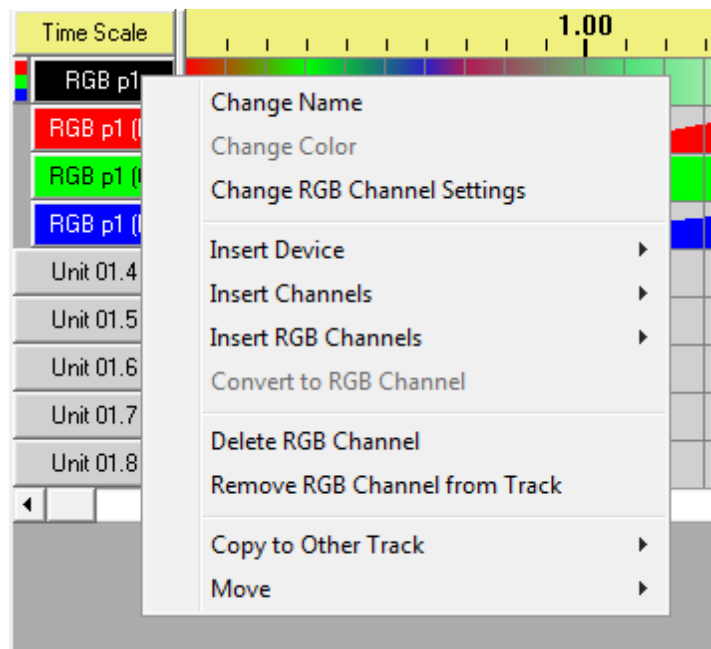
Such tools can also be directly applied to the constituent channels of an RGB channel (as opposed to the RGB channel itself), allowing for finer grained control over the behaviour of the RGB channel.

Clicking on an [RGB channel's button](#) will open the [RGB Channel Settings dialog](#), allowing control over various settings such as the [units](#) and [circuits](#) of the constituent channels:



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:

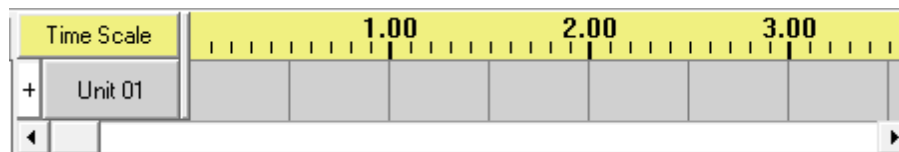


The RGB Channel Button Popup Menu

RGB channels can be added to a sequence in a few ways, all via the Channel/RGB Channel Button Popup Menu. First, the "[Insert Device](#)" menu item has options to insert a [Cosmic Color Device](#) or a [generic RGB device](#), both of which will result in RGB channels being added to the sequence. Second, the "[Insert RGB Channels](#)" menu item will create new RGB channels. Third, existing regular channels can be converted to RGB channels via the "[Convert to RGB Channel](#)" menu item.

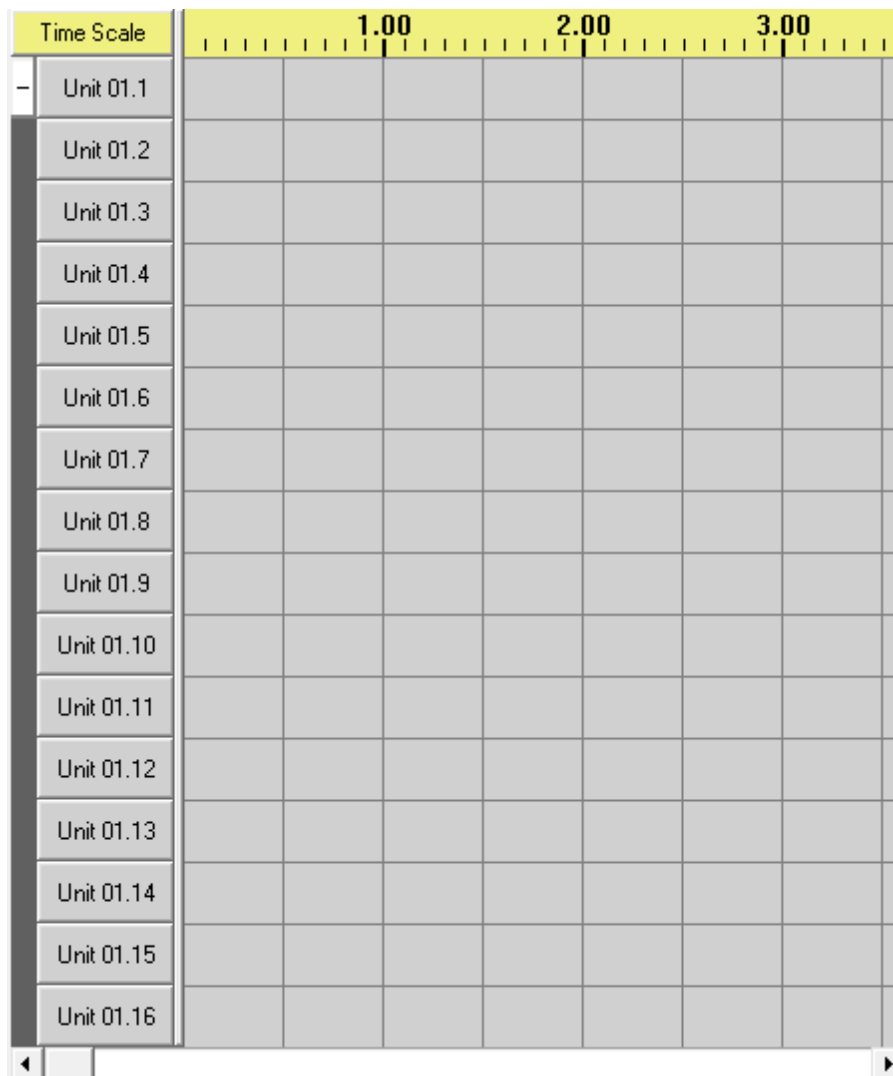
#### 4.1.6 Channel Groups

A channel group is a set of [channels](#) or [RGB channels](#) (or, conceivably, other channel groups) that is nested together, so that it can be collapsed down to a single row in the [sequence's](#) display, or expanded to show all of its members, or (in some cases) partially expanded to show some of its members. When a channel group is first created (or when a sequence with one is first opened or created), the channel group is shown as a single row:



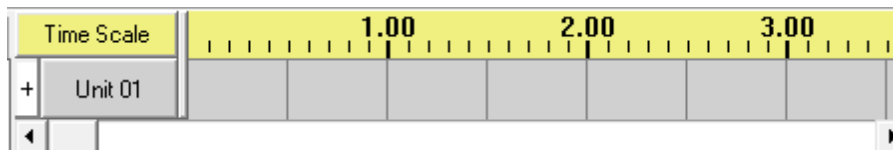
An unexpanded channel group

To the left of the channel group's row is a small white button with a "+" sign. Left-clicking on this expands the channel group to show all of its rows (and the "+" sign changes to a "-" sign):



The same channel group, fully expanded

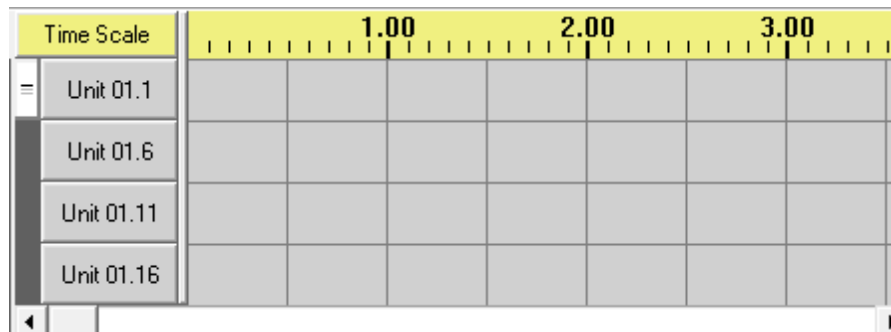
Clicking the small white button again collapses the channel group back to a single row:



The same channel group, collapsed again.

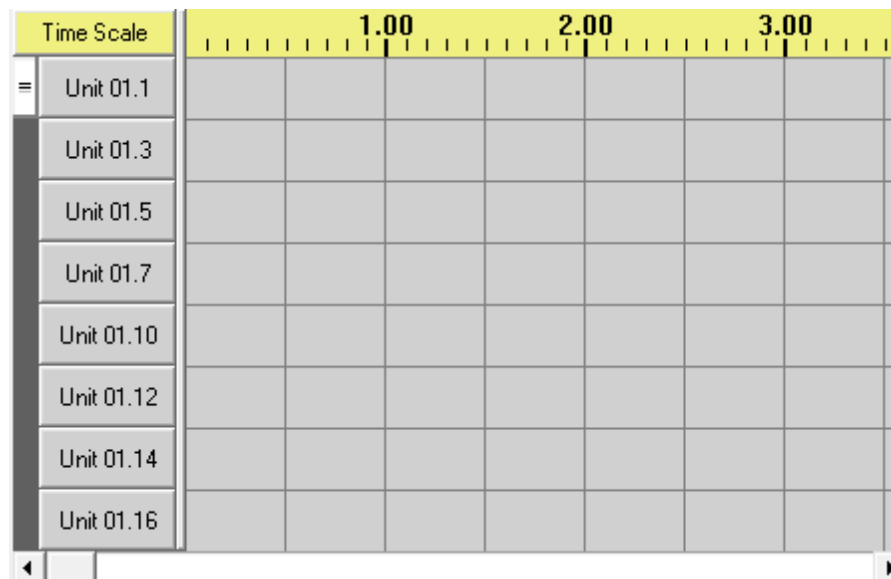
If you hold the Shift key while clicking, not only the channel group, but also all of its descendants (with the exception of RGB channel descendants) will be expanded if it is collapsed, and all of its descendants collapsed if it is expanded. Holding both the Ctrl and Shift keys will cause all of its descendants (including RGB channels) to be expanded if it is collapsed, and all of its descendants to be collapsed if it is expanded.

Depending upon how many channels are in the channel group, right-clicking on the small white button may partially expand the channel group, showing the first and last channels, plus some approximately equally spaced channels in between:



The same channel group, partially expanded.

Right-clicking on the small white button again may partially expand it further, showing more channels:

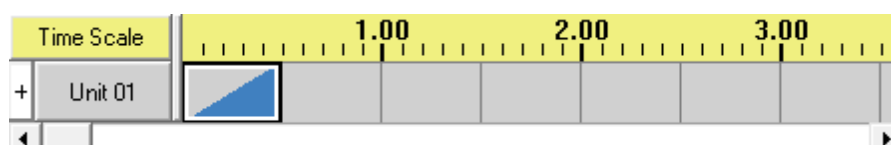


The same channel group, partially expanded further

If you keep right-clicking, eventually the channel group will be fully expanded, after which another right-click will collapse it back to a single row. Exactly how many right-clicks it takes to go from collapsed to fully expanded depends upon the number of channels in the channel group.

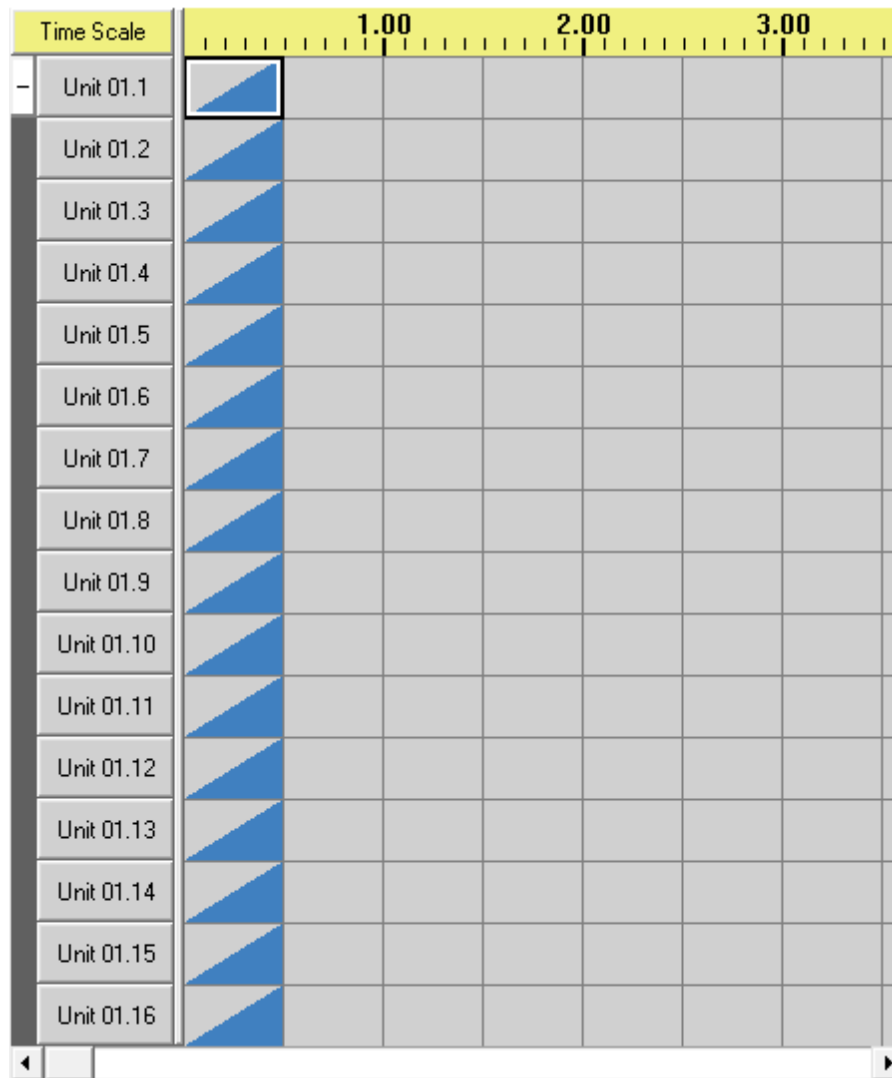
If you hover your mouse over the button, it will show the name of the channel group it operates on, and whether clicking on it will cause that group to expand or collapse.

When a channel group is collapsed, the [effects](#) displayed on its row are the events of its first channel (or RGB channel). However, applying a tool to the row actually applies it to all of its members. For example, with the channel group compressed, if you apply the Fade Up tool to its first cell, the result will look like this:



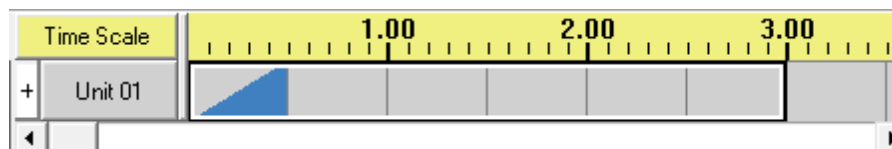
The same channel group, collapsed, after applying the Fade Up tool while it was collapsed

But when you expand the channel group, it becomes apparent that the Fade Up tool was applied to all of the channel group's members:



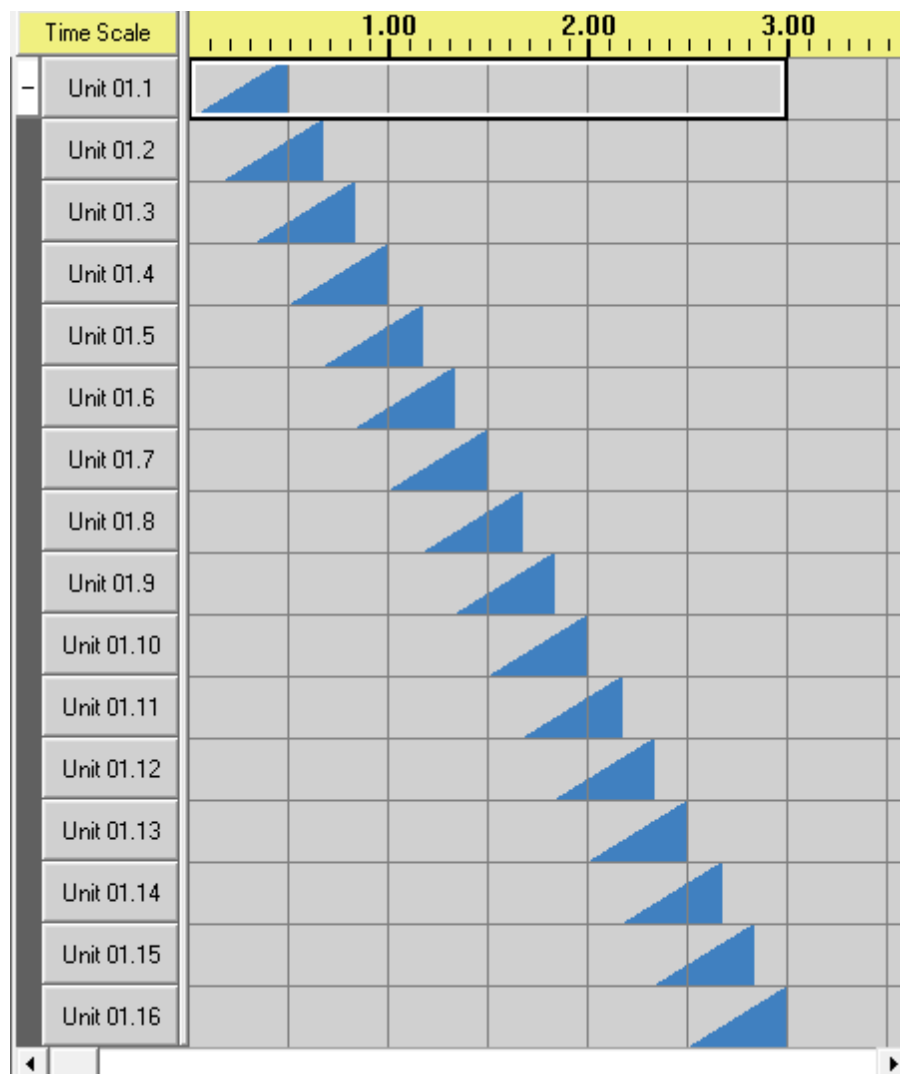
The same channel group, expanded

If you then collapse the channel group, and apply the Chase tool to it while it is collapsed, no change will be evident from what is displayed:



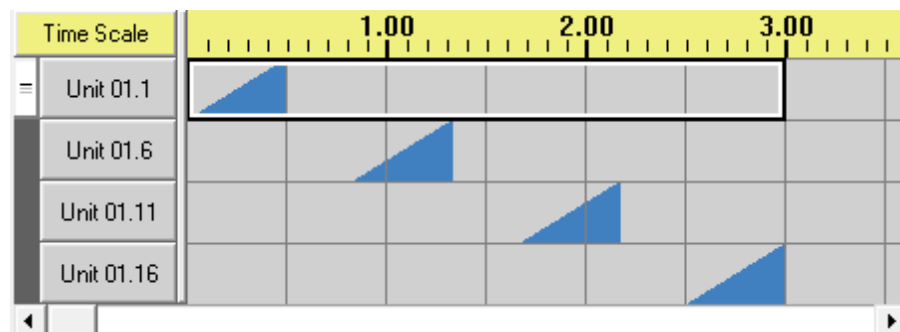
After applying the Chase tool, while collapsed

But a change did happen - the Chase tool was applied to the entire channel group. The only reason that no change is evident from what is displayed is because when the channel 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 channel group reveals the change:



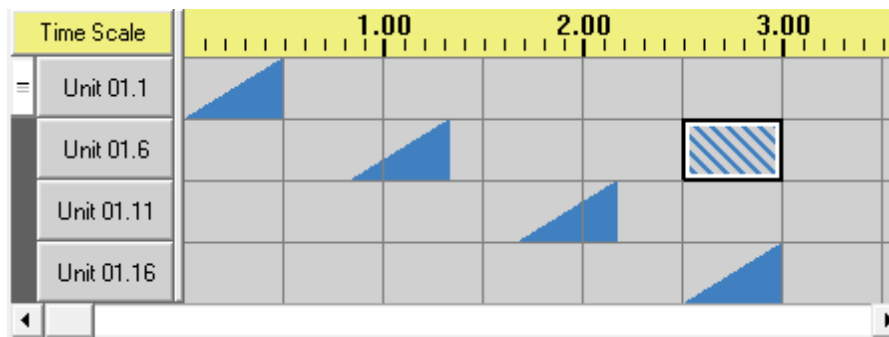
Expanded, after a chase

If the channel group is then partially expanded, the chase can be partially seen:



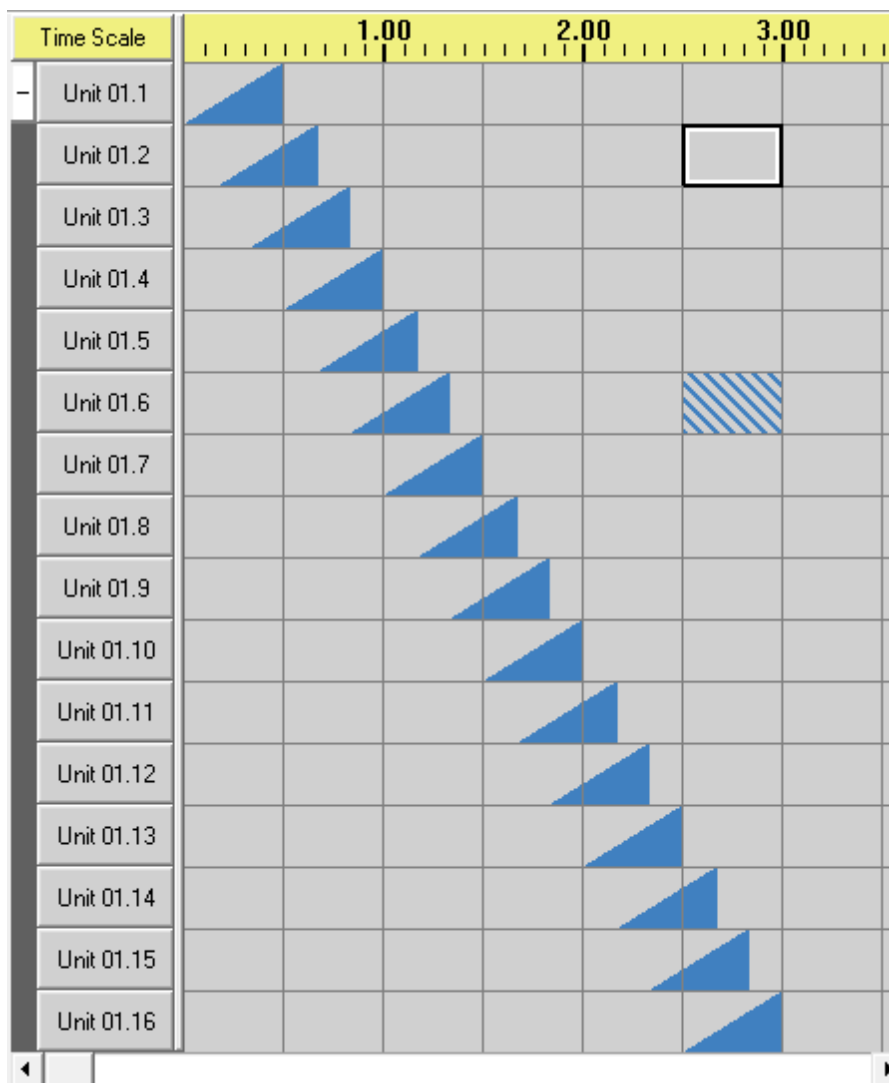
Partially expanded, after a chase

While it is partially expanded, applying a tool to a single row will apply that tool only to that channel. For example, if the Shimmer tool is applied to the row for "Unit 01.6", the result will look like this:



After a shimmer is applied to a single row while partially expanded

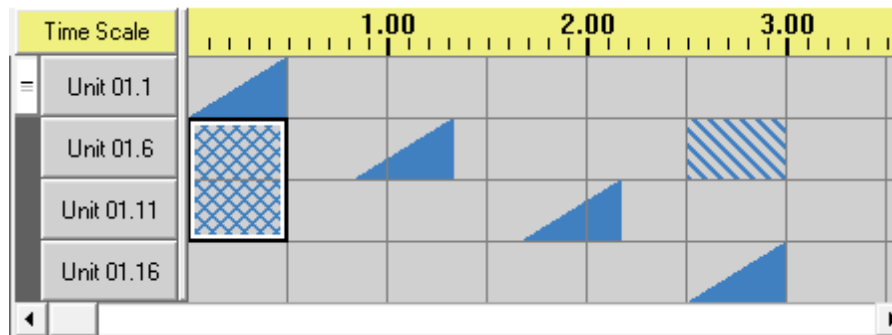
Expanding the channel group reveals that the shimmer really was applied only to that channel:



Fully expanded, after a single row shimmer

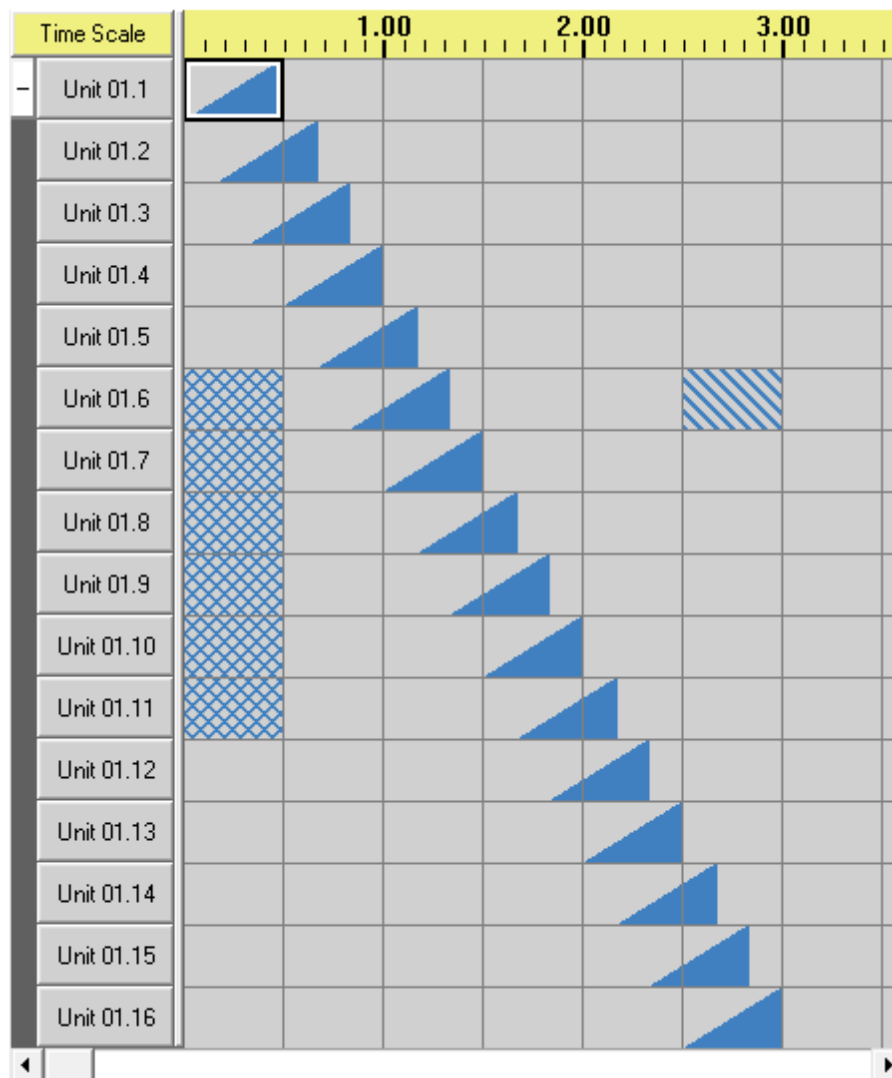
But if a tool is applied to more than one row while partially expanded, it is actually applied to all channels from the first selected row to the last, regardless of whether they are explicitly displayed or not. For example, if (while partially expanded) the Twinkle tool is applied to "Unit 01.6" and "Unit 01.11",

the result will look like this:



Partially expanded, after a twinkle is applied to multiple rows

But expanding the channel group reveals that the twinkle was applied not just to Unit 01.6 and Unit 01.11, but also to all channels in between them:



Expanded, after a twinkle was applied to multiple rows while partially expanded



Channel groups can be created via the [Insert Device dialog](#). If the "Add as a Group" checkbox on that dialog is checked, the device will be added as a channel group; if it is unchecked, the device will be created as raw channels and/or RGB channels.

You can also convert existing channels (and RGB channels, etc.) so that they become part of a new channel group, by using "[Convert to Group](#)" on a [channel button's right-click popup menu](#). You can "degrou" a group -- that is, move its children to its parent, and then remove it itself from its parent -- by using "[Degroup](#)" on that same popup menu.

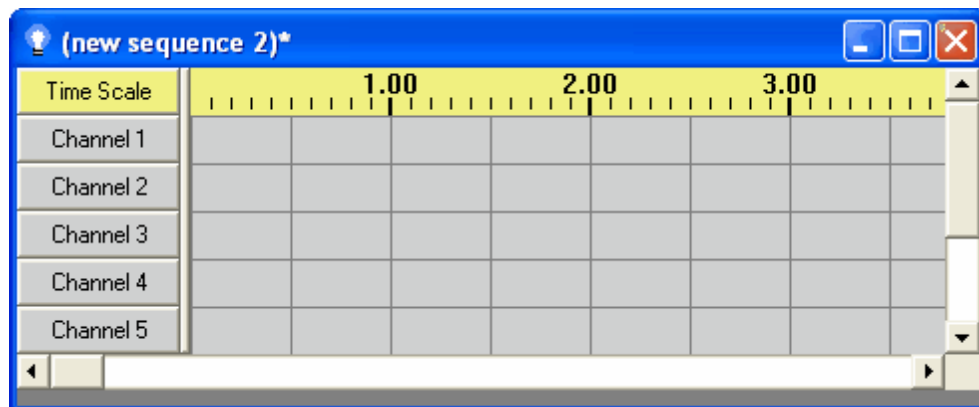
## Cosmic Color Device Channel Groups

When a [Cosmic Color Ribbon \(or Bulb\)](#) or a [Cosmic Color Array](#) is created as a group, and it contains macro channels, it is treated a little differently than other channel groups. First, those macro channels will only be displayed when the channel group is fully expanded, and never when it is only partially expanded. Instead, when it is partially expanded, the last displayed row will be the last RGB channel. Second, if a tool is applied to the group while collapsed, it is only applied to the group's RGB channels, not to its macro channels.

### 4.1.7 Timings

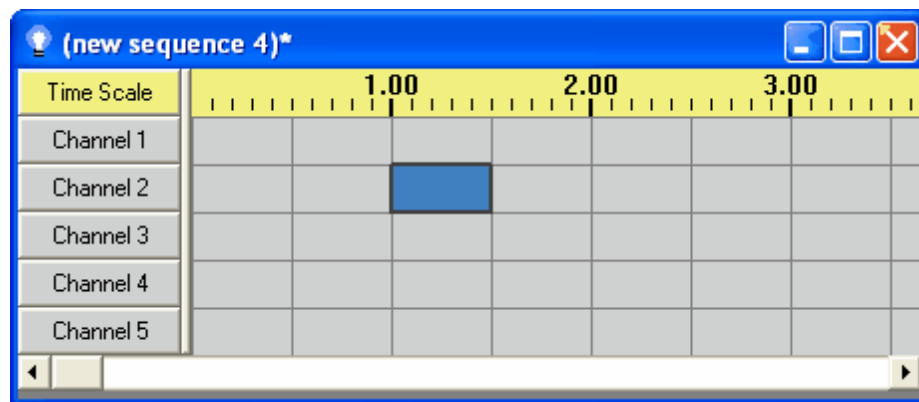
Timings are the times in a [sequence](#) at which you can command the lights to do various [effects](#) - to turn on, turn off, fade up, fade down, and so forth.

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:



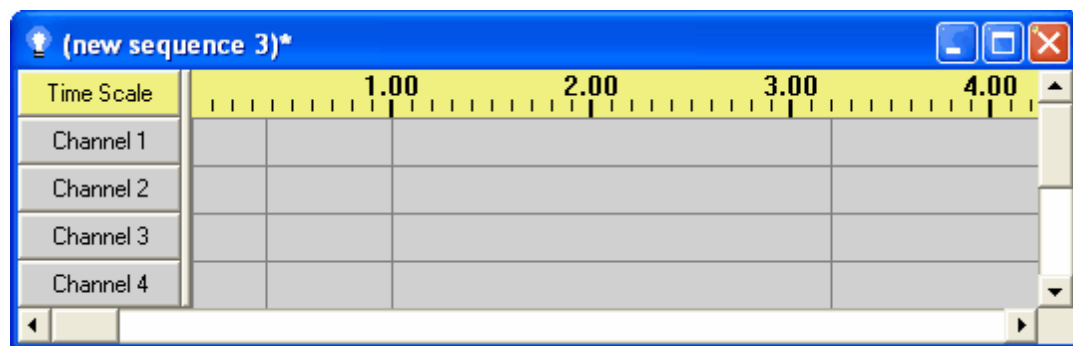
A sequence with timings every half a second

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 [channel](#). The space between two timings can be set to an effect by selecting the appropriate tool (such as the "Fade Up" tool) and clicking on the space (please see "[Editing Sequences Using the Keyboard](#)" and "[Editing Sequences Using the Mouse](#)" for details). For example, selecting the "On" tool and clicking the cell between 1 second and 1.5 seconds for Channel 2 results in:



The second channel 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 (or, if the sequence has more than one [track](#), one per track at a time). The timing grid that is currently shown can be changed by selecting from the "Timings" dropdown box on the Tracks and Timings 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 give you the option to create them in a [fixed timing grid](#) or a [freeform timing grid](#); if you tell it to use one of the tools, 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.

**New Musical Sequence**

Sequence Author (cannot be changed later):

Select Preview

A preview defines all of the display elements and channels in your sequence

Existing Preview Quick Preview

Music

File name

Artist

Title

Album

Initial Timing

Use a Wizard to create timings

☒ Not now, maybe later

☐ Use the MIDI Wizard

☐ Use the Tapper Wizard

☐ Use the Beat Wizard

☐ Use the VU Wizard

Create equally spaced timings

☐ Tenth second intervals

☒ Half second intervals

☐ One second intervals

☐ Custom interval

Default number of motion effect rows for pixel props: (requires PRO license)

☒ Save these choices as defaults

Create Cancel

The New Musical Sequence dialog

These tools (such as the Beat Wizard and MIDI File Wizard) can also be used after the sequence has been created, by selecting them from the Tools menu.

Timings in a freeform timing grid can be moved by clicking and dragging them. Or, if you wish, this behavior can be turned off by selecting "Lock Timings" in the Edit menu.

Timings can also be added, deleted, and resized in a variety of other ways:

- On the Edit menu:
  - Copy and paste timings
  - Insert multiple timings
  - Delete extraneous timings
  - Switch timing grid
- On the [right-click context menu](#):
  - [Copy timing](#)
  - [Paste timing at...](#)
  - [Paste timing at \(centisecond\)](#)
  - [Paste timing multiple](#)
  - [Insert timing at...](#)
  - [Insert timing at \(centisecond\)](#)
  - [Insert multiple timings](#)
  - [Delete timing at...](#)
  - [Delete selected timings](#)
  - [Resize timings to...](#)
  - [Resize timings to equal times](#)
- Using the [Tracks and Timings toolbar](#)

#### 4.1.8 Effects

Light-O-Rama allows you to make your lights behave in a variety of ways. 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 assign these effects to [channels](#) in a [sequence](#) using the [Sequencer](#). There are various ways to apply the effects to a sequence; see [Editing Sequences Using the Keyboard](#) and [Editing Sequences Using the Mouse](#) for details. One simple way is to select the effect's tool from the [Tools toolbar](#), and click on a cell or range of cells that you want to apply the effect to.

Most of these effects require that you use [Light-O-Rama controllers](#). Although Light-O-Rama can control other types of devices (such as X10 controllers or digital IO cards), only "on" and "off" are supported in these non-LOR controllers.

- [On, Off, and Set Intensity](#)
- [Twinkle](#)
- [Shimmer](#)
- [Fade Up and Fade Down](#)
- [Custom Fade/Intensity Twinkles and Shimmers](#)
- [DMX Intensity](#)

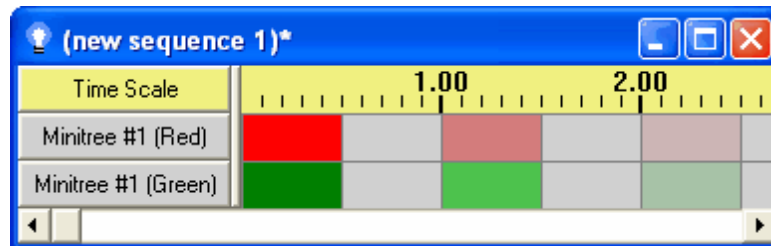
Related to effects are the effect editing modes: [background effects](#), [foreground effects](#), and [regular effects](#). These are not themselves effects, but are ways to use the Sequencer to turn effects on based upon the existing effects. For example, with background effects mode on, if some cells are selected and the "twinkle" tool is used, only the selected cells that are currently off will be changed to twinkles. The other cells - those that are on or at some intensity, have fades, shimmers, or twinkles, will remain unchanged.

### On, Off, and Set Intensity

The "On" and "Off" effects will turn a string of your lights to their full brightness or completely off,

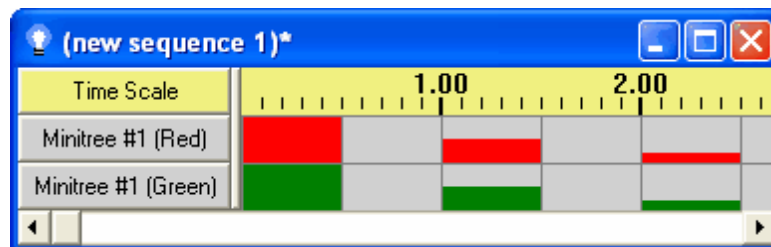
respectively. Additionally, the "Set Intensity" effect allows you to specify a percentage of full brightness - for example, 50% bright.

In the [Sequencer](#), an "on" effect is displayed as a cell having the color that you chose for the [channel](#), and an "off" effect is displayed as a light grey cell. "Set intensity" is displayed as a color somewhere in between the two (depending upon the intensity chosen). For example, the following picture shows a sequence with two channels (one red and one green), each being on for the first half second, off for the next, then 50% on, then off again, then 20% on, and then off again:



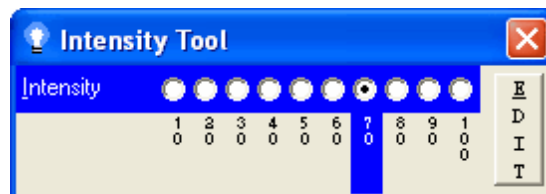
Different levels of intensity

Alternatively, you can choose to have varying intensities displayed not by varying colors, but by filling in the cells to varying degrees. This is done by selecting "View Fades as Ramps" from the View menu (or, to make this your default, by setting it in the Display Preferences dialog of the Edit menu). For example, here is the exact same sequence, but this time with "View Fades as Ramps" turned on:



The same sequence, with "View Fades as Ramps" turned on

The brightness used by the "Set Intensity" tool can be controlled by the Intensity Tool Settings dialog:

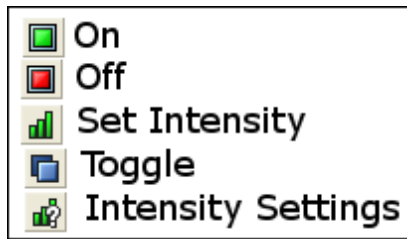


The Intensity Tool Settings dialog, with 70% intensity selected

Any of the ten values listed on the Intensity Tool Settings dialog can be changed, by clicking its "Edit" button to open the Intensity Tool Options dialog.

In the [Tools toolbar](#), the "On" tool's button shows a green square, the "Off" tool's shows a red square, and the "Set Intensity" tool's shows three green columns of varying heights. Additionally, there is a "Toggle" tool, which can be used to turn any cell that is off to on, and any other cell to off. The "Toggle" tool's button shows two blue squares, one in front of the other. Finally, the Intensity Tool Settings dialog's button looks like the Set Intensity button, but with a question mark in front of

it:



Intensity-related toolbar buttons

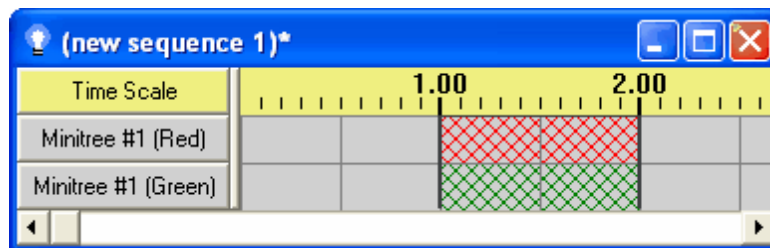
"Set Intensity" is only supported on [Light-O-Rama controllers](#). If it is used on a different device type, any intensity greater than 10% is considered "on", and lesser percentages are considered "off".

## Twinkle

The "Twinkle" effect causes your lights to quickly vary between on and off.

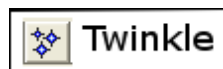
The difference between "Twinkle" and "[Shimmer](#)" is that twinkle is more random: Two different strings of lights that are both told to shimmer at the same time will quickly turn off and on in sync with each other; if they are instead told to twinkle, they will still quickly turn off and on, but not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

In the [Sequencer](#), twinkle is represented with crossed diagonal hatching:



Two channels, each with twinkle between 1 and 2 seconds

On the Tools toolbar, the Twinkle tool is represented by a button with stars on it:



The twinkle toolbar button

Twinkle is only supported on [Light-O-Rama controllers](#). If it is used on a different device type, it will simply turn the lights on to their full brightness.

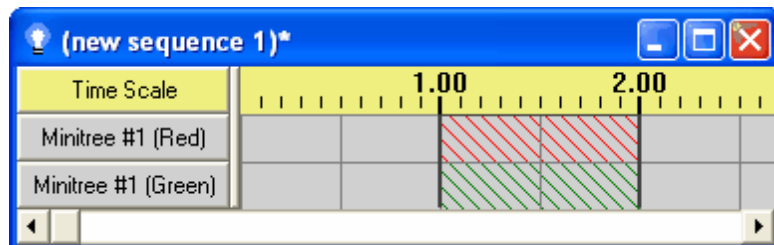
The Twinkle tool itself twinkles the lights at full intensity. You can also twinkle the lights while fading up or fading down, or at some intensity other than full intensity, by using a [custom tool](#) instead of the Twinkle tool.

## Shimmer

The "Shimmer" effect causes your lights to quickly vary between on and off.

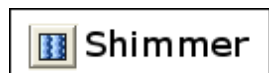
The difference between "Shimmer" and "[Twinkle](#)" is that twinkle is more random: Two different strings of lights that are both told to shimmer at the same time will quickly turn off and on in sync with each other; if they are instead told to twinkle, they will still quickly turn off and on, but not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

In the [Sequencer](#), shimmer is represented with diagonal lines:



Two channels, each with shimmer between 1 second and 2 seconds

On the [Tools toolbar](#), the Shimmer tool is represented by a button with wavy lines:



The shimmer toolbar button

Shimmer is only supported on [Light-O-Rama controllers](#). If it is used on a different device type, it will simply turn the lights on to their full brightness.

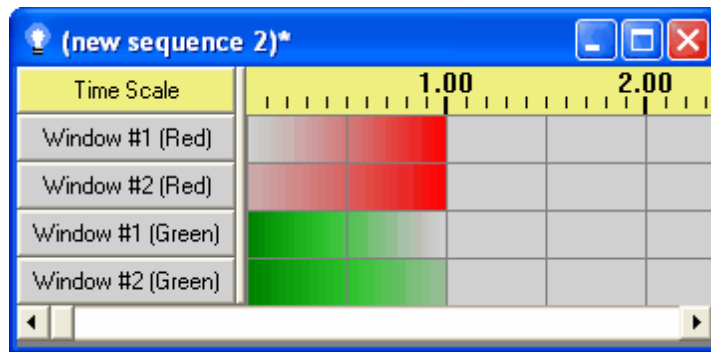
The Shimmer tool itself shimmers the lights at full intensity. You can also shimmer the lights while fading up or fading down, or at some intensity other than full intensity, by using a [custom tool](#) instead of the Shimmer tool.

## Fade Up and Fade Down

The fade tools will make the brightness of your lights gradually change, either brighter or less bright. Both the starting brightness and the ending brightness can be specified, anywhere from 0% to 100%, as can the length of time that it takes to fade from one to the other.

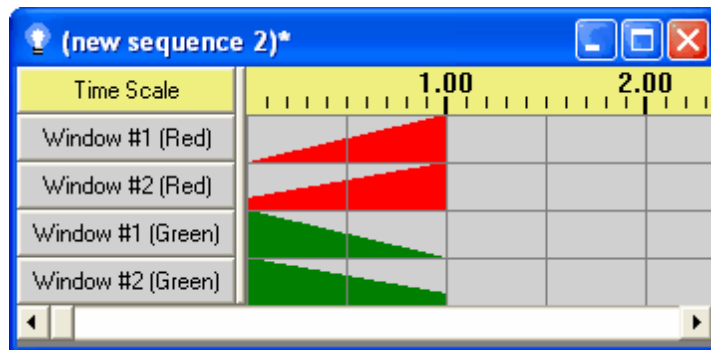
In the [Sequencer](#), fades are represented by gradually varying colors, between light grey (representing 0%) and the color that you assigned to the [channel](#) (representing 100%). For example, the following picture shows a [sequence](#) with four channels (two red and two green), all fading over the course of the first second of the sequence. The first channel fades up from 0% to 100%; the second from 25% to 100%; the third fades down from 100% to 0%; the fourth from 100% to 25%:





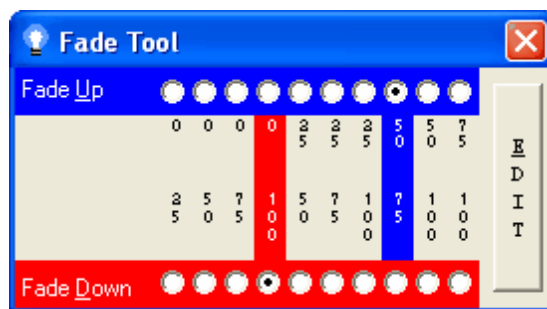
Four different fades

Alternatively, you can choose to have fades displayed not by varying colors, but by filling in the cells to varying degrees. This is done by selecting "View Fades as Ramps" from the View menu (or, to make this your default, by setting it in the Display Preferences dialog of the Edit menu). For example, here is the exact same sequence, but this time with "View Fades as Ramps" turned on:



The same sequence, with "View Fades as Ramps" turned on

The starting and ending brightnesses used by the Fade Up and Fade Down tools can be controlled via the Fade Tool Settings dialog:



The Fade Tool Settings dialog, with fade up 50%-75% and fade down 100%-0% selected

Any of the ten values on the Fade Tool Settings dialog can be changed, by clicking its "Edit" button to open up the Fade Tool Options dialog.

On the [Tools toolbar](#), the Fade Up and Fade Down tools are represented as blue up and down arrows in front of green triangles. The Fade Tool Settings dialog's button looks like that of the Fade Up tool, but with a question mark in front of it:



Fade-related toolbar buttons

Fades are only supported on [Light-O-Rama controllers](#). If one is used on a different device type, it will simply immediately turn the lights completely on or completely off, based on the ending brightness of the fade (fades ending at greater than 10% brightness are considered "on", and others are considered "off").

## Custom Fade/Intensity Twinkles and Shimmers

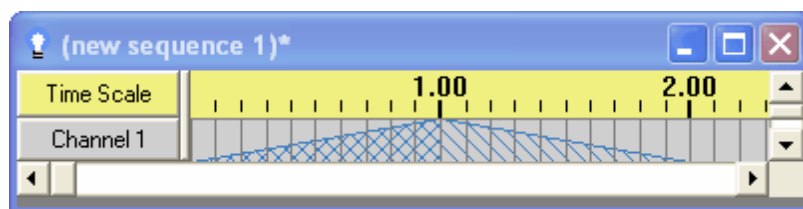
Only one of the [Twinkle](#), [Shimmer](#), [Fade Up](#), [Fade Down](#), and [Set Intensity](#) tools can be selected at any given time. They can therefore be used, for example, to twinkle the lights, or to fade the lights up, but not both. However, you can still twinkle the lights while fading them up, in another way: By using the Custom tool.

On the [Tools toolbar](#), the Custom tool is shown as a large yellow star. To the right of it are five buttons, which are enabled when the Custom tool is selected (and disabled if any other tool is selected). These five buttons allow you to select "twinkle" or "shimmer", and "set intensity", "fade up", or "fade down". Each of these five looks like the corresponding button for the base effect (such as "twinkle"), with a smaller yellow star in its lower right corner.

For example, to select a tool that will let you twinkle the lights while fading them up, select the yellow star "Custom" button. The five custom option buttons will then become enabled; select the "Custom Twinkle" button *and* the "Custom Fade Up" button.

The regular fade tool settings apply to faded twinkles and shimmers, and the regular set intensity tool settings apply to set intensity twinkles and shimmers.

If you have an older [Light-O-Rama controller](#), it may need a [firmware upgrade](#) before it will be able to twinkle or shimmer while fading, or at any intensity other than full intensity. If a custom twinkle or shimmer is sent to such a controller that does not have the appropriate firmware upgrade, it will react as it would to a "standard" twinkle or shimmer - i.e. it will twinkle or shimmer at full intensity.



A twinkling fade up followed by a shimmering fade down



Toolbar icons for custom twinkles and shimmers

## DMX Intensity

The intensity for most [effects](#) - such as [fades](#) - can vary between zero and 100. The DMX intensity effect, however, can vary between zero and 255.

This is useful for sending DMX commands to DMX devices via a [Light-O-Rama controller](#); the DMX protocol supports intensities from zero to 255, and so this effect allows Light-O-Rama to send any of the 256 possible DMX intensities to a device, instead of only 101 of them. However, 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.

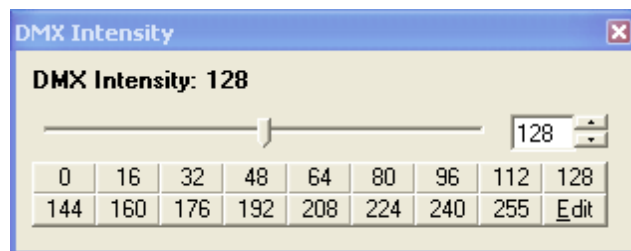
The DMX intensity tool is not enabled in the [Sequencer](#) by default - that is, by default, the Sequencer will not show a toolbar button for the DMX intensity tool, nor a menu item in the Tools menu, nor allow a [keyboard shortcut](#) for it. To enable these things, make sure that "Allow DMX Editing" is checked in your DMX Preferences.



### DMX Intensity

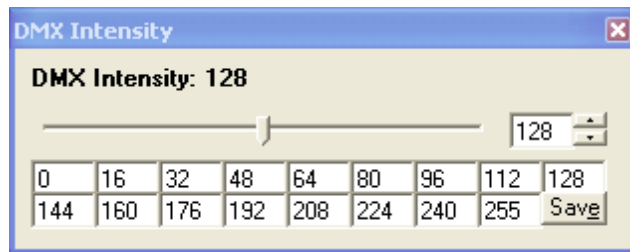
The DMX Intensity toolbar button

When DMX editing is enabled and the DMX intensity tool is selected, a dialog will appear allowing you to set the exact DMX intensity that will be used whenever the tool is used on a cell or group of cells:



The DMX Intensity dialog

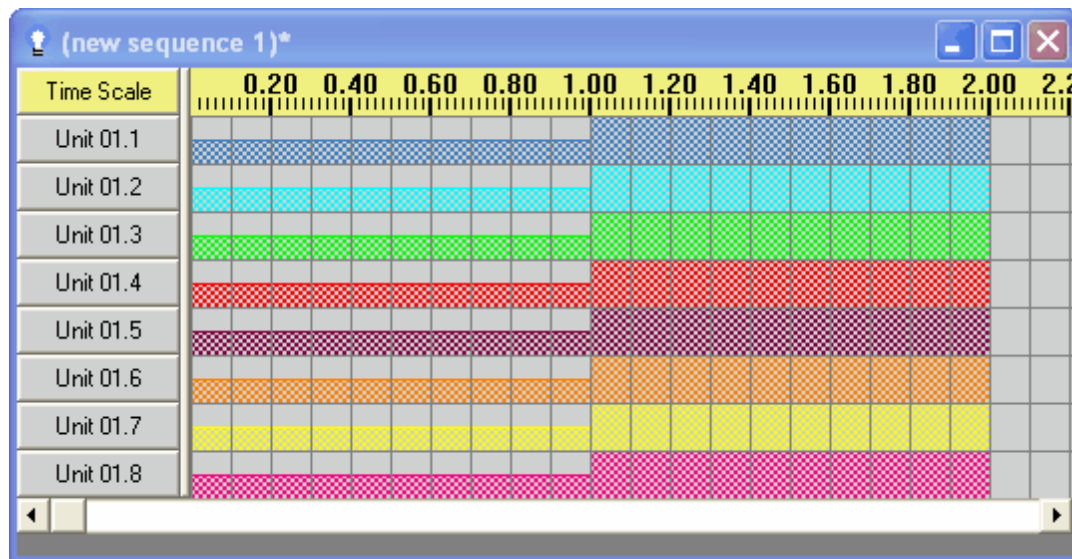
The intensity can be set in this dialog in several ways: by moving the slider, by typing in the text box, by using the up/down buttons next to the text box, or by selecting any of the preset intensity buttons. Additionally, the values of the preset buttons can be changed by clicking the "Edit" button:



Editing the DMX Intensity dialog's preset intensities

After modifying the preset intensities using these text boxes, click "Save" to go back to showing the buttons instead of the text boxes. Note: When you click "Edit", Light-O-Rama will automatically sort the values that you entered so that they are displayed from lowest to highest, regardless of the order that you entered them in. Also, if you enter any particular value more than once, Light-O-Rama will automatically filter out the duplicates, and replace them with values that are in between those that you have entered.

The Sequencer displays DMX intensity effects using a checkerboard pattern:



Several channels, each with a DMX intensity of 128 followed by a DMX intensity of 255

## Background and Foreground Effects

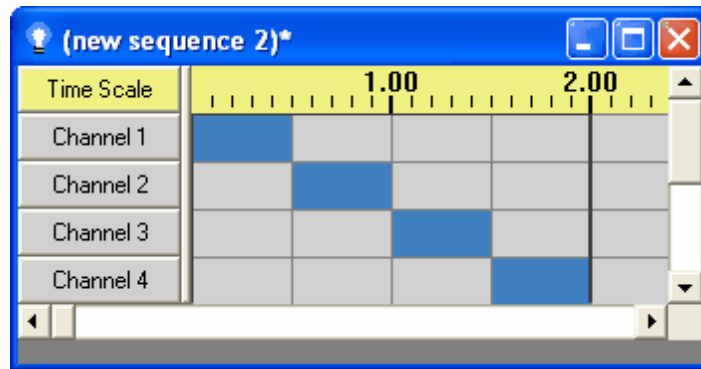
Background and foreground effects are not themselves [effects](#), but are rather modes of editing effects in the [Sequencer](#). These modes affect the behavior of tools (such as "[Twinkle](#)" and "[Fade Up](#)") in the following manner:

If background effects have been turned on, the tool only applies to those selected cells that are completely off (that is, at intensity zero for their entire duration).

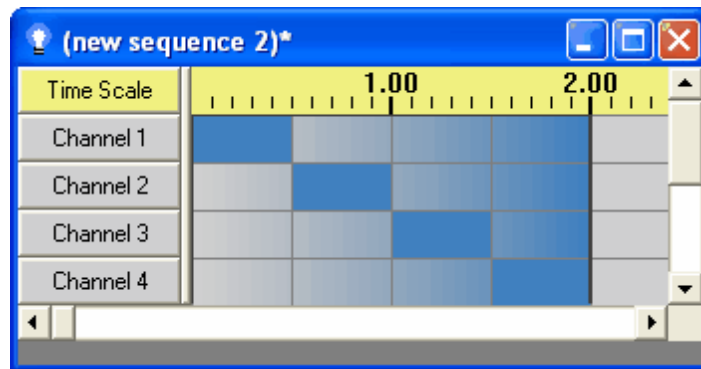
If foreground effects have been turned on, the tool only applies to those selected cells that are *not* completely off.

If neither background effects nor foreground effects have been turned on, the tool will apply to all selected cells. This is referred to as "regular effects".

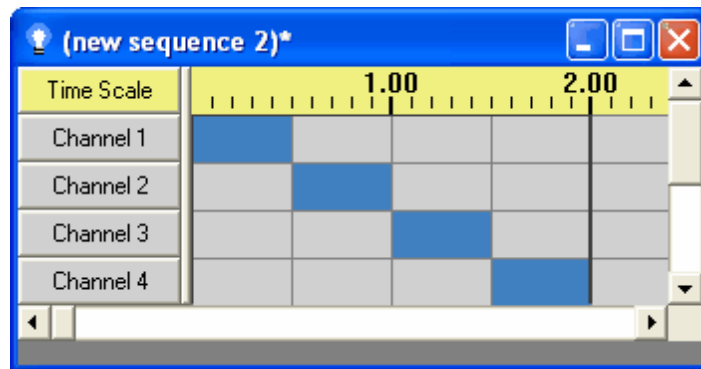
Some examples:



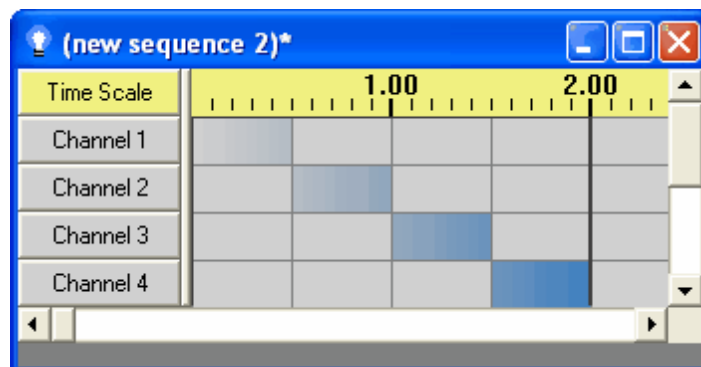
Before a background fade up



After a background fade up



Before a foreground fade up

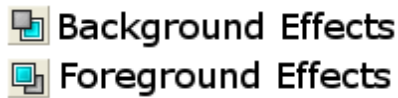


### After a foreground fade up

Background and foreground effects can be turned on and off in several ways:

- Via the Tools Menu ("Tools/Background Effects" and "Tools/Foreground Effects");
- Via the [Tools toolbar](#);
- Via the [keyboard](#):
  - The "A" key ("bAckground") will cause the next keystroke (and only the next keystroke) to use background effects mode rather than whatever mode is currently selected;
  - "Shift-A" will cause background effects to be turned on until it is explicitly turned off;
  - Similarly, "O" and "Shift-O" ("fOreground") for foreground effects, and "E" and "Shift-E" ("rEgular") for regular effects (i.e. for turning off both background and foreground effects).

These tools are also available via the [effect grid's right-click popup menu](#), for single-shot use, like the other tools (for example "on", "twinkle", and "fade up").



The background and foreground effects toolbar buttons

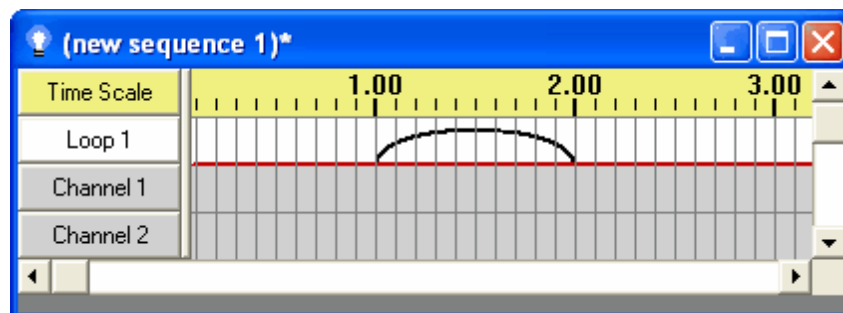
## 4.1.9 Loops

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.

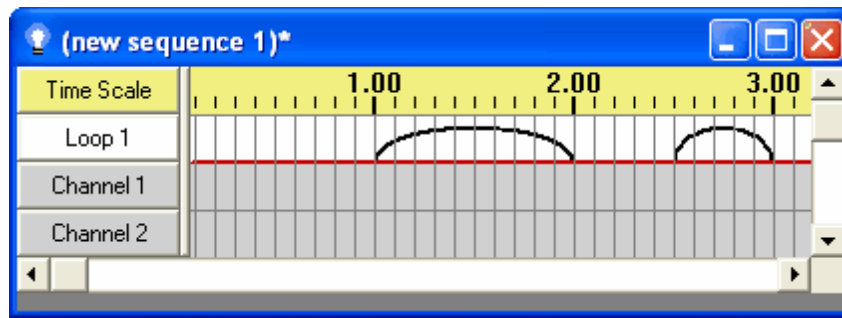
A sequence can contain many loops. Loops can be nested - that is, a loop can contain other loops.

In the Sequencer, loops are shown in a white row, above the grey rows representing channels. For example, the following picture shows a sequence with a loop starting at 1 second and ending at 2 seconds:



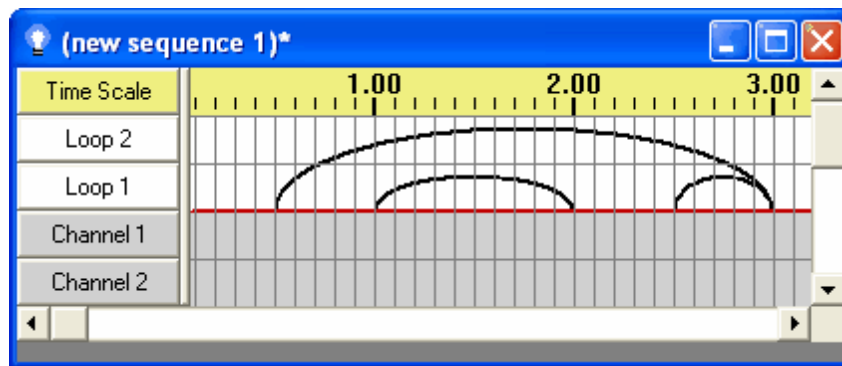
A sequence with a loop, starting at 1 second and ending at 2 seconds

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

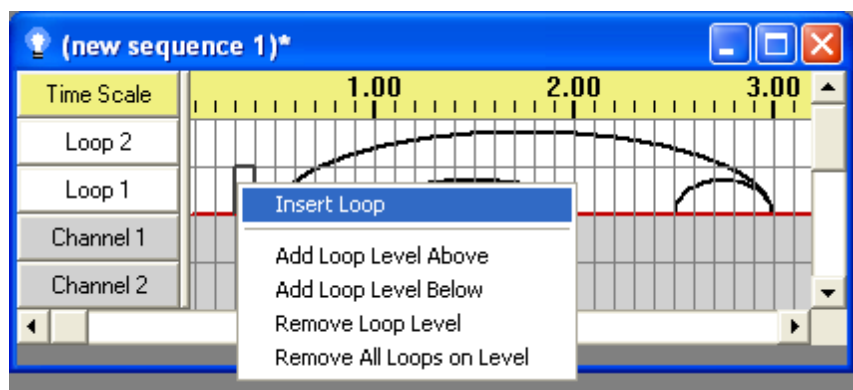
Loops can contain loops; this is represented by having multiple rows of loops. For example, in the following picture, a second loop level has been added, and a loop was put into it from 0.5 seconds to 3 seconds, thus containing both of the loops of the lowest loop level:



A loop containing loops

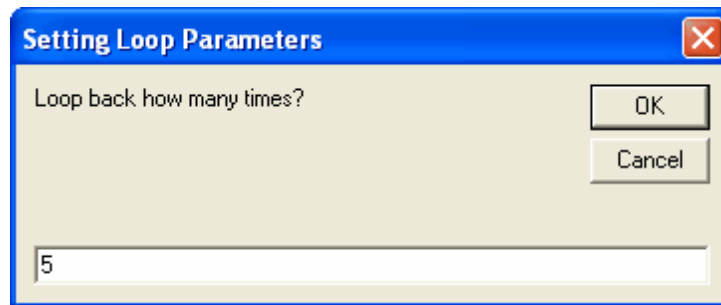
To use loops in an animation sequence, you first must use the "Turn on Loops" option in the Edit menu of the Sequencer (or, alternatively, specify that you want to use loops when you create the sequence in the [New Animation dialog](#)).

To create a loop, select the appropriate time range and the loop level, either by clicking and dragging [the mouse](#) in the white loop rows or by [using the keyboard](#). The [Loop Context menu](#) will pop up:

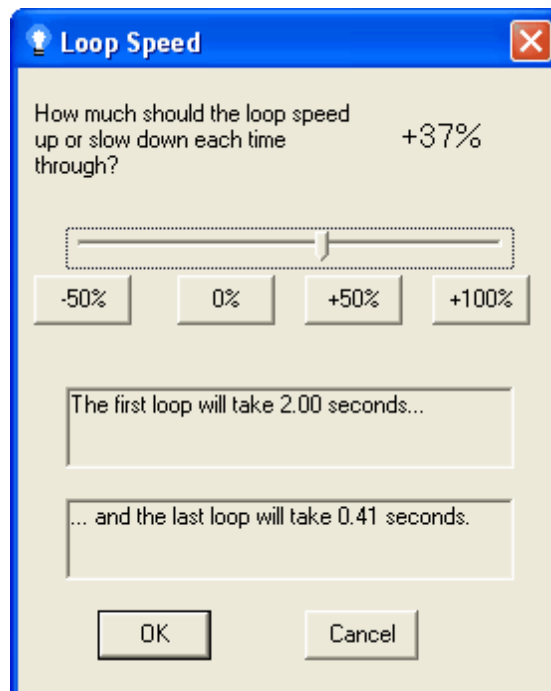


The Loop Context menu

After selecting "[Insert Loop](#)". You will then be prompted for how many times the loop should loop back, and then whether (and by how much) it should increase, decrease, or remain the same speed in each pass through the loop:

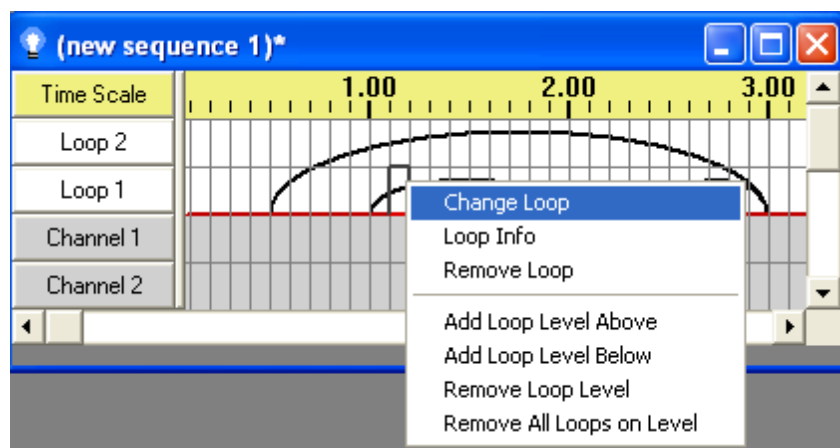


Inserting a loop: How many times should it loop back?



Inserting a loop: Should it speed up or slow down?

Clicking on an existing loop also brings up the Loop Context menu, but with additional menu items, such as [displaying information about the loop](#) and [removing the loop](#):





#### The Loop Context menu, on an existing loop

Several of these menu items can also be accessed by clicking on the [loop level's button](#) (specifically, the ones dealing with loop levels, such as "[Add Loop Level Above](#)" and "[Remove Loop Level](#)").

### 4.1.10 Grid Views

A [sequence](#) can contain multiple grid views, with each grid view being a group of [channels](#). A channel can be in one track, or can be shared among multiple tracks. For example, the following sequence has two tracks, and two channels, with both of the channels being in both of the tracks:



Two tracks in one sequence, with the same channels in both tracks

Notice that the two tracks have different [timings](#) than each other - in this case, the top track has timings every tenth of a second, and the bottom track every half a second.

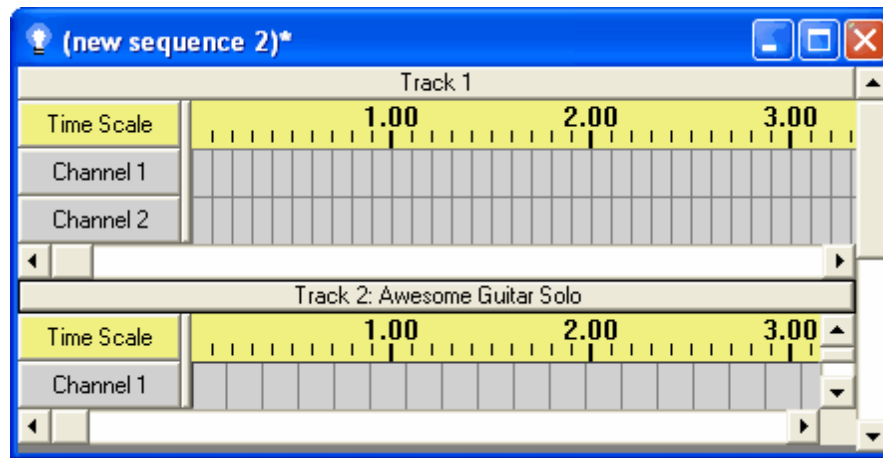
All sequences are initially created with a single track. There are a few ways to add another track using the [Sequencer](#):

- In the Edit menu:
  - "Add New Track" will add a track with entirely new channels.
  - "Duplicate Track" will add a new track and share all of the channels of the currently selected track with it.
- On a [channel button's right-click popup menu](#):
  - "[Copy to New Track](#)" will add a new track and copy the channel to it, while also giving you the option to automatically insert new channels as well.
  - "[Move to New Track](#)" does much the same, except that the channel will be moved, not copied, to the new track.
- Using the [Tracks and Timings toolbar](#)

**Important:** To share a channel between tracks, make sure to use one of the above duplication or copying commands. Do *not* simply set two different channels in different tracks to the same unit ID, circuit number, et cetera. Doing that will have unexpected and undesired results, as the two different channels compete for control over the same physical circuit.

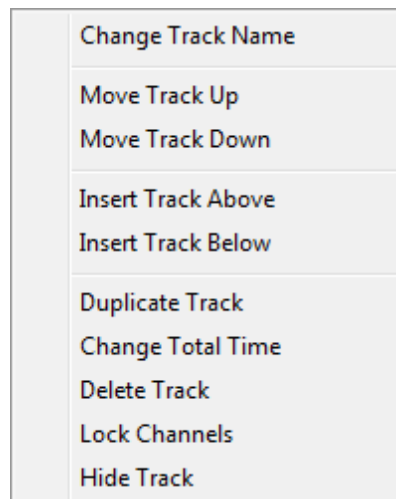
If a sequence has more than one track, each will be displayed with a preceding track bar. The bar will

be labeled with the track's number within the sequence (the track at the top is track #1, the next one down is track #2, and so forth). If the track is given a name (such as by "Change Track Name" of the Edit menu), it will also be displayed on the bar:



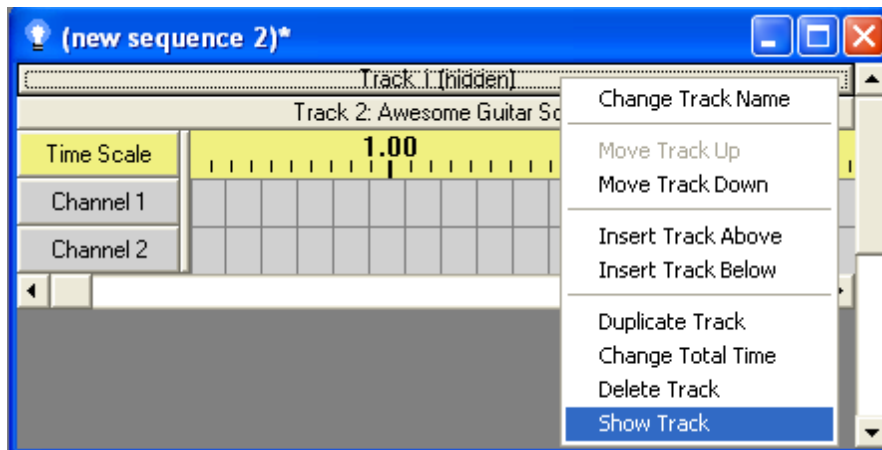
**Track 1 has no name, while Track 2 is named "Awesome Guitar Solo"**

Left-clicking on a track bar will hide or unhide the track, while right-clicking on one will bring up the track bar's popup menu, containing various track-related functions (such as renaming the track, moving the track up or down in the sequence, duplicating the track to a new track, or deleting the track):



**The track bar popup menu**

If the "Hide Track" item on that popup menu is selected, the track will no longer be displayed. However, the track's track bar still will be, and will indicate that the track has been hidden; clicking on it again to bring up the popup menu will now allow you to "Show Track":



For more detail on these and other track-related functions, please see:

- The Edit menu
- [Channel buttons' right-click popup menus](#)
- Track bars' popup menus

#### 4.1.11 Subsequences

##### What Is A Subsequence?

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.



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.

## How Are They Created?

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.

### 4.1.12 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.

### 4.1.13 Protected Sequences

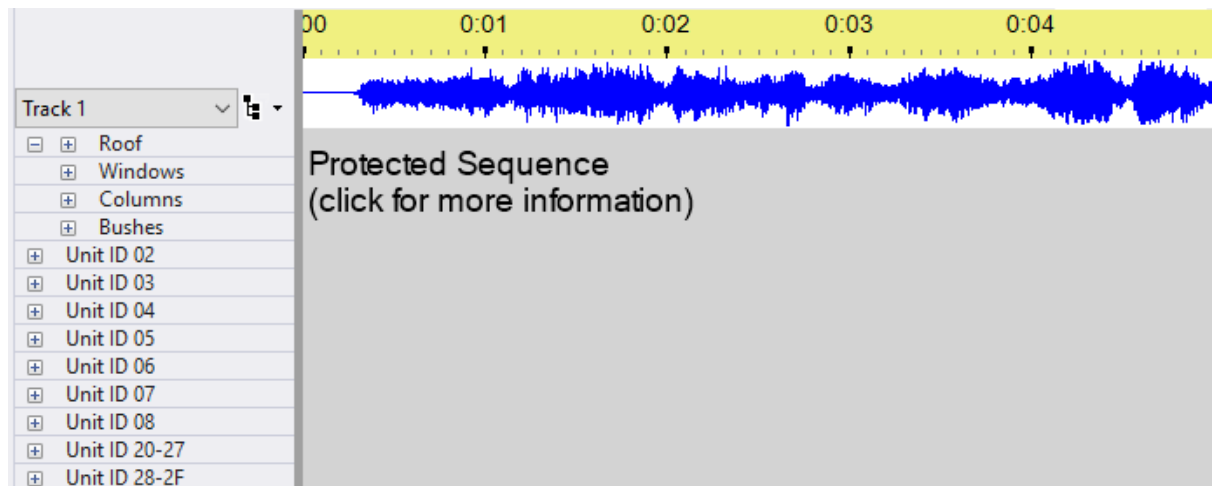
A protected sequence is a [sequence](#) which, generally speaking, cannot be modified, and whose sequence grid cannot be viewed in the [Sequencer](#). Protected sequences can, however, be played just like any other sequence; they can be [scheduled](#) in your [shows](#), they can be played in the Sequencer, 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](#))
- 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](#).



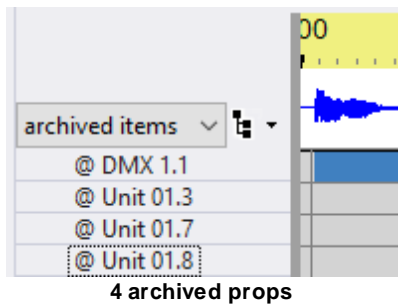
A protected sequence, as displayed in the Sequencer

### 4.1.14 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.



## 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:

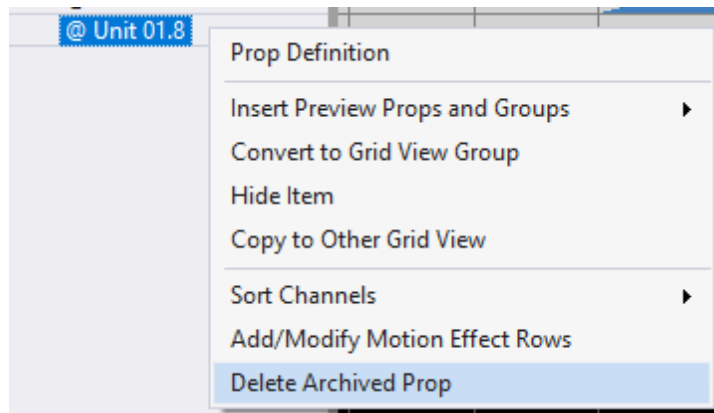
- You are upgrading sequences for S4 and you created your preview by importing a Visualizer file. However, there are some old channels in your sequence that you don't use any and were not in the Visualizer file - and thus won't be in your S5 preview either. Those old channels in the sequence will get 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".



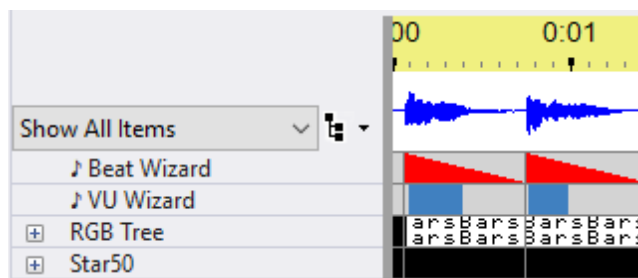
- From the [Manage Archived Props dialog](#) you can perform bulk deletions, convert archive props to [beat channels](#), or add them to your preview (making them a full-fledged members of your sequence, capable of controlling lights).

#### 4.1.15 Beat Channels

##### What Are Beat Channels?

Beat channels are intended to hold sequence effects related to the beat of the music; however, you can put any 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.



2 beat channels at the top of a sequence

##### How Are They Created?

Beat channels can be created:

- By using 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.

## What Can You Do With Them?

You can copy sequencing from a beat channel to other areas of your sequence using copy/paste.

### 4.1.16 RGB Aggregates

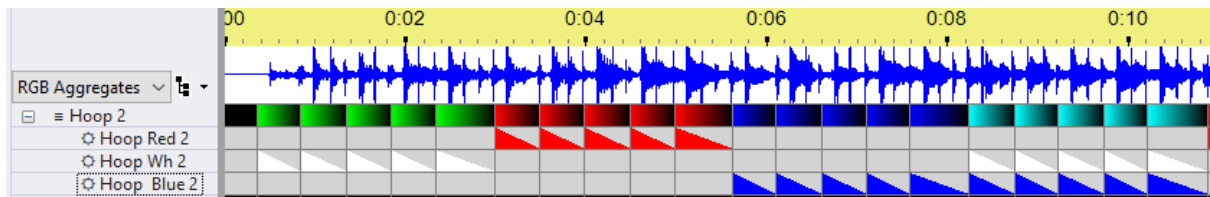
#### What Are RGB Aggregates?

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.



#### 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.

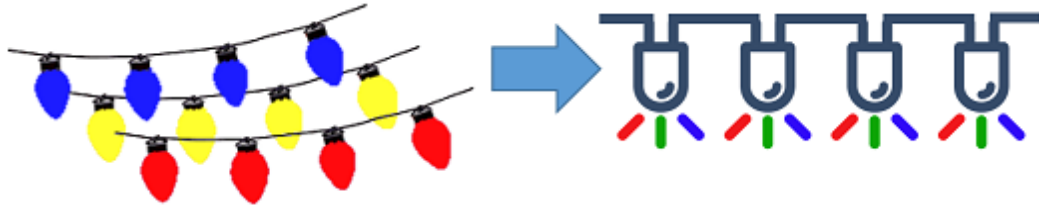
Right-click on a RGB aggregate's name and select "Delete RGB aggregate" to remove it completely from



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.



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.

### 4.1.17 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

## 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.

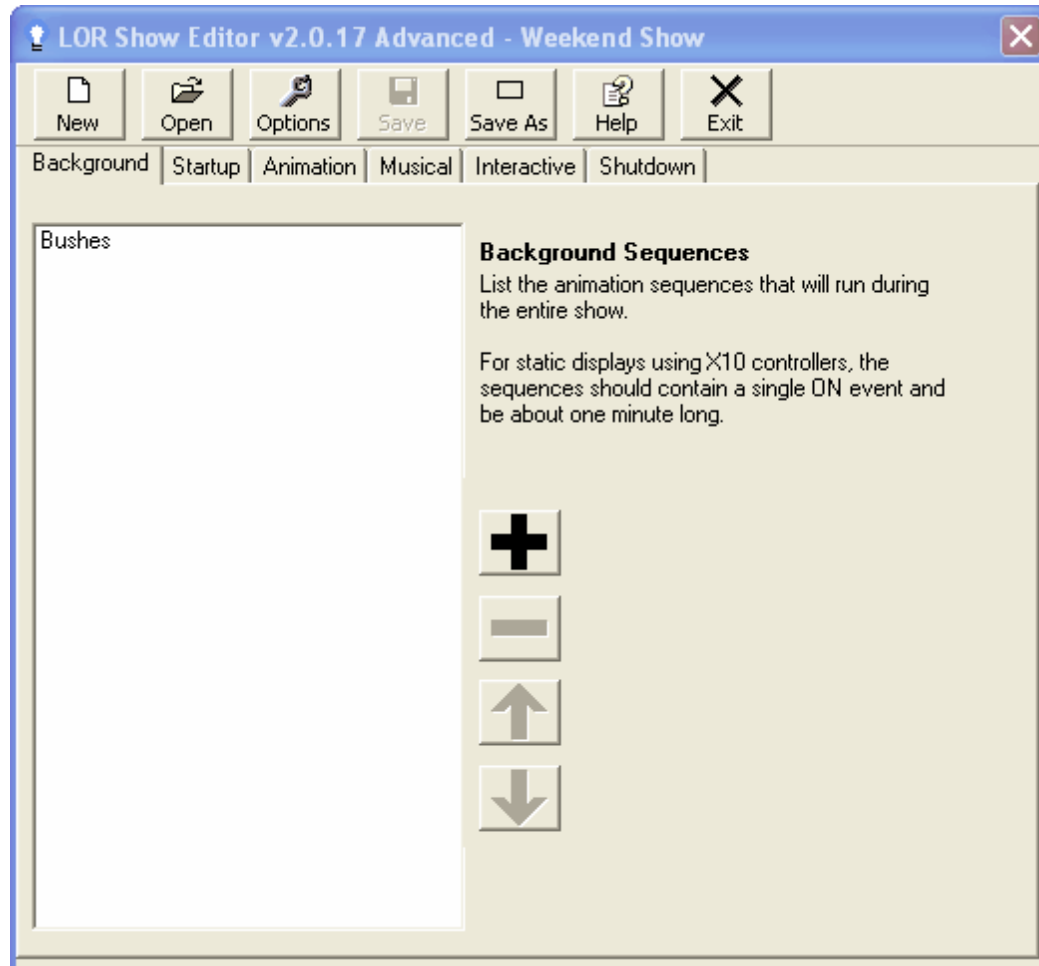
### The Background Section

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.



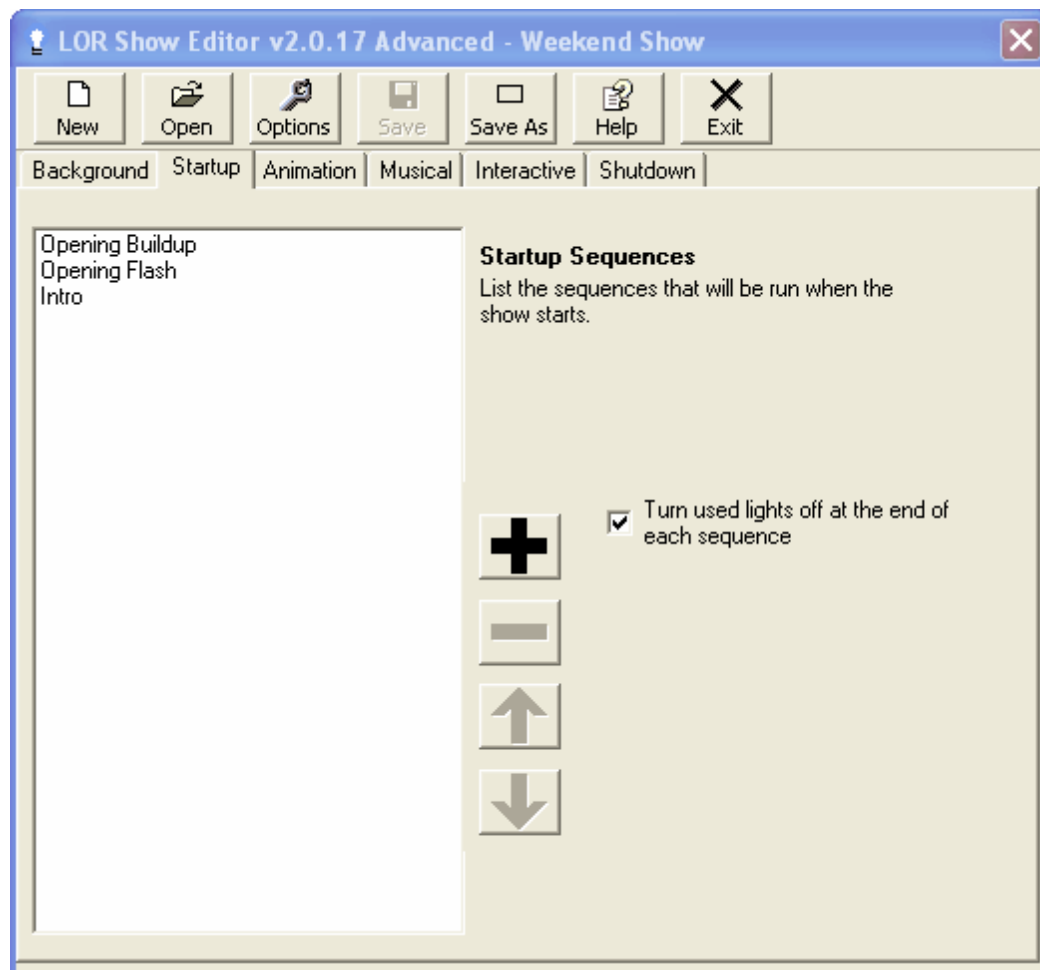
The Show Editor's tab for the background section of a show, with one sequence

## 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.



The startup section in the Show Editor, with three sequences

## The Animation Section

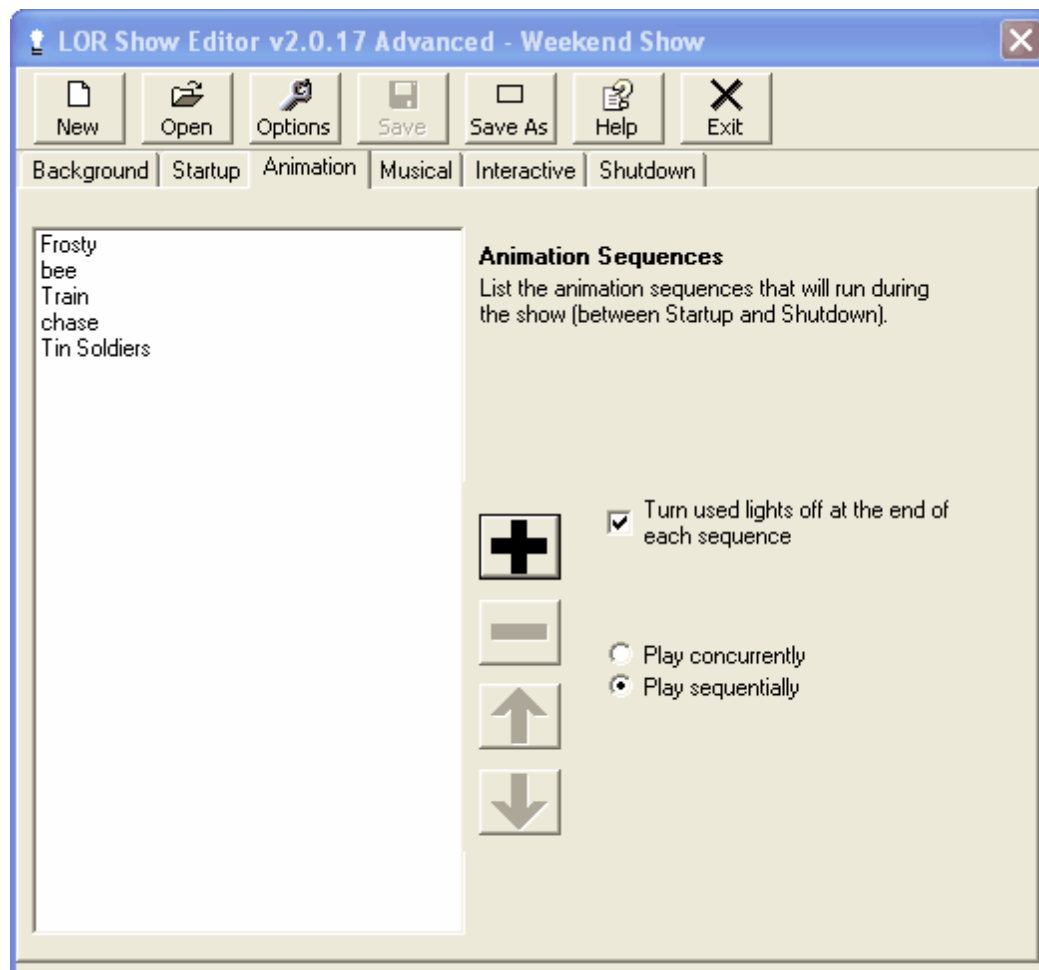
After a show's [startup section](#) has completed, its animation section will begin (as will its [musical section](#)).

[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.



The animation section in the Show Editor, with five sequences, played sequentially

## The Musical Section

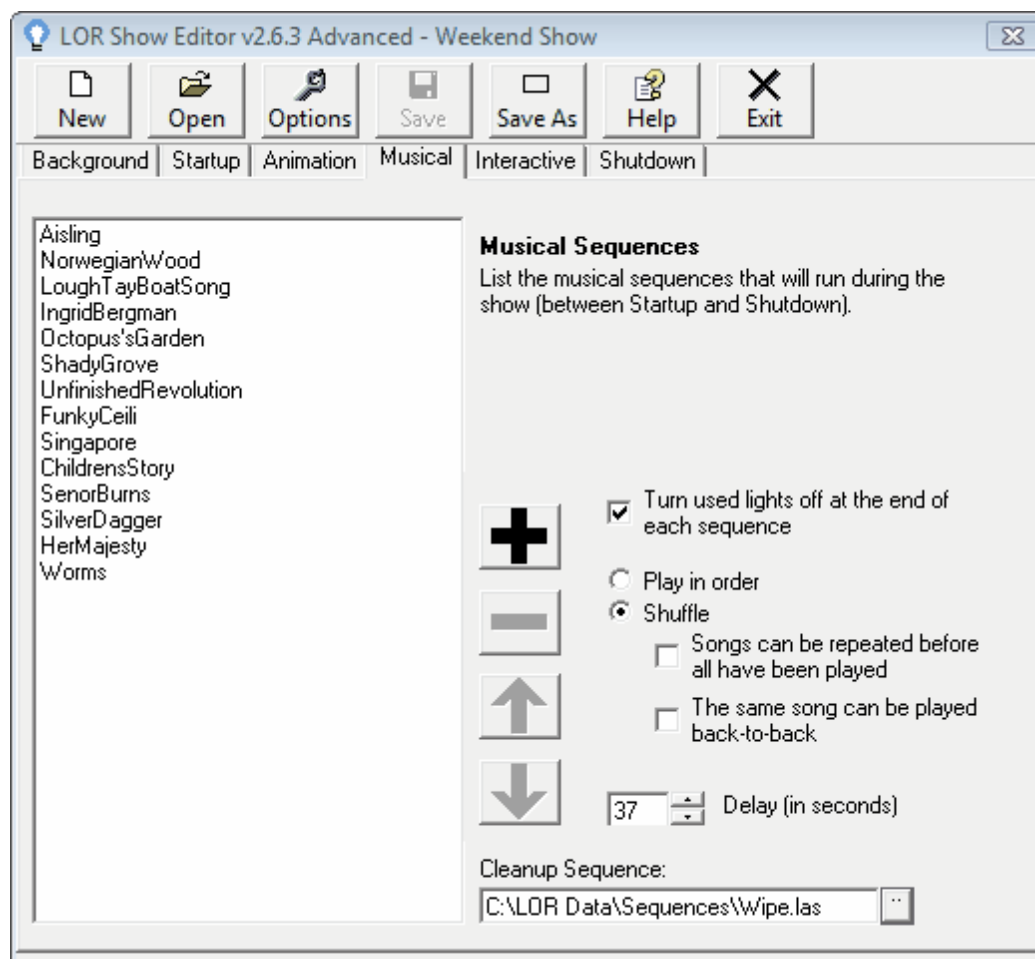
After a show's [startup section](#) has completed, its musical section will begin (as will its [animation section](#)).

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.

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

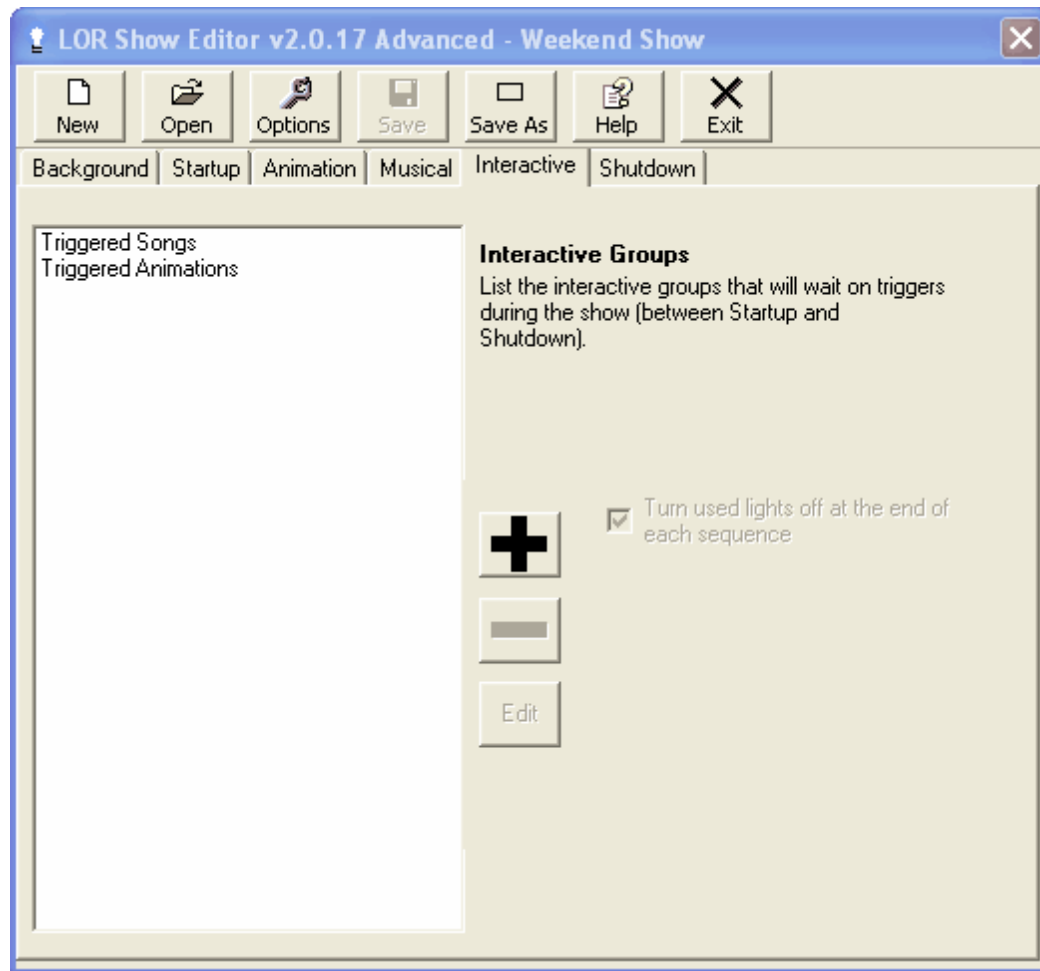
Some [Light-O-Rama controllers](#) can be used not only to control lights, but also to accept input from people, causing Light-O-Rama to play [sequences](#) on demand. For example, you could have a big red button as part of your display, which, when pressed, will cause Light-O-Rama to start playing a 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 unlike in other sections of the show, this setting is controlled individually for each interactive group, rather than for the section as a whole.

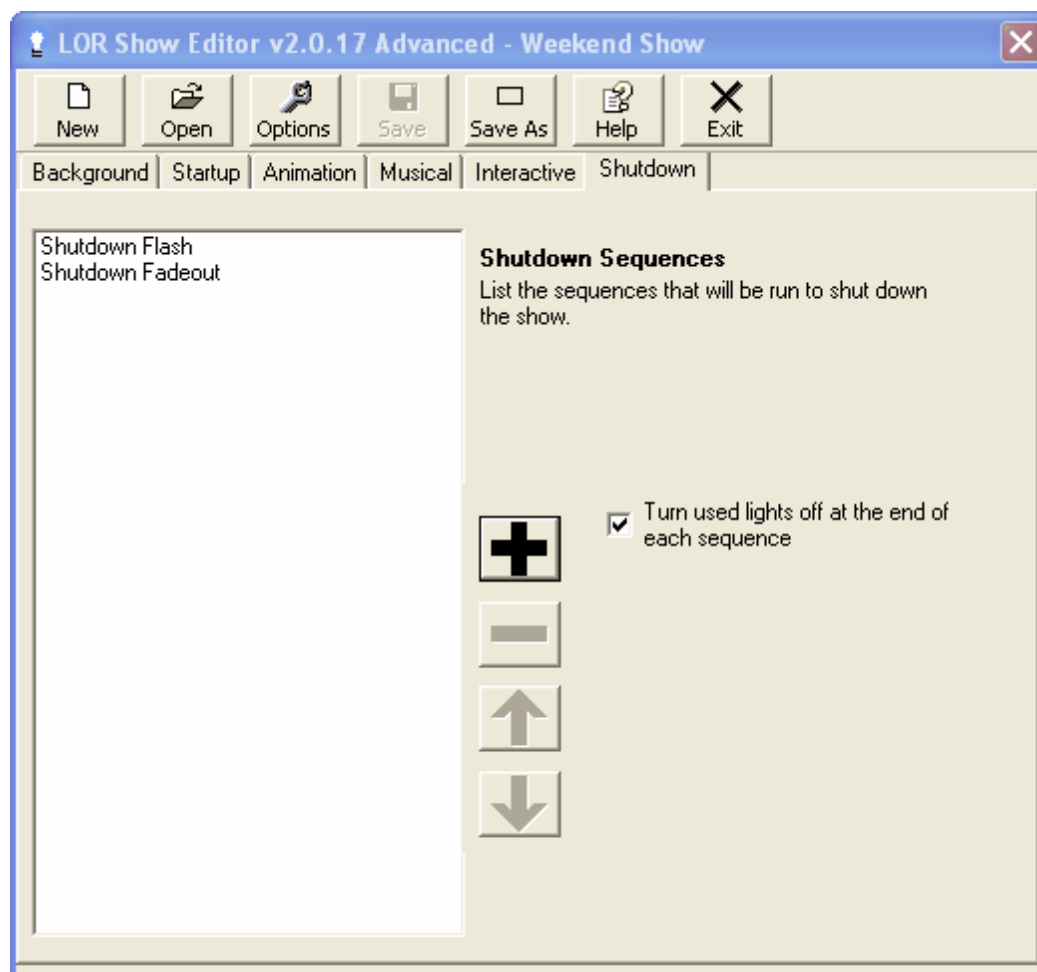


The interactive section in the Show Editor, with two groups of sequences

## 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.



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:





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**

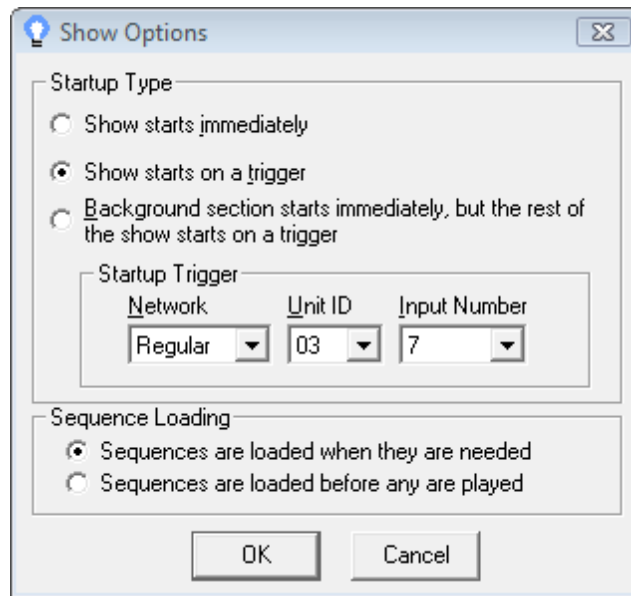
In triggered startup mode, your [show](#) will start when a specified [circuit](#) on a specified [Light-O-Rama controller](#) is triggered (as long as it is triggered during the show's [scheduled](#) run time). For example, you could hook up a big red button labeled "Start the Show" to a controller. 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:



The Show Options dialog

### 4.2.1 Interactive Groups

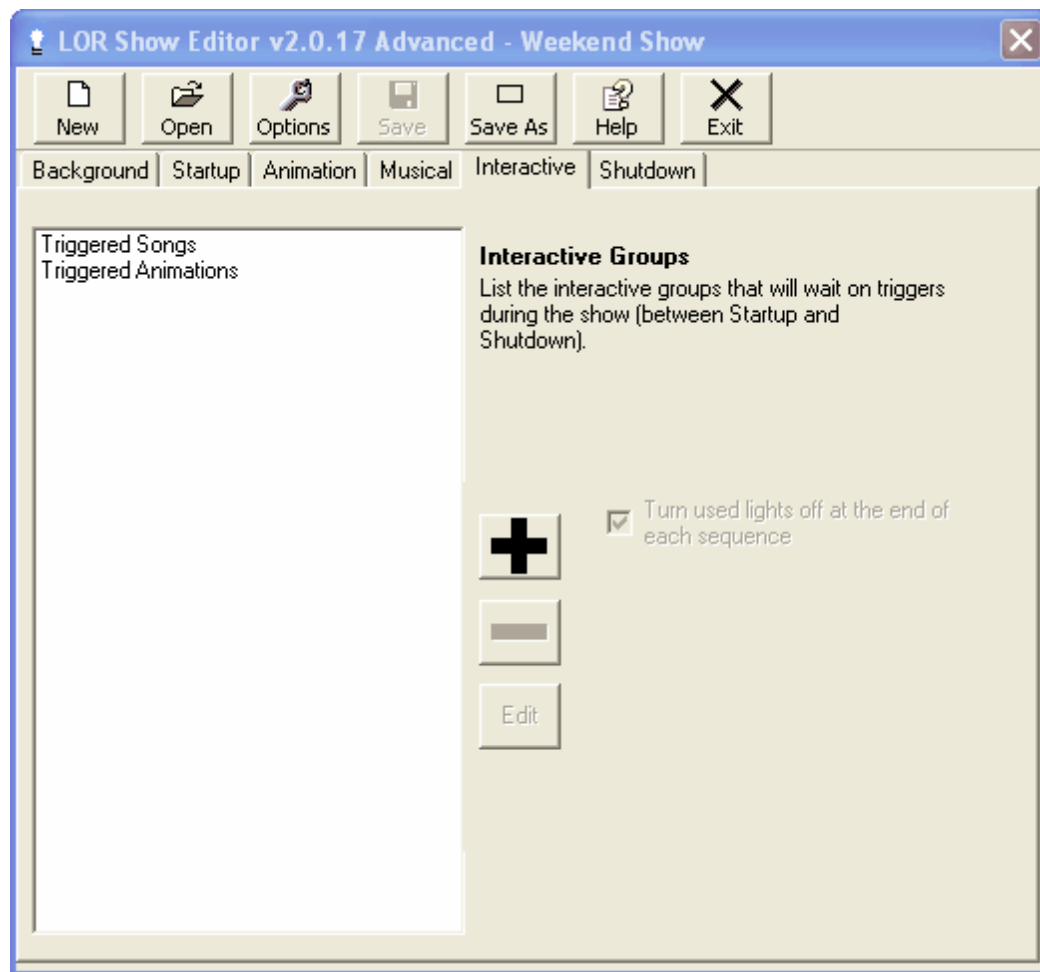
Some [Light-O-Rama controllers](#) can be used not only to control lights, but also to accept input that can be used to trigger a [sequence](#) or sequences. For example, your display might have several buttons for people to press, each of which will cause Light-O-Rama to play some particular song on 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](#).

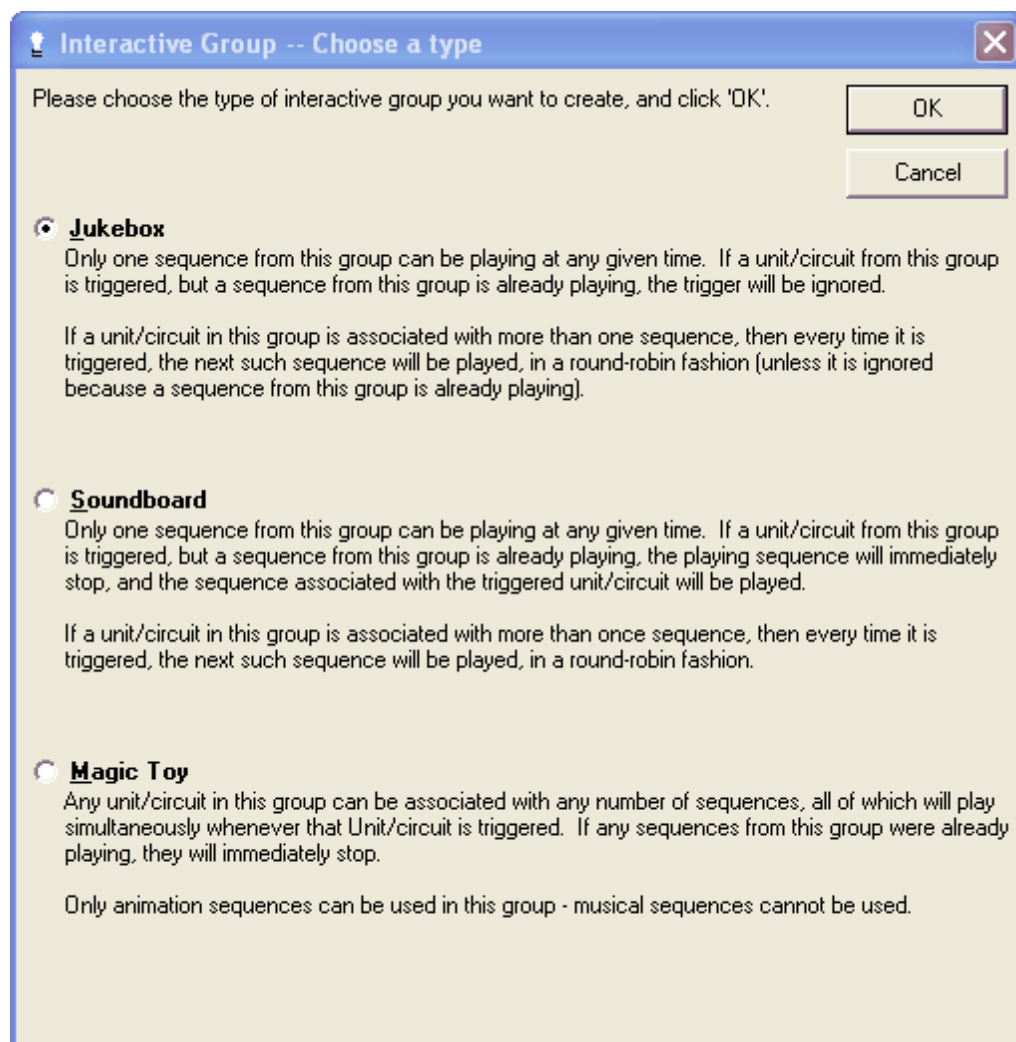
- [Types of Interactive Groups](#)
  - [Jukebox](#)
  - [Soundboard](#)
  - [Magic Toy](#)
- [Choosing Sequences for a Group](#)



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:



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.

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.

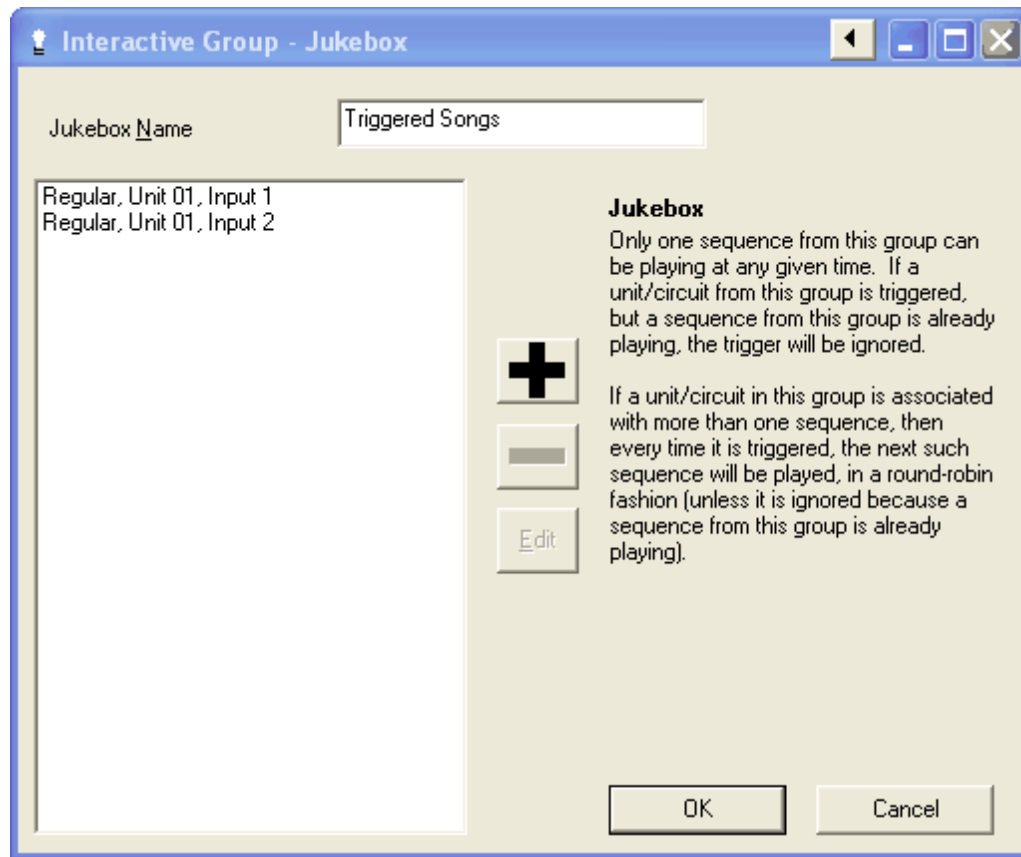
## **Magic Toy**

"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.

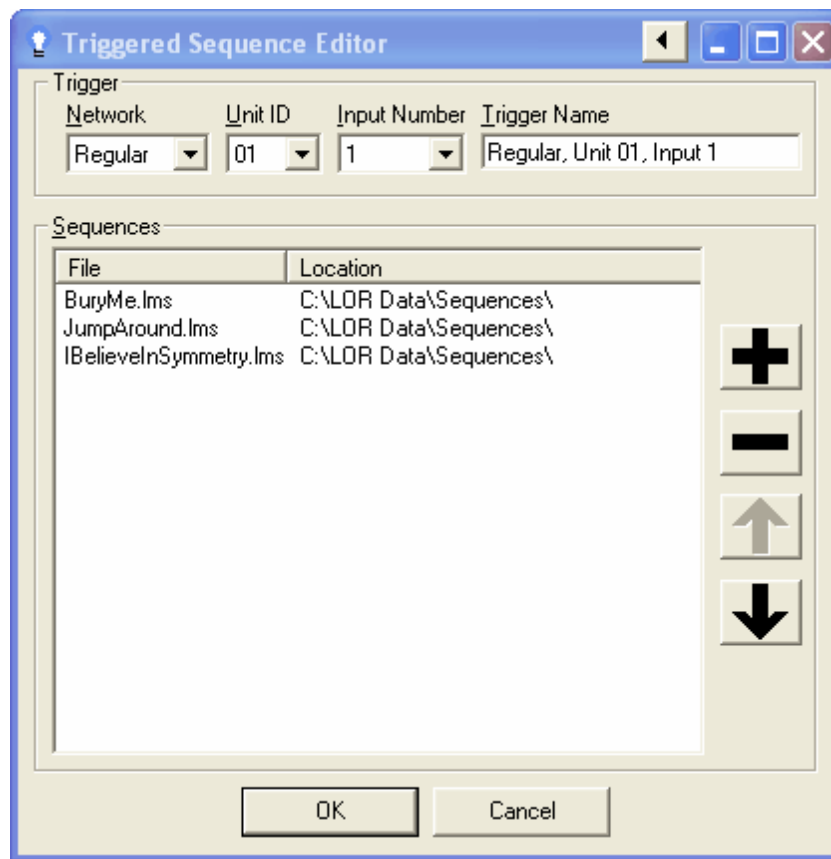
## **Choosing Sequences for a Group**

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:



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:



Choosing the sequences assigned to a trigger in an interactive group

## 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](#).
- 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.

### 4.3.1 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](#).

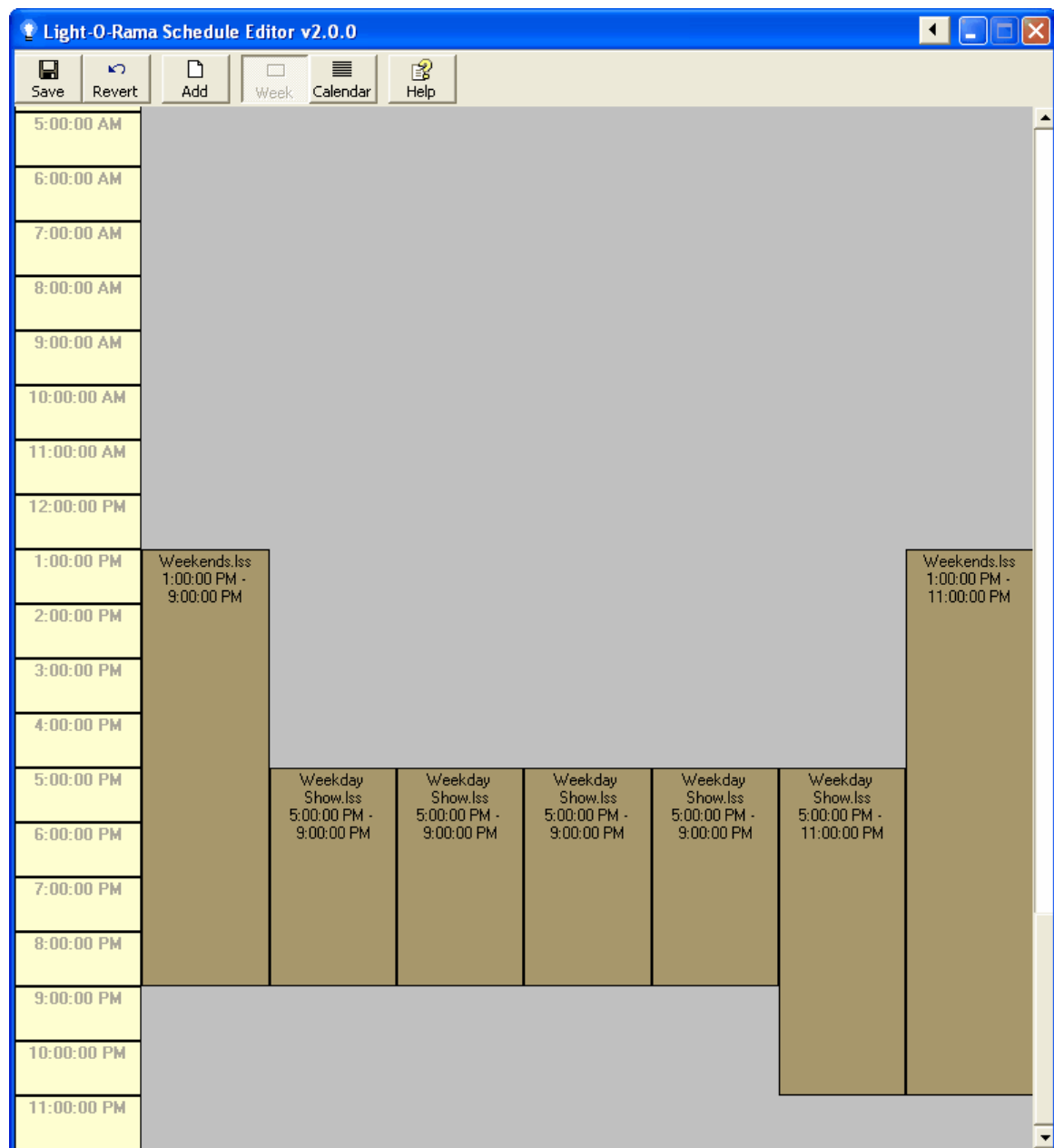
The difference between these two parts of the schedule is that the weekly schedule allows you to specify shows that should be played by the [Light-O-Rama Show Player](#) on a recurring, weekly basis, while the calendar schedule allows you to specify shows that should be played by the Show Player once, 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.Iss", run Mondays to Thursdays from 5:00 PM to 9:00 PM, and Fridays 5:00 PM to 11:00 PM;
- "Weekends.Iss", run Saturdays from 1:00 PM to 11:00 PM, and Sundays from 1:00 PM to 9:00 PM.





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](#).

### 4.3.2 The Calendar Schedule

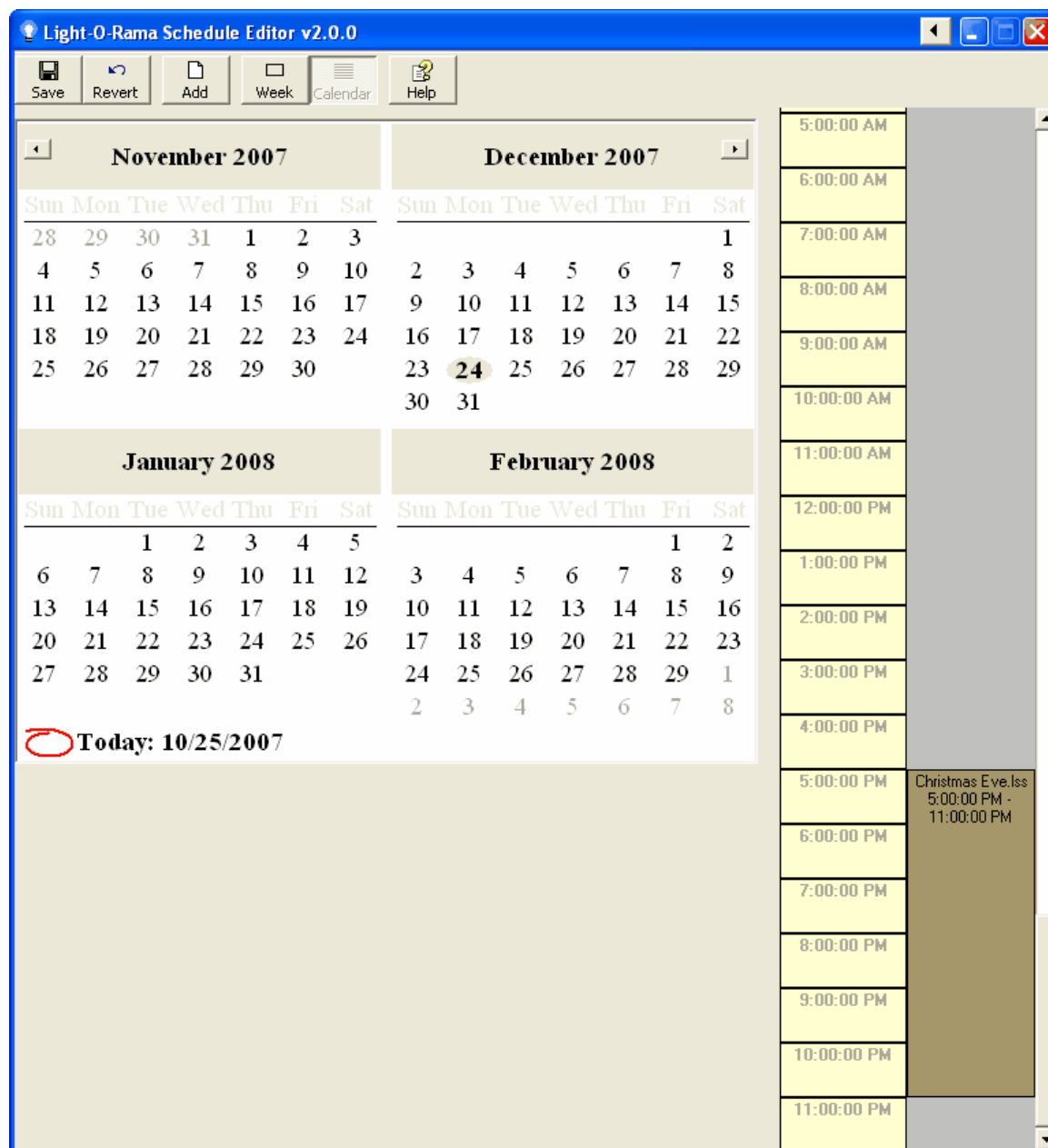
The calendar schedule is part of the [schedule](#), saying which shows should be played when. The other part of the schedule is the [weekly schedule](#).

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 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.Iss" 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

For details on creating and modifying the calendar schedule, please see the [Schedule Editor](#).

## 4.4 Hardware

Light-O-Rama can control your lights via several different kinds of hardware controllers. Primary among these, of course, are Light-O-Rama controllers, but all of the following types of controllers can be used:

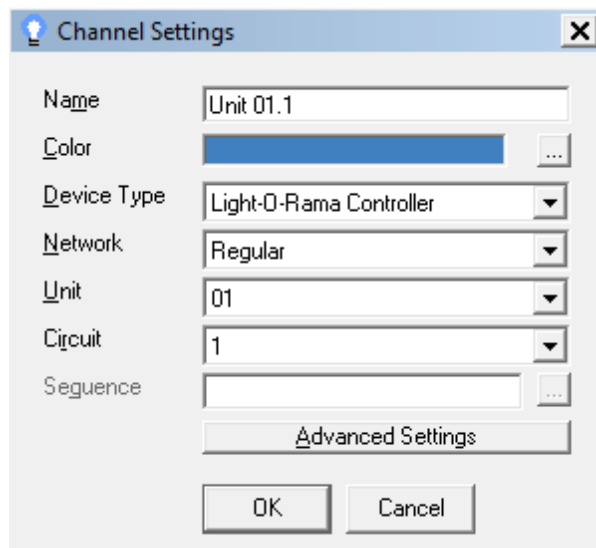
- [Light-O-Rama controllers](#)
- [Native DMX devices](#)
- Dasher controllers
- Digital IO cards
- BSOF digital IO cards
- X10 controllers

Most [lighting effects](#) (such as [fading](#), [twinkling](#), and [shimmering](#)) are only supported on Light-O-Rama controllers and native DMX devices. Other controllers can only be turned on (to full brightness) or off.

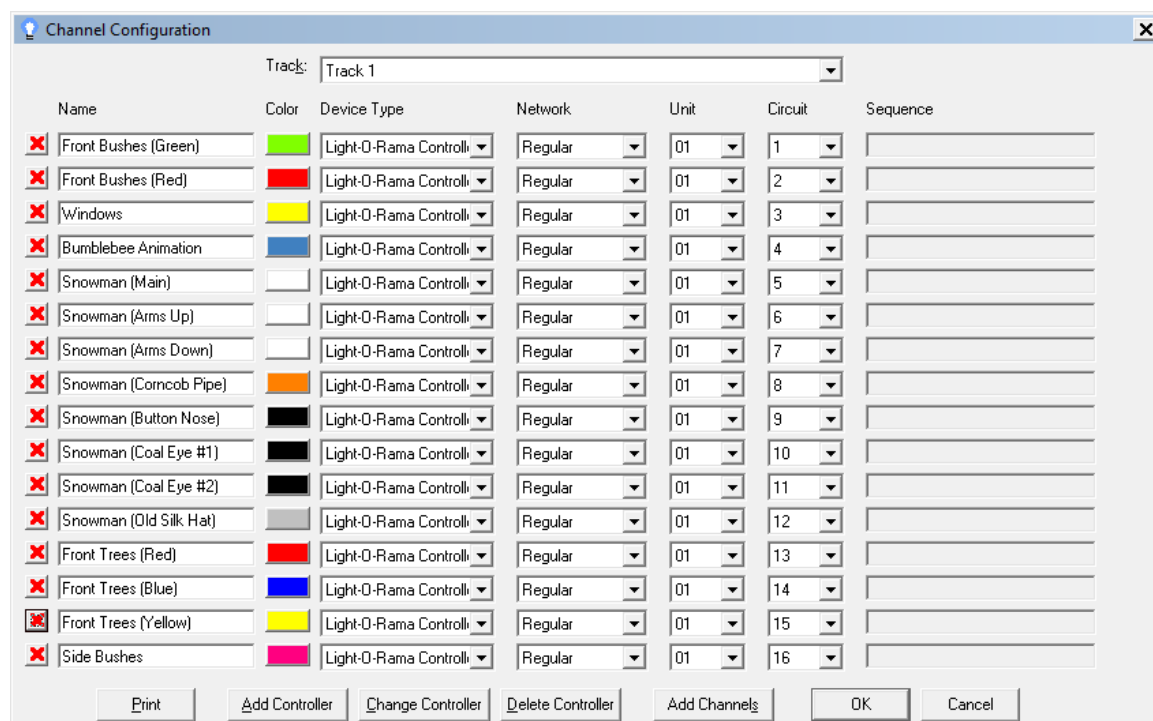
When a [channel](#) is created in a [sequence](#) using the [Sequencer](#), the kind of controller (known as "device type") can be assigned to it in a couple of ways:

- In the [Channel Settings dialog](#), accessible by left-clicking the [channel's button](#) or by selecting "[Change Channel Settings](#)" on the [channel's right-click popup menu](#);
- Via the Channel Configuration screen, accessible by selecting "Channel Configuration" in the Tools menu.

The Channel Settings dialog is most useful for changing a single channel, while the Channel Configuration screen is more useful for changing many channels at once.



The Channel Settings dialog



The Channel Configuration screen

#### 4.4.1 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. [Other kinds of controllers](#) can be used, but most [lighting effects](#) (such as [fading](#) and [twinkling](#)) are only supported on 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.

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

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".

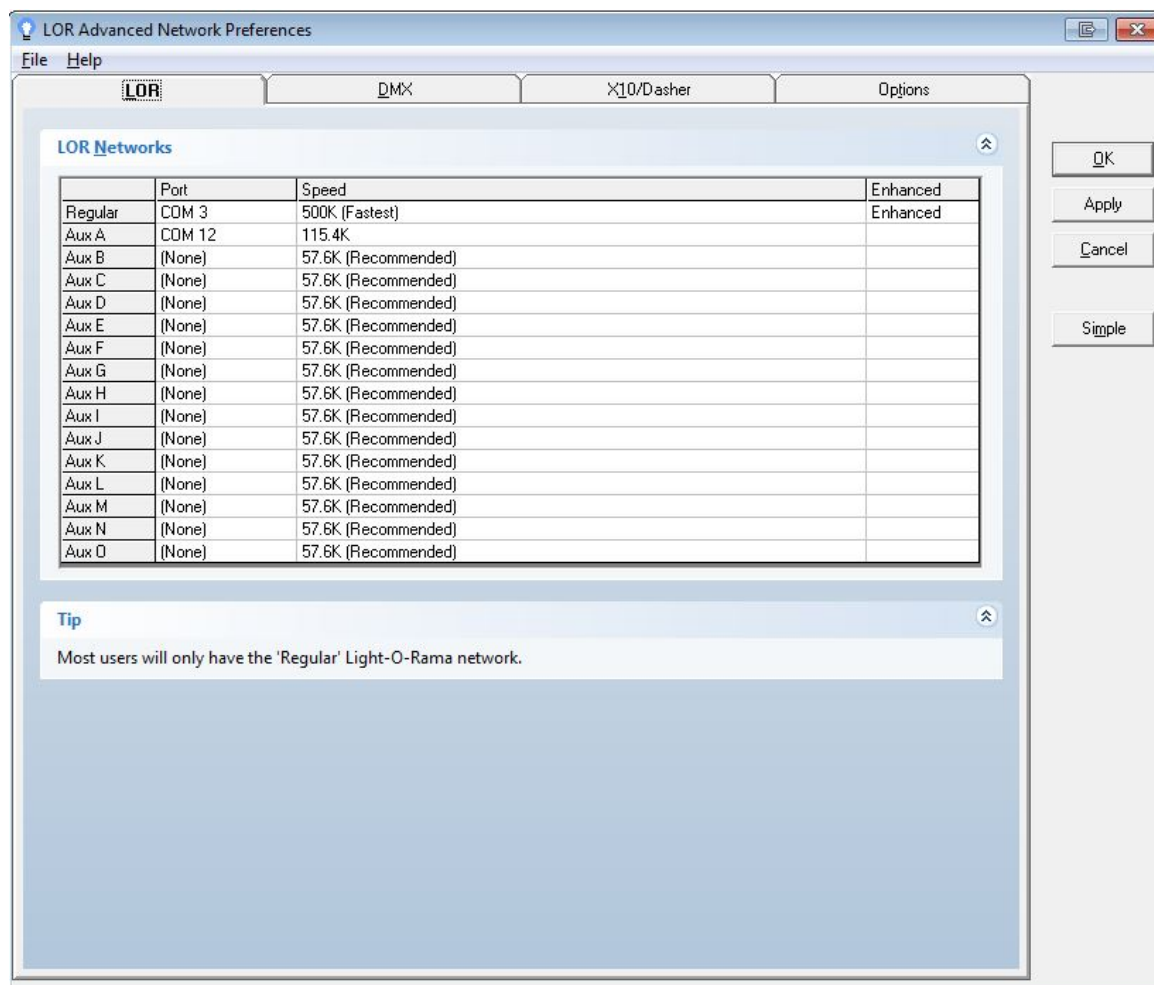
One main use of multiple networks is for displays with very large numbers of controllers; they enable more lighting commands to be sent out at a single time. They also allow you to set up a sort of star network centered on your PC, rather than a single long daisy chain of controllers; both of these may 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 O, and the remainder of the networks unassigned, with Regular (COM3) being an enhanced network:



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 (via the [Advanced Mode](#) of 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.

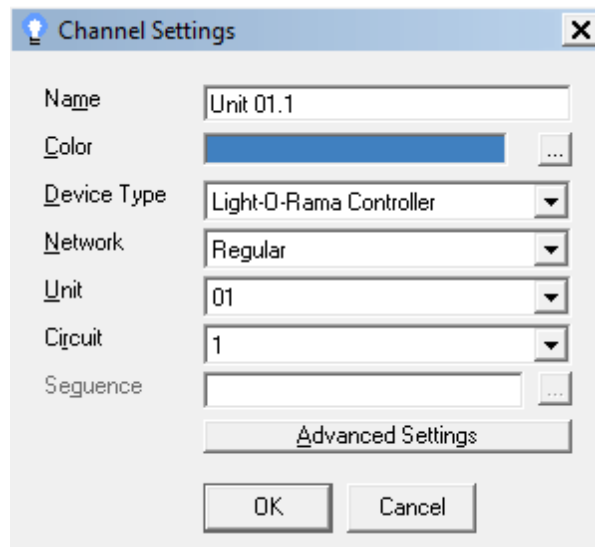
A Pro level [license](#) is required to use this feature, and the [Light-O-Rama Comm Listener](#) must be running in order for the lights to be controlled. Not all controllers can be used on such a network, and some controllers may require [firmware updates](#) before they are able to be used on an enhanced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

## Assigning Circuits to Channels

When a [sequence](#) is created using the [Sequencer](#), each of its [channels](#) can be assigned a string of lights using the [Channel Settings dialog](#) or the Channel Configuration screen (the former may be more convenient for modifying a single channel, and the latter for modifying multiple channels at once).

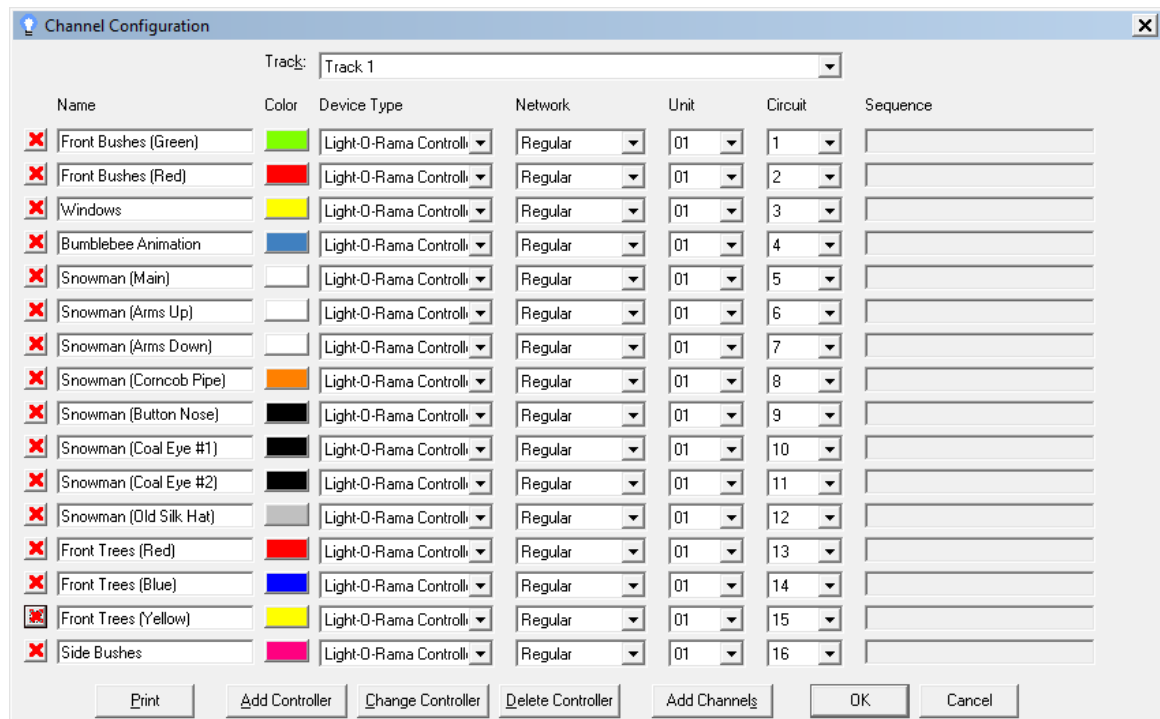
For Light-O-Rama controllers, these allow you to set the [network](#), [unit ID](#), and [circuit ID](#) assigned to the channel. Without these being assigned for a channel, any [lighting effects](#) made for that channel will not happen on your actual lights.

For example, the following Channel Settings dialog shows a channel for a Light-O-Rama controller on the regular network, with unit ID 03 and Circuit ID 7:

The image shows a 'Channel Settings' dialog box with a lightbulb icon and a close button (X). It contains several fields: 'Name' with the text 'Unit 01.1'; 'Color' with a blue color bar and a selection button (...); 'Device Type' with a dropdown menu showing 'Light-O-Rama Controller'; 'Network' with a dropdown menu showing 'Regular'; 'Unit' with a dropdown menu showing '01'; 'Circuit' with a dropdown menu showing '1'; and 'Sequence' with an empty text field and a selection button (...). Below these fields is an 'Advanced Settings' button, and at the bottom are 'OK' and 'Cancel' buttons.

**The Channel Settings dialog for a Light-O-Rama controller**

The Channel Settings dialog can be accessed by left-clicking on the [channel's button](#), or by selecting "[Change Channel Settings](#)" from the [channel button's right-click popup menu](#). The Channel Configuration screen can be accessed by selecting "Channel Configuration" from the Tools menu.



The Channel Configuration screen

#### 4.4.2 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.

#### 4.4.3 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.

You can quickly add [RGB channels](#) and [channel groups](#) appropriate for a PixCon16 device to a [sequence](#) using the "PixCon16" option in the [Sequencer's Insert Device](#) dialog.

#### 4.4.4 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.

To set a [channel](#) to use DMX protocol, set its device type to "DMX Universe". You can then set its universe and address (similarly to setting up an LOR controller's [network](#), [unit](#), and [circuit](#)). This can be done in the [Sequencer's](#) Channel Configuration Screen or in the channel's [Channel Settings dialog](#).

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 or X10), 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.

#### 4.4.5 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*.
- **'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 make 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.

## 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](#) is a sort of front end to the Sequencer, used to create sequences visually rather than via a channels-versus-time grid.
- The Pixel Editor allows you to create lighting effects for your sequences in a visual way.
- 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 Visualizer can be used to give a visual representation on your computer screen of how your lights will look when a sequence or your show plays.
- 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.

Additionally, several [add-ons](#) can be used with Light-O-Rama (these are not supplied as a part of the Light-O-Rama software package).

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.

## 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 using the "Register Light-O-Rama" (or "Upgrade Light-O-Rama") menu items on the [Sequencer's](#) Help menu or on the [Control Panel's popup menu](#).

Doing any of these things will open the Registration dialog:

The image shows a Windows-style dialog box titled "Register Light-O-Rama". It has a light beige background and a blue title bar. The text inside says: "Please enter your registration information. Note that your name is considered case-sensitive, so please type all uppercase and lowercase letters exactly as they are in your registration information." Below this, it says: "If you do not yet have registration information, you can purchase a license from Light-O-Rama's website:" followed by the URL <http://www.lightrama.com/>. There are two input fields: "Name:" and "License Key:". At the bottom, there are two buttons: "Register" and "Cancel". Below the buttons, it says "Need to register offline? [Click here.](#)"

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](#).

### 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 image shows a Windows-style dialog box titled "Offline Registration" with a light blue header bar containing a lightbulb icon and a close button. The main area has a light gray background. It starts with a paragraph: "First, please enter your registration information. Note that your name is considered case-sensitive, so please type all uppercase and lowercase letters exactly as they are in your registration information:". Below this are two text input fields labeled "Name:" and "License Key:". A button labeled "Show Offline Registration Key" is centered below the fields. Another paragraph follows: "When you have entered them, please click the 'Show Offline Registration Key' button:". Below this is the heading "Your Offline Registration Key:". Another paragraph: "Next, you will need an offline authorization key. If you have another computer, with LOR installed, which has internet access, you can get one by running the LOR Offline Registration Utility on that computer, and entering your license name, license key, and offline registration key into it." This is followed by a paragraph: "If you do not have another computer, with LOR installed, with internet access, please call Light-O-Rama at 518-539-9000, and a person there will create an offline authorization key for you. You will need to provide the person with your license name, license key, and offline registration key." Then: "After you have received your offline authorization key, please enter it below, and click the 'Register' button:". Below this is a row of ten small, empty text boxes. A final paragraph: "If a box turns red, that means that LOR has detected an error in that box, so please double-check what you have typed in it." At the bottom are two buttons: "Register" and "Cancel".

**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 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

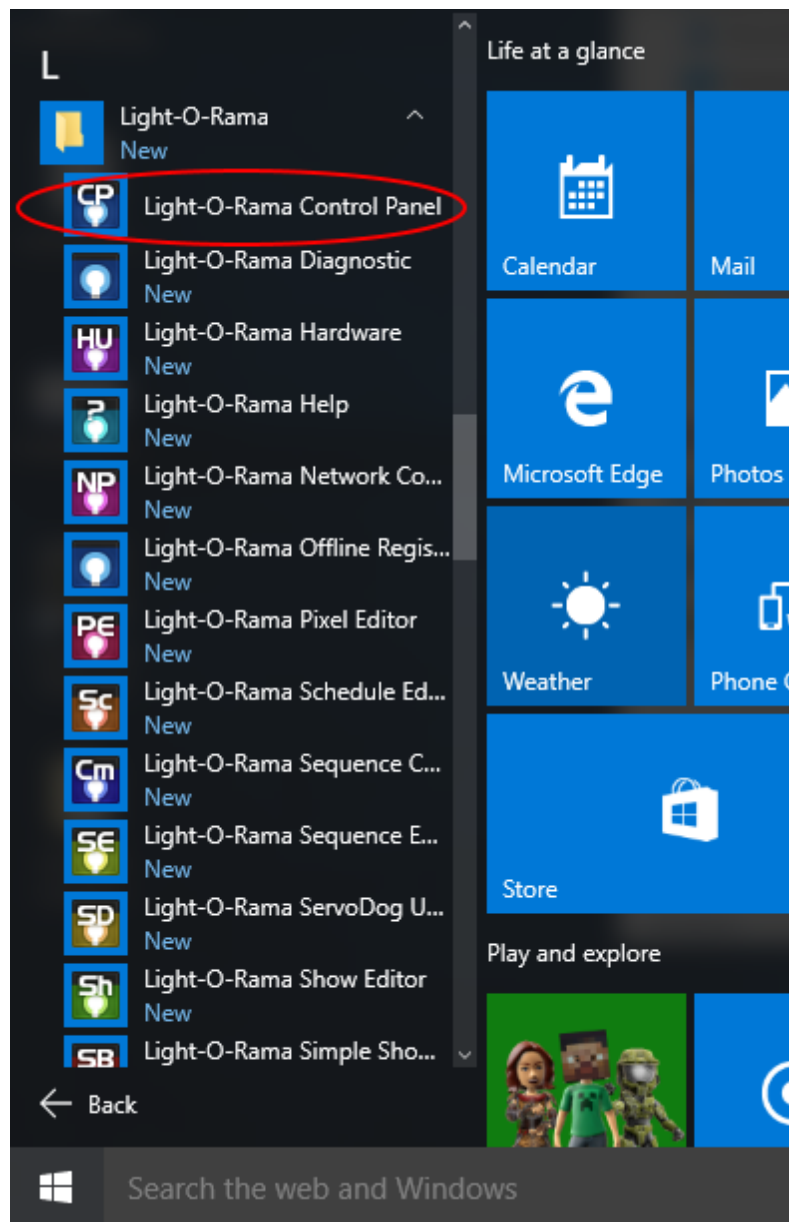
### What is the Light-O-Rama Control Panel?

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:



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

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:



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

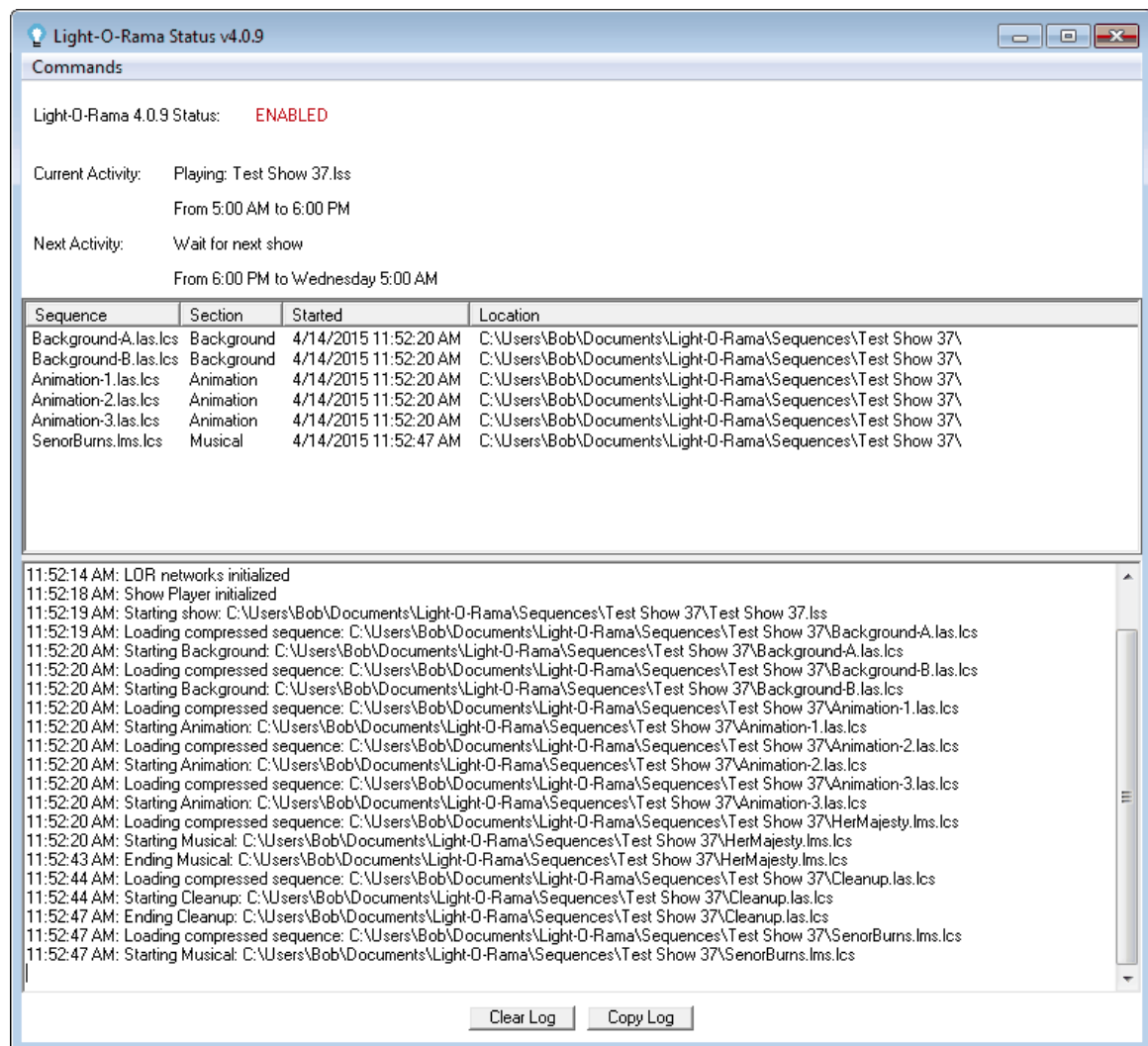
Left-clicking on the Light-O-Rama Control Panel's icon in your computer's system tray opens up the Light-O-Rama status window. This window shows whether or not the [Light-O-Rama Show Player](#) is currently monitoring your [schedule](#) to play [shows](#) at their scheduled times, and, if so, whether 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.

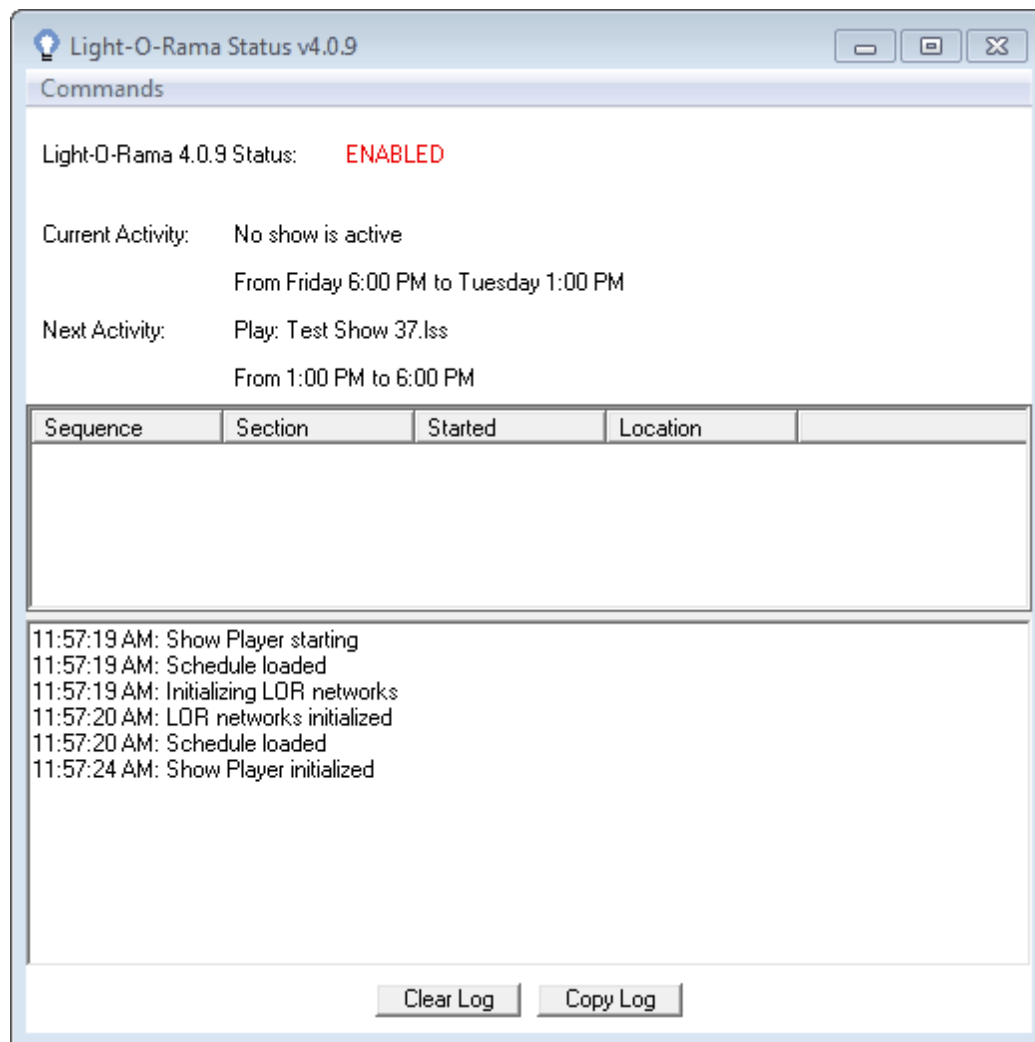
If that Status window shows Light-O-Rama's status as "Scheduled Play is Off", your scheduled shows will not play. If you wish to enable them, select "[Enable Schedule](#)" from its "Commands" menu or from the [Control Panel's right-click popup menu](#). Similarly, if the Status window says that they 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).

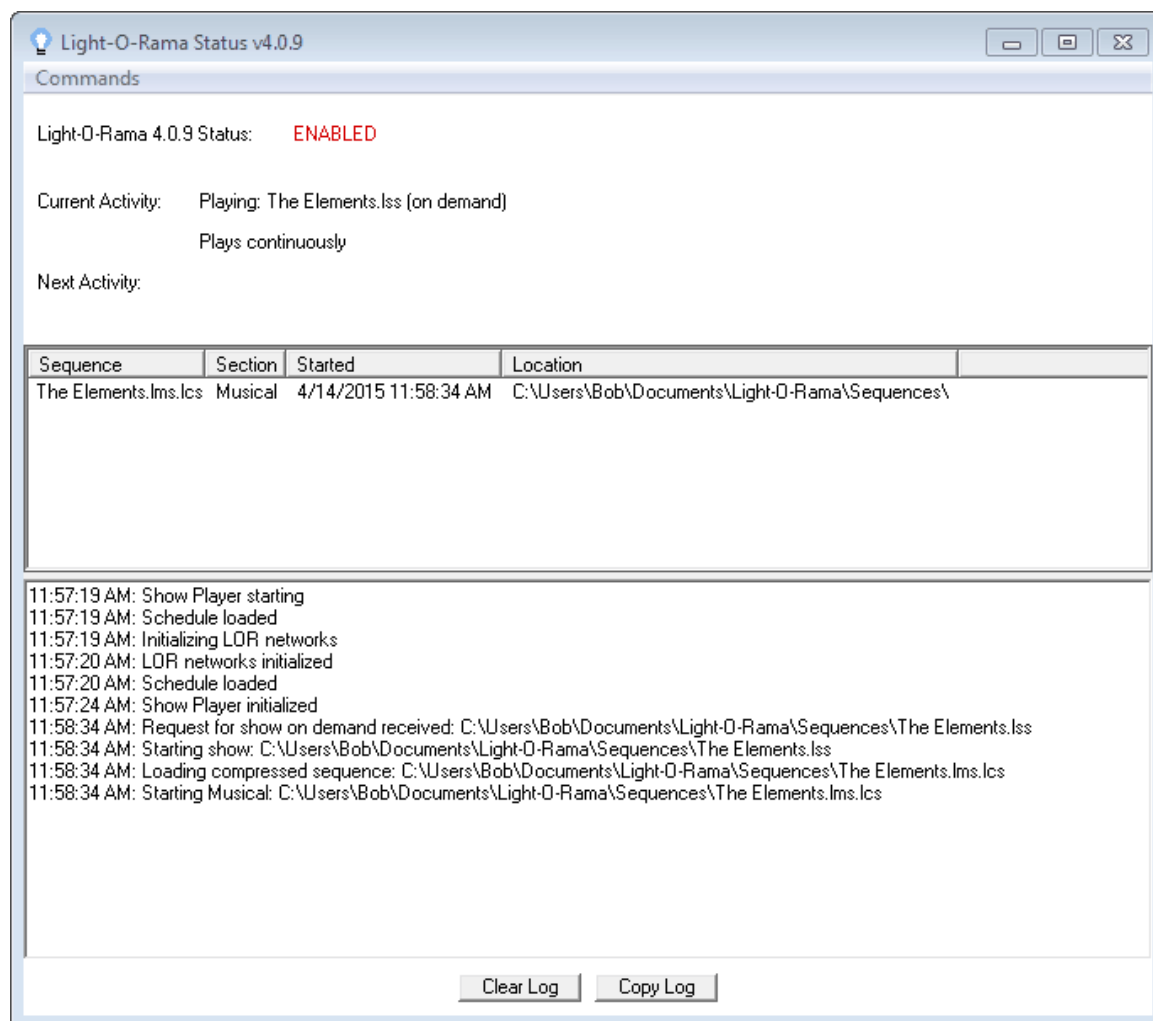


The status window, with scheduled shows enabled and a show currently playing

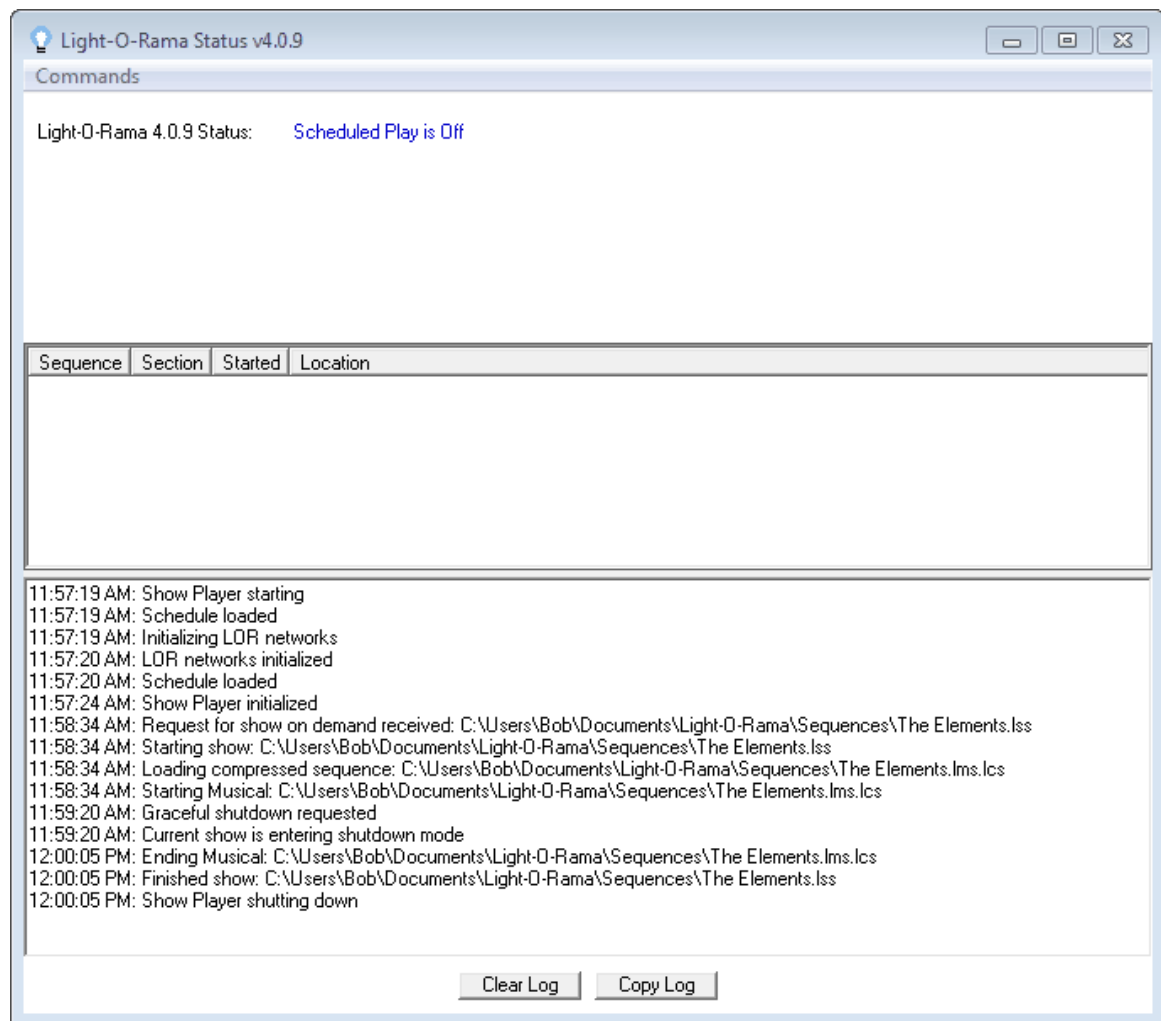




The status window, with scheduled shows enabled, but no show currently playing



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



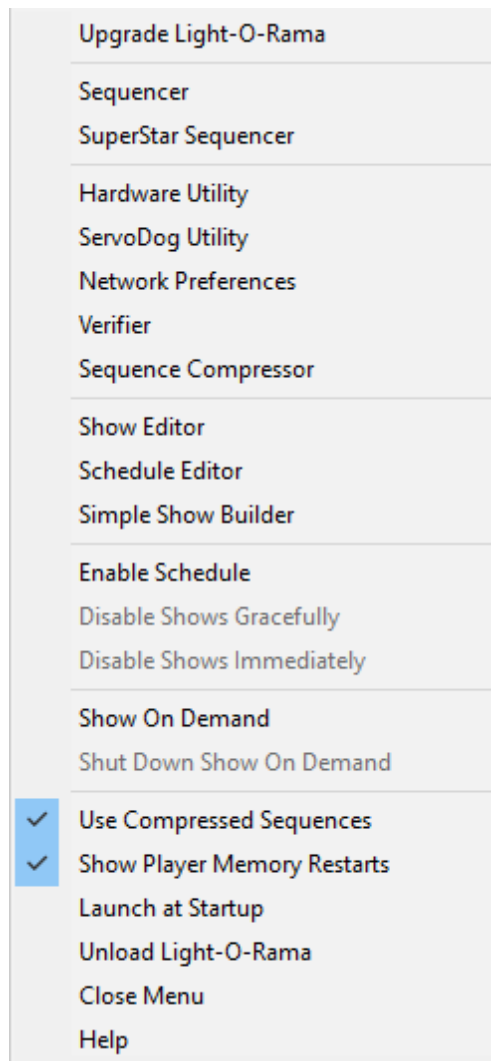
The status window, with shows disabled

## 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](#)

- [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](#).

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](#), used to create [sequences](#) and intensity files for sequences.

## **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**

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.

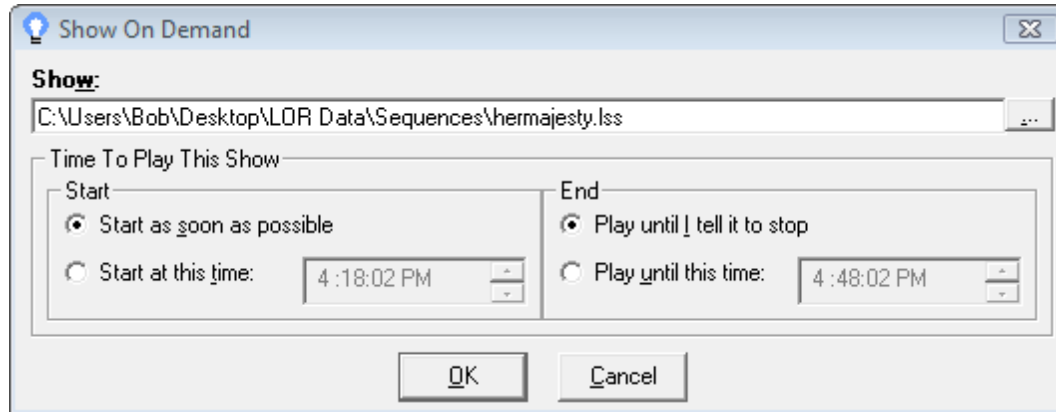
Stopping your show immediately will abruptly stop your [sequences](#), including any song that happens to be playing. To have the Show Player stop your show more gracefully, choose [Disable Shows Gracefully](#) instead.

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

**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).

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.

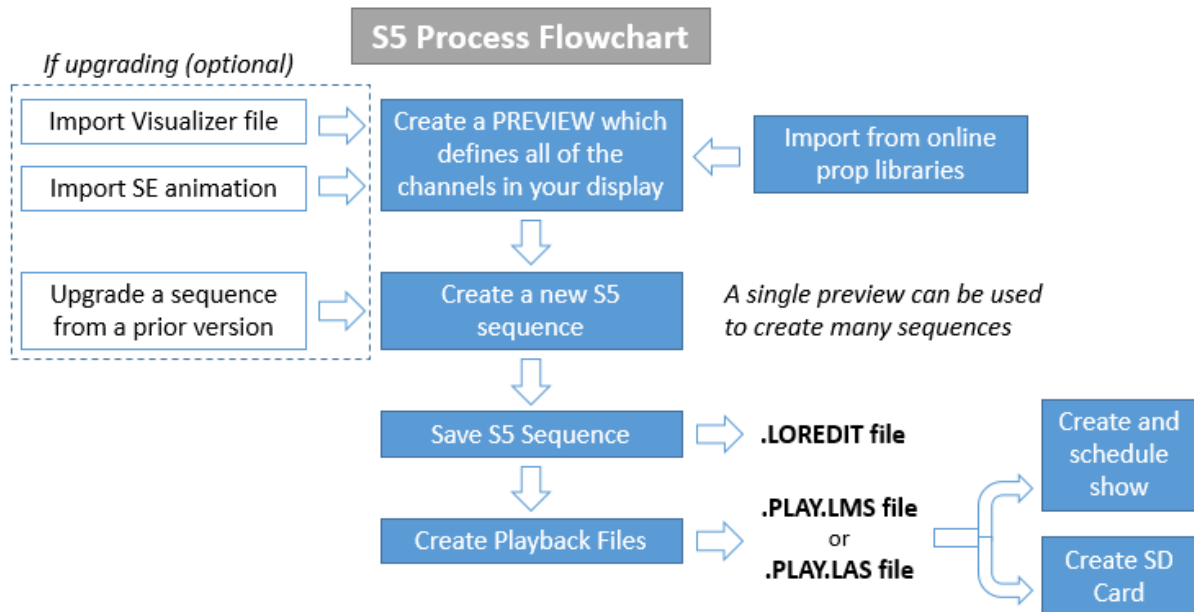
## **5.3 S5 Sequencer**



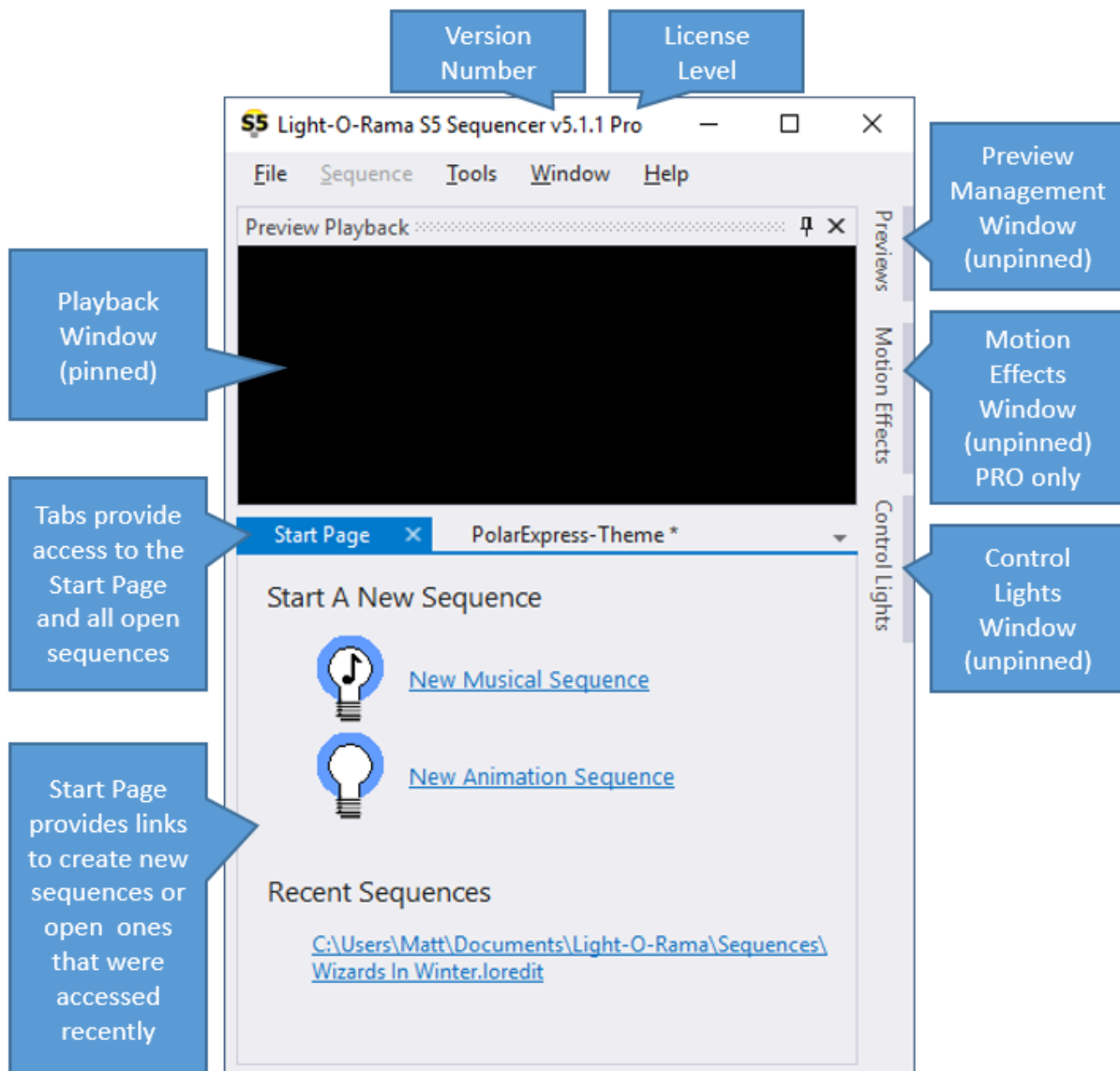
The Light-O-Rama S5 Sequencer is a tool used to create [sequences](#), which are files that contain commands to be sent to [controllers](#) to produce various [lighting effects](#) - to turn lights [on and off](#), make them [twinkle](#) or [shimmer](#), [fade up or down](#), and so forth.



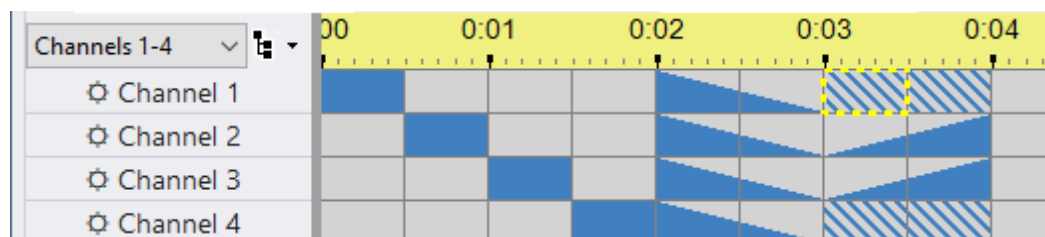
After creating sequences with the S5 Sequencer, those sequences can be grouped together into [shows](#), using the [Show Editor](#). Shows can then be [scheduled](#) to run at certain times, using the [Schedule Editor](#), and the [Show Player](#) can be used to monitor the schedule and play those shows at the scheduled times.



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 3 windows 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.



A sequence is represented in the S5 Sequencer as a grid, with rows being [channels](#) and columns being [timings](#). A cell in the grid represents the [lighting effect](#) or effects on that channel at that time. For example, the following sequence has four channels. At the start of the sequence, the first channel turns [on](#). It stays on for half a second, then turns off, and the second 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:

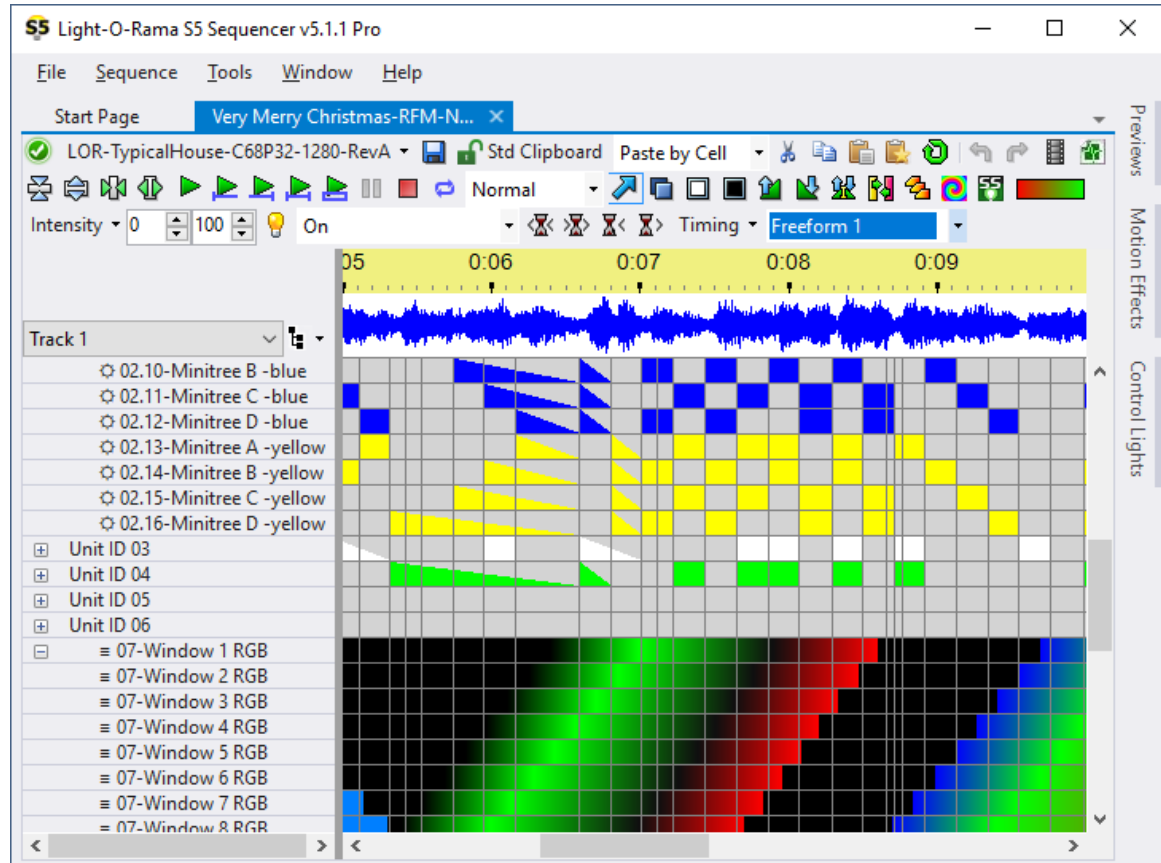


A sequence with four channels, and various lighting effects

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.

For more detailed information about sequences and the S5 Sequencer, please see the help file page on [sequences](#), and the following topics:

- [Editing Sequences Using the Keyboard](#)
- [Editing Sequences Using the Mouse](#)
- The Menu Bar
- [Toolbars](#)
- [The Right-Click Context Menu](#)
- [Channel Buttons](#)
- Track Bars
- [Loop Menus](#)
- The Channel Configuration Screen
- The Animator
- [The Beat Wizard](#)
- [The MIDI File Wizard](#)
- [The Tapper Wizard](#)
- [The VU Wizard](#)
- [Freeform Play Mode](#)
- Intensity File Section
- Comm Status Panel




The Light-O-Rama Sequencer, with a 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](#)

 Light-O-Rama S5 Sequencer v5.0.19 Pro



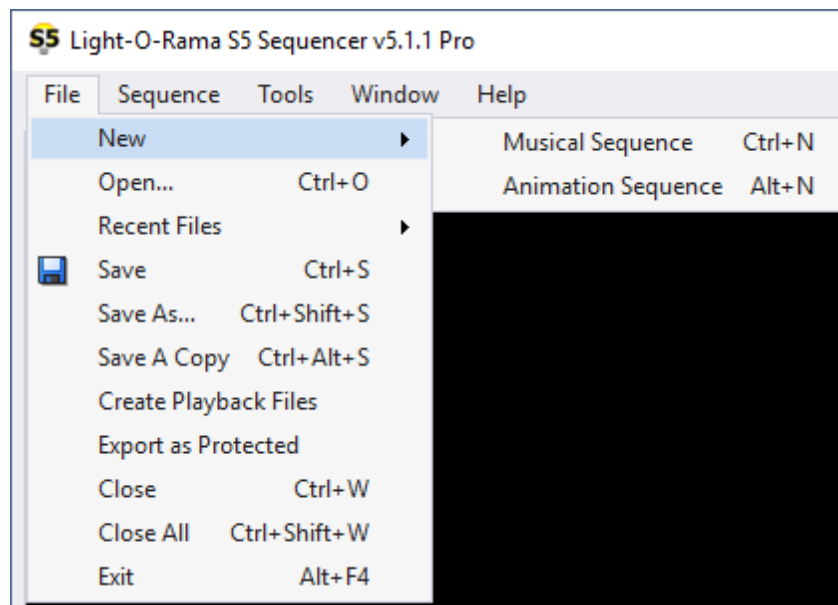
The S5 Sequencer's menu bar

#### 5.3.1.1 The 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 on which [theme](#) you are using). To select a sequence, simply click on its tab.

- [New](#)
- [Open](#)
- [Recent Files](#)
- [Save](#)
- [Save As](#)
- [Save A Copy](#)
- [Create Playback Files](#)
- [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.

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

"New Animation Sequence" has a keyboard hotkey: Alt-N.

## 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) it 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 sequence will be upgraded to S5 and you will receive some prompts during the upgrade process.

"Open" has a [keyboard](#) hotkey: Ctrl-O.

## Recent Files

Selecting "Open Recent" on the [Sequencer's File menu](#) opens the New and Open dialog, on its "Recent Sequence" tab, which lets you open by selecting it from a list of the most recently opened sequences.

## 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: Ctrl-S.

## 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

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.

## Create Playback Files

When you are finished with a sequence, select "Create Playback Files" from the [Sequencer's File menu](#) to save the current [sequence](#) in a format that can be used for scheduling a [show](#) or [writing an SD card for an LOR Director](#). If you subsequently make changes to the sequence, you will need to create playback files again.

If your sequence is named "mysequence.loredit", then the playback file will be named "mysequence.play.lms" if it is [musical sequence](#), or "mysequence.play.las" if it is an [animation](#). If you have a Pro license, a "mysequence.play.lms.pe.lid" intensity data file will be created at the same time. The playback file(s) will be placed in the same folder as the base sequence (mysequence.loredit).

## 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](#).

## 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.

## 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 The New Animation Dialog

The [Sequencer's](#) New Animation dialog is used to create a new [animation sequence](#). The New Animation dialog is opened by selecting "New Animation Sequence" from the New and Open dialog's "New Sequence" tab. The New and Open dialog, in turn, can be opened in a few ways:

- Selecting "[New](#)" from the [File menu](#);
- Clicking the "[New Sequence](#)" button on the [Standard toolbar](#);
- Using the [keyboard](#) shortcut Ctrl-N.

For detailed help, please refer to the following sections:

- [Who is the author of this new animation?](#)
- [How many channels should this animation use?](#)
- [Automatically set up channels to use standard LOR controllers](#)
- [How long should this animation be?](#)
- [How much time should be in between timings?](#)
- [Use a fixed timing grid](#)
- [Use loops.](#)
- [Save these choices as defaults.](#)
- [Don't ask me this again.](#)

New Animation Sequence

Sequence Author (cannot be changed later):  
Matt Brown

Select Preview

A preview defines all of the display elements and channels in your sequence

Existing Preview Quick Preview

2017 class sample

Length of animation (not including loops):  
1:00.00 ☐ Use Loops

Initial Timing

☒ Tenth second intervals  
☐ Half second intervals  
☐ One second intervals  
☐ Custom interval  
0.05  
☐ Create an empty freeform timing grid

Default number of motion effect rows for pixel props: (requires PRO license) 1

☒ Save these choices as defaults

Create Cancel

The New Animation dialog

## Who is the author of this new animation?

If you wish, you can put your name here. It will be saved with the [sequence](#), and will be displayed as a part of the information available via "Sequence Info" of the View menu.

Once set, even if set to a blank value, this cannot be changed.

## How many channels should this animation use?

Specify the number of [channels](#) that you want in this sequence. You can always change this later,



by adding or removing channels, for example via the Channel Configuration screen or via a [channel's right-click popup menu](#).

**Note:** All channels specified here will be placed into a single [track](#). More tracks can be added later, for example via Add New Track or Duplicate Track of the Edit menu.

## Automatically set up channels to use LOR controllers

If you check this box, the [channels](#) in your newly created [sequence](#) will automatically be set up to use [Light-O-Rama controllers](#). The first channel will be set up to use [unit 1 circuit 1](#), the next unit 1 circuit 2, and so forth, up through unit 1 circuit 16, and then on to unit 2, and so forth. All such channels will be set up to use the regular [LOR network](#).

## How long should this animation be?

This allows you to specify the duration of the [sequence](#). You will be able to change the value later, using "Change Total Time" in the Edit 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](#).

## How much time should be in between timings?

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 "Some other value", 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](#).

## Use a fixed timing grid

Unless you chose "Don't add any timings" in response to the question "[How much time should be in between timings?](#)", then if this box is checked, the [sequence's](#) initial [timing grid](#) will be a [fixed timing grid](#). Otherwise, it will be a [freeform timing grid](#).

## Use loops.

If you check the "Use Loops" checkbox, 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 "Turn on Loops" from the Edit menu.

## Save these choices as defaults.

If you turn this checkbox 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.

## Don't ask me this again.

If you turn this checkbox on, then whenever you create new [animation sequences](#) in the future, you will not be presented with this dialog. Instead, the default answers to the questions will be used.

If you later decide that you want to change these defaults, you can do so by going to the New Animation Preferences dialog, from Preferences submenu of the Edit menu.

### 5.3.1.1.2 The New Musical Sequence Dialog

The [Sequencer's](#) New Musical Sequence dialog is used to create a new [musical sequence](#). The New Musical Sequence dialog is opened by selecting "New Musical Sequence" from the New and Open dialog's "New Sequence" tab. The New and Open dialog, in turn, can be opened in a few ways:

- Selecting "[New](#)" from the [File menu](#);
- Clicking the "[New Sequence](#)" button on the [Standard toolbar](#);
- 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 you want to build the new [sequence](#) based off of. After you select such a file, then the New Musical Sequence dialog will open.

For detailed help, please refer to the following sections:

- [Author of this new sequence](#)
- [Musical Information](#)
- [Channel Setup](#)
- [Initial Timing](#)
- [Save as defaults.](#)
- [Don't ask me this again.](#)

New Musical Sequence

Sequence Author (cannot be changed later):  
Matt Brown

Select Preview

A preview defines all of the display elements and channels in your sequence

Existing Preview Quick Preview

LOR-TypicalHouse-C68P32-1280-RevA

Music

File name Wizards In Winter.mp3

Artist Trans-Siberian Orchestra

Title Wizards In Winter (Instrumental) (Album Version)

Album The Lost Christmas Eve

Initial Timing

Use a Wizard to create timings

☒ Not now, maybe later

☐ Use the MIDI Wizard

☐ Use the Tapper Wizard

☐ Use the Beat Wizard

☐ Use the VU Wizard

Create equally spaced timings

☐ Tenth second intervals

☒ Half second intervals

☐ One second intervals

☐ Custom interval

0.05

Default number of motion effect rows for pixel props: (requires PRO license) 1

☒ Save these choices as defaults

Create Cancel

The New Musical Sequence dialog

## Author of this new sequence

If you wish, you can put your name here. It will be saved with the [sequence](#), and will be displayed as a part of the information available via "Sequence Info" of the View menu.

Once set, even if set to a blank value, this cannot be changed.

## Musical 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 as a part of the information available via "Sequence Info" of the View menu.

If you are basing the sequence on an MP3 file, and the file is tagged with this information, it will automatically be placed into this section (though you can still change or delete it if you wish).

When the "Use LOR Internal Media Format" is checked, the [Sequencer](#) will automatically attempt to fix various issues that the media may have with playback. It is suggested that this option always be checked. If desired, though, it can later be changed for any particular sequence via Edit / Use Internal Media.

You can change this information later, via "Sequence Info" of the Edit menu.

## Channel Setup

In this section, you can either specify the number of [channels](#) that you want in this sequence, or specify that the channels should be set up based upon a channel configuration file.

If you specify the number of channels, you can also check the "Using standard LOR controllers" checkbox, which will cause the channels in the new sequence to be automatically set up to use [Light-O-Rama controllers](#). The first channel will be set up to use [unit 1 circuit 1](#), the next unit 1 circuit 2, and so forth, up through unit 1 circuit 16, and then on to unit 2, and so forth. All such channels will be set up to use the regular [LOR network](#).

Unless you use a channel configuration file, all channels specified here will be placed into a single [track](#). More tracks can be added later, for example via Add New Track or Duplicate Track of the Edit menu.

You can always change the number of channels or their settings later, by adding or removing channels, for example via the Channel Configuration screen or via a [channel's right-click popup menu](#).

## Initial Timing

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 "some other value"), 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 "Some other value", 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.

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

## Save 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).

## Don't ask me this again.

If you turn this checkbox on, then whenever you create new [musical sequences](#) in the future, you will not be presented with this dialog. Instead, the default answers to the questions will be used.

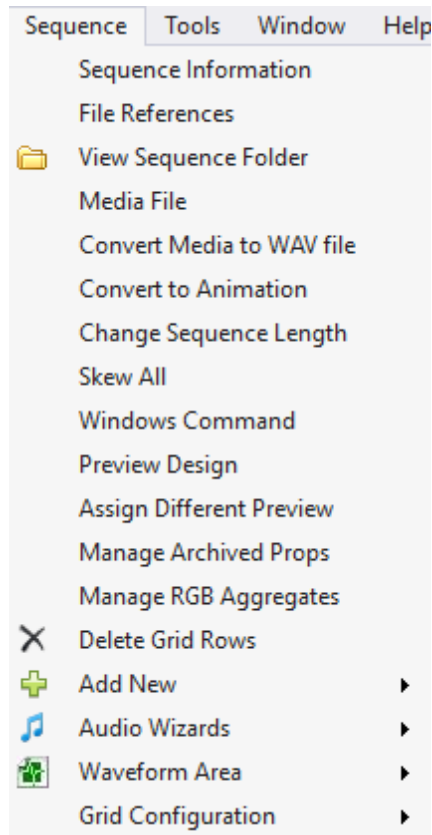
If you later decide that you want to change these defaults, you can do so by going to the New Musical Sequence Preferences dialog, from Preferences submenu of the Edit menu.

### 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](#)
- [Delete Grid Rows](#)
- [Add New](#)
- [Audio Wizards](#)
- [Waveform Area](#)
- [Grid Configuration](#)



**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

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](#).

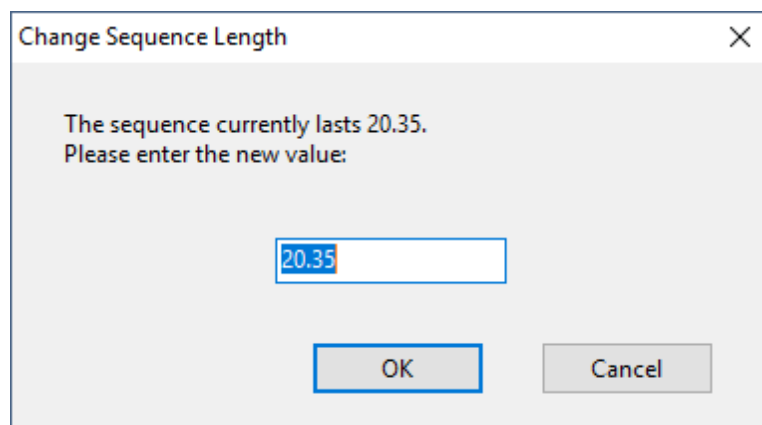
Perhaps someone has sent you a sequence, but you don't have the media file to go with it. By converting the sequence to an animation, you can still play it back and watch the [preview](#).

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.



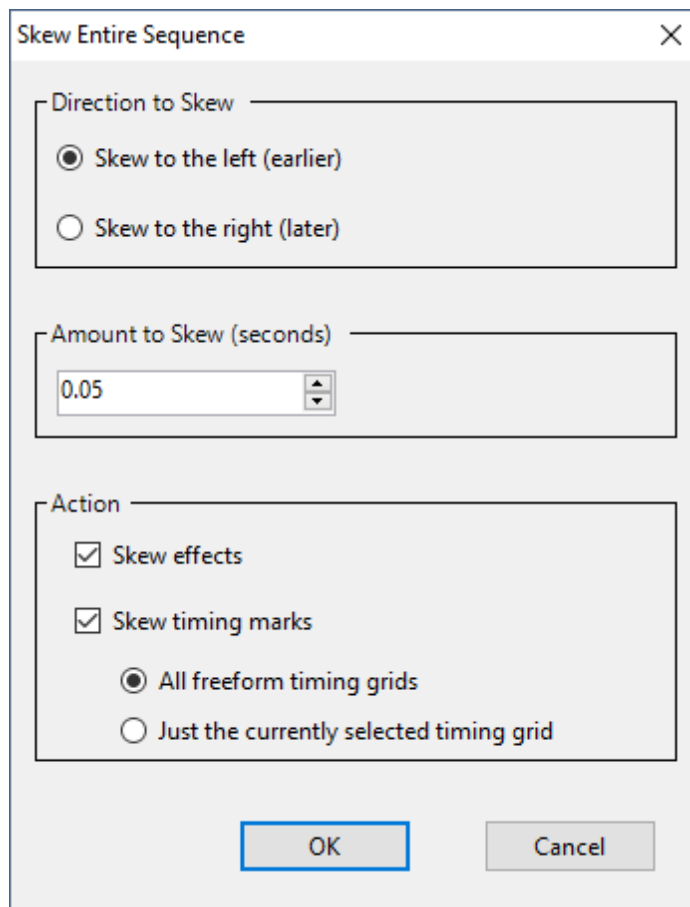
The Change Sequence Length dialog

## Skew All

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 box is a window with a title bar "Skew Entire Sequence" and a close button (X). It contains three sections:

- Direction to Skew:** Two radio buttons. The first is "Skew to the left (earlier)" and is selected. The second is "Skew to the right (later)".
- Amount to Skew (seconds):** A text box containing "0.05" and a spin button.
- Action:** Two checked checkboxes: "Skew effects" and "Skew timing marks". Below them are two radio buttons: "All freeform timing grids" (selected) and "Just the currently selected timing grid".

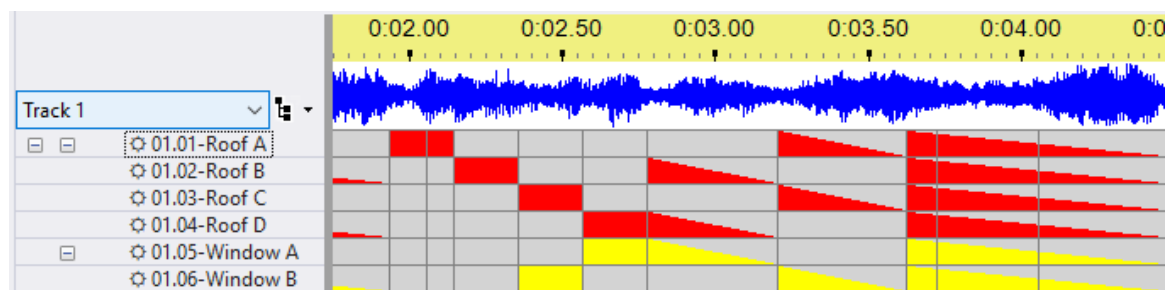
At the bottom are "OK" and "Cancel" buttons.

The Skew All dialog

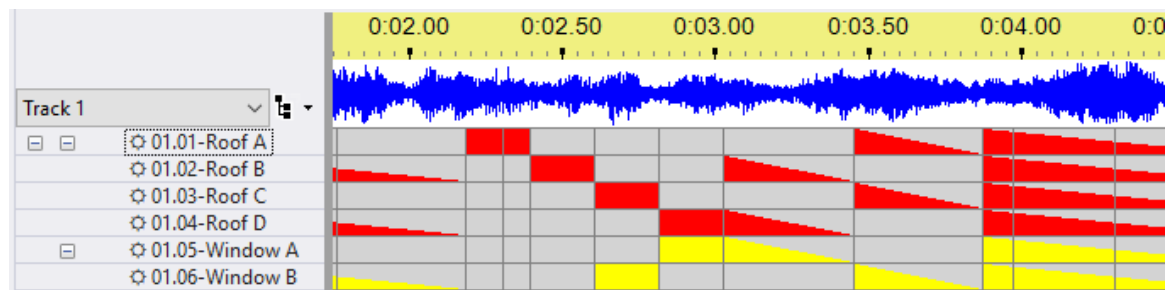
In most cases, you should leave the "Action" section with the default choices. However, if you have a special situation, you can turn off skewing of [effects](#) or [timing marks](#) as needed.

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:



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

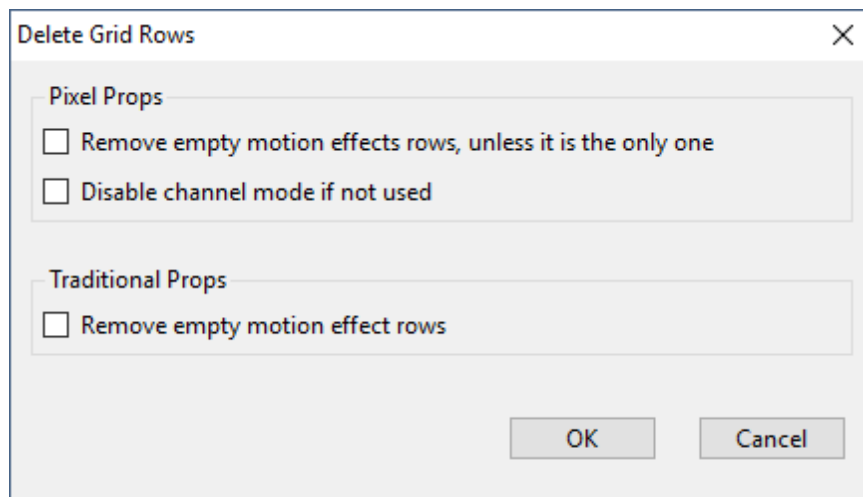
This menu item will open the [Manage Archived Props dialog](#) which allows you to change [archived props](#) in the current [sequence](#): delete them, turn them into preview props, or turn them into [beat channels](#).

## 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 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.

## 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

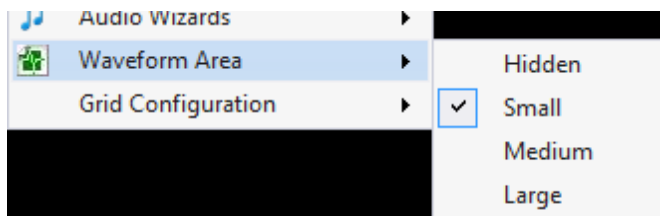
This menu item opens a sub-menu, allowing you to add a new [beat channel](#), [subsequence](#), or [RGB aggregate](#). "Add New" is also available on the Grid View menu.

## Audio Wizards

This menu item opens a sub-menu, allowing you to select an [audio wizard](#) to run.

## Waveform Area

The "Waveform" sub-menu from allows you to set the audio waveform's display height. Choose "Large" to see the maximum amount of detail in the waveform. Choose "Small" to see the waveform, but have more room to display the [sequence](#). [Animation sequences](#) are automatically set to hide the waveform.



## Grid Configuration

This item opens a sub-menu allowing you import or export the user-defined grid views in the sequence. For Pro users, it will also import/export the properties of each motion effect row. The system-generated "Show All Items" grid view is not included in the export. "Grid Configuration" is also available 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:

- **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:** 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.

The Sequence Information dialog

## 5.3.1.2.2 File References Dialog

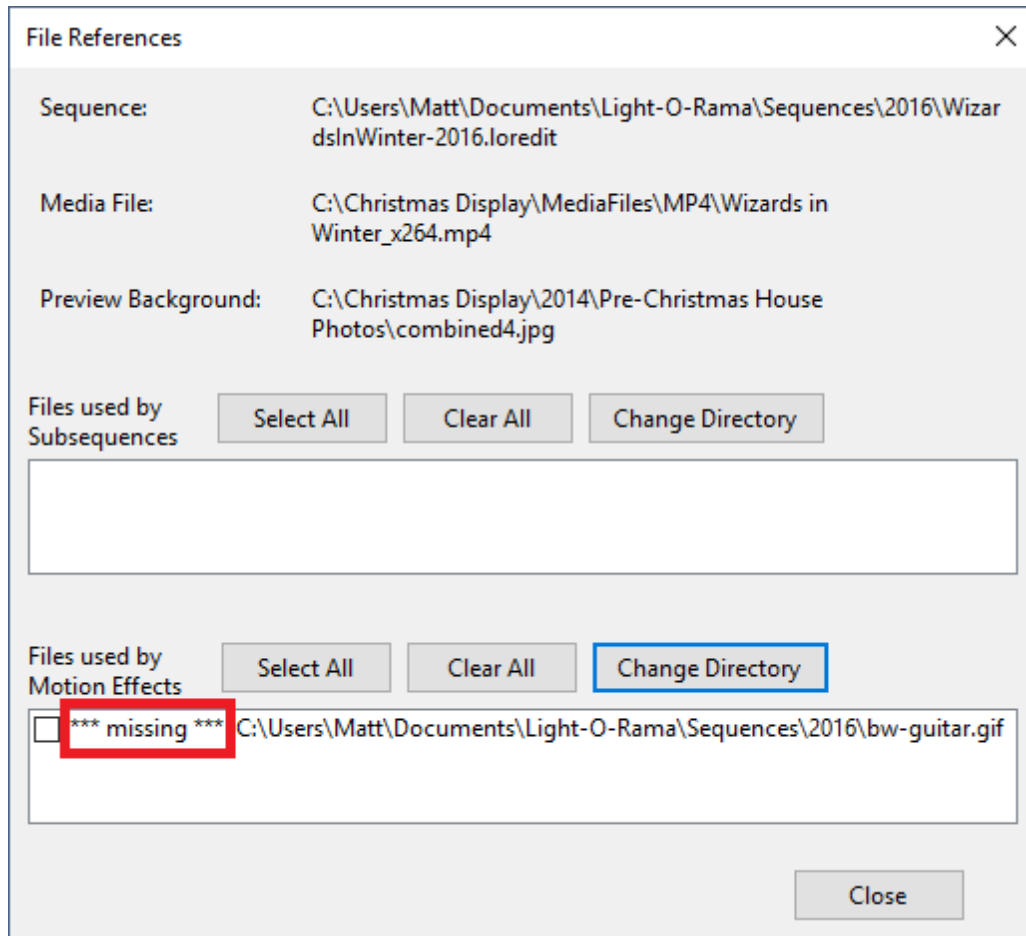
Selecting "File References" from the [Sequencer's Sequence menu](#) opens a dialog that lists all files referenced by the sequence. This includes the media file, the background image for the preview, [subsequences](#), and files used by motion effects (e.g. Movie and Picture [effects](#)).

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.

Subsequence and motion effect references can be fixed with this dialog. 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](#).

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.



The File References dialog

#### 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 (either by the Sequencer or the [Show Player](#)), the command will be executed.

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 for the [Advanced feature level](#).

**Windows Shell Command**

**Command**

Please enter the Windows shell command that you want executed whenever this sequence runs.  
If you don't want any command executed when the sequence runs, simply make the box empty.

ers\Matt\Documents\Light-O-Rama\Sequences\pause.bat %DT\_a% %ENV\_USERNAME% %MEDIA\_ALBUM%

**Window Style**

Please select the window style you want to use when the command is executed.

☐ Hidden: The window is hidden, and the focus is passed to it.

☒ Normal, Focus: The window is displayed normally, and the focus is passed to it.

☐ Minimized, Focus: The window is minimized, and the focus is passed to it.

☐ Maximized, Focus: The window is maximized, and the focus is passed to it.

☐ Normal, No Focus: The window is displayed normally, but the focus is not passed to it.

☐ Minimized, No Focus: The window is minimized, but the focus is not passed to it.

OK Cancel

Windows Shell Command dialog

- [Shell Command Variables](#)
- [Sharing Sequences between Computers, and Security](#)

## 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 " <i>something</i> "; for example, use %ENV_PATH% to get the value of your computer's PATH environment variable
%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_EXTENSION%	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_ATE%	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_EXTENSION%	The name of the sequence file, without path information and without the file extension (such as ".lms")

NO_EXT%	
%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.

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.

### 5.3.1.2.4 Manage Archived Props Dialog

Selecting "Manage Archived Props" from the [Sequencer's Sequence menu](#) opens a dialog where you can view all of the [archived props](#) in a sequence.



Archived Props

☐ Select All

Prop	# of Effects
<input type="checkbox"/> DMX 1.1	2
<input type="checkbox"/> New RGB	5
<input type="checkbox"/> Unit 01.3	0
<input type="checkbox"/> Unit 01.7	5
<input type="checkbox"/> Unit 01.8	0

Checked Items

Move To  
Preview  
Total: 0

Move To  
Beats  
Total: 0

Delete  
Total: 0

Save Cancel

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:

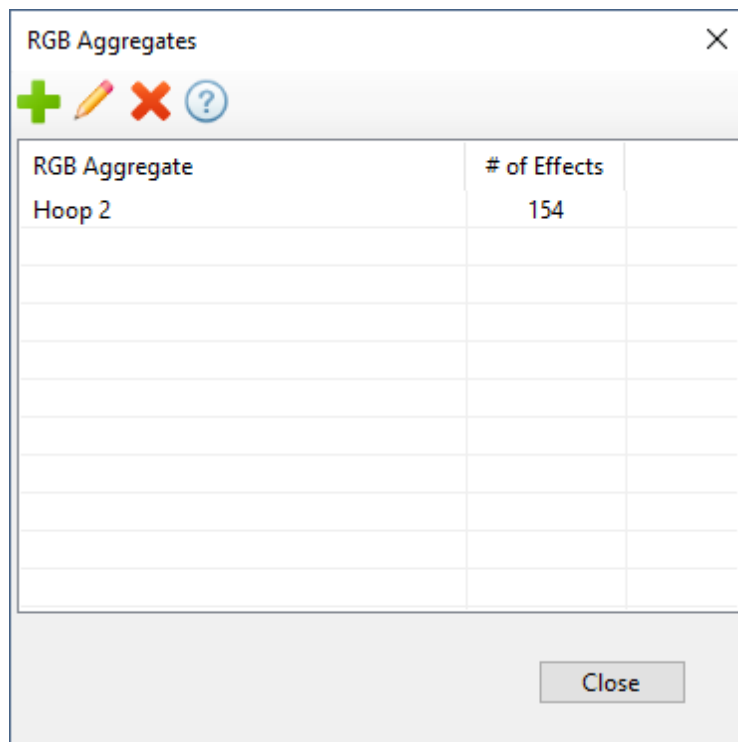
- "Move to preview" will convert the archived prop to a preview prop (i.e. it adds the prop to the preview). The prop is no longer archived and its sequencing will appear during preview playback and will control real lights.
- "Move to beats" will convert the archived prop to [beat channels](#). While 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](#)
- [Modify an existing RGB aggregate](#)
- [Delete an RGB aggregate](#)



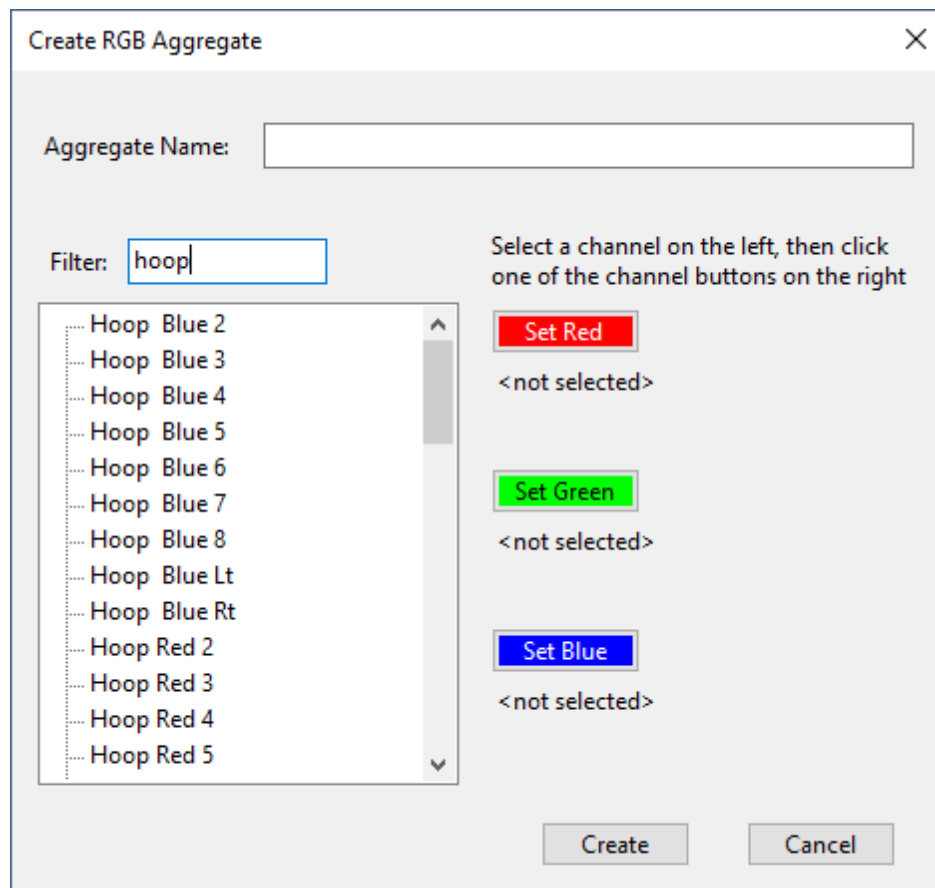
The Manage RGB Aggregates dialog

## 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 down 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.

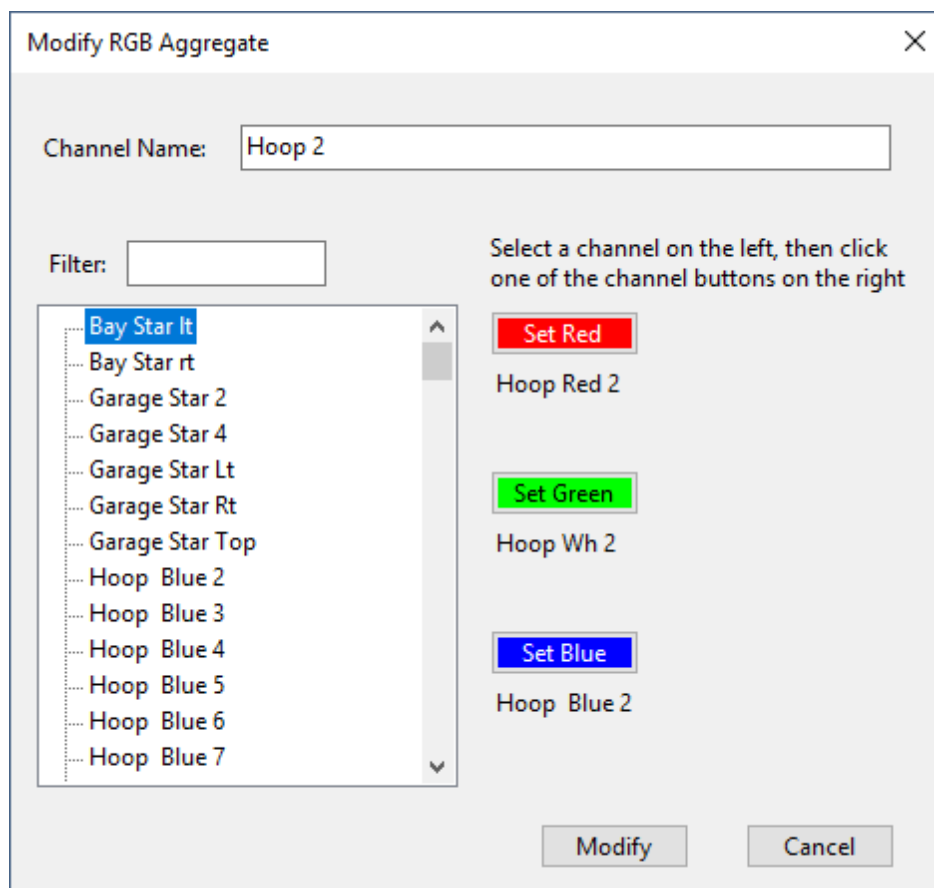
It is not required to set all 3 slots. Setting only 1 or 2 of the slots is fine.



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](#).



Modifying an RGB Aggregate

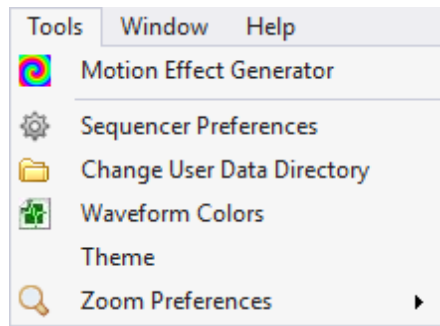
## Delete an RGB aggregate

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.

### 5.3.1.3 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](#)
- [Sequencer Preferences](#)
- [Change User Data Directory](#)
- [Waveform Colors](#)
- [Theme](#)
- [Zoom Preferences](#)



The Tools Menu

## Motion Effect Generator

This option on the [Tools menu](#) opens the [Motion Effect Generator](#) window. This menu item can be used when no sequences are open to test effects and optionally save the one's you like. You can do this at any license level.

When a sequence is open, this menu item can be used to place motion effects in the active [sequence](#). 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.

## 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](#).

## 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.

## Waveform Colors

This option on the [Tools menu](#) allows you to customize the colors of the [waveform display](#).

## 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](#).

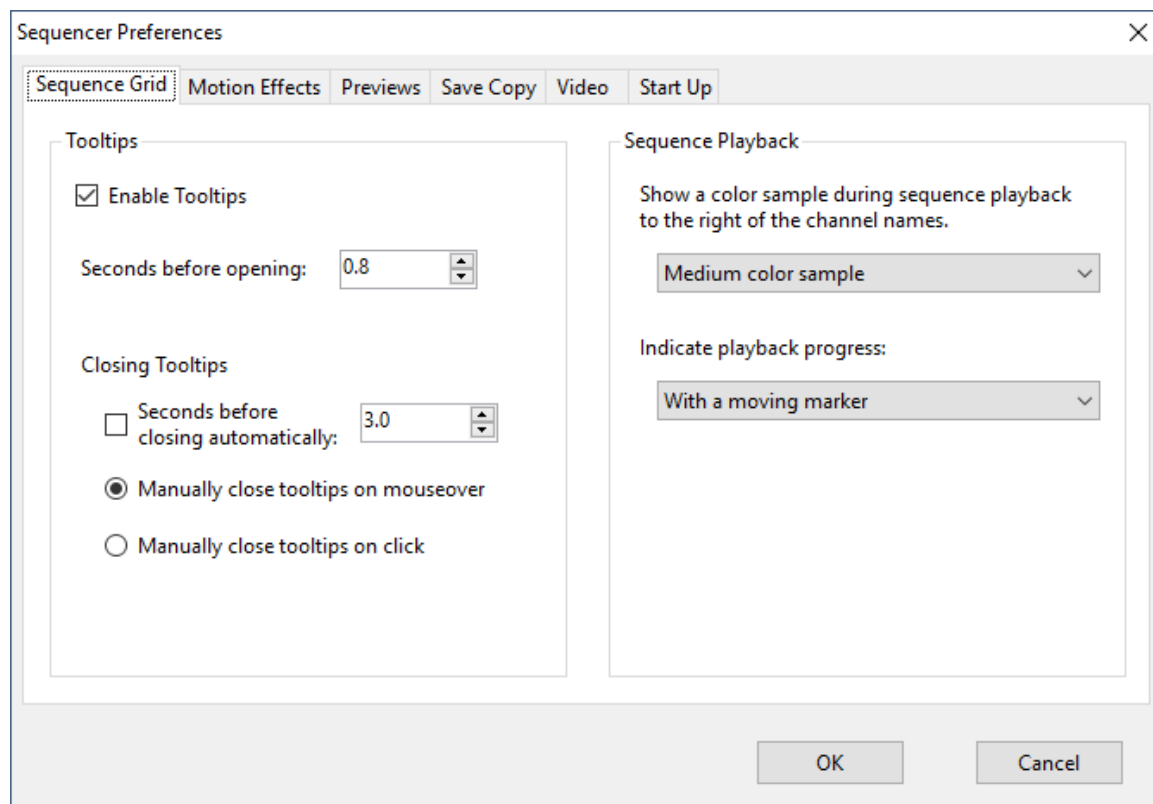
## Zoom Preferences

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 sub-menu 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:

- [Sequence Grid](#)
- [Motion Effects](#)
- [Previews](#)
- [Save Copy](#)
- [Video](#)
- [Start Up](#)

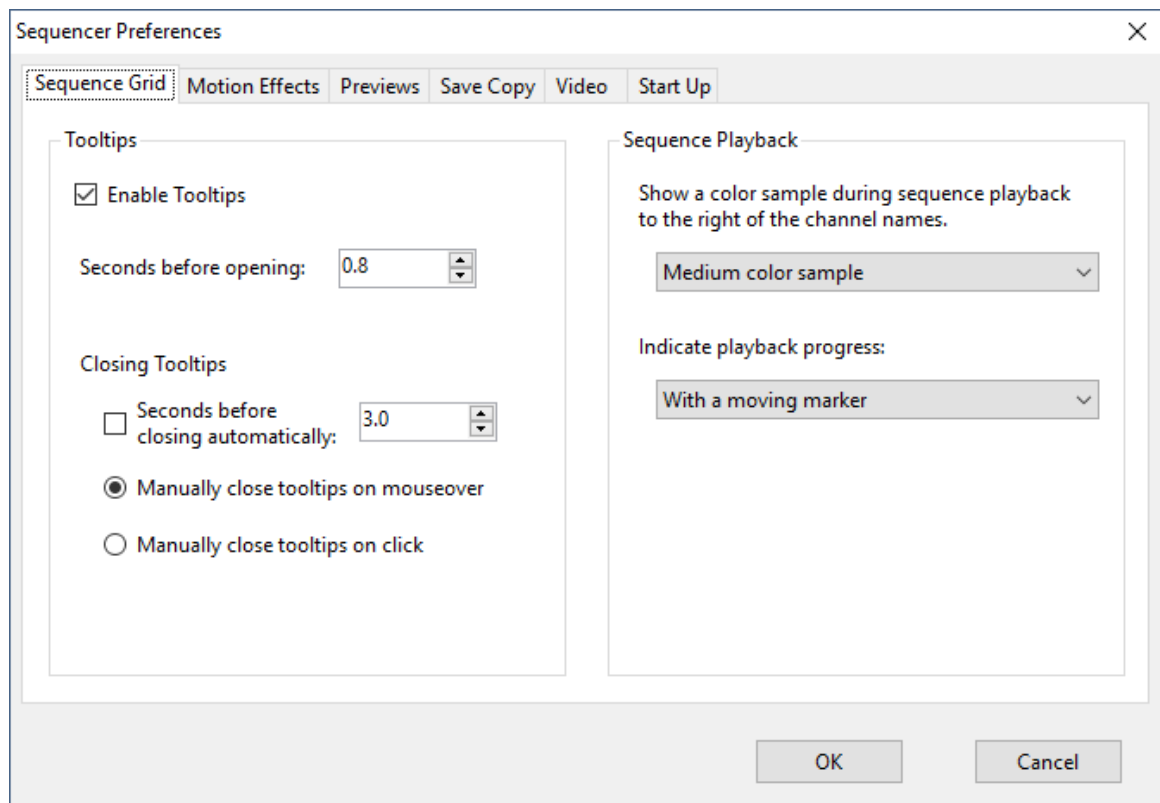


**The Sequencer Preferences Dialog**

## 5.3.1.3.1.1 Sequence Grid Preferences

The "Sequence Grid" 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](#)
- [How color samples are displayed during playback](#)
- [How progress is indicated during playback](#)



The Sequencer Preferences - Sequence Grid Tab

## Tool-tip Preferences

- Enable tooltips
- Seconds before opening
- Seconds before closing automatically
- Manually close tooltips on mouseover
- Manually close tooltips on click

### ***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***

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.

## **Color Sample Preferences**

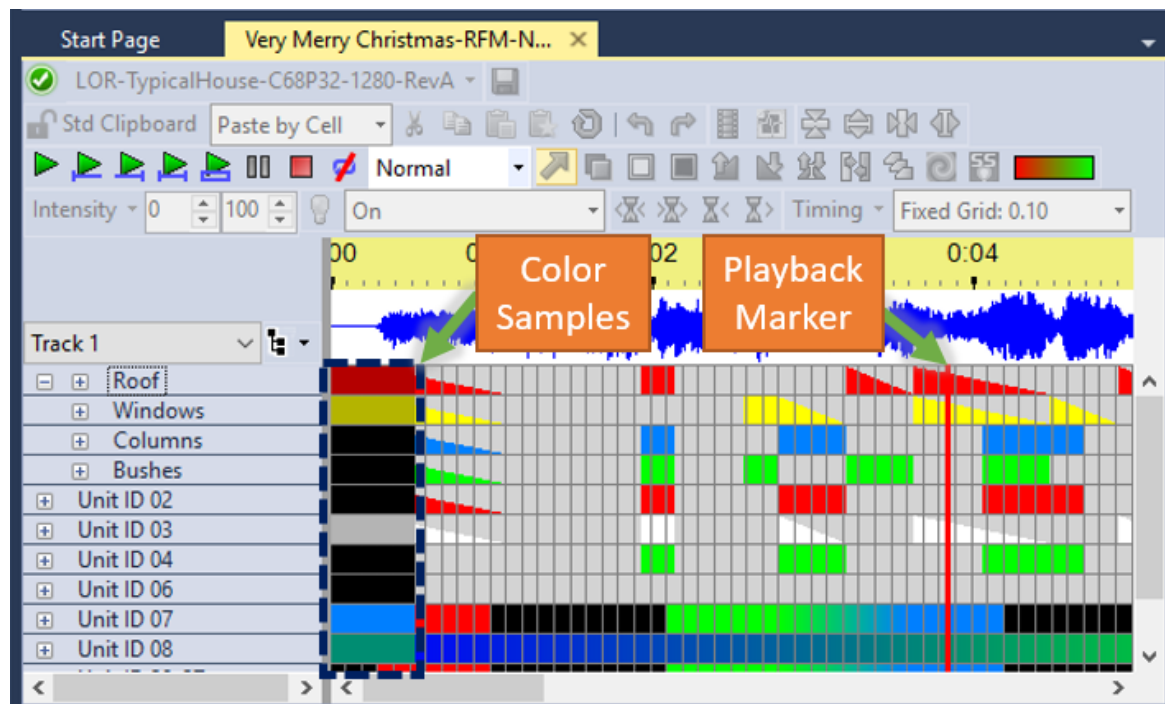
This option controls the width of the color sample area (just to the right of the channel names, as shown in the picture below). Choose "No color sample" to not display color samples at all.

## **Playback Progress Preferences**

This option controls how the playback marker is displayed. The options are:

- Use a moving marker. This displays a marker at the current playback location, regardless of timing marks.
- Highlight the current column. This highlights the timing marks immediately before and after the current playback location.
- Highlight the current timing mark. This 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.



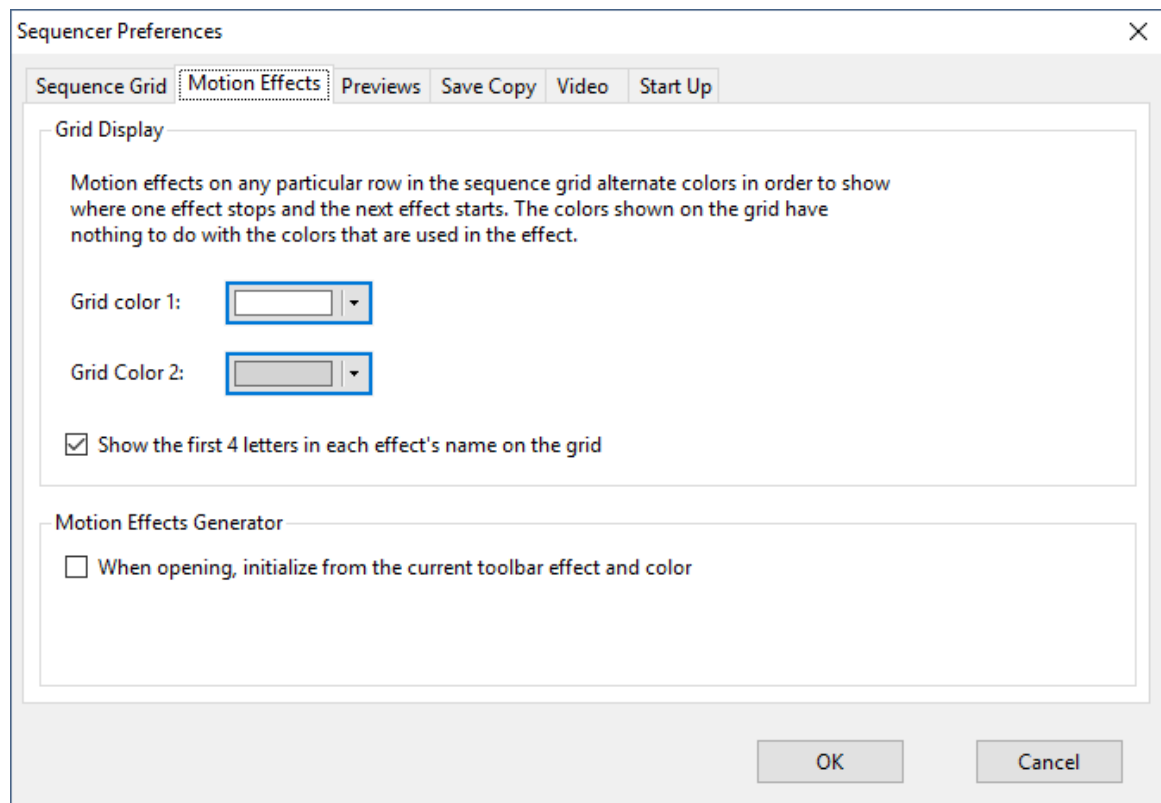


Playback in Progress

#### 5.3.1.3.1.2 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](#)
- [How the Motion Effect Generator is initialized when it opens](#)



The Sequencer Preferences - Motion Effects Tab

## How motion effects are displayed in the sequence grid

### ***Motion Effect Row Colors***

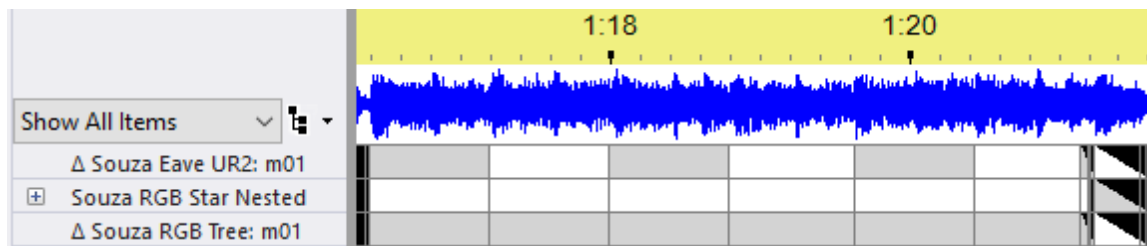
Motion effects on any particular row in the sequence grid alternate colors in order to show where one effect stops and the next effect starts. The colors shown on the grid have nothing to do with the colors that are used in the effect. Use "Grid color 1" and "Grid color 2" to set the 2 colors displayed 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***

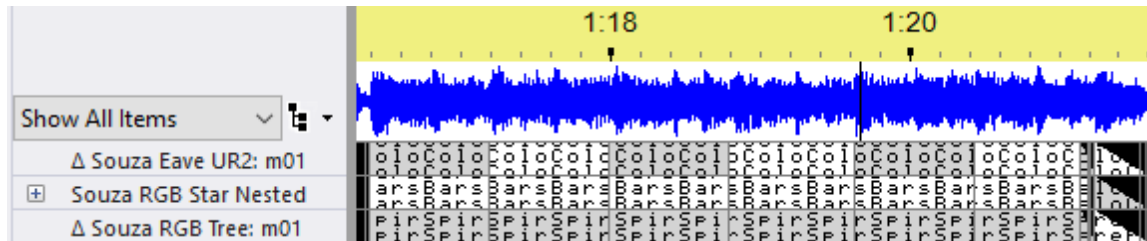
The first 4 letters of the effect's name can be displayed on the sequencer grid. This can help identify the effect.

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).



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

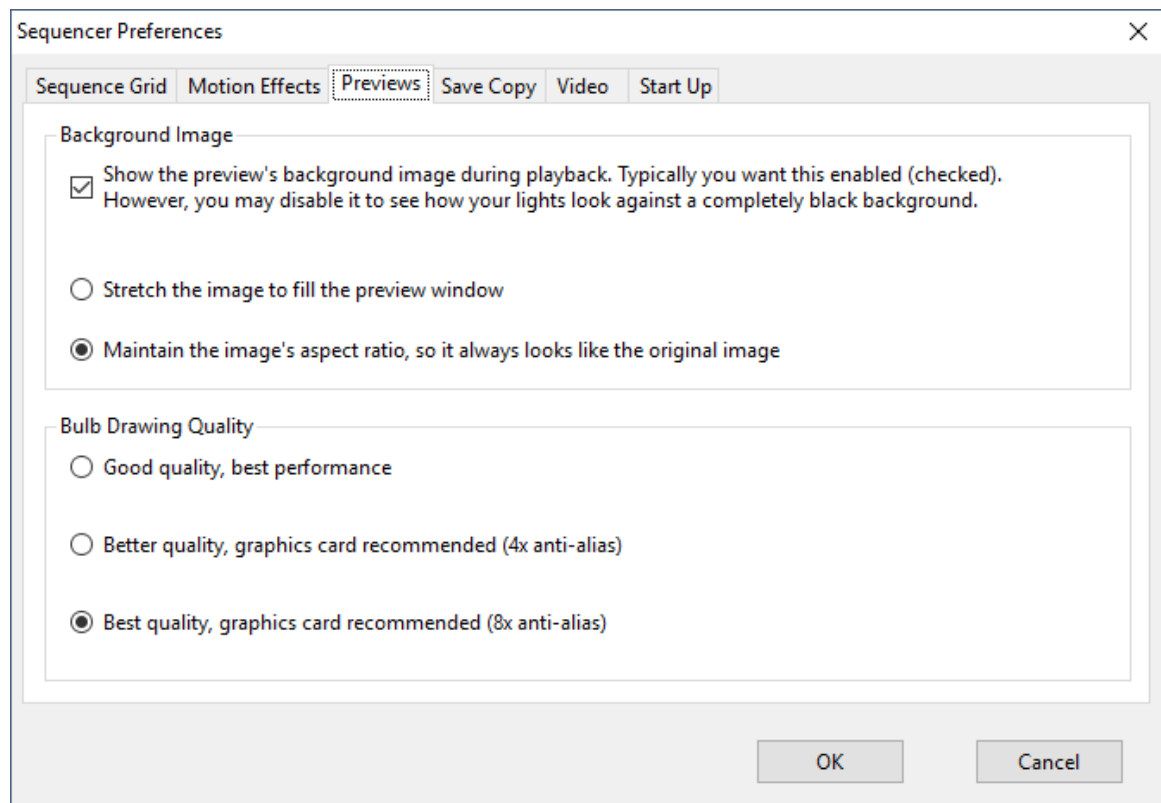
## How the Motion Effect Generator is initialized when it opens

The Motion Effect Generator can be initialized with values from the sequence toolbar when creating a new effect (it has no impact when modifying an existing effect). If enabled then the first color in the palette will reflect the value of the Color Fade Tool on the sequence toolbar. Also, the effect will be initialized based on the current toolbar channel effect: Colorwash motion effect for "on", Twinkle motion effect for "twinkle", and a flashing Colorwash motion effect for "shimmer".

### 5.3.1.3.1.3 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](#)



The Sequencer Preferences - Previews Tab

## How preview background images are handled

The first check box controls whether the background image is displayed at all. We recommend that you leave this box checked.

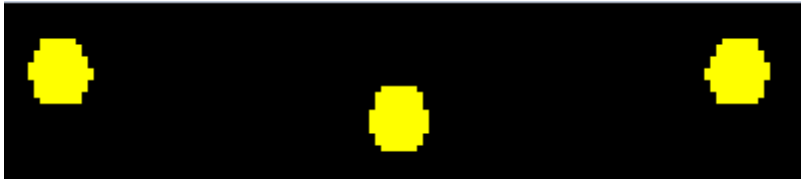
The second part determines whether the background image will be stretched to completely fill the playback window, or whether the image's aspect ratio (the ratio of the width to the height) will be maintained. Note that props are drawn in relation to the background image; so if you choose the option where the aspect ratio is maintained, then it will also be maintained for 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 setting. 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):



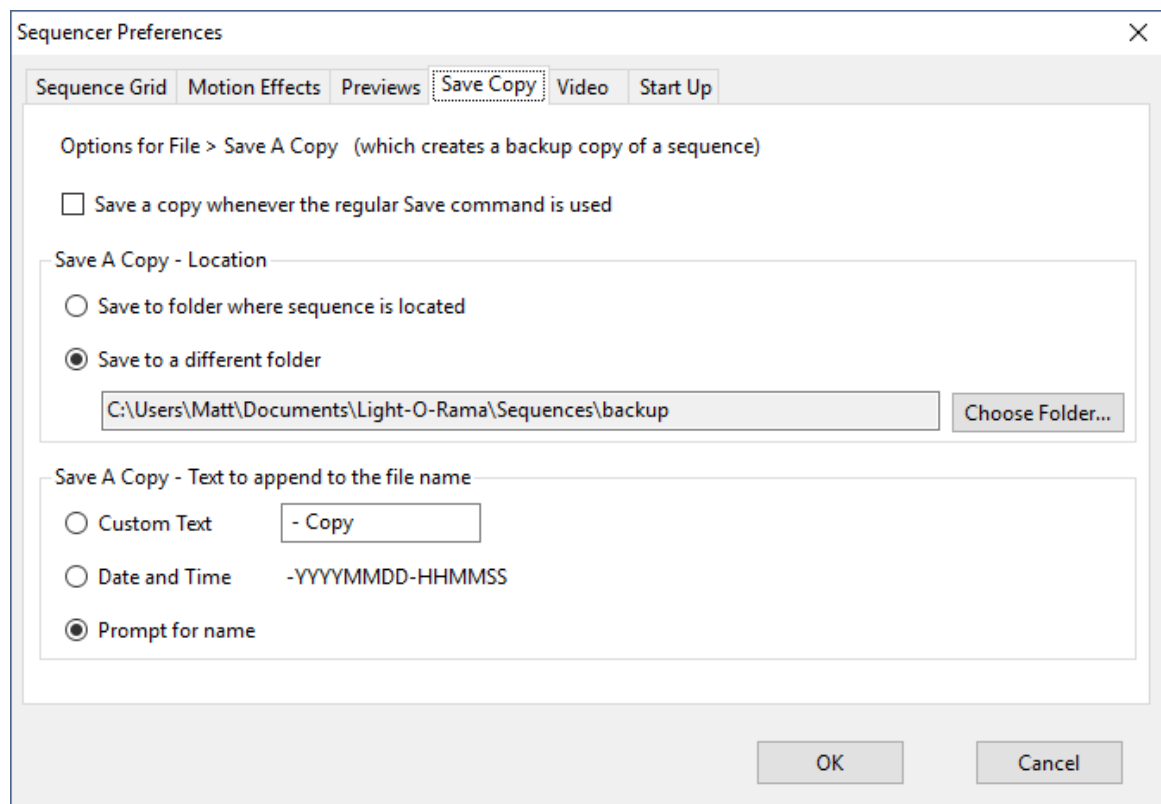
Hexagon-shaped bulbs at the highest quality setting (enlarged to show detail):



#### 5.3.1.3.1.4 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

## 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: \* . " / \ [ ] : ; | = ,

### 5.3.1.3.1.5 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.

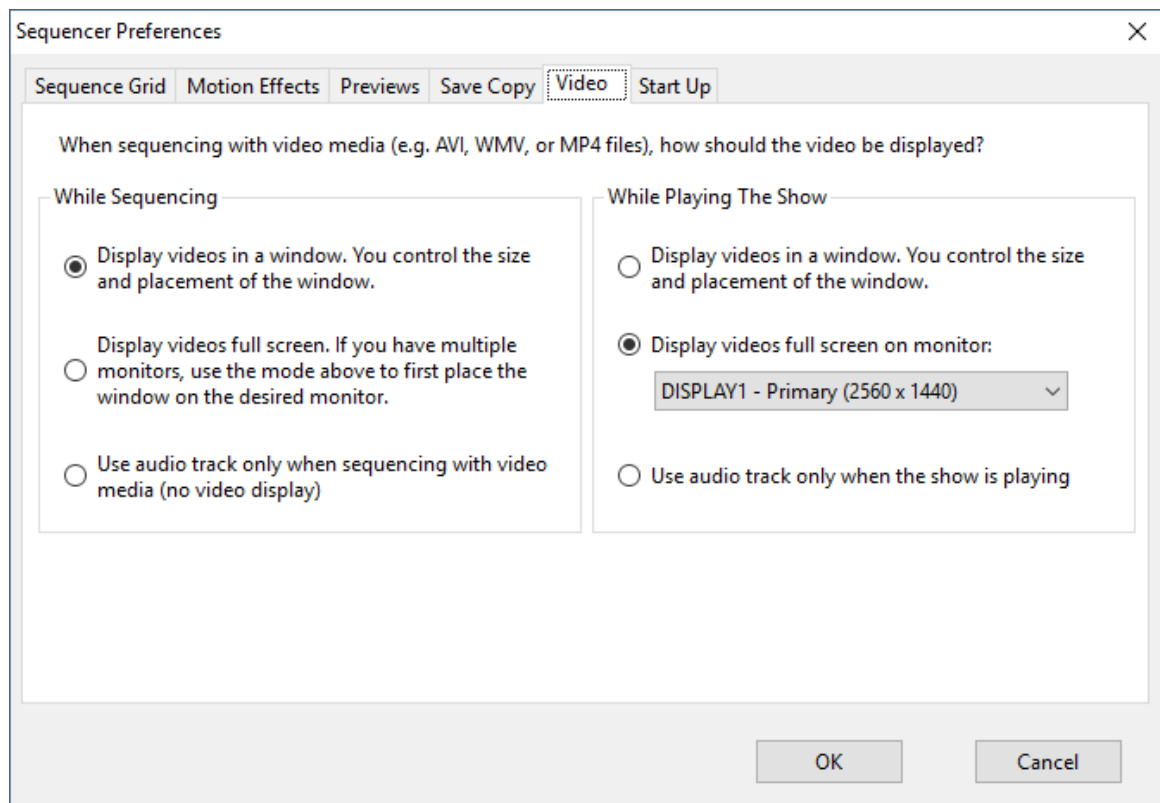
The "Video" tab is accessed by selecting [Sequencer Preferences](#) from the [Sequencer's Tools menu](#) and can be used to control whether and how video is displayed during playback.

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.



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.

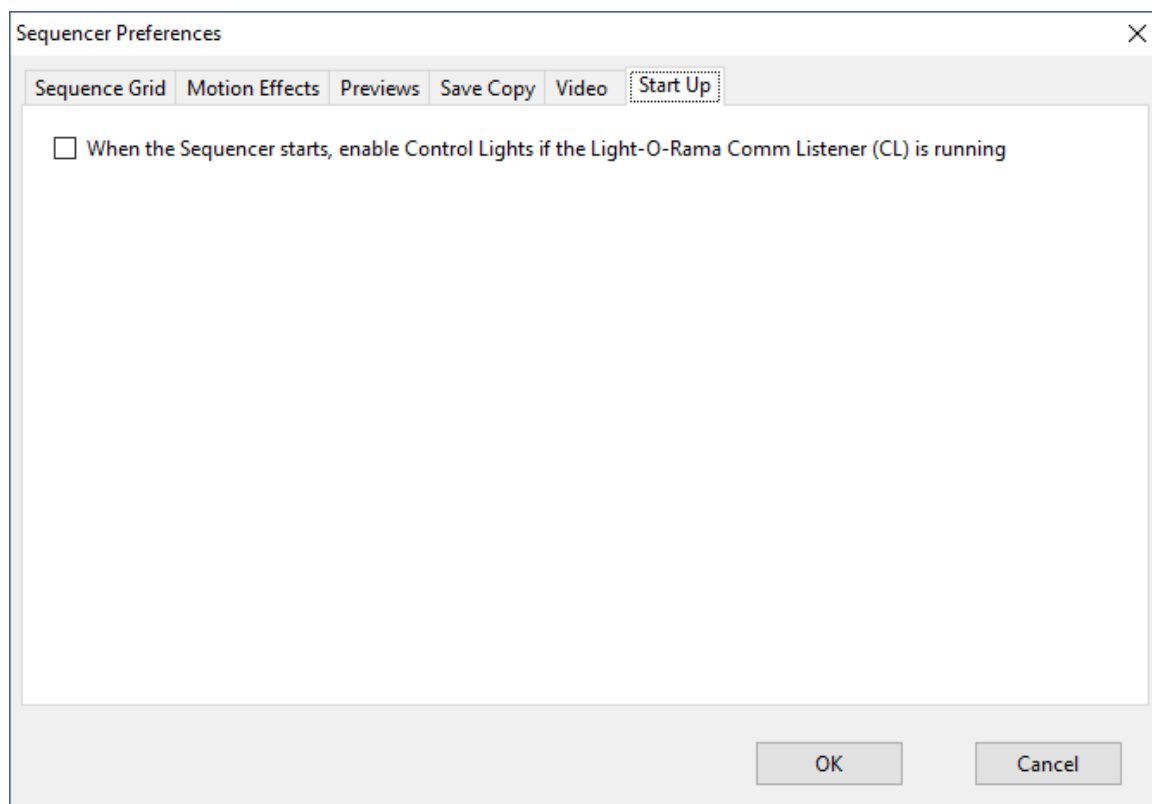
## Use Audio Track Only When Sequencing With Video Media

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.

### 5.3.1.3.1.6 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:

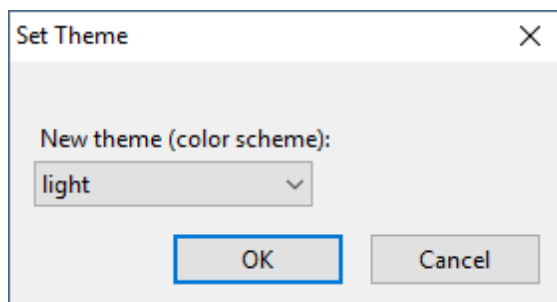
- Whether [Control Lights](#) is automatically enabled if the [Comm Listener](#) is already running when the Sequencer is started.



The Sequencer Preferences - Start Up Tab

#### 5.3.1.3.2 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.



Theme Selection Dialog

There are 3 themes to choose from:

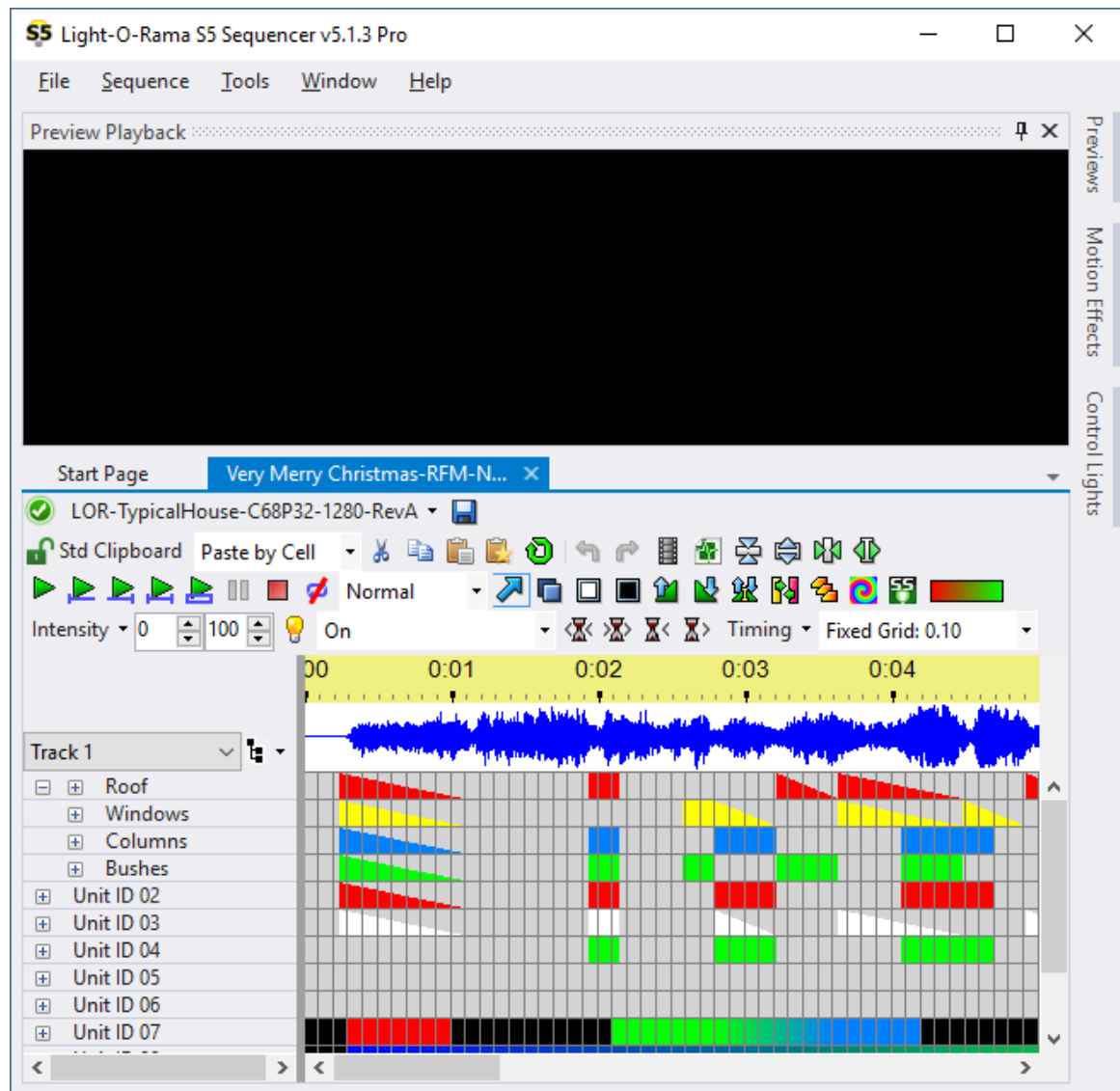
- [Light](#)
- [Dark](#)
- [Blue](#)

After selecting a theme, the Sequencer will need to be restarted in order for the new theme to take



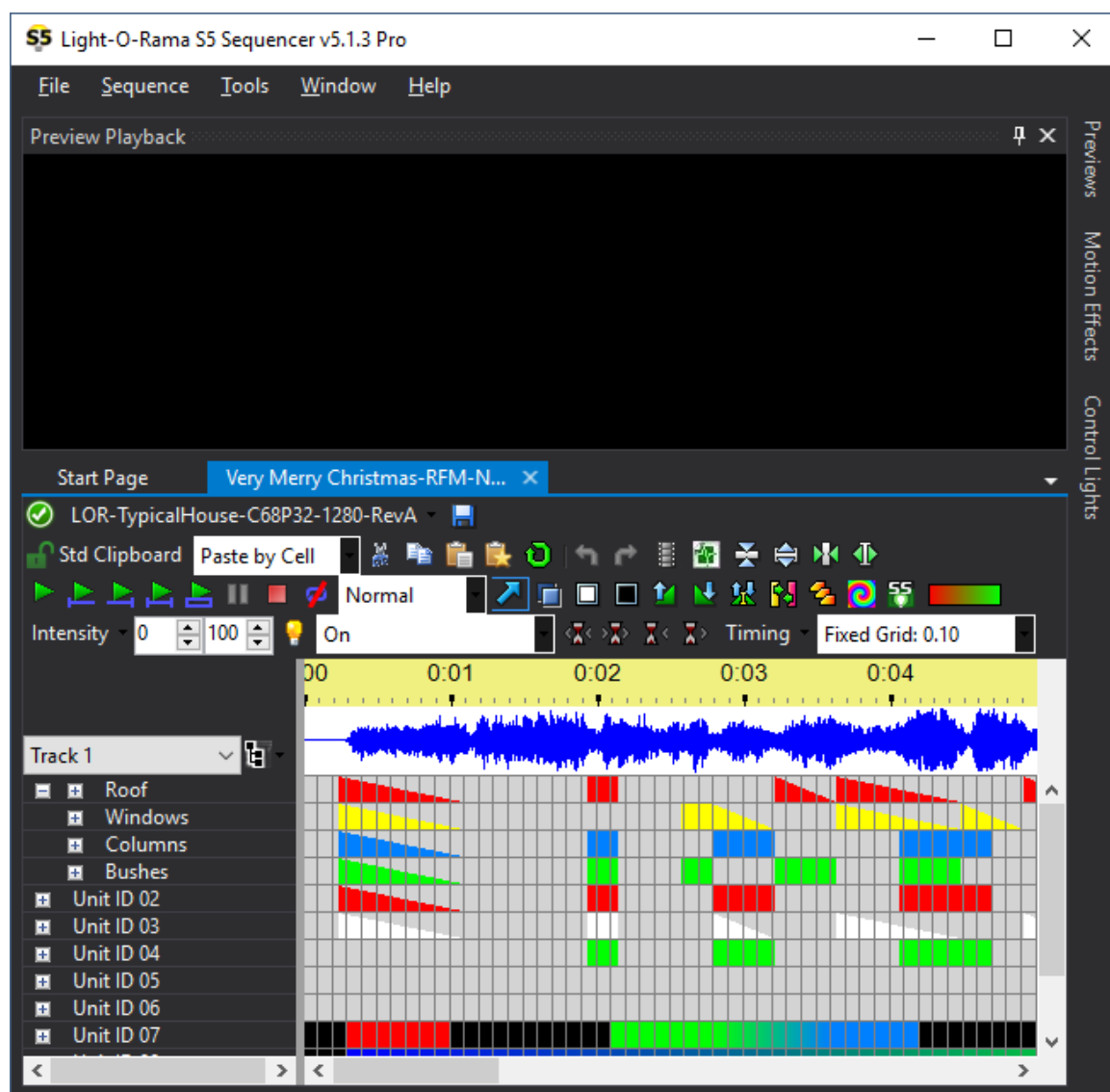
effect.

## Light Theme



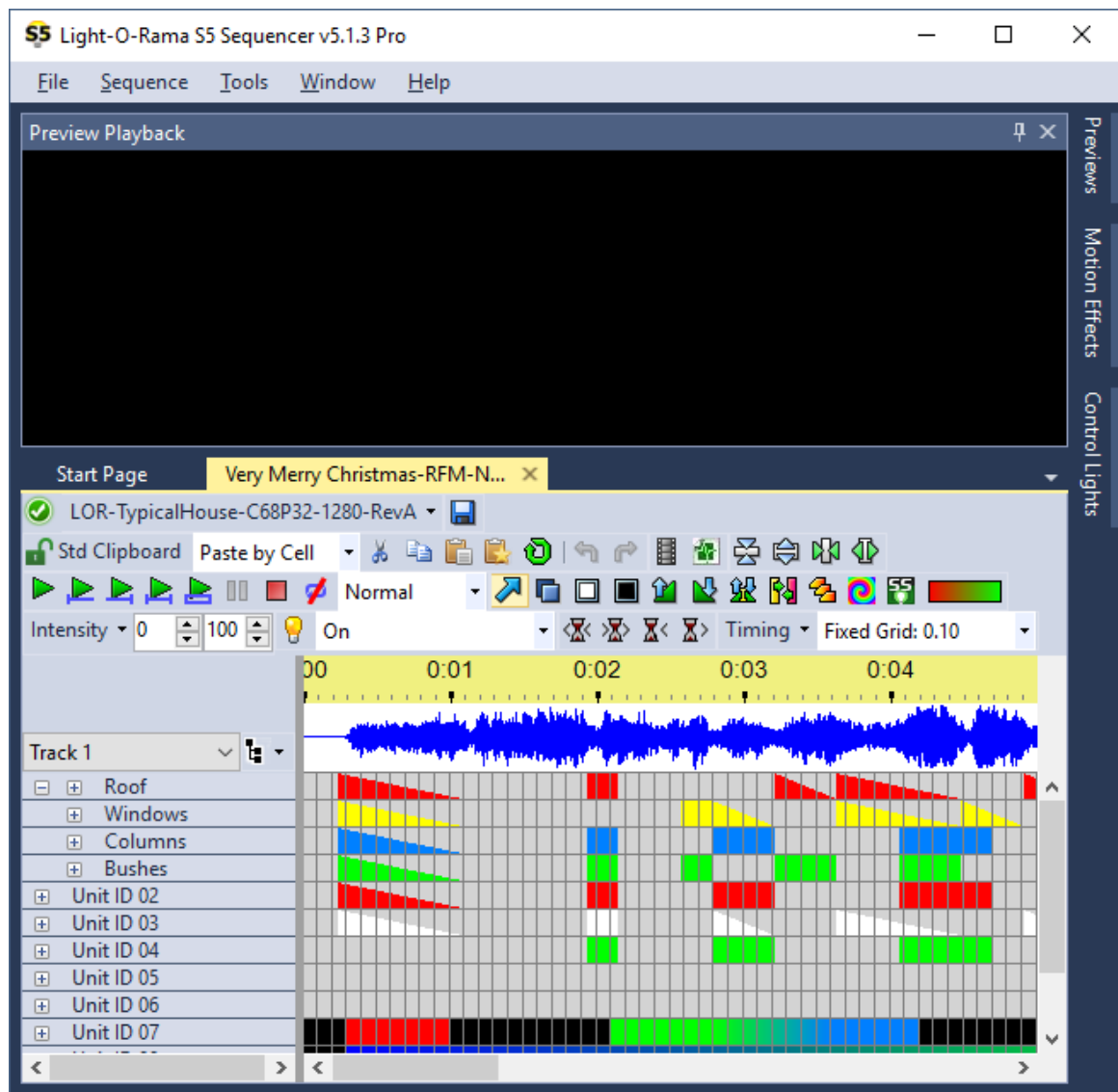
The Light Theme

## Dark Theme



The Dark Theme

Blue Theme



The Blue Theme

#### 5.3.1.3.3 Zoom Preferences

When a [sequence](#) is displayed in the [Sequencer](#), it is represented as a grid. Columns represent time, and rows represent [channels](#). You can zoom the display of either or both of these dimensions in or out for any particular sequence, in a variety of ways (such as by [using the keyboard](#), the mouse wheel, or various buttons on the [Standard toolbar](#)).

Whenever you set the zoom level for a particular sequence, that zoom level will always be used for that sequence (unless you change it again). However, whenever the Sequence Editor 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 "Restore Zoom Preferences".

There is also a system default zoom level, and selecting "Apply System Defaults" will apply that to the active sequence.



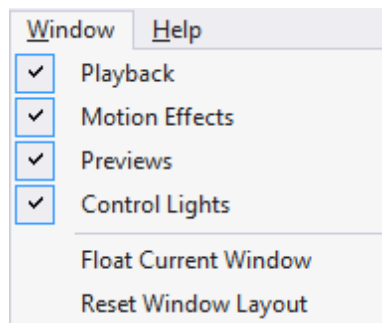
Zoom Preferences Sub-menu

#### 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:

- [Playback](#)
- [Motion Effects](#)
- [Previews](#)
- [Control Lights](#)
- [Float Current Window](#)
- [Reset Window Layout](#)



The Window Menu

### Playback

Selecting this option on the [Window menu](#) shows or hides the [Playback window](#). A check mark is displayed next to the menu item when the window is visible.

### Motion Effects

Selecting this option on the [Window menu](#) shows or hides the [Motion Effects window](#). A check mark

is displayed next to the menu item when the window is visible. This window is only visible with the Pro license.

## Previews

Selecting this option on the [Window menu](#) shows or hides the [Preview Management window](#). A check mark is displayed next to the menu item when the window is visible.

## Control Lights

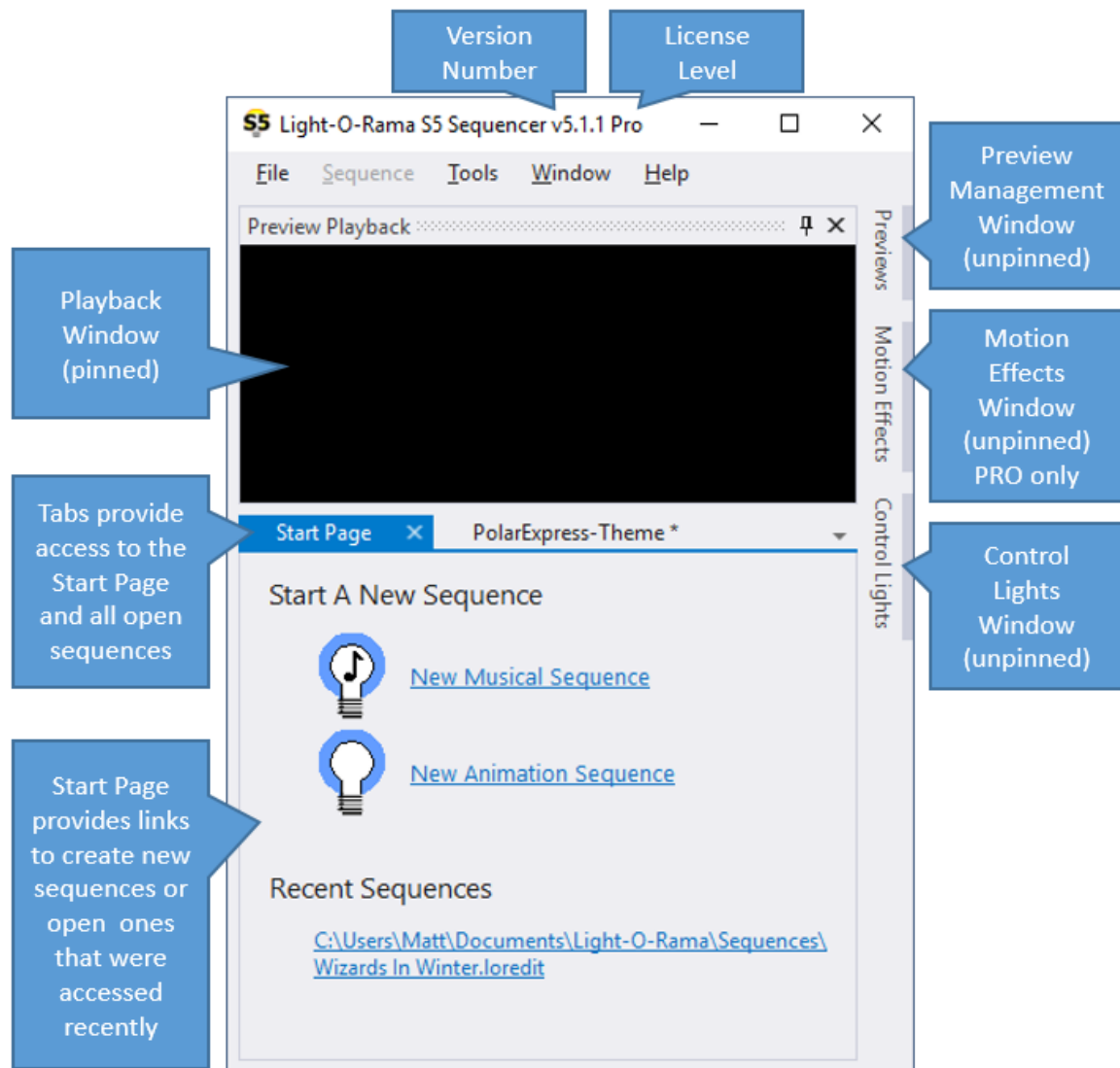
Selecting this option on the [Window menu](#) shows or hides the [Control Lights window](#). A check mark is displayed next to the menu item when the window is visible.

## 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 Playback, Preview, Motion Effects, and Control Lights windows can float. Sequence windows cannot float.

## Reset Window Layout

This option on the [Window menu](#) resets the position of all windows to their default locations, as shown below.

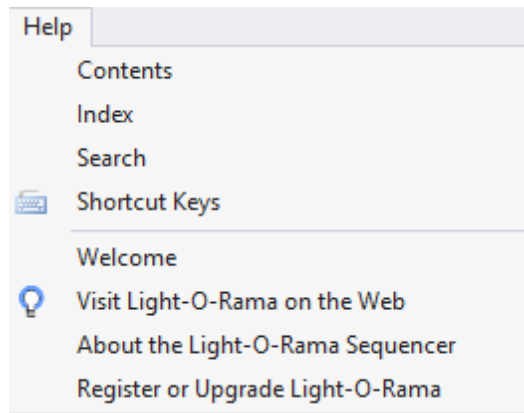


### 5.3.1.5 Help Menu

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](#)
- [Welcome](#)
- Visit Light-O-Rama on the Web
- About the Light-O-Rama Editor
- Register or Upgrade Light-O-Rama



The Help Menu

## 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 [Editing Sequences Using the Keyboard](#) topic in the Light-O-Rama help file.

## Welcome

This option on the Help menu displays some introductory information to help you get started using the [Light-O-Rama Sequencer](#)

## 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.

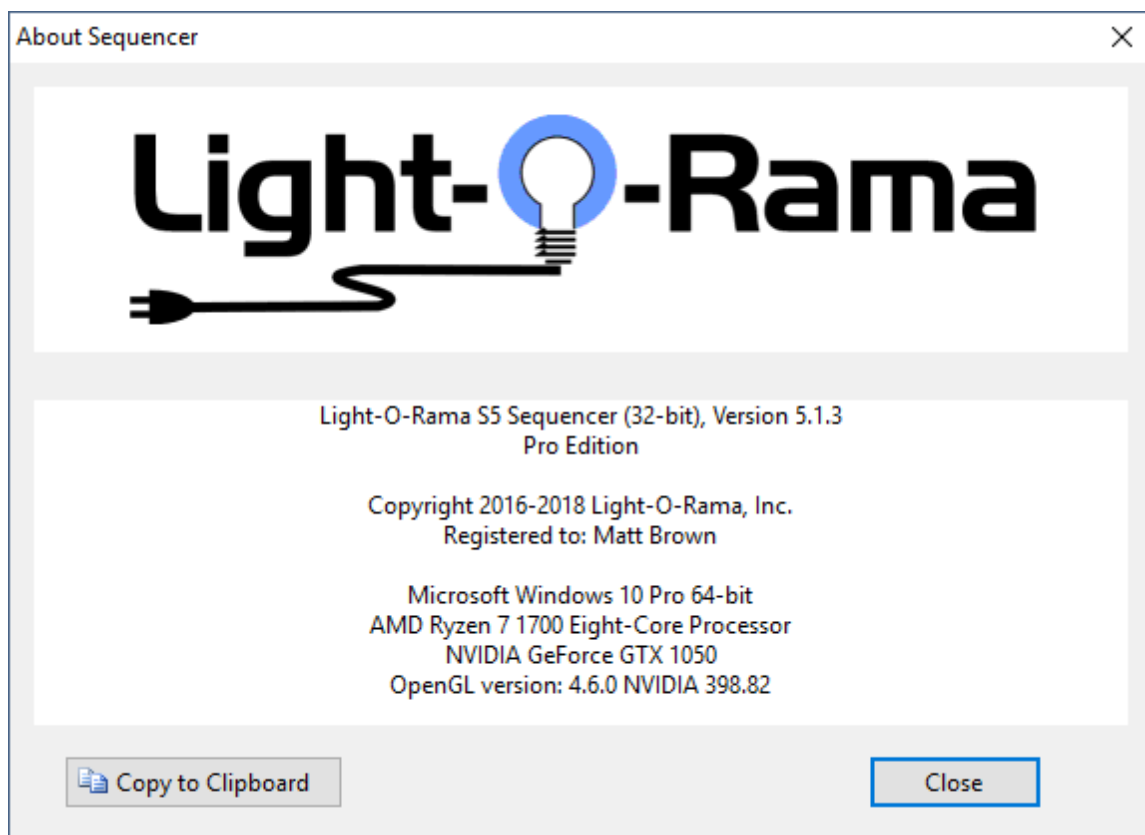
## Register or Upgrade Light-O-Rama

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 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 you can paste it into your ticket. This will assist in getting your issue resolved faster.

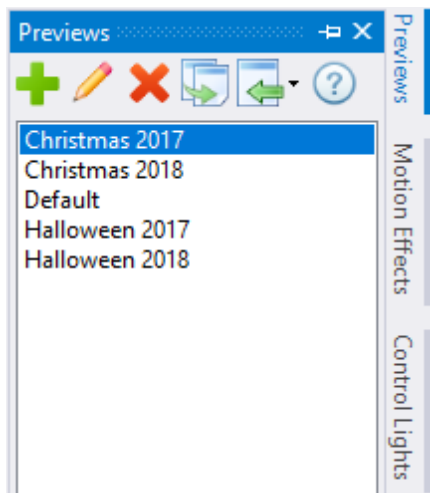


The S5 Sequencer's About Box






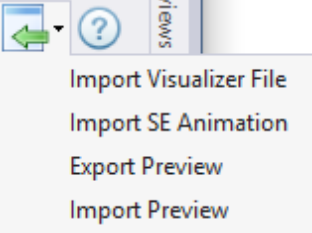
## 5.3.2 Manage Previews

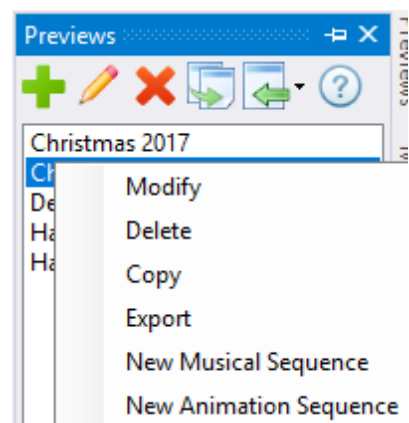
The "Previews" window is normally docked on the right side of the main [Light-O-Rama S5 Sequencer](#). To keep the window open, click the pin icon in the upper right corner of the window. From the Preview window you can create, modify, delete, and import/export [previews](#).





From here you can:

	<p>Double-click on a preview name to edit it. This will open a <a href="#">Preview Design</a> window with the selected preview loaded.</p>
	<p>Click the "+" icon to start a new <a href="#">preview</a>. This will open an empty <a href="#">Preview Design</a> window ready for you to create a preview from scratch.</p>
	<p>Click on a preview name and then click the pencil icon. This will open a <a href="#">Preview Design</a> window with the selected preview loaded.</p>
	<p>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 <a href="#">sequence</a> associated with that preview you can just open that sequence and the preview will be imported from it.</p>
	<p>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).</p>
	<p>Click the Import icon to open a menu that allows you to:</p> <ul style="list-style-type: none"> <li>• <a href="#">Import a Visualizer (LEE) file</a>. You will be 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 <a href="#">props</a>, and Visualizer props will be imported as <a href="#">Prop Groups</a>.</li> </ul>

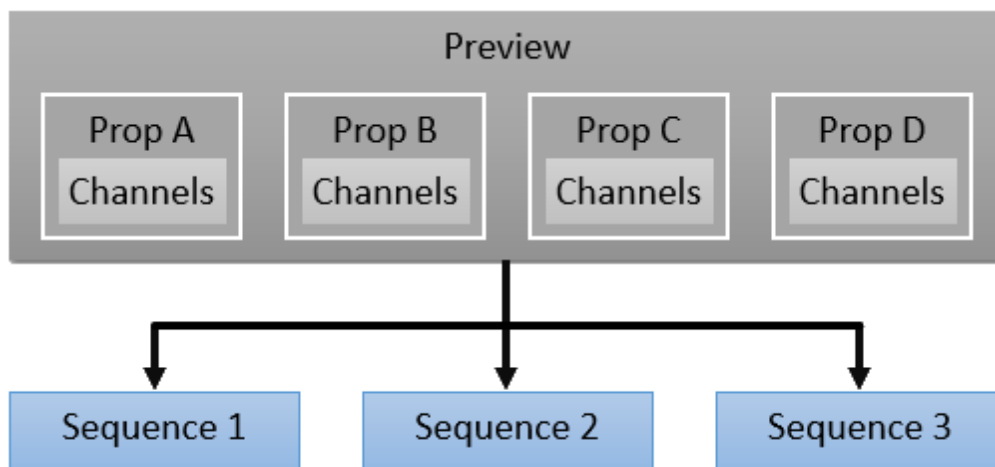
	<ul style="list-style-type: none"> <li>• <a href="#">Import a Sequence Editor Animation</a>. You will be prompted to select the LMS or LAS sequence file that contains the animation.</li> <li>• Export an S5 preview. You will be prompted for the file name. This creates a file with an LORPREV extension.</li> <li>• Import an S5 preview. You will be prompted to select a file with an LORPREV extension.</li> </ul>
	<p>Right-click on a preview name to open a menu that allows you to:</p> <ul style="list-style-type: none"> <li>• Modify the selected preview in a <a href="#">Preview Design</a> window.</li> <li>• Delete the selected preview. You will be prompted to confirm that you want to proceed with the deletion.</li> <li>• Copy the selected preview. You will be prompted for the name of the new preview.</li> <li>• Export the selected preview. You will be prompted for the file name. This creates a file with an LORPREV extension.</li> <li>• Create a new <a href="#">musical sequence</a> using the selected preview.</li> <li>• Create a new <a href="#">animation sequence</a> using the selected preview.</li> </ul>

### 5.3.3 Preview Design

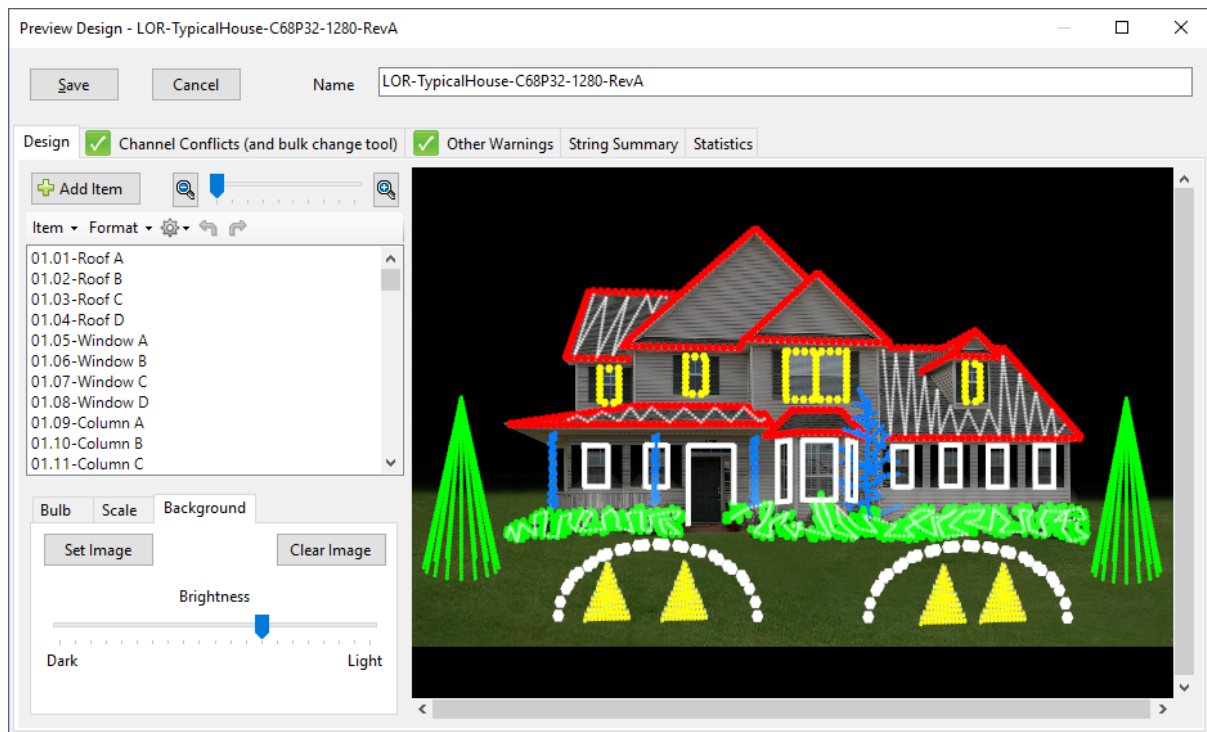
Creating a preview is the first step in using the [Light-O-Rama S5 Sequencer](#). No [sequencing](#) can be done without a preview. While it is possible to create a preview outside of the Preview Design window (via import, or using the Quick Preview feature when creating a new sequence), any editing of a preview will be done in Preview Design.

A [preview](#) defines the lighting elements in your display and how they are arranged. It allows your [sequence](#) to be simulated during playback. It must accurately define the channels for all of the lights that will be controlled by your 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.



- [Colors](#)
- [Groups](#)
- [Preview Name](#)
- [Item List](#)
- [Selecting Items](#)
- [Prop Menu](#)
- [Group Menu](#)
- [Format Menu](#)
- [List Menu](#)
- [Undo/Redo](#)
- [Bulb Settings](#)
- [Background Settings](#)
- [Using Your Mouse To Arrange Preview](#)
- [Keyboard Shortcuts](#)
- [Naming Strategies](#)



The Preview Design window showing a sample preview

#### 5.3.3.1 Overview

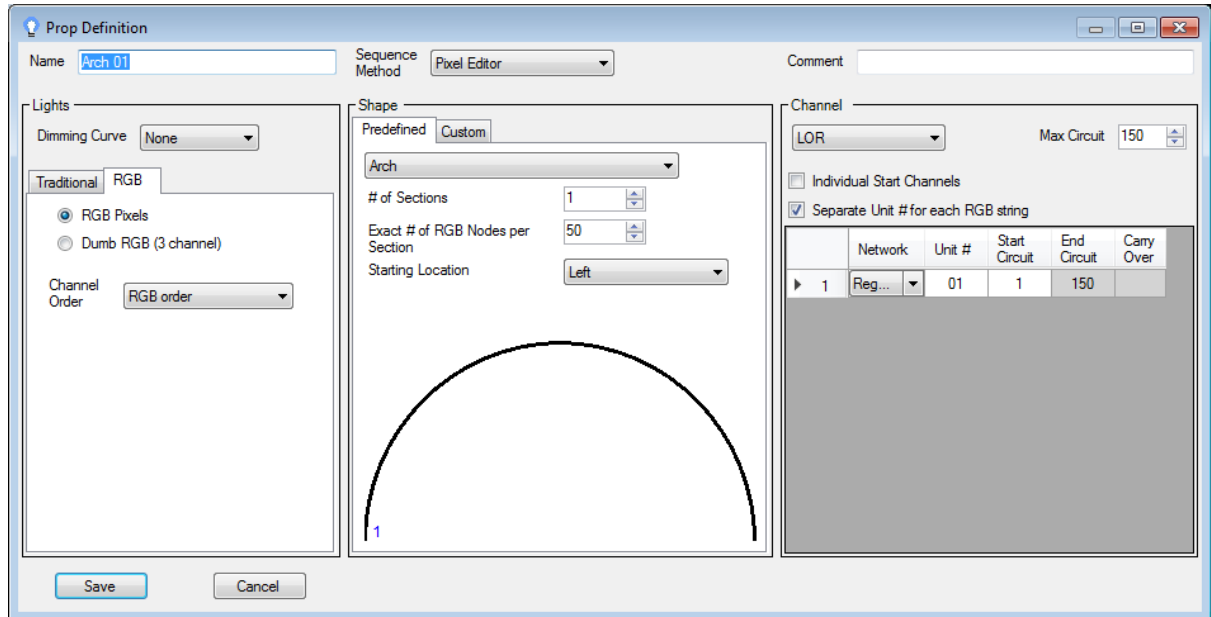
Enter topic text here.

#### 5.3.3.2 Colors

In the Pixel Editor's [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.

### 5.3.3.3 Prop Definition

A prop in the Pixel Editor allows you to define a single item that is on your stage, its shape, parameters, etc.



#### Name

Each [prop](#) must have a name. The name must be unique within the [preview](#).

#### Sequence Method

[Props](#) can be created for sequencing in the Pixel Editor, or they can define display elements being sequenced using the [Sequencer](#). You must create all props that will be sequenced with the Pixel Editor. Creating props that are sequenced with the Sequencer is optional, but allows the [sequence](#) for those props to be viewed during playback operations in the Pixel Editor.

#### 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.

#### Shapes Section

Use this section to [define how your prop looks](#).

## Channels Section

The section tells the Pixel Editor about the [channels in use](#) for this [prop](#).

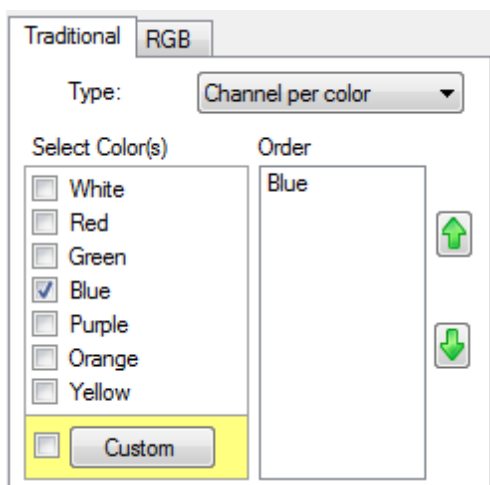
### 5.3.3.3.1 Lights

In the Pixel Editor's [Prop Definition's](#) Lights section, select the tab that is appropriate for your lights:

- [Traditional](#)
- [RGB](#)

#### 5.3.3.3.1.1 Traditional

Choose the “Traditional” tab of the [Lights section](#) of the Pixel Editor's [Prop Definition](#) window to model strings of LEDs or incandescent lights or strobes. 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.



Set the “Type” drop-down as follows:

- Choose “Channel per color” for single color strings or bundles of single color strings (sometimes referred to as superstrings) or single color flood lights. 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 Pixel Editor will assign one [channel](#) for each color that you choose. If you are defining a bundle and 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.
- Select “Multicolor string 1 ch” for a single string with various light colors. Choose the colors that make up the string.
- Select “Strobe string 1 ch” for strobe lights. Choose the color of your strobes. You can choose multiple colors if you have mixed strobe colors on your string.

## 5.3.3.3.1.2 RGB

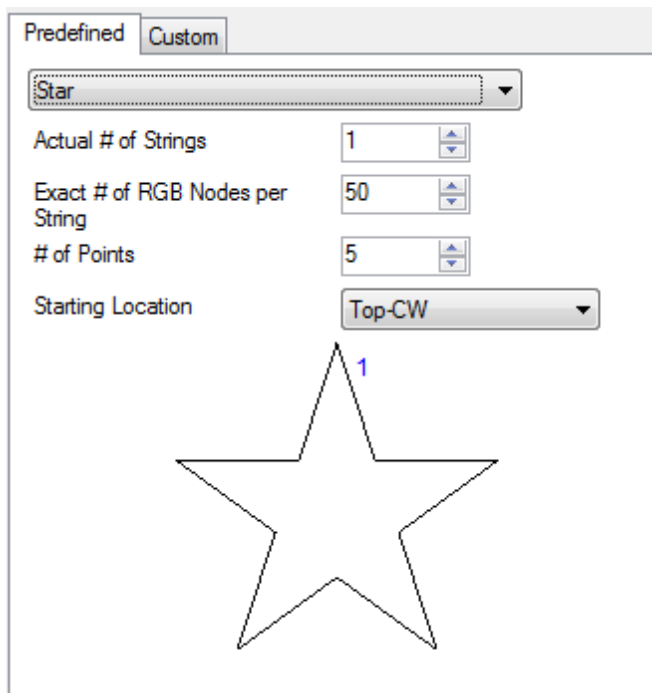
In the [Lights section](#) of the Pixel Editor's [Prop Definition](#), there are two kinds of [RGB channels](#) that the Pixel Editor can use:

- Choose RGB nodes for LOR [Cosmic Color Devices](#) and any other pixel strips, nodes, or bulbs.
- Choose Dumb RGB for display elements that have a single red, green, and blue channel. This includes RGB floods and dumb strips and nodes.

## 5.3.3.3.2 Shapes

Select the shape of your prop in this section of the Pixel Editor's [Prop Definition](#) window. The Pixel editor has many [predefined](#) shapes, or you can define your own [custom](#) shape.

## 5.3.3.3.2.1 Predefined



In the Pixel Editor's [Prop Definition](#) window, use a predefined [shape](#) if there is one there that meets your requirements. Any shape can be resized and rotated, so you are not limited to the traditional orientation of the shape. Consider using a horizontal matrix for net lights (bushes, tree wraps, etc.).

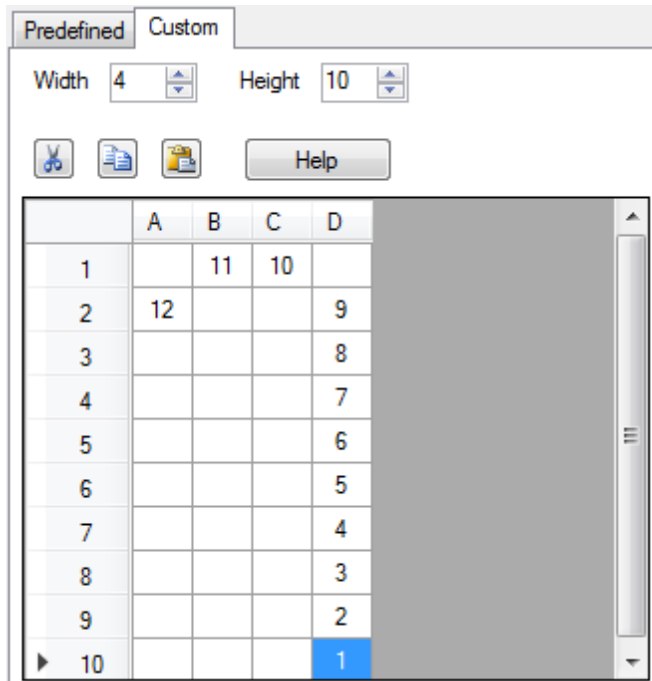
The selections in the middle will change depending on the shape that is selected and type of lights (traditional, RGB pixels, or dumb RGB). At the bottom will be diagram of your shape primarily intended to show channel number orientation for props with multiple [channels](#).

## 5.3.3.3.2.2 Custom

If a [predefined shape](#) does not meet your needs, then you can click on the "Custom" tab of the [Shapes section](#) of the Pixel Editor's [Prop Definition window](#) to create a custom shape using a grid. There is a "Help" button on that tab that explains the process of creating a custom shape. From the custom grid, you can cut and paste to and from Excel if necessary to assist in the creation of your custom prop.

For traditional strings and dumb RGB, the number you enter in the custom grid is the string number. For RGB pixels, the number you enter is the pixel number. 1-999 are pixels on the first RGB string. 1001-1999 are pixels on the second RGB string, 2001-2999 are on the third RGB string, etc.

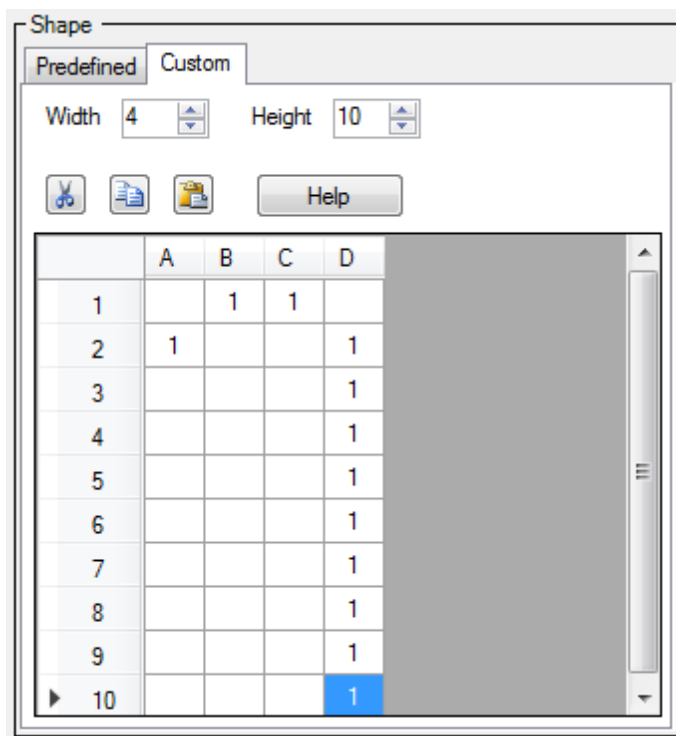
The picture below shows a candy cane with 12 RGB pixels.



	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

**Pixel based candy cane**

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.



**String based Candy Cane**

#### 5.3.3.2.3 Advanced

Enter topic text here.

#### 5.3.3.3 Channels

The final step of [prop definition](#) in the Pixel Editor is to define the prop's [unit ID](#)(s) and channel numbers in the right-most section of the window. 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.



Channel

LOR Max Circuit 150

☐ Individual Start Channels

☒ Separate Unit # for each RGB string

	Network	Unit #	Start Circuit	End Circuit	Carry Over
▶ 1	Reg...	01	1	150	
2	Reg...	02	1	150	
3	Reg...	03	1	150	
4	Reg...	04	1	150	
5	Reg...	05	1	150	
6	Reg...	06	1	150	
7	Reg...	07	1	150	
8	Reg...	08	1	150	
9	Reg...	09	1	150	
10	Reg...	0A	1	150	

## Device Type

Select the device type from the drop-down that matches your hardware. A device type of “Undetermined” is available for situations where the device type is not known. For [controllers](#) that connect via the E1.31 protocol over Ethernet, select “[DMX](#)”.

## 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 you have a controllers that does not allow an RGB pixel to cross universe boundaries. In this case, set the DMX universe size to 510 (170 pixels per universe).

## Individual Start Channels

For the first string, you must provide the starting [Unit ID](#) and [circuit](#) (for LOR channels), or universe number and channel (for [DMX](#) channels). Subsequent strings will be automatically calculated by the Pixel Editor. This works great for many situations, but there are exceptions. For those exceptions, click the “Individual Start Channels” checkbox. This will allow you to enter a starting Unit ID and circuit for every string.

Channel

LOR Max Circuit 150

☒ Individual Start Channels

☒ Separate Unit # for each RGB string

	Network	Unit #	Start Circuit	End Circuit	Carry Over
▶ 1	Reg...	01	1	150	
2	Reg...	02	1	150	
3	Reg...	03	1	150	
4	Reg...	04	1	150	
5	Reg...	05	1	150	
6	Reg...	06	1	150	
7	Reg...	07	1	150	
8	Reg...	08	1	150	
9	Reg...	09	1	150	
10	Reg...	0A	1	150	

## Separate Unit ID (or DMX Universe) for each RGB String

This checkbox 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.

### 5.3.3.4 Groups

The Pixel Editor also allows you to 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 spiral effect applied to the group will be different than the same spiral effect applied to each prop individually.

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.

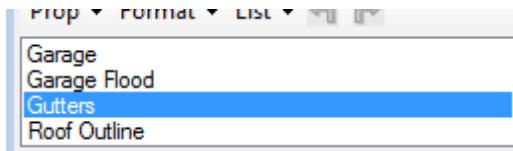
### 5.3.3.5 Preview Name

The first field in the Pixel Editor's [Preview Design](#) window is the Preview Name. Every preview must have a unique name. If a preview is already associated with one or more [sequences](#) and you change the preview name, the association(s) with sequences will be preserved.

Visit the [Preview Naming](#) topic to review different strategies for naming and managing your previews.

### 5.3.3.6 Item List

The Pixel Editor's [Preview Design](#) window's item list has two modes:



- Prop Mode lists all of the [props](#) in the preview
- Group Mode lists all of the [prop groups](#) (collections of props) that have been created for the preview

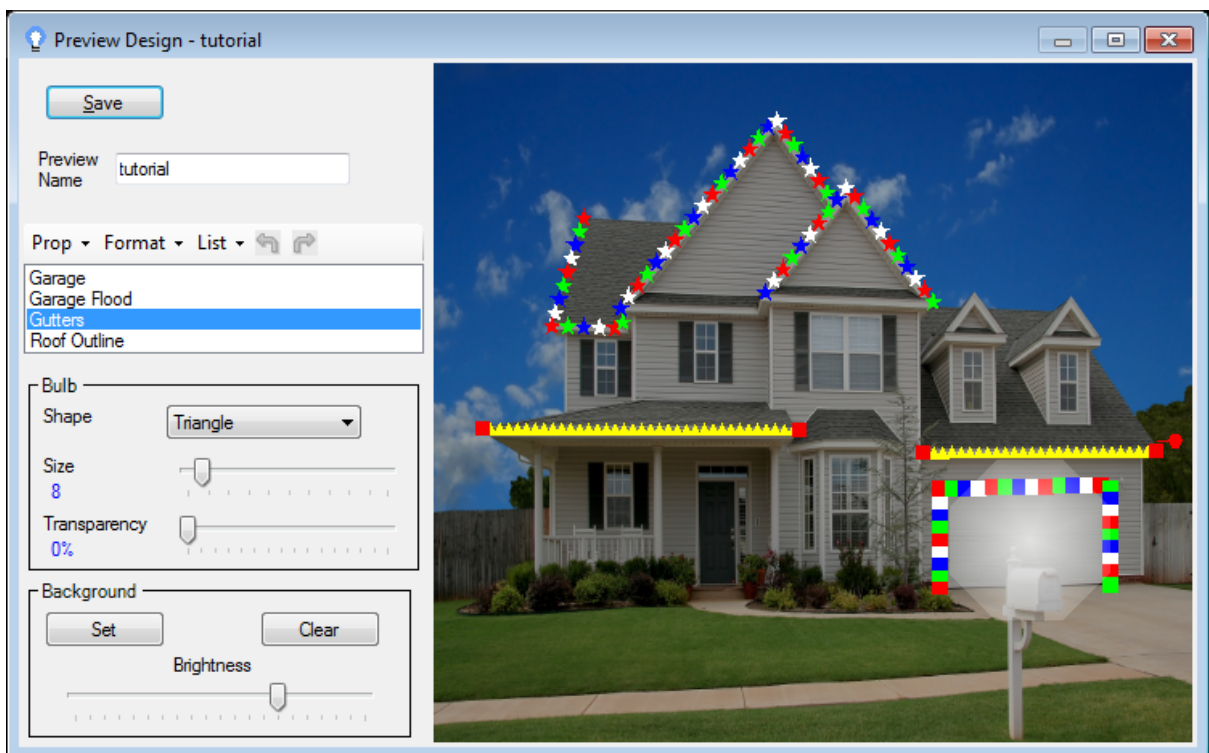
The [List Menu](#) allows you to switch between the two modes.

### 5.3.3.7 Selecting Items

Items in the Pixel Editor's [item list](#) can be selected by clicking them. The [prop](#) or [group](#) that is selected will then be displayed in yellow in the design window on the right. You can also do the reverse: you can click on a prop in the design window and its name will be highlighted in the [Item List](#).

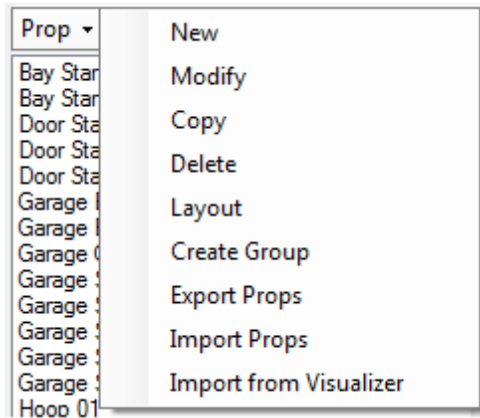
You can also select more than one item at a time. This is often useful for moving several props at the same time or for creating prop groups. In the [Item List](#), Ctrl-click on an item to select it in addition to items already selected. Use Shift-click to select a range of items in the list. When selecting items using the mouse in the design window, 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 “Gutters” prop has been selected – it is highlighted in the item list and displayed in yellow in the design window.



### 5.3.3.8 Prop Menu

The Prop menu of the Pixel Editor's [Preview Design](#) is only displayed when the [item list](#) is in Prop Mode.



#### Commands Available:

- [New](#)
- [Modify](#)
- [Copy](#)
- [Delete](#)
- [Layout](#)
- [Create Group](#)
- [Export Props](#)
- [Import Props](#)
- [Import from Visualizer](#)

## New

Select "New" to create a new [prop](#). This will open the [Prop Definition](#) window. After saving the new prop, it will be added to the [Item List](#) and displayed in the [design window](#) on the right.

## Modify

To modify a [prop](#)'s definition, you can double-click on the prop's name, or you can single-click on it and select "Modify" from the Prop Menu. Either method will open the [Prop Definition](#) window.

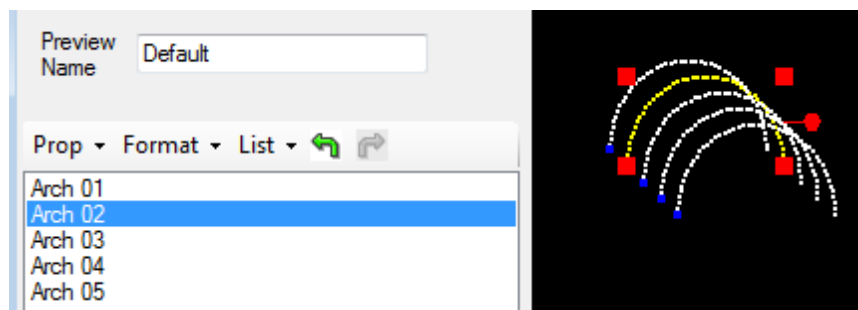
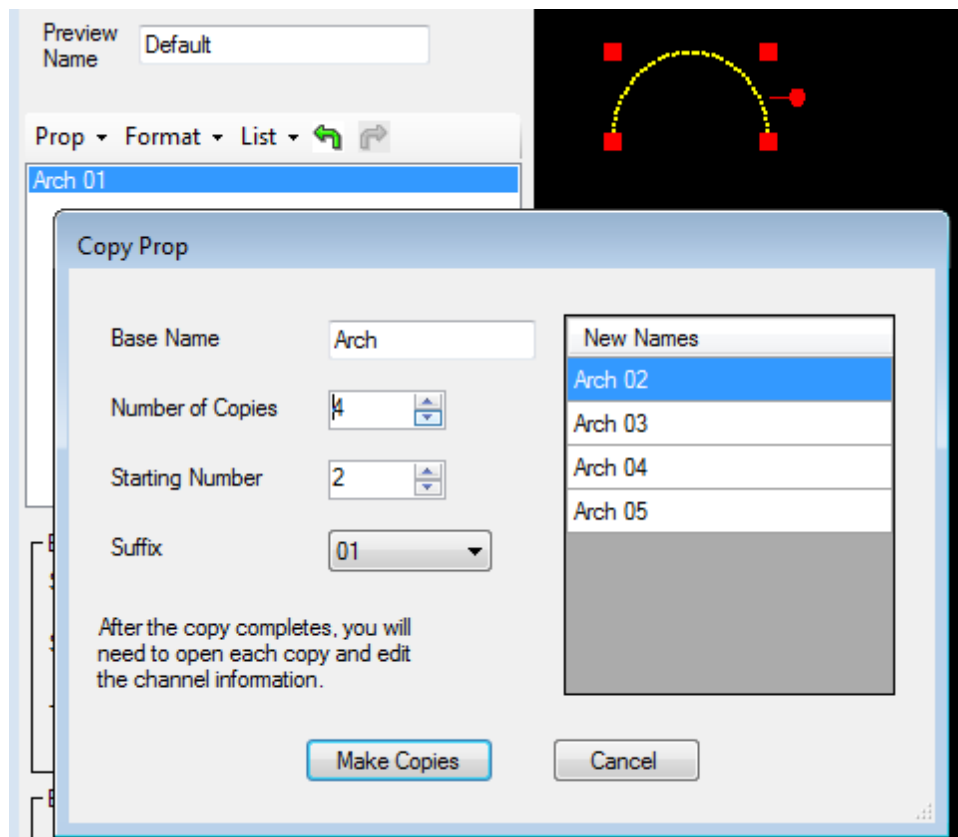
## Copy

The "Copy" command is very helpful in creating a collection of [props](#) that all look the same, such as a series of arches or mini-trees. This opens a 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

Here is the process for copying a prop:

- Select the prop in the [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.
- 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.
- While the copy process takes care of prop naming for you, it does not change the [channel](#) information – all of the copies will have the same channel information as the source prop. After the copy completes, you will need to double-click on the name of each copied prop in the list and when the [Prop Definition](#) window opens, modify the channel information for that prop.

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).



Result of making 4 copies

## Delete

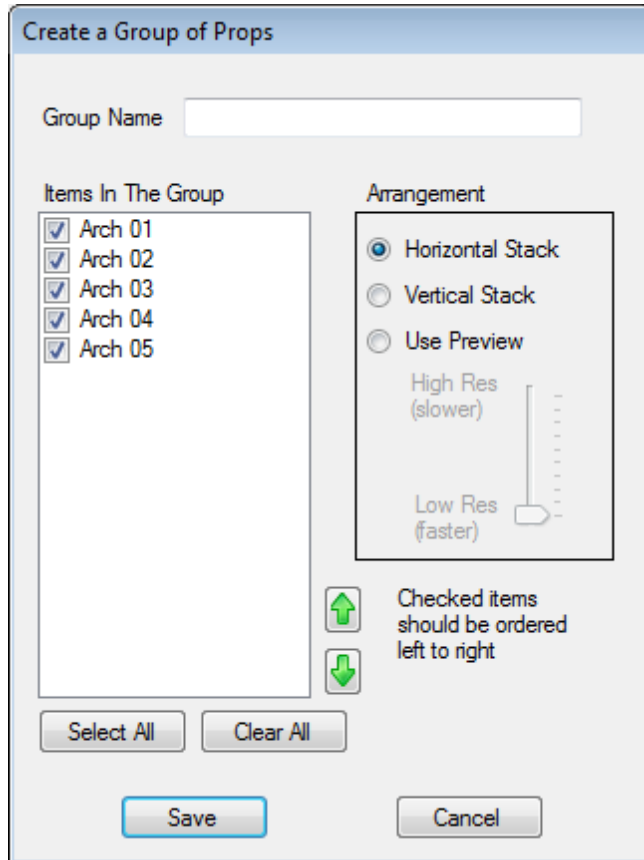
Select "Delete" to delete a prop. You will be asked to confirm before the delete actually takes place.

## Layout

Select "Layout" to view a printable layout of your prop with channel information for every string or pixel. This can be quite large depending on the number of pixels involved.

## Create Group

Select the [props](#) you want to place in a [group](#), then select "Create Group" from the Prop menu. The "Create Group of Props" window will open (an example is shown below). For groups with a horizontal or vertical stack arrangement, the order of the items listed is important. A message below the arrangement box will inform you of the proper order.



## Export Props

The Pixel Editor makes it easy for you to create a library of frequently used [props](#) and to share those props with others if you desire. Select the props you want to export from the prop list. You can use shift-click and ctrl-click to select multiple props. Then select "Export Props" from the Prop menu to start the export. You will be prompted for a location to save the export file. Export files have the extension ".lpeprop".

## Import Props

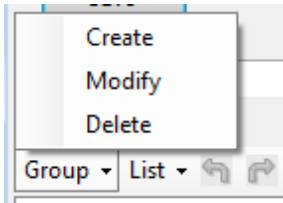
Select "Import Props" from the [Prop menu](#) to load props into your preview from a file that had previously been [exported](#). These files have an ".lpeprop" extension. You should review the channel assignments on any imported props to make sure they match your controllers – this can be done by double-clicking 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 from Visualizer

When you select “Import from Visualizer” from the [Prop menu](#), you will be prompted to select a Visualizer (.LEE) file. All of the fixtures and props defined in the selected file will then be loaded into the preview. Visualizer fixtures will become Pixel Editor props. Visualizer props will become Pixel Editor [prop groups](#).

#### 5.3.3.9 Group Menu

The Group menu of the Pixel Editor's [Preview Design](#) is only displayed when the [item list](#) is in Group Mode.

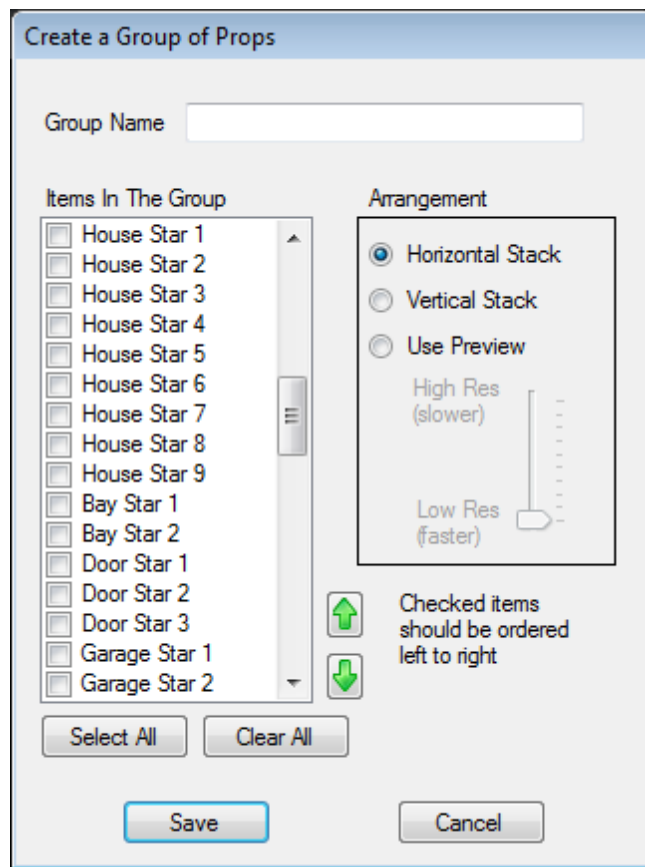


- [Create](#)
- [Modify](#)
- [Delete](#)

### Create

Selecting “Create” from the [Group menu](#) will open the “Create Group of Props” window, allowing you to create a new group. In the pop-up window, place a checkmark next to each prop that you want included in the group. Select the arrangement, ensure the order is correct, then click the “Save” button.





## Modify

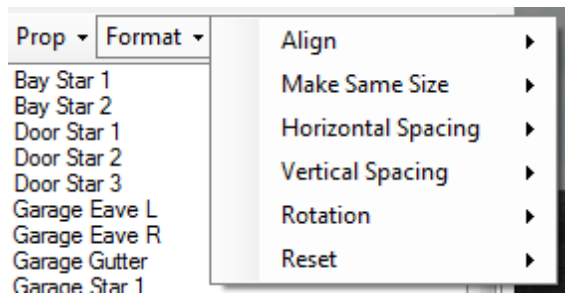
Double-clicking on a group name or single-clicking the name then choosing “Modify” from the [Group menu](#) will open the “Create Group of Props” window, allowing you to make changes to an existing group.

## Delete

Selecting a group name in the [item list](#) then choosing “Delete” from the Group menu will delete the group.

### 5.3.3.10 Format Menu

The Format menu of the Pixel Editor's [Preview Design](#) is only displayed when the [item list](#) is in Prop Mode.



- [Align](#)
- [Make Same Size](#)
- [Horizontal Spacing](#)
- [Vertical Spacing](#)
- [Rotation](#)
- [Reset](#)

## Align

After [selecting](#) 2 or more [props](#), the actions listed under the “Align” menu allow you to align the selected items horizontally or vertically.

## Make Same Size

After [selecting](#) 2 or more [props](#), the actions listed under the “Make Same Size” menu allow you to resize the selected items such that they all have the same width, height, or both.

## Horizontal Spacing

After [selecting](#) 2 or more [props](#), the actions listed under the “Horizontal Spacing” menu allow you to reposition the selected items such that they are equally spaced, or have no spacing between them at all.

## Vertical Spacing

After [selecting](#) 2 or more [props](#), the actions listed under the “Vertical Spacing” menu allow you to reposition the selected items such that they are equally spaced, or have no spacing between them at all.

## Rotation

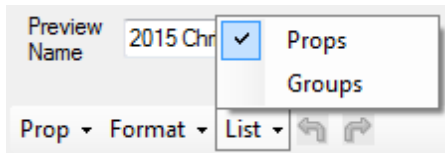
After [selecting](#) 1 or more [props](#), the actions listed under the “Rotation” menu allow you to rotate the selected items back to their default orientation (0 degrees), to 90 degrees right, or 90 degrees left. Individual props can be rotated to any angle by [dragging the rotation handle](#) that 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).

## Reset

After [selecting](#) 1 or more [props](#), the actions listed under the “Reset” menu allow you to reset the selected items back to their default position (centered), or default size (1/2 of the preview area), or both. Resetting the position is particularly useful because it is possible to drag items off the edge of the preview area. When this happens, select the prop from the [item list](#), then choose Format > Reset > Position from the menu.

#### 5.3.3.11 List Menu

The List menu on the [Pixel Editor's Preview Design](#) allows you to switch the [item list](#) between Prop Mode and Group Mode.

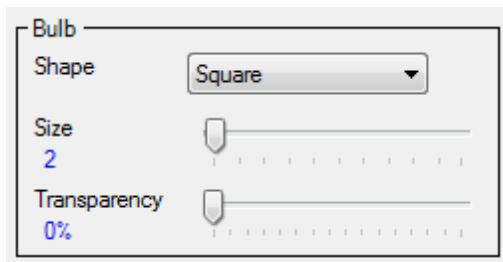


#### 5.3.3.12 Undo/Redo



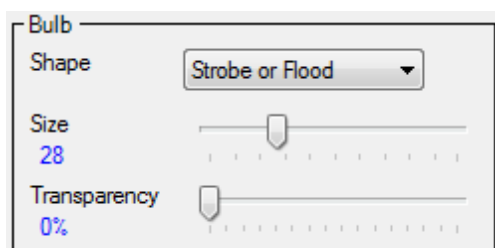
In the Pixel Editor's [Preview Design](#), Undo is the arrow pointing left and has the keyboard shortcut Ctrl-Z. Redo is the arrow pointing right and has the keyboard shortcut Ctrl-Y. [Prop](#) movement, scaling, and rotation can be undone and redone. Undo/redo does not apply to adding, modifying, or removing props or [groups](#).

#### 5.3.3.13 Bulb Settings

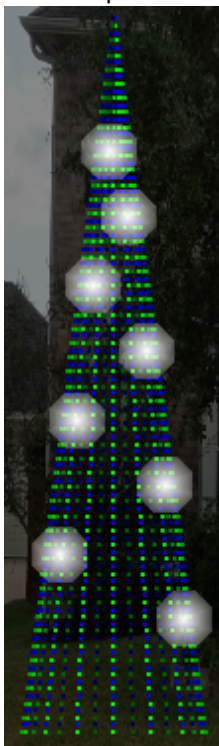


After [selecting](#) 1 or more [props](#), you can change the bulb settings for the selected props. Making the bulb size larger can make the prop easier to see on the computer screen. The default bulb shape is square, which uses the least amount of computer resources (i.e. your preview refreshes faster during playback operations).

For flood lights and strobes you will want to change the bulb shape to “Strobe or Flood” and increase the bulb size. The transparency setting for this bulb shape applies to the center of the bulb – for strobes you will want it at 0%. For floods, you may want something more transparent (> 0%).



An example of strobes on a megatree along with the associated [prop definition](#):



**Prop Definition**

Name:  Sequence Method:

**Lights**

Dimming Curve:

Traditional ☒ RGB

Type:

Select Color(s):

- ☒ White
- ☐ Red
- ☐ Green
- ☐ Blue
- ☐ Purple
- ☐ Orange
- ☐ Yellow
- ☐ Custom

Order:

**Shape**

Predefined ☒ Custom

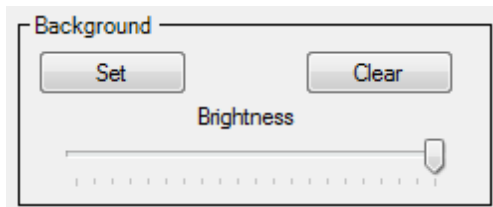
Lines-Connected

# of segments:

Preview # of lights total:

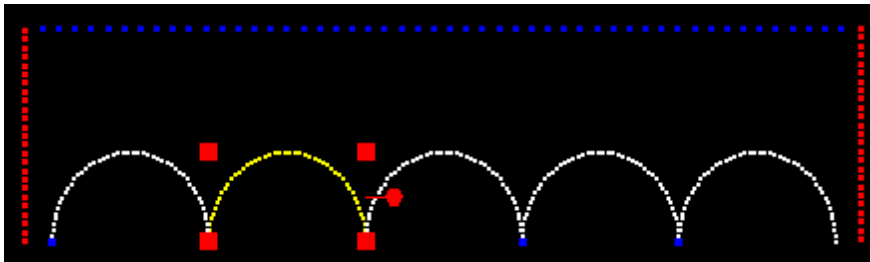
Starting Location:

#### 5.3.3.14 Background Settings



As shown in the picture in the Pixel Editor's [Preview Design](#) topic, your preview can have a background image. Click the "Set" button to choose the image file. Clicking the "Clear" button will disassociate the image file with the preview. Move the Brightness slider to the left to dim the background image, simulating the view of your display during nighttime.

#### 5.3.3.15 Using your Mouse to Arrange Preview



In the picture above from the Pixel Editor's [Preview Design](#), there is 1 blue string, 2 red strings, and 5 RGB arches. The second arch is selected. See the explanation of [preview design colors](#) for more information.

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 in the design window, or Ctrl-click or Shift-click in the [item list](#). The selected [prop\(s\)](#) can be dragged around the preview window 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.

Any movement, scaling, or rotation action can be [undone](#) by clicking the undo button or using the Ctrl-Z keyboard shortcut.

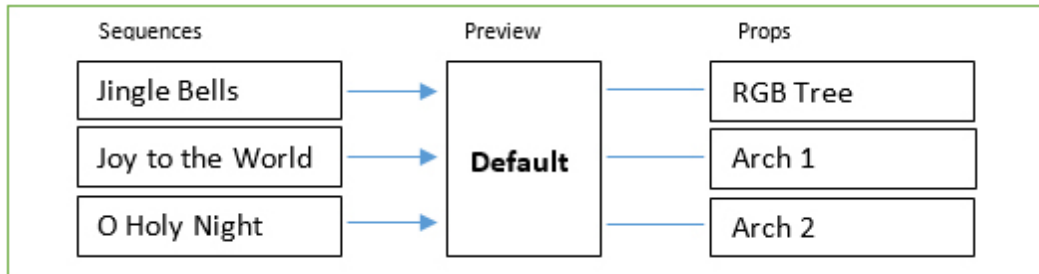
#### 5.3.3.16 Keyboard Shortcuts

The following keyboard shortcuts can be used during the Pixel Editor's [preview design](#):

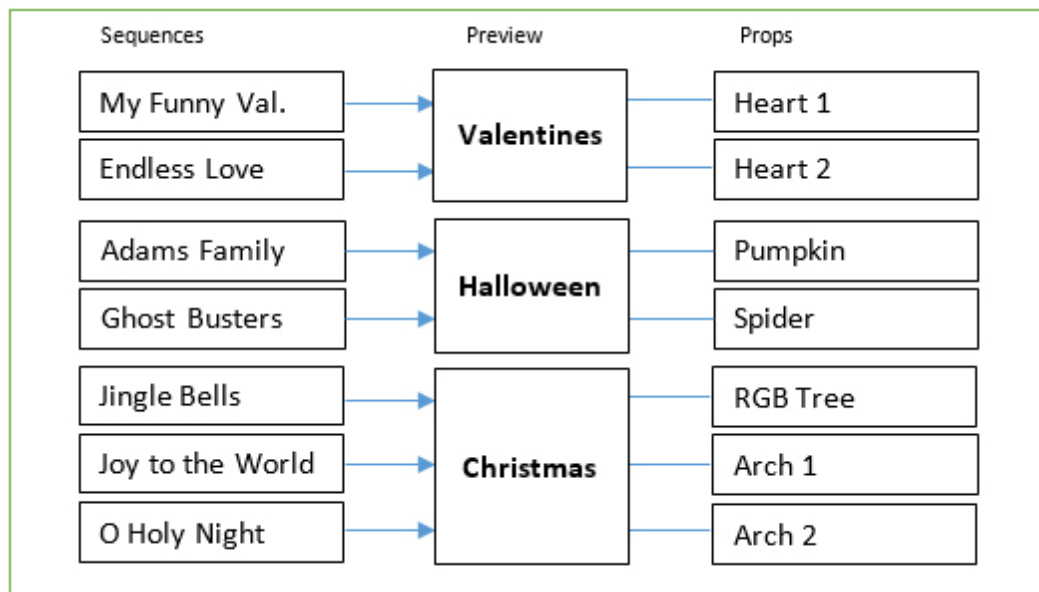
- Delete – deletes the selected [prop](#) or [group](#)
- Ctrl-A – selects all props
- Arrow keys – moves the select props
- Ctrl-UpArrow – makes the selected props larger
- Ctrl-DownArrow – makes the selected props smaller
- Ctrl-LeftArrow and Ctrl-RightArrow – rotates the selected props
- Ctrl-0 – resets prop rotation to its default value
- Ctrl-Z – [undo](#)
- Ctrl-Y – [redo](#)

### 5.3.3.17 Naming Strategies

The Pixel Editor 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:



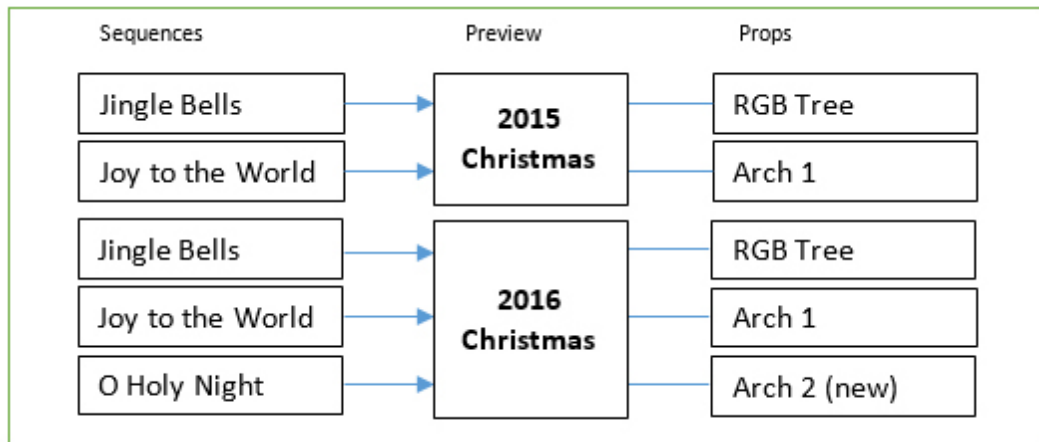
Another approach is to create a preview for each holiday for which you have a light [show](#). For example, you could have previews called “Valentines”, “Halloween”, and “Christmas”. If your display were to change from year to year, you would update the props in the preview for the relevant holiday.



Finally, you can create a preview for each display, for each year. So you might start with a preview called “2015 Christmas” associated with all of your [sequences](#) for 2015. Then in 2016, you would archive your 2015 sequences for reference, and make copies that you would work with for your 2016 show. Something like this:

- Copy all of your 2015 sequences to a new folder for 2016.
- In the Pixel Editor, [copy](#) the “2015 Christmas” preview to “2016 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 2016 folder using the Pixel Editor and change the sequence’s preview to “2016 Christmas” (with the sequence open, select [Sequence](#) > [Assign Preview](#) from the menu).
- With that complete, you could proceed with adding and removing props in the “2016 Christmas” preview and revising the 2016 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 pixel editor and viewed using the preview in effect for that year.



### 5.3.4 Sequencing

Before using the [Light-O-Rama S5 Sequencer](#)'s sequence grid, you must have an existing LAS/LMS [sequence](#) file created using the LOR [Sequencer](#). Items that the Pixel Editor will use from this file include the [timing grids](#) and any beat [channels](#) you may have created.

The first time you open the LMS/LAS file, you will be asked to pick a [preview](#) to associate with this sequence. That is why it is important to create your preview first. You can change the preview associated with the sequence later by selecting [Sequence](#) > [Assign Preview](#) from the [menu](#).

Sequences are displayed in the Pixel Editor as a grid. Rows represent [props](#) (or [groups](#) of props), 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.

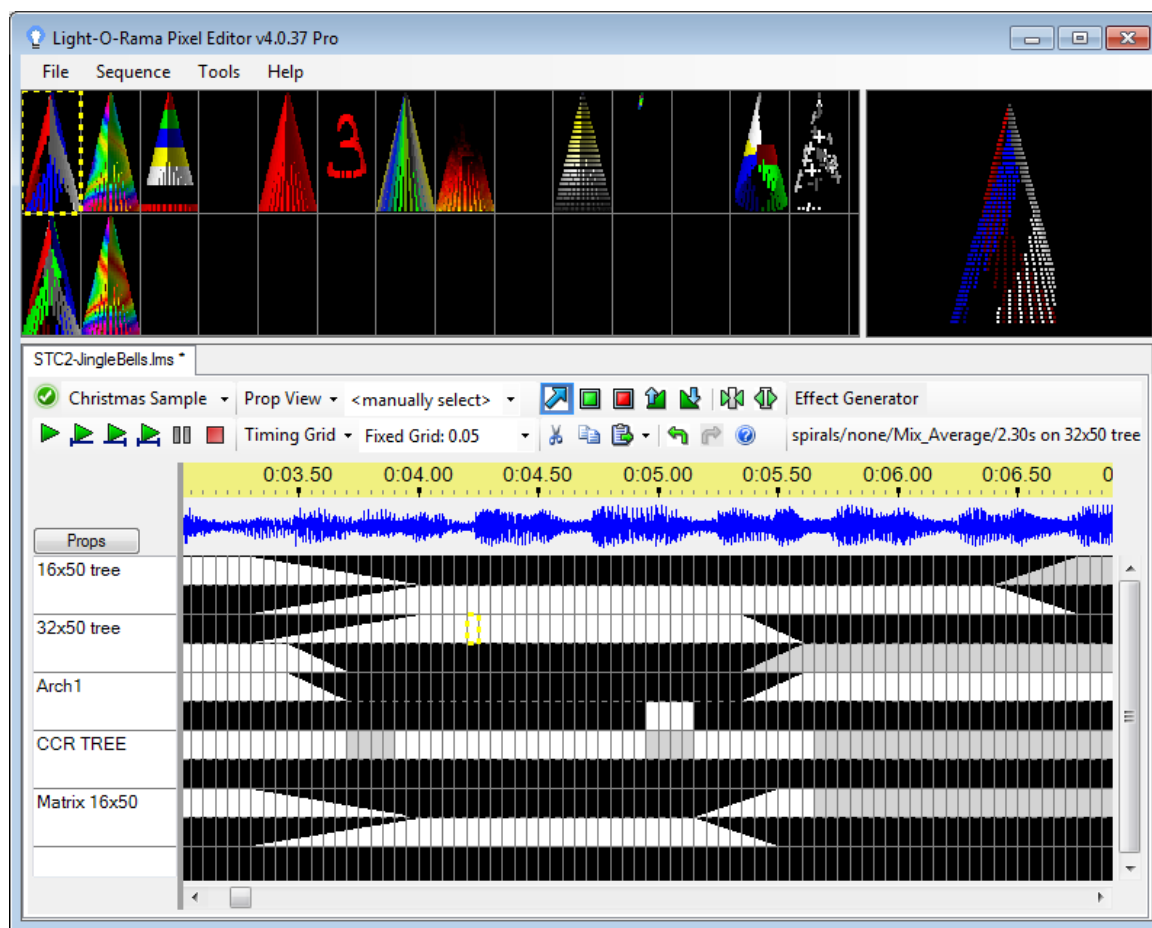
Props [designated](#) as sequenced using the Pixel Editor are displayed with 2 rows – an upper row and a lower row separated by a dashed line. This allows 2 different effects to be applied to a prop at the same time. Or more often, it allows one effect to smoothly transition to the next effect (shown in the picture below).



Props [designated](#) as sequenced using the Sequencer are displayed with a gray background using one row per channel. This is shown in the following picture. Note that the row's label is the Pixel Editor's prop name followed by the Sequencer's channel name.



The following picture shows a sequence open and ready for editing in the Pixel Editor.



For more information on sequencing in the Pixel Editor, please see the following topics:

- [Selecting Cells](#)
- [Cut/Copy/Paste](#)
- [Prop Views](#)
- [Timing Grids](#)
- [Zoom](#)
- [Playback](#)
- [Prop and Preview Information](#)
- [Background Brightness](#)
- [Thumbnails](#)
- [Tooltips](#)

#### 5.3.4.1 Editing Sequences Using the Keyboard

The keyboard can be used in several ways to help build [sequences](#) in the [Sequencer](#):

- [Selecting a Cell](#)
- [Selecting Multiple Cells](#)
- [Modifying Cells](#)
- [Copying, Cutting and Pasting](#)
- [Copying and Pasting Timings](#)



- [Undoing and Redoing](#)
- [Zooming](#)
- [Creating and Opening Sequences](#)
- [Saving Changes](#)
- [Refreshing the Display](#)
- [Help](#)
- [Freeform Play Mode](#)
- [Opening a Tooltip](#)
- [Other Keyboard Usage](#)

Please also see [Editing Sequences Using the Mouse](#).

## Selecting a Cell

[Sequences](#) are displayed in the [Sequencer](#) as a grid. Rows represent [channels](#) or [RGB channels](#), and columns represent [timings](#). Cells in the grid therefore represent the [lighting effects](#) that will happen on channels at various points in time while the sequence is being played.

A cell, or a range of cells, can be selected, allowing you to apply various tools to it (such as specifying what lighting effects should take place in that cell). You can recognize the currently selected cell (or cells) by a thick black and white border. For example, in the following sequence, the cell of the third channel between 1 second and 1.5 seconds is selected:

Time Scale	1.00									
Unit 01.1										
Unit 01.2										
Unit 01.3										
Unit 01.4										
Unit 01.5										
Unit 01.6										

**The time between 1 and 1.5 seconds of the third channel is selected**

You can change which cell is selected by using the arrow keys - Up, Down, Left and Right. Page Up and Page Down can also be used, to go up and down in the sequence by a page at a time. Ctrl-Left and Ctrl-Right can be used to page left and right.

If the currently selected cell is not the first cell in the currently selected channel (i.e. the cell starting at time zero), hitting the Home key brings you to the first cell in the currently selected channel. If, however, the first cell is already selected, then hitting the Home key will bring you to the first channel in the sequence. So, hitting the Home key twice in a row will bring you to the first cell in the first channel.

The End key works similarly, but for the last event and the last channel.

## Selecting Multiple Cells

A range of cells can be selected by holding down the shift key while using the arrow keys (or Page Up, Page Down, Home, or End). For example, the following picture has four cells selected, two

each from second and third channels:

Time Scale	1.00															
Unit 01.1																
Unit 01.2																
Unit 01.3																
Unit 01.4																
Unit 01.5																
Unit 01.6																

Four cells are currently selected, two each in Channel 2 and Channel 3

## Modifying Cells

Once you have selected a cell, or a range of cells, you can modify the cell or cells by pressing keys:

Ctrl+N: create new musical sequence  
 Alt+N: create 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

Arrow keys/PgUp/PgDown: move selection  
 Home: move to first column  
 End: move to last column  
 Shift+arrow/PgUp/PgDown/home/end keys: expand selection  
 C: select column  
 R: select row  
 E: select effect  
 Ctrl+A: select all

A: set selected cells to 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 toolbar intensity range  
 D: set selected cells to FADE DOWN using toolbar intensity range  
 F: fill selected cells  
 G: toggle selected cells  
 H: create chase in selected cells  
 DEL: clear selected cells  
 M: apply current settings to selected effects  
 Shift+A/I/U/D/M: choose effect then fill selection  
 O: open the color fade selector  
 N: set selected cells to ON effect at max toolbar intensity  
 T: set selected cells to TWINKLE effect at max toolbar intensity  
 during playback inserts a timing mark

S: set selected cells to SHIMMER effect at max toolbar intensity  
 L or Shift-L: activate Select Tool

Spacebar: start and stop playback  
 Shift+Spacebar: clear timeline range, then start playback

Ctrl + : zoom in on time scale  
 Ctrl - : zoom out on time scale  
 Ctrl+Z: undo last operation  
 Ctrl+Y: redo  
 Ctrl+X: cut  
 Ctrl+C: copy  
 Ctrl+V: paste  
 Ctrl+Alt+V: paste special

Time Scale	1.00											
Unit 01.1												
Unit 01.2												
Unit 01.3												
Unit 01.4												
Unit 01.5												
Unit 01.6												

The selected cells have been changed to twinkles

## Copying, Cutting and Pasting

The [lighting effects](#) in cells can be copied, cut, and pasted using the standard Windows copy, cut and paste keys, Ctrl-C, Ctrl-X, and Ctrl-V.

Note that the Light-O-Rama Sequencer supports several different pasting modes and pasting options (paste from/to foreground/background). You can choose these settings using the Paste Options subpanel of the left-hand Tools Panel.

## Copying and Pasting Timings

[Timings](#) can be copied using Ctrl-Insert, and inserted using Shift-Insert.

## Undoing and Redoing

Changes to a [sequence](#) can be undone and redone using the standard Windows undo and redo keys, Ctrl-Z and Ctrl-Y. Note that this includes any changes to the sequence, not merely changes made using the keyboard.

## Zooming

The view of a [sequence's](#) grid can be zoomed in and out using the keyboard. Both rows ([channels](#)) and columns ([timings](#)) can be zoomed.

To zoom in on channels - i.e. to make them bigger - use Alt-Down, and to zoom out, use Alt-Up. Alt-Page Down and Alt-Page Up also work, to zoom in and out as much as possible.

To zoom in on timings, use Alt-Right; to zoom out, use Alt-Left. Alt-End and Alt-Home zoom in and out as much as possible.

## Creating and Opening Sequences

The New and Open Dialog can be opened using either Ctrl-N, Ctrl-O, or Ctrl-R. Ctrl-N will open it to its New Sequence tab, Ctrl-O will open it to its Existing Sequence tab, and Ctrl-R will open it to its Recent Sequence tab.

## Saving Changes

Changes to a [sequence](#) can be saved using Ctrl-S. If this is a new sequence that has never before been saved, this will first prompt you for a filename to save the sequence to.

## Refreshing the Display

Occasionally during play, the display of a [sequence's](#) grid may seem to blank out. This is typically caused when your computer happens to do something unrelated to Light-O-Rama, and temporarily takes the focus away from the [Sequencer](#). The sequence itself is not affected, nor are the actual lights - only the Sequencer's display of the sequence is - and the display is typically returned to normal when play reaches the next screen (or stops). However, if you do not wish to wait for that, you can hit the F5 key to manually refresh the display.

## Help

The Light-O-Rama help file can be opened by hitting the F1 key.

## Freeform Play Mode

The space bar can be used to start and stop the current sequence either in "from selection" mode or, if a freeform play range has been selected, in [freeform play mode](#). While playing, the up and down arrows can be used to define a freeform play range. If play is started with "Shift-Space" instead of just "Space", the freeform play range will be removed, and play will then start in "from selection" mode.

## Opening a Tooltip

If your mouse is over the current [sequence's](#) grid, you can open a tooltip describing the cell it is pointing to by hitting the "P" key. This can be done regardless of whether you have set your display preferences to disable tooltips.

## Other Keyboard Usage

The various menus on the menu bar can be accessed by holding down the Alt key while pressing a particular key for the menu in question:

Key	Effect
-----	--------

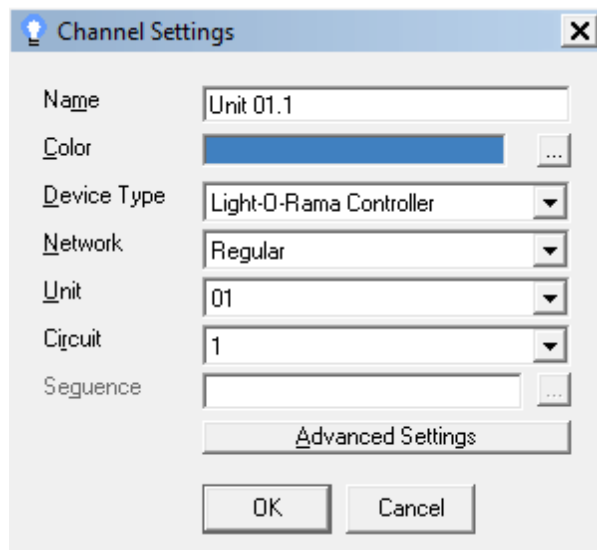
<Alt>-E	The Edit menu
<Alt>-F	The <a href="#">File menu</a>
<Alt>-H	The Help menu
<Alt>-P	The Play menu
<Alt>-T	The Tools menu
<Alt>-V	The View menu
<Alt>-W	The Window menu

After opening a menu, menu items can be selected using their hotkeys (indicated by an underlined letter). For example, pressing Alt-E followed by K will select "Duplicate Track" from the Edit menu. Keys such as Up, Down, Left, Right, Enter and Space can also be used to navigate these menus.

Many functions in the Light-O-Rama Sequencer cause dialog windows to open up. Those which have "OK" and "Cancel" buttons can typically have "OK" invoked by hitting the Enter key, and "Cancel" by hitting the Escape key.

Standard Windows keyboard navigation should work on these dialogs - for example, using the Tab key to tab between controls, or the arrow keys to choose which radio button in a group is selected.

Hotkeys exist on many of these dialogs, which allow you to select a specific control on the dialog by holding the Alt key and pressing the key of the underlined letter. For example, in the [Channel Settings dialog](#) (picture follows), the "Name" control can be selected by Alt-N, the "Color" control by Alt-C, and so forth:



The Channel Settings dialog

#### 5.3.4.2 Editing Sequences Using the Mouse

[Sequences](#) can be edited in the [Light-O-Rama Sequencer](#) using the mouse:

- [Selecting a Cell](#)
- [Selecting Multiple Cells](#)
- [Modifying Cells](#)
- [Other Mouse Usage](#)

See also "[Editing Sequences Using the Keyboard](#)".

## Selecting a Cell

[Sequences](#) are displayed in the [Sequencer](#) as a grid. Rows represent [channels](#), and columns represent [timings](#). Cells in the grid therefore represent the [lighting effects](#) that will happen on channels at various points in time while the sequence is being played.

A cell, or a range of cells, can be selected, allowing you to apply various tools to it (such as specifying what lighting effects should take place in that cell). You can recognize the currently selected cell (or cells) by a thick black and white border. For example, in the following sequence, the cell of the third channel between 1 second and 1.5 seconds is selected:

Time Scale	1.00									
Unit 01.1										
Unit 01.2										
Unit 01.3										
Unit 01.4										
Unit 01.5										
Unit 01.6										

The time between 1 and 1.5 seconds of the third channel is selected

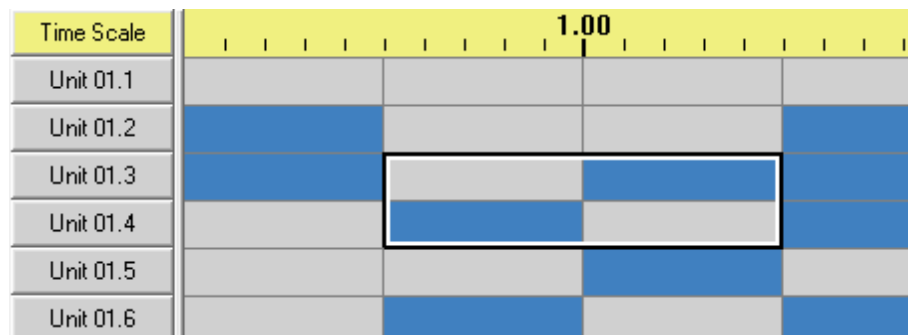
Using the mouse, you can change which cell is selected by simply clicking in the cell that you want to be selected. However, unlike when you select a cell [using the keyboard](#), this will not just select the cell - it will also apply the current effect tool (from the [Tools toolbar](#)) to the cell. So, for example, it might turn the cell [on](#), or [off](#), or cause it to [twinkle](#), or [fade up](#). So, if you want to just select a cell without changing its contents, either use the keyboard, or make sure that your current effect tool is the [Selection tool](#).

Another option is to right-click in the desired cell. This will select the cell, and will not apply the current tool, but it will also bring up the [right-click context menu](#). One exception: If you already have multiple cells selected, and you right click on one of those cells, that cell will not become the currently selected cell. Instead, the whole range of cells will remain selected, and the right-click context menu will pop up, applying to the entire range of cells.

## Selecting Multiple Cells

You can select multiple cells using the mouse in two ways: either click and drag from the first to the last, or click in the first, move (without necessarily dragging) to the last, and shift-click in the last. Note that this will not just select the cells; it will also apply the current tool (from the [Tools toolbar](#)) to the cells. For example, it will make them [shimmer](#), or [fade down](#). So, if you want to select multiple cells without changing their contents, either use the keyboard, or make sure that the current tool is the [Selection tool](#).

Right-clicking can also be used to select multiple cells, but will bring up the [right-click context menu](#) rather than applying the current tool.



Four cells are selected, two each in two different channels

## Modifying Cells

Simply [selecting a cell](#) or [a range of cells](#) will apply the current [effect](#) tool (from the [Tools toolbar](#)) to the selection.

Another option is to right-click on the cell or cells, which will bring up the [right-click context menu](#). This menu has a variety of options for modifying the cells.

## Other Mouse Usage

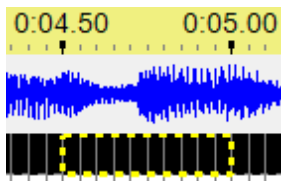
Various popup menus and dialogs can be obtained by using the mouse:

- Right-clicking on the sequence grid brings up the [right-click context menu](#).
- Left-clicking on a [channel button](#) brings up that channel's [Channel Settings dialog](#).
- Right-clicking on a channel button brings up that [channel's popup menu](#).
- Left or right-clicking on a track bar brings up that track's context menu.
- Left or right-clicking on a loop level portion of the grid brings up the [Loop Context menu](#).
- Left or right-clicking on a [loop level's button](#) brings up part of the Loop Context menu (the items related to the whole loop level, rather than individual loops).

Additionally, the menu bar and the [toolbars](#) can be accessed via the mouse in the standard way for Windows programs.

### 5.3.4.3 Selecting Cells

A cell, or a range of cells, can be selected in the Pixel Editor's [grid](#), allowing you to apply various tools to it (such as specifying what lighting effects should take place in that cell). You can recognize the currently selected cell (or cells) by a thick dashed yellow border. For example, in the following [sequence](#), the cells between 4.50 second and 5.00 seconds are selected:



You can select cells using the mouse, keyboard shortcuts, or by right-clicking on the grid:

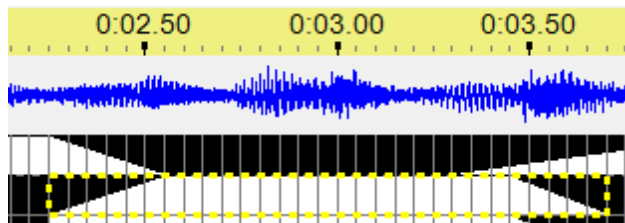
- [Mouse Selection](#)

- [Double-Click Selection](#)
- [Keyboard Selection](#)
- [Right-Click Selection](#)






#### 5.3.4.3.1 Mouse Selection

Using the mouse in the Pixel Editor's [sequencing grid](#), you can:

- Click on a single cell to select it. If the cell has an effect in it, that effect starts playing in the right window and the effect becomes the current effect (text description is listed below the [Effect Generator](#) button).
- Select multiple cells by clicking on a cell and then dragging the mouse across the range.
- Extend the selection by shift-clicking on a cell.
- [Double-clicking](#) on an effect will select all of the cells for that effect, then open the Effect Generator so the effect can be edited. 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).



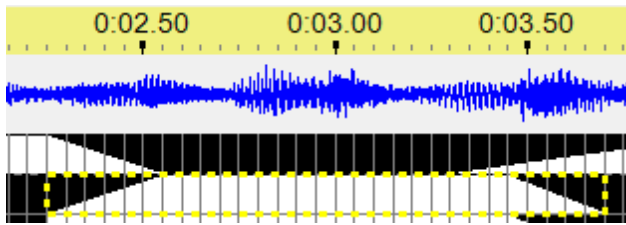
What happens when any of the above actions takes place depends on which tool is selected:

-  Select – no effect is applied to the selected cells
-  On – will apply the current effect, as listed below the Effect Generator button, to the selected cells. The effect is applied at 100%.
-  Off – will remove any effects in the selected cells
-  Fade Up – will apply the current effect, as listed below the Effect Generator button, to the selected cells. The effect is ramped up from 0% at left-most selected cell to 100% at the right.
-  Fade Down – will apply the current effect, as listed below the Effect Generator button, to the selected cells. The effect is ramped down from 100% at left-most selected cell to 0% at the right.

#### 5.3.4.3.2 Double-Click Selection

Double-clicking on an effect in the Pixel Editor's [sequencing grid](#) will select all of the cells for that effect, then open the Effect Generator so the effect can be edited. If the effect is modified in the Effect Generator 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).





#### 5.3.4.3.3 Keyboard Selection

You can change which cell is selected in the Pixel Editor's [sequencing grid](#) by using the arrow keys - Up, Down, Left and Right.

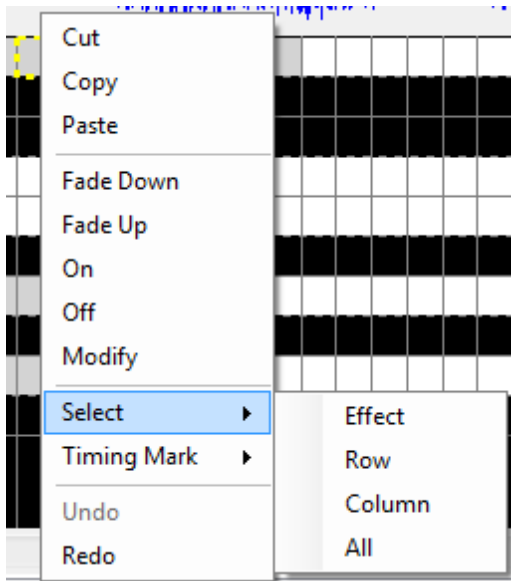
The Home key brings you to the first cell in the currently selected [prop](#). The End key will take you to the last cell in the currently selected prop.

A range of cells can be selected by holding down the shift key while using the arrow keys (or Home, or End).

“C” will select the current column. “R” will select the current row. Ctrl-A will select the entire grid.

#### 5.3.4.3.4 Right-Click Selection

Right-clicking in the Pixel Editor's [sequencing grid](#) provides a variety of options, including [cell selection](#).

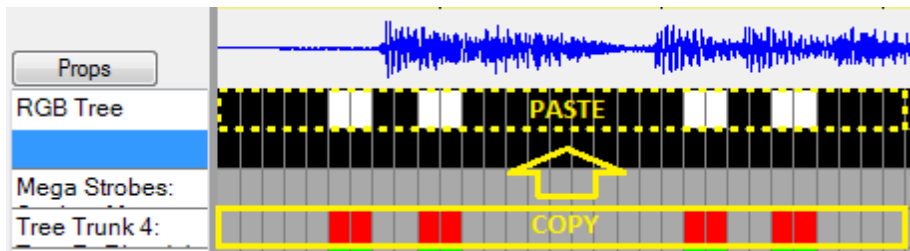


#### 5.3.4.4 Cut/Copy/Paste

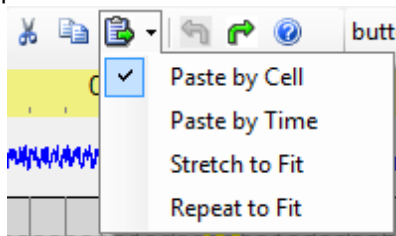
In the Pixel Editor's [sequencing grid](#), the lighting effects in cells can be copied, cut, and pasted using the standard Windows copy, cut and paste keys, Ctrl-C, Ctrl-X, and Ctrl-V. These functions can also be accessed from toolbar buttons above the grid or the menu that appears after [right-clicking on a grid cell](#).

Most of the time, you will copy from a Pixel Editor prop and paste to another Pixel Editor prop. However, you can also copy from a [Sequencer](#) prop and paste to a Pixel Editor prop. Start by making the

Sequencer [channels](#) visible in the grid using the [Props button](#), then copy from cells on a gray row and paste into a black row. The black cells will be populated with colorwash effects, but it is a quick way to get the correct timing established for your Pixel Editor effects. See the picture below:



Pixel Editor supports several different pasting modes accessed by clicking the down arrow to the right of the paste button:

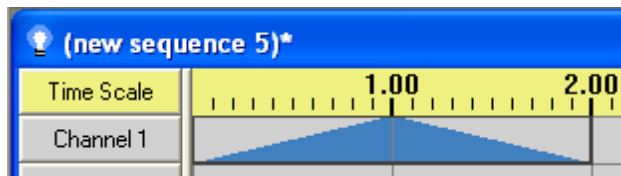


- [Paste By Cell](#)
- [Paste By Time](#)
- [Stretch to Fit](#)
- [Repeat to Fit](#)

#### 5.3.4.4.1 Paste By Cell

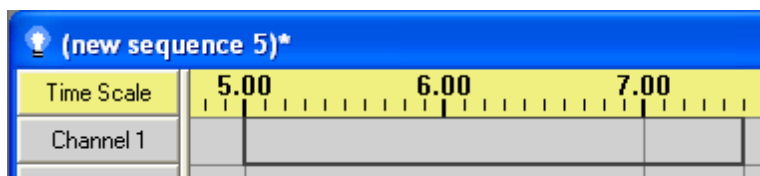
When [pasting](#) in the Pixel Editor's [sequencing grid](#), Paste by Cell pastes [effects](#) based upon the relative durations of the copied cells and the cells where they will be pasted.

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:



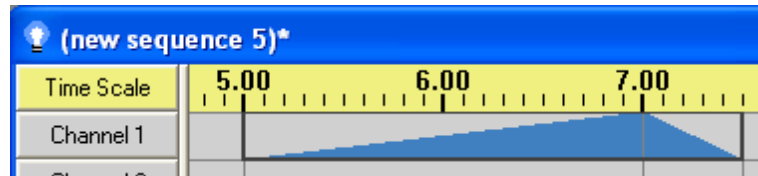
Events to be copied

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:

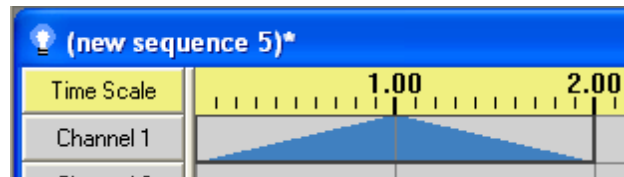


After pasting by cell

#### 5.3.4.4.2 Paste By Time

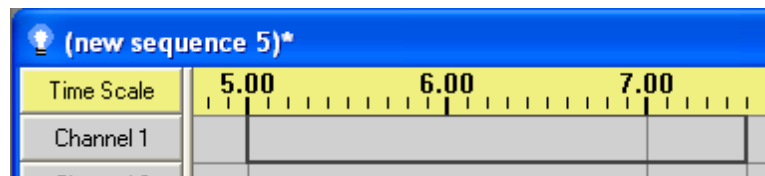
When [pasting](#) in the Pixel Editor's [sequencing grid](#), Paste by Time pastes [effects](#) based upon their durations as they were copied.

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:



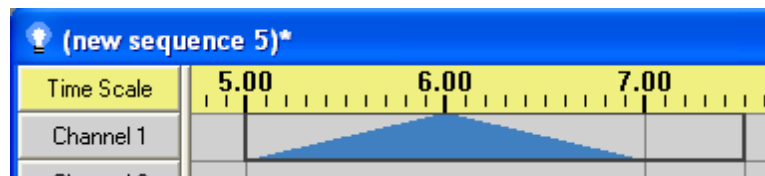
Events to be copied

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:

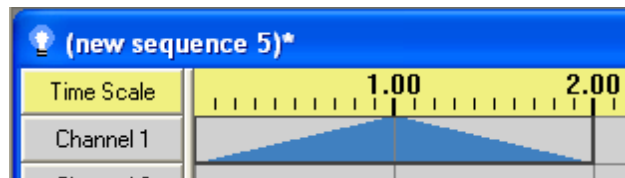


After pasting by time

#### 5.3.4.4.3 Stretch to Fit

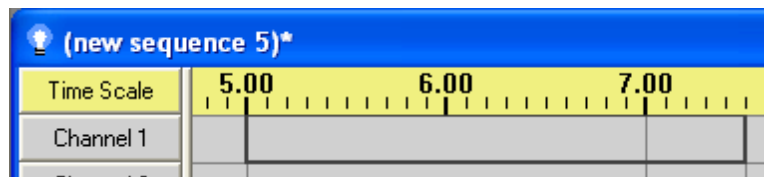
When [pasting](#) in the Pixel Editor's [sequencing grid](#), Stretch to Fit stretches (or compresses) [effects](#) to fit into the area that you have selected, without regards to any [timings](#) within that area.

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:



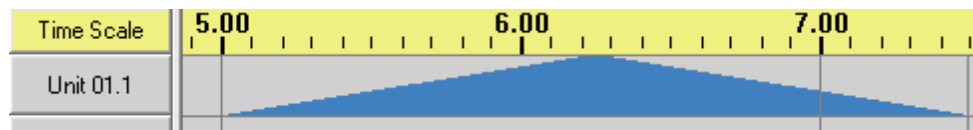
Events to be copied

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:

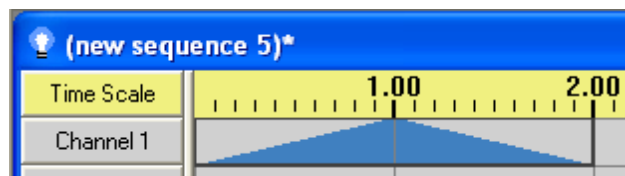


After stretching to fit

#### 5.3.4.4.4 Repeat to Fit

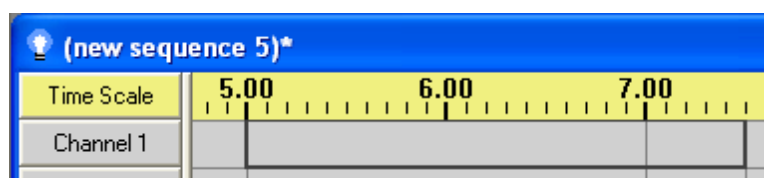
When [pasting](#) in the Pixel Editor's [sequencing grid](#), Repeat to Fit repeats (or cuts off) [effects](#) to fit into the area that you have selected, without regards to any [timings](#) within that area.

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:



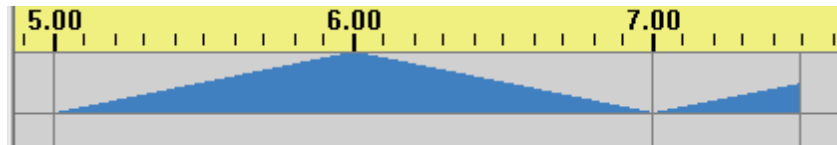
Events to be copied

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

#### 5.3.4.5 Toolbars

The [Light-O-Rama Sequencer](#) has three toolbars: the [Standard toolbar](#), the [Tools toolbar](#), and the [Tracks and Timings toolbar](#).

The Standard toolbar has buttons for a variety of different functions, such as creating, opening, and saving [sequences](#), setting various display options, and playing sequences.

The Tools toolbar enables you to choose which lighting effect tool is currently in use, and set certain options regarding them.

The Tracks and Timings toolbar has dropdown boxes to allow you to quickly choose which track is displayed, and which timing grid it is displayed with, and it additionally has buttons with popup menus, with various track and timing grid-related menu items.

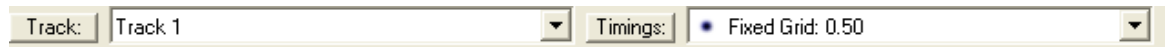
If desired, these toolbars can be hidden (and later unhidden) by using the "Tool Bars" item on the View menu.



The Standard toolbar








The Tools toolbar

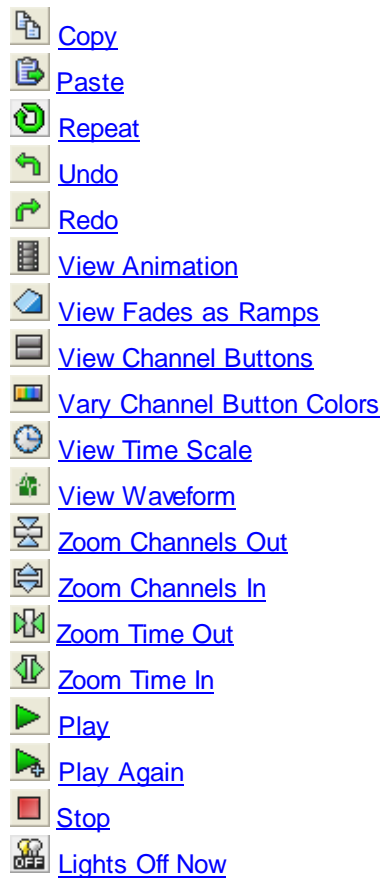


The Tracks and Timings Toolbar

##### 5.3.4.5.1 The Standard Toolbar

The [Light-O-Rama Sequencer's](#) Standard toolbar contains buttons for several functions and options. From left to right, they are:

-  [New Sequence](#)
-  [Open Sequence](#)
-  [Close Sequence](#)
-  [Save Sequence](#)
-  [Cut](#)



If desired, the toolbar can be hidden (or unhidden) via "Tool Bars" on the View menu.



The Standard toolbar

## New Sequence

This button on the [Standard toolbar](#) can be used to create a new [sequence](#). Clicking on it opens the New and Open dialog, on its "New Sequence" tab.

## Open Sequence

This button on the [Standard toolbar](#) can be used to open a [sequence](#). Clicking on it opens the New and Open dialog, on whichever of its "Existing Sequence" tab or its "Recent Sequence" tab was most recently used.

## Close Sequence

This button on the [Standard toolbar](#) can be used to close an open [sequence](#). Please see "[Close](#)" on the [File menu](#) for details.

## Save Sequence

This button on the [Standard toolbar](#) can be used to save changes to an open [sequence](#). Please see "[Save](#)" on the [File menu](#) for details.

## Cut

This button on the [Standard toolbar](#) can be used to cut [effects](#) from a [sequence](#). Please see "Cut, Copy, Paste, and Paste Multiple" on the Edit menu for details.

## Copy

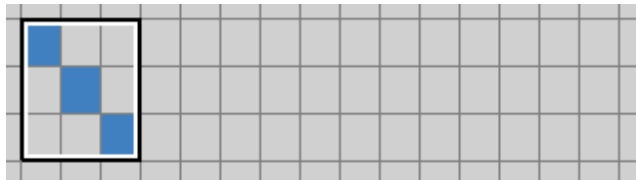
This button on the [Standard toolbar](#) can be used to copy [effects](#) from a [sequence](#). Please see "Cut, Copy, Paste, and Paste Multiple" on the Edit menu for details.

## Paste

This button on the [Standard toolbar](#) can be used to paste [effects](#) into a [sequence](#). Please see "Cut, Copy, Paste, and Paste Multiple" on the Edit menu for details.

## 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:



After repeating once

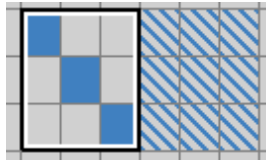
And you can repeat as many times as you like thereafter; for example, pressing Repeat three more times will make the following:



After repeating four times

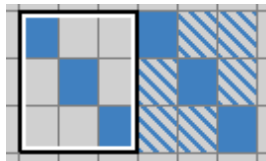
The Repeat tool pays attention to your current "Paste from/to" settings. For example, before

repeating:



Before repeating

And after repeating, with "Paste from Foreground" enabled:



After repeating, with "Paste from Foreground" enabled

Undo 

This button on the [Standard toolbar](#) can be used to undo changes to a [sequence](#). Please see "Undo and Redo" on the Edit menu for details.

Redo 

This button on the [Standard toolbar](#) can be used to redo previously undone changes to a [sequence](#). Please see "Undo and Redo" on the Edit menu for details.

View Animation 

This button on the [Standard toolbar](#) can be used to control whether the [animation](#) for a [sequence](#) is displayed. This can be set independently for different open sequences. Please see "View Animation" on the View menu for details.

View Fades as Ramps 

This button on the [Standard toolbar](#) can be used to control whether fades are displayed as gradual changes in color or as ramps. Please see "Fades" on the View menu for details.

View Channel Buttons 

This button on the [Standard toolbar](#) can be used to control whether the [channel buttons](#) for a [sequence](#) are displayed. This can be set independently for different open sequences. Please see "View Channel Buttons" on the View menu for details.

Vary Channel Button Colors 

This button on the [Standard toolbar](#) can be used to control whether the [channel buttons](#) for a [sequence](#) will change color during play, based upon the [lighting effects](#) happening on those [channels](#). Please see "Vary Color of Channel Buttons" on the Play menu for details.



## View Time Scale

This button on the [Standard toolbar](#) can be used to control whether a time scale is displayed at the top of an open [sequence](#). This can be set independently for different open sequences. Please see "View Time Scale" on the View menu for details.

## View Waveform

This button on the [Standard toolbar](#) can be used to control whether the audio [waveform](#) is displayed at the top of an open [musical sequence](#). This can be set independently for different open musical sequences. Please see "View Waveform" on the View menu for details.

## Zoom Channels Out

This button on the [Standard toolbar](#) can be used to zoom a [sequence's](#) rows (representing its [channels](#)) out, making them shorter. Please see "Zoom Rows" on the View menu for details.

## Zoom Channels In

This button on the [Standard toolbar](#) can be used to zoom a [sequence's](#) rows (representing its [channels](#)) in, making them taller. Please see "Zoom Rows" on the View menu for details.

## Zoom Time Out

This button on the [Standard toolbar](#) can be used to zoom a [sequence's](#) columns (representing the duration from one [timing](#) to the next) out, making them thinner. Please see "Zoom Columns" on the View menu for details.

## Zoom Time In

This button on the [Standard toolbar](#) can be used to zoom a [sequence's](#) columns (representing the duration from one [timing](#) to the next) in, making them wider. Please see "Zoom Columns" on the View menu for details.

## Play

This button on the [Standard toolbar](#) can be used to start play of an open [sequence](#) or sequences. If only a single sequence is open, it will be played; if more than one sequence is open, a popup menu will open, asking if you want to play all of the sequences or just the currently active sequence. Please see "Start This Sequence" and "Start All Sequences" on the Play menu for details.

## Play Again

This button on the [Standard toolbar](#) can be used to start play in the same way as it was last started. Please see "Play Again" on the Play menu for details.

## Stop

This button on the [Standard toolbar](#) can be used to stop a playing [sequence](#). Please see "Stop" on the Play menu for details.

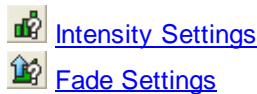
## Lights Off Now

This button on the [Standard toolbar](#) can be used to manually turn off lights. Please see "Lights Off Now" on the Play menu for details.

### 5.3.4.5.2 The Tools Toolbar

The Light-O-Rama [Sequencer's](#) Tools toolbar contains buttons which enable you to choose which effect tool is currently selected, as well as buttons to modify the behavior of those tools. From left to right, they are:

-  [Select](#)
-  [Toggle](#)
-  [Twinkle](#)
-  [Shimmer](#)
-  [On](#)
-  [Off](#)
-  [Set Intensity](#)
-  [Fade Up](#)
-  [Fade Down](#)
-  [Intelligent Fade](#)
-  [Fill](#)
-  [Chase](#)
-  [Color Fade](#)
-  [Paint Sequence](#)
-  [DMX Intensity](#)
-  [Custom](#)
-  [Custom Twinkle](#)
-  [Custom Shimmer](#)
-  [Custom Set Intensity](#)
-  [Custom Fade Up](#)
-  [Custom Fade Down](#)
-  [Background Effects](#)
-  [Foreground Effects](#)



If desired, the Tools toolbar can be hidden (or unhidden) via "Tool Bars" on the View menu.



## Select

This button on the [Tools toolbar](#) chooses the Select tool as the currently active effect tool. It is equivalent to "Select" from the Tools menu. Please refer to that help page for details.

## Toggle

This button on the [Tools toolbar](#) chooses the Toggle tool as the currently active effect tool. It is equivalent to "Toggle" from the Tools menu. Please refer to that help page for details.

## Twinkle

This button on the [Tools toolbar](#) chooses the Twinkle tool as the currently active effect tool. It is equivalent to "Twinkle" from the Tools menu. Please refer to that help page for details.

## Shimmer

This button on the [Tools toolbar](#) chooses the Shimmer tool as the currently active effect tool. It is equivalent to "Shimmer" from the Tools menu. Please refer to that help page for details.

## On

This button on the [Tools toolbar](#) chooses the On tool as the currently active effect tool. It is equivalent to "On" from the Tools menu. Please refer to that help page for details.

## Off

This button on the [Tools toolbar](#) chooses the Off tool as the currently active effect tool. It is equivalent to "Off" from the Tools menu. Please refer to that help page for details.

## Set Intensity

This button on the [Tools toolbar](#) chooses the Set Intensity tool as the currently active effect tool. It is equivalent to "Set Intensity" from the Tools menu. Please refer to that help page for details.

## Fade Up

This button on the [Tools toolbar](#) chooses the Fade Up tool as the currently active effect tool. It is equivalent to "Fade Up" from the Tools menu. Please refer to that help page for details.

## Fade Down

This button on the [Tools toolbar](#) chooses the Fade Down tool as the currently active effect tool. It is equivalent to "Fade Down" from the Tools menu. Please refer to that help page for details.

## Intelligent Fade

This button on the [Tools toolbar](#) chooses the Intelligent Fade tool as the currently active effect tool. It is equivalent to "Intelligent Fade" from the Tools menu. Please refer to that help page for details.

## Fill

This button on the [Tools toolbar](#) chooses the Fill tool as the currently active effect tool. It is equivalent to "Fill" from the Tools menu. Please refer to that help page for details.

## Chase

This button on the [Tools toolbar](#) chooses the Chase tool as the currently active effect tool. It is equivalent to "Chase" from the Tools menu. Please refer to that help page for details.

## Color Fade

This button on the [Tools toolbar](#) chooses the Color Fade tool as the currently active effect tool. It is equivalent to "Color Fade" from the Tools menu. Please refer to that help page for details.

## Paint Sequence

This button on the [Tools toolbar](#) chooses the Paint Sequence tool as the currently active effect tool. It is equivalent to "Paint Sequence" from the Tools menu. Please refer to that help page for details.

## DMX Intensity

This button on the [Tools toolbar](#) chooses the DMX Intensity tool as the currently active effect tool. It is equivalent to "DMX Intensity" from the Tools menu. Please refer to that help page for details.

Note: The DMX Intensity button is only present if DMX editing has been enabled.

## Custom

This button on the [Tools toolbar](#) chooses the current [custom tool](#) as the currently active effect tool. When this button is selected, the exact meaning of the current custom tool can be selected via the five buttons to its right - [Custom Twinkle](#), [Custom Shimmer](#), [Custom Set Intensity](#), [Custom Fade Up](#), and [Custom Fade Down](#).

For example, to use a tool that will shimmer the lights while fading them down, select this button, Custom Shimmer, and Custom Fade Down.

## Custom Twinkle

When the [Custom button](#) is selected, this button on the [Tools toolbar](#) makes the current [custom tool](#) some sort of twinkle tool.

For example, to use a tool that will twinkle the lights while fading them down, select the Custom button, this button, and [Custom Fade Down](#).

## Custom Shimmer

When the [Custom button](#) is selected, this button on the [Tools toolbar](#) makes the current [custom tool](#) some sort of shimmer tool.

For example, to use a tool that will shimmer the lights while fading them down, select the Custom button, this button, and [Custom Fade Down](#).

## Custom Set Intensity

When the [Custom button](#) is selected, this button on the [Tools toolbar](#) makes the current [custom tool](#) some sort of set intensity tool.

For example, to use a tool that will twinkle the lights at some intensity other than full intensity, select the Custom button, [Custom Twinkle](#), and this button.

## Custom Fade Up

When the [Custom button](#) is selected, this button on the [Tools toolbar](#) makes the current [custom tool](#) some sort of fade up tool.

For example, to use a tool that will twinkle the lights while fading them up, select the Custom button, [Custom Twinkle](#), and this button.

## Custom Fade Down

When the [Custom button](#) is selected, this button on the [Tools toolbar](#) makes the current [custom tool](#) some sort of fade down tool.

For example, to use a tool that will twinkle the lights while fading them down, select the Custom button, [Custom Twinkle](#), and this button.

## Background Effects

This button on the [Tools toolbar](#) can be used to enable [background effects mode](#). It is equivalent to "Background Effects" from the Tools menu. Please refer to that help page for details.

## Foreground Effects

This button on the [Tools toolbar](#) can be used to enable [foreground effects mode](#). It is equivalent to "Foreground Effects" from the Tools menu. Please refer to that help page for details.

## Intensity Settings

This button on the [Tools toolbar](#) can be used to open or close the Intensity Tool Settings dialog. It is equivalent to "Intensity Tool Settings" from the Tools menu. Please refer to that help page for details.

## Fade Settings

This button on the [Tools toolbar](#) can be used to open or close the Fade Tool Settings dialog. It is equivalent to "Fade Tool Settings" from the Tools menu. Please refer to that help page for details.

### 5.3.4.5.3 The Track and Timings Toolbar

The Tracks and Timings toolbar consists of four controls, two related to [tracks](#) and two related to [timings](#):

- [The track button](#)
- [The track dropdown](#)
- [The timings button](#)
- [The timings dropdown](#)

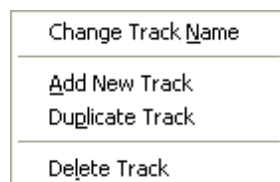


The Tracks and Timings toolbar

## The Track Button

Clicking on the [Track and Timings toolbar's](#) track button brings up a popup menu with various [track](#)-related items:

- [Change Track Name](#)
- [Add new Track](#)
- [Duplicate Track](#)
- [Delete Track](#)



The track button's popup menu

### ***Change Track Name***

This menu item on the [track button's](#) popup menu can be used to change the name of the current [track](#). For details, please see the Change Track Name menu item on the Edit menu.

### ***Add New Track***

This menu item on the [track button's](#) popup menu can be used to add a new [track](#) to the [sequence](#). For details, please see the Add New Track menu item on the Edit menu.

## ***Duplicate Track***

This menu item on the [track button's](#) popup menu can be used to add a new [track](#) with all the same channels as the current track. For details, please see the Duplicate Track menu item on the Edit menu.

## ***Delete Track***

This menu item on the [track button's](#) popup menu can be used to delete the current [track](#) from the [sequence](#). There must be at least one track in a sequence, so this menu item will be unavailable if there is only one track.

## **The Track Dropdown**

The [Tracks and Timings toolbar's](#) track dropdown gives a list of the [tracks](#) in the [sequence](#). It displays the currently active track; selecting another track from the dropdown makes that track active, and updates the display to show that track if it is not already being shown.

## **The Timings Button**

Clicking on the [Tracks and Timings toolbar's](#) timings button brings up a popup menu with various [timings](#)-related items:

- [Change Timing Grid Name](#)
- [Add New Fixed Grid](#)
- [Add New Freeform Grid](#)
- [Duplicate to New Freeform Grid](#)
- [Delete Timing Grid](#)



The timings button's popup menu

## ***Change Timing Grid Name***

This menu item on the [timings button's](#) popup menu 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 timing grids when they are listed in places such as the [Tracks and Timings toolbar's timings dropdown](#).

## ***Add New Fixed Grid***

This menu item on the [timings button's](#) popup menu 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 on the [timings button's](#) popup menu 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.

### **Duplicate to New Freeform Grid**

This menu item on the [timings button's](#) popup menu can be used to create a new [freeform timing grid](#), initially populating it with the same [timings](#) as 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](#).

### **Delete Timing Grid**

This menu item on the [timings button's](#) popup menu can be used to delete the current [timing grid](#) from the [sequence](#). Any [tracks](#) in the sequence that use this timing grid will automatically be switched to use some other 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.

## **The Timings Dropdown**

The [Tracks and Timings toolbar's](#) timings dropdown gives a list of the [timing grids](#) in the [sequence](#). It displays the timing grid currently in use on the active [track](#); selecting another timing grid from the dropdown changes the track to use that timing grid instead.

### **5.3.4.6 The Right-Click Context Menu**

In the [Light-O-Rama Sequencer](#), [sequences](#) are represented using a grid. Rows in the grid represent [channels](#), and columns in the grid represent the duration between [timings](#). Cells in the grid are used to display what [lighting effects](#) are set in the sequence for that point in time on those channels.

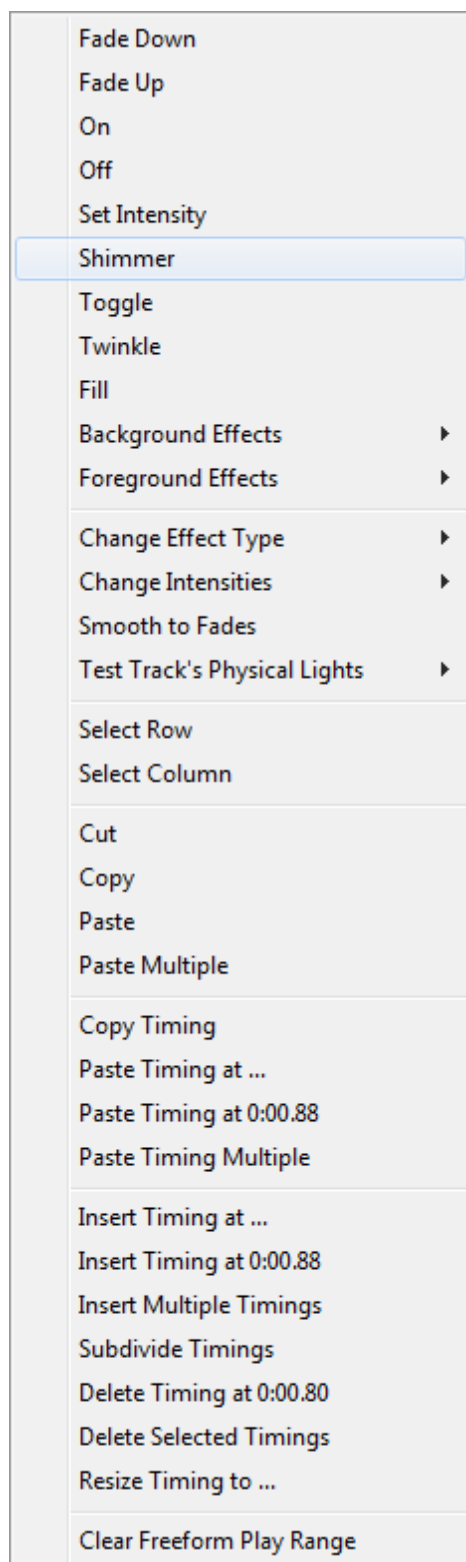
Right-clicking on the grid brings up a popup menu. This menu contains several items which allow you to modify the currently selected cells, in a variety of ways. For example, you can insert lighting effects, cut, copy, and paste (both effects and timings), and delete or resize timings.

The following items are available on this right-click context menu:

- [Fade Down](#)
- [Fade Up](#)
- [On](#)
- [Off](#)
- [Set Intensity](#)
- [Shimmer](#)
- [Toggle](#)
- [Twinkle](#)
- [Fill](#)
- [Background Effects](#)
- [Foreground Effects](#)
- [Change Effect Type](#)



- [Change Intensities](#)
- [Smooth to Fades](#)
- [Test Track's Physical Lights](#)
- [Select Row\(s\)](#)
- [Select Column\(s\)](#)
- [Cut](#)
- [Copy](#)
- [Paste](#)
- [Paste Multiple](#)
- [Copy Timing](#)
- [Paste Timing at...](#)
- [Paste Timing at \(centisecond\)](#)
- [Paste Timing Multiple](#)
- [Insert Timing at...](#)
- [Insert Timing at \(centisecond\)](#)
- [Insert Multiple Timings](#)
- [Subdivide Timings](#)
- [Delete Timing at \(centisecond\)](#)
- [Delete Selected Timings](#)
- [Resize Timings to...](#)
- [Resize Timings to Equal Times](#)
- [Clear Freeform Play Range](#)



The right-click context menu

## Fade Down

This item on the [right-click context menu](#) will insert a [fade down effect](#) into the currently selected cell or cells.

## Fade Up

This item on the [right-click context menu](#) will insert a [fade up effect](#) into the currently selected cell or cells.

## On

This item on the [right-click context menu](#) will insert an [on effect](#) into the currently selected cell or cells.

## Off

This item on the [right-click context menu](#) will insert an [off effect](#) into the currently selected cell or cells.

## Set Intensity

This item on the [right-click context menu](#) will insert a [set intensity effect](#) into the currently selected cell or cells.

## Shimmer

This item on the [right-click context menu](#) will insert a [shimmer effect](#) into the currently selected cell or cells.

## Toggle

This item on the [right-click context menu](#) will toggle the [effects](#) in the currently selected cell or cells 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](#)).

## Twinkle

This item on the [right-click context menu](#) will insert a [twinkle effect](#) into the currently selected cell or cells.

## Fill

This item on the [right-click context menu](#) will apply a fill to every [off event](#) in the currently selected cell or cells.

## Background Effects

This submenu of the [right-click context menu](#) can be used to insert various [effects](#) (such as [fades](#) and [shimmers](#)) into the currently selected cell or cells, using [background effects mode](#).

Note that this does not turn on background effects mode permanently; it merely enables it for this one insertion.

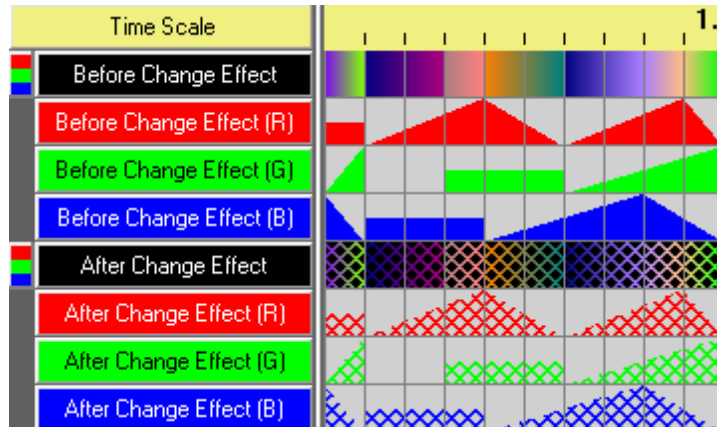
## Foreground Effects

This submenu of the [right-click context menu](#) can be used to insert various [effects](#) (such as [fades](#) and [shimmers](#)) into the currently selected cell or cells, using [foreground effects mode](#).

Note that this does not turn on foreground effects mode permanently; it merely enables it for this one insertion.

## Change Effect Type

This submenu of the [right-click context menu](#) can be used to change the [effect type](#) in the currently selected cell or cells (for example, changing the effects in the cells to be [shimmers](#), keeping their intensity values unchanged).



A before-and-after shot of using "Change Effect" on an RGB channel to change to twinkles

## Change Intensities

This submenu of the [right-click context menu](#) can be used to change the intensities of the [effect events](#) in the currently selected cell or cells in a variety of ways, without affecting their event types. For example, by setting various options appropriately, you can change any intensity above 80% on any red [channel](#) of any [RGB channel](#) to 80%, or add 37% to any intensity on any channel. It has three menu items:

- The topmost menu item is the "quick" item; clicking on it changes the intensities in the same way that intensities were most recently changed.
- The middle item, "Recent", is itself a submenu. The Recent submenu contains up to ten items representing the most recent ways in which intensities were changed.
- The bottom item, "Detailed", opens up a window which allows you to set various options on how Change Intensities will behave.

For more information, see the [Change Intensities](#) page.

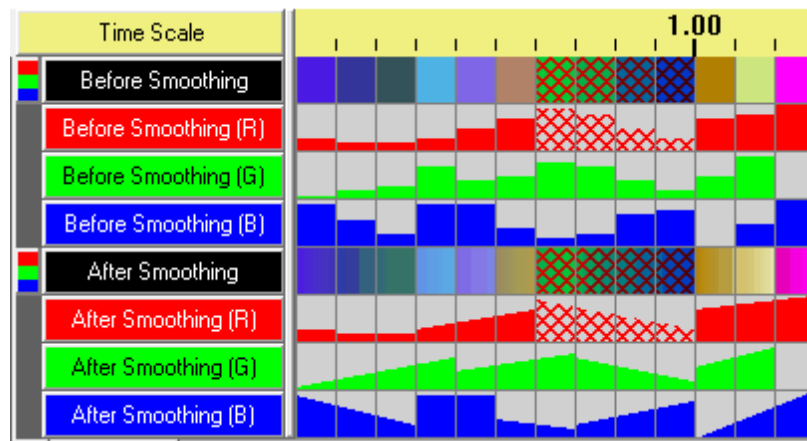
## Smooth to Fades

This item on the [right-click context menu](#) will attempt to "smooth" rapid, consecutive [effect events](#) in the selected cell or cells to [fades](#):

Sometimes, [sequences](#) (especially those created with the help of various automatic tools) will have sections wherein a [channel](#) will have many very rapid consecutive effect events. For example, "From time 0.00 to time 0.05, 10%; from time 0.05 to time 0.10, 30%; from time 0.10 to time 0.15, 40%; from time 0.15 to time 0.20, 70%". If done on many channels, this sort of thing can lead to laggy or bursty behavior. Moreover, it's often more or less indistinguishable (to the human eye) from the simpler "From time 0.00 to time 0.20, fade up from 10% to 70%", which is significantly more efficient. Smoothing effects in this way can improve the performance of the sequence (reducing lagginess) and also decrease loading and saving time.

Currently, this tool will only attempt to change consecutive effects that are each a tenth of a second or less in length, and that are either monotonically increasing or monotonically decreasing. Other effects in the selected cell or cells will remain unchanged.

Note that when applied to large selections, this tool can take some time.

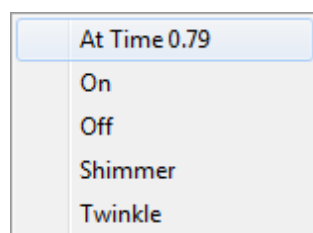


A before-and-after shot of the effect of "Smooth to Fades" on the contents of an RGB channel

## Test Track's Physical Lights

This submenu on the [right-click context menu](#) allows simple real-time control of the physical lights that are associated with the [channels](#) in the [track](#). Using the commands on the submenu, you can make all of the channel's lights do a certain basic command ([on](#), [off](#), [twinkle](#), [shimmer](#)), or else all behave in whatever way the [sequence](#) says they should behave at the exact time that you clicked in the track grid.

See also [Test Physical Channels](#) on the [channel button popup menu](#).



The Test Tracks' Physical Lights submenu, when the popup menu was opened by right-clicking at time 0.79

## Select Row(s)

This item on the [right-click context menu](#) changes the selection so that any rows that are in the selection become completely selected. That is, the selection will stay on the same row or rows, but from time zero to the end of the [track](#).

## Select Column(s)

This item on the [right-click context menu](#) changes the selection so that any column or columns that are in the selection become completely selected. That is, the selection will stay on the same time range, but from the first [channel](#) to the last.

## Cut

This item on the [right-click context menu](#) will cut the [effects](#) from the currently selected cell or cells. Please see "Cut, Copy, Paste, and Paste Multiple" on the Edit menu for details.

## Copy

This item on the [right-click context menu](#) will copy the [effects](#) from the currently selected cell or cells. Please see "Cut, Copy, Paste, and Paste Multiple" on the Edit menu for details.

## Paste

This item on the [right-click context menu](#) will paste [effects](#) into the [sequence](#), starting at the start of the currently selected cell or cells. Please see "Cut, Copy, Paste, and Paste Multiple" on the Edit menu for details.

## Paste Multiple

This item on the [right-click context menu](#) opens a dialog that can be used to paste several copies of [effects](#) into the [sequence](#), starting from the currently selected cell or cells. For example, you can choose to paste the effects three times in a row horizontally, and two times in a row vertically. Please see "Cut, Copy, Paste, and Paste Multiple" on the Edit menu for details.

## Copy Timing

This item on the [right-click context menu](#) will copy the [timings](#) from the currently selected cell or cells. Please see "Copy and Paste Timings" on the Edit menu for details.

## Paste Timing at ...

This item on the [right-click context menu](#) 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 "Copy and Paste Timings" on the Edit menu for details, and [Time Format](#) for details on how to enter times.

## Paste Timing at (centisecond)

This item on the [right-click context menu](#) can be used to paste copied [timings](#) into the sequence, starting at the time that you right-clicked when opening the context menu. Please see "Copy and Paste Timings" on the Edit menu for details.

## Paste Timing Multiple

This item on the [right-click context menu](#) can be used to paste copied [timings](#) into the sequence, multiple times in a row. Please see "Copy and Paste Timings" on the Edit menu for details.

## Insert Timing at ...

This item on the [right-click context menu](#) 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 (*centisecond*)

This item on the [right-click context menu](#) can be used to insert a [timing](#) into the [sequence](#) at the time that you right-clicked when opening the context menu.

## Insert Multiple Timings

This item on the [right-click context menu](#) can be used to insert multiple evenly-spaced [timings](#) into the selected cell or cells, based on the length of the entire selection. See "Insert Multiple Timings" on the Timings submenu of the Edit menu for details.

Also see "[Subdivide Timings](#)" for similar, but different, functionality.

## Subdivide Timings

This item on the [right-click context menu](#) can be used to insert multiple evenly-spaced [timings](#) into each selected cell, based on the length of the cell. See "Subdivide Timings" on the Timings submenu of the Edit menu for details.

Also see "[Insert Multiple Timings](#)" for similar, but different, functionality.

## Delete Timing at (*centisecond*)

This item on the [right-click context menu](#) can be used to delete the [timing](#) closest on the left to the time that you right-clicked when opening the context menu.

## Delete Selected Timings

This item on the [right-click context menu](#) 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 Timings to ...

This item on the [right-click context menu](#) 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 on the [right-click context menu](#) 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.

## Clear Freeform Play Range

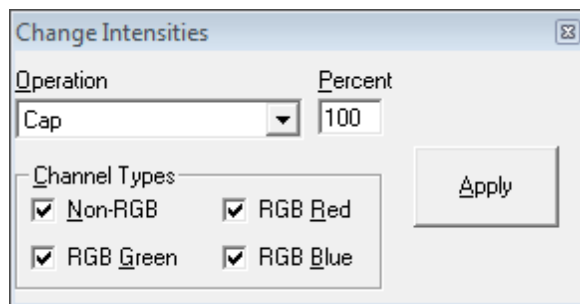
If a [track](#) has a [freeform play range](#) selected, this item on the [right-click context menu](#) can be used to remove it.

### 5.3.4.6.1 Change Intensities

The Change Intensities command can be used to modify the intensities of [effect events](#) in a selected area of a [sequence](#) in a wide variety of ways. You can access it through the [Change Intensities submenu](#) on the [right-click context menu](#). The submenu has three menu items: [Quick](#), [Recent](#), and [Detailed](#). Although it is listed last in the menu, we will discuss [Detailed](#) first:

## Detailed

Selecting this will open up a tool window which can be used to set the various options determining how Change Intensities will behave:



The Change Intensities "Detailed" tool window

In the tool window, there are three main options: [Operation](#), [Percent](#), and [Channel Types](#). There is also an [Apply](#) button to apply the Change Intensities tool to the [sequence](#).

## Operation and Percent

The Operation dropdown list is used to select among several different behaviors of Change Intensities. The Percent textbox is used to specify a percentage, the exact meaning of which



depends upon which operation is selected. The operations are:

- [Cap](#)
- [Floor](#)
- [Increase](#)
- [Reduce](#)
- [Scale](#)

## **Cap**

The Cap operation imposes a maximum upon the intensities in the selected area. 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 type 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).

## **Floor**

The Floor operation imposes a minimum upon the intensities in the selected area. 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". However, the [DMX intensity](#) effect type 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).

## **Increase**

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 type 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.

## **Reduce**

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.

## **Scale**

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.

## **Channel Types**

The Channel Types section has four different checkboxes: Non-RGB, RGB Red, RGB Green, and RGB Blue. Which ones are selected determines which [channels](#) the Change Intensities tool will apply to. For example, if you check Non-RGB and RGB Red, but have RGB Green and RGB Blue unchecked, then the tool will apply to any red channels found in [RGB channels](#), and also to any channels that are found outside of RGB channels, but it will not apply to any green or blue channels found in RGB channels.

Channels that are found as macro channels of [Cosmic Color Devices](#) will always be skipped.

Note that a channel can appear multiple times in a [sequence](#), or even multiple times in a [track](#), and it is entirely possible that one of its appearances is (for example) as a green channel of an RGB channel, while another appearance of the same channel is outside of any RGB channel. The Change Intensities tool is not particularly smart about this sort of thing: When deciding whether or not the tool should apply to a channel, each individual appearance of the channel in the sequence is considered independently of any other appearances it may make.

## **Apply**

The Apply button applies the Change Intensity tool to the currently selected area, using the various options set in the [Detailed](#) dialog. The dialog will remain open, so you can use it several times in a row with different option settings and/or on different selected areas. To close the dialog, click the Windows close "X" button in its upper right corner.

## **Quick**

The Quick menu item on the [Change Intensities submenu](#) will be greyed out until you first use the Change Intensities tool (the first time you use the tool, it must be done through the [Detailed dialog](#)). After that, it will instead show the options that you most recently used for Change Intensities. For example, if your last use of Change Intensities was to apply a floor of 37% to red and green channels, the Quick menu item will display as "Floor 37% on red, green", and clicking on it will apply a floor of 37% to red and green channels in the selected area.

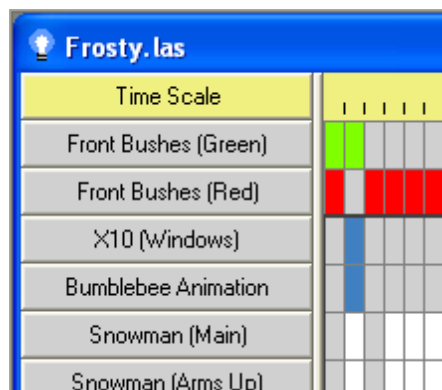
## Recent

The Recent menu item on the [Change Intensities submenu](#) is similar to the [Quick](#) menu item, except instead of one single item, it is actually a submenu of the up-to-ten most recent uses of the Change Intensities tool.

### 5.3.4.7 Channel and RGB Channel Buttons

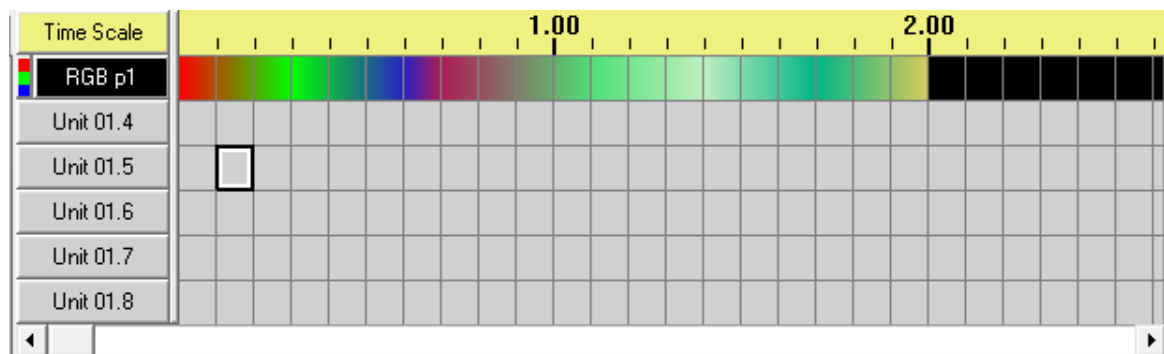
In the [Light-O-Rama Sequencer](#), [sequences](#) are represented using a grid. Rows in the grid represent [channels](#) and [RGB channels](#), and columns in the grid represent the duration between [timings](#). Cells in the grid are used to display what [lighting effects](#) are set in the sequence for that point in time on those channels and RGB channels.

In each row, to the left of the grid, there is a button associated with the channel or RGB channel for that row. The button is labeled with the name of the channel or RGB channel:



Some channel buttons (on the left)

Buttons for regular channels are shown in grey, as in the above picture. Those for RGB channels are shown in black, as in the first row of the following:

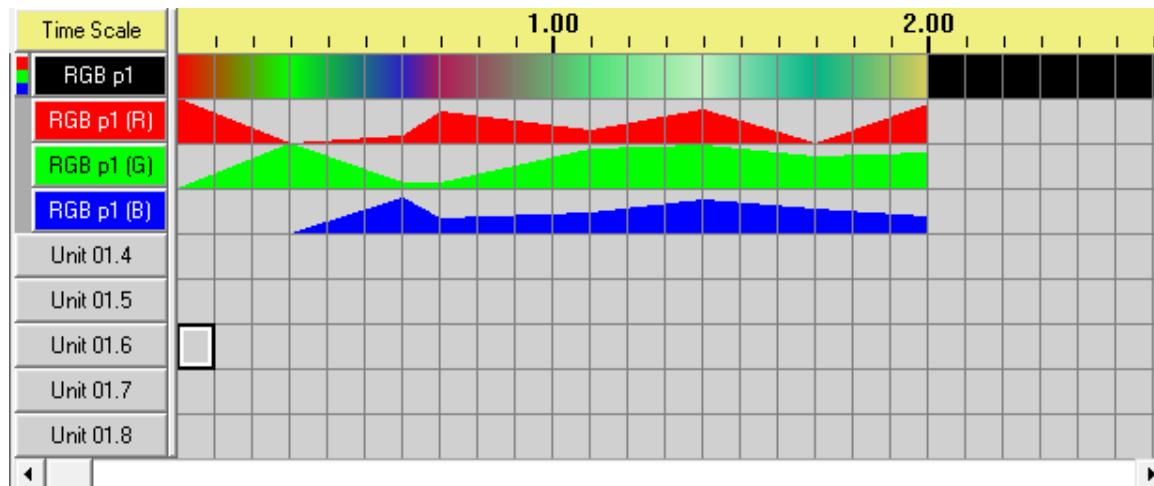


A sequence with an RGB channel followed by several normal channels

Left-clicking on such a button brings up the [Channel Settings dialog](#) if for a channel, and the [RGB Channel Settings dialog](#) if for an RGB channel, from which you can modify various settings such as a channel's name, color, [unit ID](#), and [circuit ID](#).

Right-clicking brings up the [channel button's popup menu](#), giving access to various channel-related functionality.

Left-clicking on the small button to the left of an RGB channel's button (with the red, green, and blue stripes) expands the view so that the constituent channels of that RGB channel can be seen (and clicking it again collapses the view by hiding them):



**A sequence with an RGB channel followed by several normal channels, with the RGB channel's constituent channels displayed**

Channels or RGB channels can be moved up or down in a sequence by clicking and dragging their buttons.

Between the channel/RGB channel buttons and the grid is a thick grey vertical bar. Dragging the bar left or right changes the width of the channel/ RGB channel buttons; clicking on it (without dragging) hides them, and clicking it again unhides them. This latter can also be done via "Channel Buttons" on the View menu.

During play, the color of a channel or RGB channel button will vary along with the [lighting effects](#) happening on that channel or RGB channel. For example, during a [fade](#), the button will gradually change in color, and during a [twinkle](#), the button will blink between its usual light grey and the channel's color. If you do not wish to see this, you can turn this behavior off permanently via "Vary the color of channel buttons during play by default" on the Play Preferences dialog, or temporarily via either "Vary Color of Channel Buttons" on the Play menu or the [Vary Channel Button Colors button](#) of the [Standard toolbar](#).

The color of the text on the button can also vary during play, to try to give a readable contrast with the color of the button itself. However, some users have found this distracting, and so you can control whether this happens or not permanently via the "Also vary their font colors" on the Play Preferences dialog, or temporarily via the "Vary Color of Channel Button Fonts" item on the Play menu.

When not playing, the color of a button can behave in three different ways, controlled from the Channel Button Colors submenu of the View menu: They can either all show the same grey (or black for RGB channels), or their individual full colors, or their colors at the time of the start of the current selection.

#### 5.3.4.7.1 Channel Settings

The [Sequencer's](#) Channel Settings dialog allows you to set various properties of a [channel](#) in your [sequence](#), such as its name, color, unit ID and circuit ID.

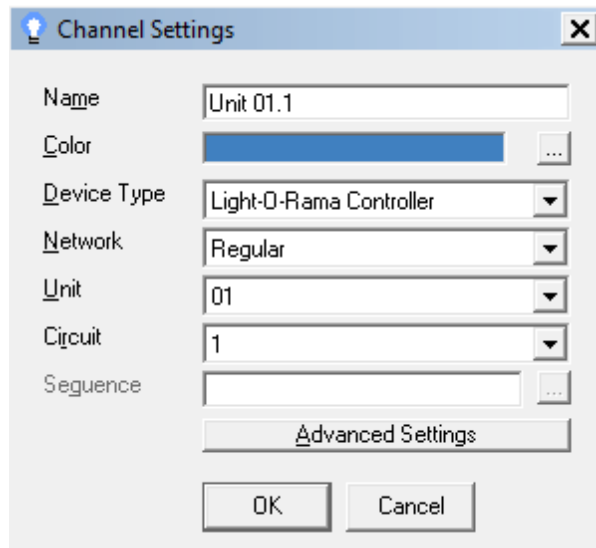
You can access the Channel Settings dialog by clicking on the [channel's button](#), or right-clicking and

selecting "[Change Channel Settings](#)" from the [popup menu](#).

Not all settings are available for all channel types; for example, X10 controllers do not use circuit IDs, and only channels representing [subsequences](#) can specify the name of a sequence file. The controls for unavailable settings will be greyed out.

The Channel Configuration screen allows you to do the same sort of things as the Channel Settings dialog, but can be used on all of the channels in your sequence at the same time.

The Channel Settings dialog also can be used to reach the "[Advanced Settings](#)" dialog.

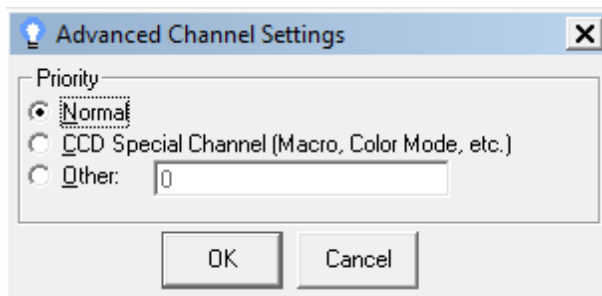


The Channel Settings dialog

#### 5.3.4.7.1.1 Advanced Channel Settings

The Advanced Channel Settings dialog (which can be reached through the [Channel Settings dialog](#)) can be used to set certain advanced options for a [channel](#):

- [Priority](#)



The Advanced Channel Settings dialog

## Priority

If a [sequence](#) has two [lighting effects](#) that are supposed to take place at the exact same centisecond, either one of the two commands may be sent to the [controller](#) a very short time before the other is sent.

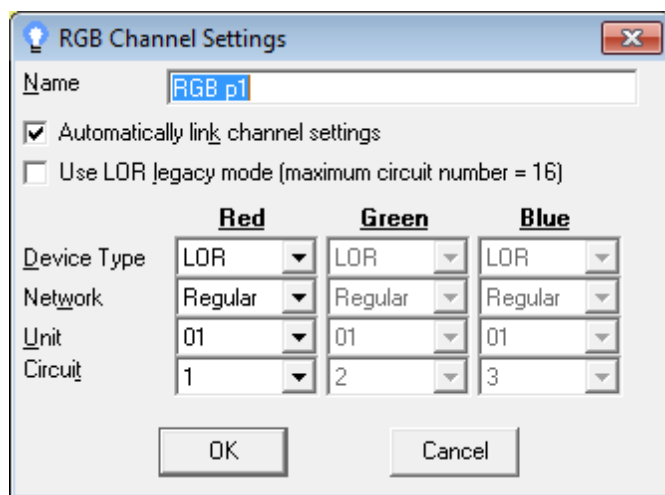
In most cases, which is actually sent first is irrelevant - the time between the two being sent is completely unnoticeable to a human. However, in certain cases, one specific command should be sent first. An example is that commands for macro channels on a [Cosmic Color Device](#) should be sent to the controller before commands for other [channels](#) on that controller, due to the way in which Cosmic Color Devices function. To guarantee that they are sent in the correct order, a channel's "priority" can be set via the [Advanced Channel Settings dialog](#).

Please note that if you have set up the channel so that it is inside of a Cosmic Color Device [channel group](#) in your [sequence](#), the priorities of each channel in the group will automatically be set correctly, so there is generally no need to use the Advanced Channel Settings dialog to manually set the priority yourself. However, if channels for circuits on a Cosmic Color Device are *not* in a Cosmic Color Device channel group in the sequence, you should set the priority manually so that the sequence knows which commands should be sent to the controller before which other commands.

#### 5.3.4.7.2 RGB Channel Settings

The [Sequencer's](#) RGB Channel Settings dialog allows you to set various properties of an [RGB channel](#) in your [sequence](#), such as its name and the [unit](#) and [circuit IDs](#) of its constituent [channels](#).

You can access the RGB Channel Settings dialog by clicking on the [RGB channel's button](#), or right-clicking and selecting "[Change RGB Channel Settings](#)" from the [popup menu](#).



The RGB Channel Settings dialog

In the above picture, notice that the settings for the green and blue channels are greyed out, so that their settings cannot be modified (directly). This is because the "Automatically link channel settings" checkbox is checked. When it is checked, any change to the red channel's settings will be automatically reflected in the green and blue channels. For example, setting the red channel's unit ID to 02 will cause both the green and blue channels to automatically change to unit ID 02, and setting the red channel's circuit ID to 4 will cause the green channel's circuit ID to become 5, and the blue's to become 6.

To modify the green and blue channels' settings independently of those of the red channel, uncheck the "Automatically link channel settings" checkbox.

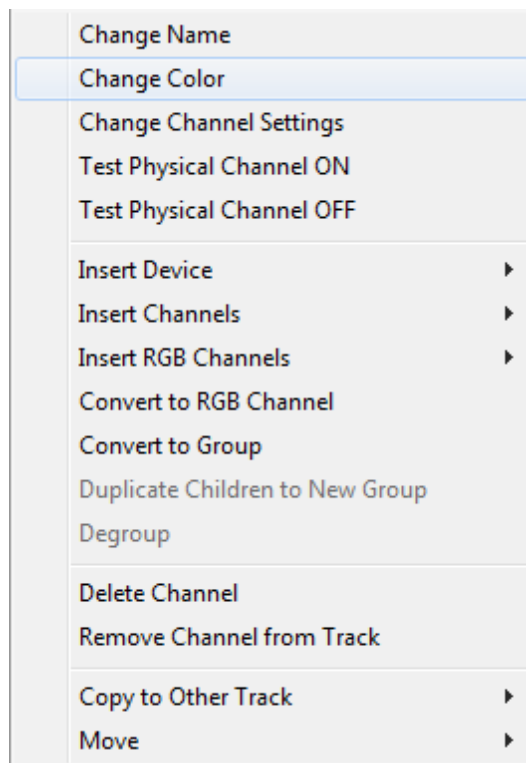
The "Use LOR legacy mode" checkbox, if checked, will limit the available circuit IDs from 1 to 16 (as opposed to the standard 1 to 512). This is to support older [controllers](#), which might each have several

different unit IDs, each of which have circuit IDs from 1 to 16, instead of having a single unit ID with many circuit IDs.

#### 5.3.4.7.3 Channel and RGB Channel Buttons' Popup Menus

In the [Sequencer](#), right-clicking on a [channel or RGB channel button](#) brings up a popup menu of items regarding that [channel](#) or [RGB channel](#). These include:

- [Change Name](#)
- [Change Color](#)
- [Change Channel Settings / Change RGB Channel Settings](#)
- [Test Physical Channel ON/OFF](#)
- [Insert Device](#)
  - [Insert Device Above](#)
  - [Insert Device Below](#)
- [Insert Channels](#)
  - [Insert Channel Above](#)
  - [Insert Channel Below](#)
  - [Insert Multiple Channels Above](#)
  - [Insert Multiple Channels Below](#)
- [Insert RGB Channels](#)
  - [Insert RGB Channel Above](#)
  - [Insert RGB Channel Below](#)
  - [Insert Multiple RGB Channels Above](#)
  - [Insert Multiple RGB Channels Below](#)
- [Convert to RGB Channel](#)
- [Convert to Group](#)
- [Duplicate Children to New Group](#)
- [Degroup](#)
- [Delete Channel / Delete RGB Channel](#)
- [Remove Channel from Track / Remove RGB Channel from Track](#)
- [Copy to Other Track](#)
  - [Copy to New Track](#)
  - [Copy to Track Number...](#)
- [Move](#)
  - [Move Up](#)
  - [Move Down](#)
  - [Move to New Track](#)
  - [Move to Track Number...](#)



The channel button popup menu

## Change Name

This option from the [channel/RGB channel button popup menu](#) can be used to change the name of the [channel](#) or [RGB channel](#). The name will be displayed in various places, including on the [channel](#) or [RGB channel's button](#).

## Change Color

This option from the [channel button popup menu](#) can be used to change the color assigned to the [channel](#) (it is unavailable for [RGB channels](#)). Note that this has no effect on your actual lights, and that it is not necessary to set the color of the channel to match the color of the actual lights hooked up to the channel. However, doing so may be convenient. For example, the [Sequencer](#) will use the assigned color to display [lighting effects](#) in the [sequence's](#) grid.

## Change Channel Settings / Change RGB Channel Settings

This option from the [channel/RGB channel button popup menu](#) opens the [Channel Settings dialog](#) or the [RGB Channel Settings dialog](#), which can be used to modify various properties of the [channel](#) or [RGB channel](#), such as a channel's name, color, [unit ID](#) and [circuit ID](#).

## Test Physical Channel On/Off

This option will test the currently selected channel by turning it fully on or off. The [channel](#) will need to have all of its [settings](#) defined, the devices connected and powered up, and the [Sequencer](#) must be able to talk to your devices - either directly or through the [Comm Listener](#).



This command can also be used on [RGB channels](#) and other [channel groups](#); it will cause all channels within the selected group to be turned on or off.

See also [Test Track's Physical Lights](#) on the [track](#) grid's [right-click context menu](#).

## Insert Device

This submenu of the [channel/RGB channel button popup menu](#) can be used to insert [channels](#) and/or [RGB channels](#) representing a particular device (such as a Cosmic Color Device or an LOR/CTB device) above or below the selected channel or RGB channel.

- [Insert Device Above](#)
- [Insert Device Below](#)

## Insert Device Above

This option from the [channel/RGB channel button popup menu](#) opens up the [Insert Device dialog](#), allowing you to specify settings of a new device (such as a Cosmic Color Device or an LOR/CTB device) to be inserted into the [sequence](#) above the selected [channel](#) or [RGB channel](#).

## Insert Device Below

This option from the [channel/RGB channel button popup menu](#) opens up the [Insert Device dialog](#), allowing you to specify settings of a new device (such as a Cosmic Color Device or an LOR/CTB device) to be inserted into the [sequence](#) above the selected [channel](#) or [RGB channel](#).

## Insert Channels

This submenu of the [channel/RGB channel button popup menu](#) can be used to insert a [channel](#), or multiple channels, above or below the selected channel or [RGB channel](#).

- [Insert Channel Above](#)
- [Insert Channel Below](#)
- [Insert Multiple Channels Above](#)
- [Insert Multiple Channels Below](#)

### ***Insert Channel Above***

This option from the [channel/RGB channel button popup menu](#) creates a new [channel](#) and inserts it into the [sequence](#) above the selected channel or [RGB channel](#).

### ***Insert Channel Below***

This option from the [channel/RGB channel button popup menu](#) creates a new [channel](#) and inserts it into the [sequence](#) below the selected channel or [RGB channel](#).

### ***Insert Multiple Channels Above***

This option from the [channel/RGB channel button popup menu](#) can be used to create multiple new [channels](#) at once, and insert them into the [sequence](#) above the selected channel or [RGB channel](#).

You will be prompted for how many channels you want to create.

### ***Insert Multiple Channels Below***

This option from the [channel/RGB channel button popup menu](#) can be used to create multiple new [channels](#) at once, and insert them into the [sequence](#) below the selected channel or [RGB channel](#). You will be prompted for how many channels you want to create.

## **Insert RGB Channels**

This submenu of the [channel/RGB channel button popup menu](#) can be used to insert an [RGB channel](#), or multiple RGB channels, above or below the selected [channel](#) or RGB channel.

- [Insert RGB Channel Above](#)
- [Insert RGB Channel Below](#)
- [Insert Multiple RGB Channels Above](#)
- [Insert Multiple RGB Channels Below](#)

### ***Insert RGB Channel Above***

This option from the [channel/RGB channel button popup menu](#) creates a new [RGB channel](#) and inserts it into the [sequence](#) above the selected [channel](#) or RGB channel.

### ***Insert Channel Below***

This option from the [channel/RGB channel button popup menu](#) creates a new [RGB channel](#) and inserts it into the [sequence](#) below the selected [channel](#) or RGB channel.

### ***Insert Multiple Channels Above***

This option from the [channel/RGB channel button popup menu](#) can be used to create multiple new [RGB channels](#) at once, and insert them into the [sequence](#) above the selected [channel](#) or RGB channel. You will be prompted for how many RGB channels you want to create.

### ***Insert Multiple Channels Below***

This option from the [channel/RGB channel button popup menu](#) can be used to create multiple new [RGB channels](#) at once, and insert them into the [sequence](#) below the selected [channel](#) or RGB channel. You will be prompted for how many RGB channels you want to create.

## **Convert to RGB Channel**

This option from the [channel button popup menu](#) opens the [Convert to RGB Channel dialog](#), which allows you to convert existing [channels](#) into [RGB channels](#). It is not available from the popup menus for RGB channel buttons.

## **Convert to Group**

This option from the [channel button popup menu](#) opens the [Convert to Channel Group dialog](#), which allows you to group existing [channels](#) (and [RGB channels](#), et cetera) into a new [channel group](#).

## Duplicate Children to New Group

This option from the [channel button popup menu](#) can be used to create an entirely new [channel group](#) that contains the same [channels](#), [RGB channels](#), and so forth as the selected channel group.

## Degroup

This option from the [channel button popup menu](#) "degroups" the selected [channel group](#). That is, all of the channel group's children are moved to the channel group's parent (unless the parent already contains them), and the channel group itself is removed from the parent.

## Delete Channel / Delete RGB Channel

This option from the [channel/RGB channel button popup menu](#) deletes the selected [channel](#) or [RGB channel](#). Note that this will completely delete the channel or RGB channel from the [sequence](#), not just from the current [track](#). If you want to remove the channel or RGB channel from the current track but still keep it in other tracks, use "[Remove Channel from Track / Remove RGB Channel from Track](#)" instead.

## Remove Channel from Track / Remove RGB Channel from Track

This option from the [channel/RGB channel button popup menu](#) removes the selected [channel](#) or [RGB channel](#) from the [track](#). If the channel or RGB channel is shared with other tracks, it will remain in those other tracks. If you instead want to delete a channel or RGB channel from the [sequence](#) completely, removing it from all tracks, use "[Delete Channel / Delete RGB Channel](#)" instead.

## Copy to Other Track

This submenu of the [channel/RGB channel button popup menu](#) can be used to share the selected [channel](#) or [RGB channel](#) either to a new [track](#) or to an existing track:

- [Copy to New Track](#)
- [Copy to Track Number...](#)

### ***Copy to New Track***

This item on the "[Copy to Other Track](#)" submenu of the [channel/RGB channel button popup menu](#) will create a new [track](#) (via the New Track dialog) and share the selected [channel](#) or [RGB channel](#) with that track.

### ***Copy to Track Number...***

This item on the "[Copy to Other Track](#)" submenu of the [channel/RGB channel button popup menu](#) will share the selected [channel](#) or [RGB channel](#) with another existing [track](#) in the [sequence](#). You will be prompted to select which track.

## Move

This submenu of the [channel/RGB channel button popup menu](#) can be used to move the selected [channel](#) or [RGB channel](#) up or down within its [track](#), or to another track. Note that a channel or RGB channel can also be moved up or down within its track by clicking and dragging its [channel button](#).

- [Move Up](#)
- [Move Down](#)
- [Move to New Track](#)
- [Move to Track Number...](#)

### ***Move Up***

This item on the "[Move](#)" submenu of the [channel/RGB channel button popup menu](#) will move the selected [channel](#) or [RGB channel](#) one slot up in its [track](#).

### ***Move Down***

This item on the "[Move](#)" submenu of the [channel/RGB channel button popup menu](#) will move the selected [channel](#) or [RGB channel](#) one slot down in its [track](#).

### ***Move to New Track***

This item on the "[Move](#)" submenu of the [channel/RGB channel button popup menu](#) will create a new [track](#) (via the New Track dialog) and move the selected [channel](#) or [RGB channel](#) to that track.

### ***Move to Track Number...***

This item on the "[Move](#)" submenu of the [channel/RGB channel button popup menu](#) will move the selected [channel](#) or [RGB channel](#) to another existing [track](#) in the [sequence](#). You will be prompted to select which track.

#### 5.3.4.7.3.1 Insert Device

The Insert Device dialog can be used to add several [channels](#) and/or [RGB channels](#) to a [sequence](#), automatically populated with various settings such as their [unit IDs](#) and [circuit IDs](#). The dialog can be opened by right-clicking on a [channel or RGB channel's button](#), and selecting either "[Insert Device Above](#)" or "[Insert Device Below](#)" from the popup menu (which will cause the new device's channels to be inserted above or below the clicked channel, respectively).

At the top of the dialog is a text box where you can specify the base name of the unit. This name will be used to create the names of the channels; additional information, such as the circuit number, may also be included in the names. Under the text box is a check box allowing you to specify whether or not the unit ID (and network, if applicable) are to be included.

Under the "name" section of the dialog is a dropdown list of the available devices, and under that is a checkbox enabling you to choose whether the device should be added as a [channel group](#) or as raw channels and/or RGB channels.

- [CF50D](#)
- [CMB16D](#)
- [CMB24D](#)
- [Cosmic Color Array](#)
- [Cosmic Color Ribbon \(or Bulb\)](#)

- [DIO32](#)
- [DMX Universe](#)
- [iDMX1000](#)
- [LOR/CTB \(4 Channel\)](#)
- [LOR/CTB \(8 Channel\)](#)
- [LOR/CTB \(16 Channel\)](#)
- [LOR/CTB \(32 Channel\)](#)
- [PixCon16](#)
- [Pixie 2/4/8/16](#)
- [RGB Device \(Non-CCD\)](#)
- [Servo Dog](#)

## CF50D

The CF50D choice for the [Insert Device dialog](#) can be used to add [channels](#) representing either a Cosmic Color Flood or a UV Black Light Flood device. A Cosmic Color Flood can be added by selecting "RGB" as the "Light Type", while selecting "UV" will add a UV Black Light Flood. If a Cosmic Color Flood is added, it will consist of an [RGB channel](#) and two regular channels, with the two regular channels being the device's strobe effect channels. If a UV Black Light Flood is added, it will consist of three channels, the first being the UV intensity, and the others being the strobe effect channels.

You can select whether the device will use [LOR mode](#) or [DMX mode](#), and set various options such as its [unit ID](#) and [network](#) (in LOR mode) or its universe and starting address (in DMX mode).

The screenshot shows the 'Add Device' dialog box with the following settings:

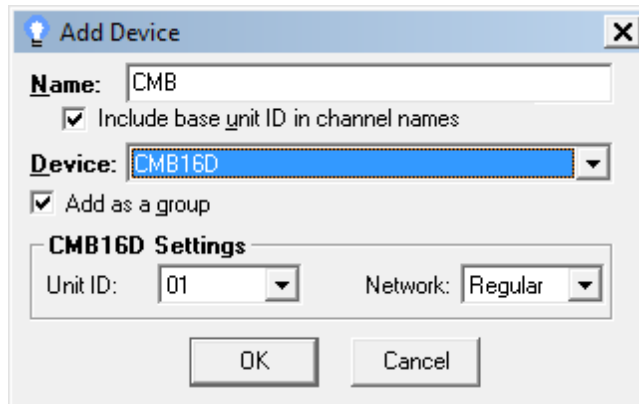
- Name:** CF
- ☒ Include base unit ID in channel names
- Device:** CF50D
- ☒ Add as a group
- CF50D Settings**
  - Device Type:**
    - ☒ LOR
      - LOR Settings**
        - Unit ID:** 01
        - Network:** Regular
    - ☐ DMX
      - DMX Settings**
        - Universe:** Universe 1
        - Starting Address:** 1
  - Light Type**
    - ☒ RGB
    - ☐ UV

Buttons: OK, Cancel

Insert Device: CF50D

## CMB16D

The CMB16D choice for the [Insert Device dialog](#) will add sixteen [channels](#), with device type [Light-O-Rama](#), a [network](#) and [unit ID](#) that you specify, and [circuit numbers](#) from 1 to 16. The name of a channel will default to "CMB" followed by an indication of the unit and circuit (such as "CMB 03.7" for unit 03 and circuit 7).



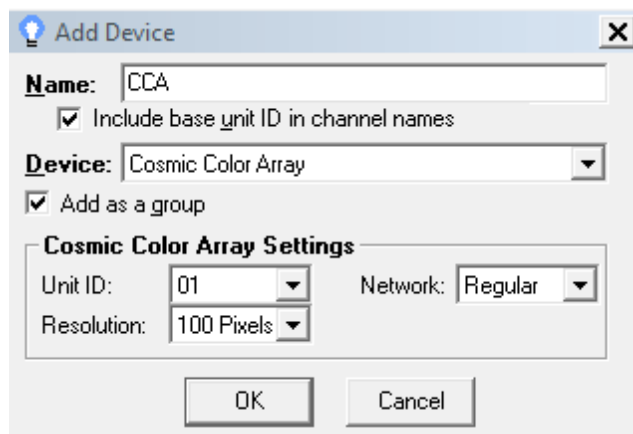
Insert Device: CMB16D

## CMB24D

The CMB24D choice for the [Insert Device dialog](#) will add either 24 [channels](#) or 8 [RGB channels](#), with device type [Light-O-Rama](#), a [network](#) and [unit ID](#) that you specify, and [circuit numbers](#) from 1 to 24. The name of a channel or RGB channel will default to "CMB" followed by an indication of the unit and either the circuit or the pixel (such as "CMB 03.7" for the channel for unit 03 and circuit 7, or "CMB 03 p7" for the RGB channel for unit 03 and pixel 7).

## Cosmic Color Array

The Cosmic Color Array choice for the [Insert Device dialog](#) will add a new Cosmic Color Array [channel group](#) to the [sequence](#). You can use it to specify the base name of the group, [network](#), [unit ID](#), and resolution of the CCA.



Insert Device: Cosmic Color Array

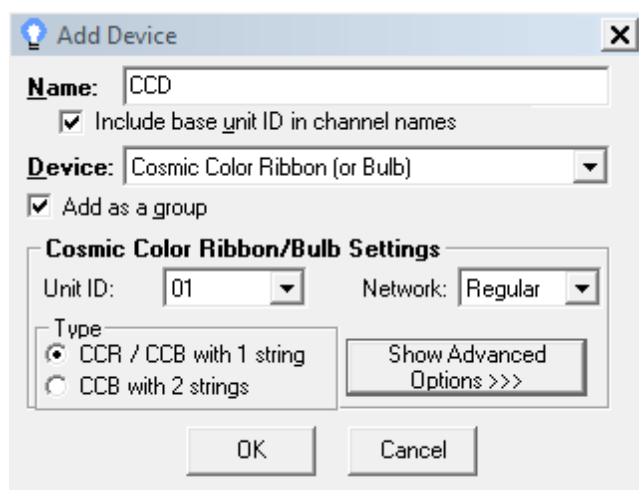
## Cosmic Color Ribbon (or Bulb)

The Cosmic Color Ribbon (or Bulb) choice for the [Insert Device dialog](#) has both a basic and an advanced mode. In basic mode, it will add fifty [RGB channels](#) followed by seven regular [channels](#) for a Cosmic Color Ribbon or for a one-string Cosmic Color Bulb, or those followed by another fifty RGB channels and another seven regular channels for a two-string Cosmic Color Bulb. All will have device type [Light-O-Rama](#), and a specified [network](#) and [unit ID](#).

The [circuit numbers](#) of the first RGB channel will be red = 1, green = 2, blue = 3, the next RGB Channel will have red = 4, green = 5, blue = 6, and so on, up to the fiftieth RGB channel, which will have red = 148, green = 149, blue = 150. The seven regular channels, which represent the macro channels of the Cosmic Color Device, start at circuit 151 and go through 157. If a two-string Cosmic Color Bulb is used, the first RGB channel on the second set of fifty will be red = 161, green = 162, blue = 163, and so on, through the second set of macro channels, which will be circuits 311 through 317.

The names of the RGB channels will default to "CCD" followed by an indication of the unit ID and the pixel number for a one-string CCD (such as "CCD 03 p7" for unit ID 03 pixel 7); two-string CCDs will also indicate the string number (such as "CCD 03 s1 p7"). The names of the macro channels will indicate which macro channels they represent, instead of having a pixel number, such as "CCD 03 LR", meaning "Cosmic Color Device, unit 03, Logical Resolution" (again, for a two-string CCD, the string number will also be included, such as "CCD 03 s1 LR"). The full list of abbreviations such as "LR" for "Logical Resolution" is:

- LR: Logical Resolution
- MM: Macro Mode
- MS: Macro Submode
- ME: Macro Effect
- CM: Color Mode
- CS: Color Speed
- CI: Color Intensity



**Insert Device: Cosmic Color Ribbon (or Bulb) - basic mode**

To use advanced mode, click on the "Show Advanced Options" button:

**Insert Device: Cosmic Color Ribbon (or Bulb) - advanced mode**

The "Resolution" dropdown controls the number of pixels - i.e. the number of RGB channels - that will be created per string. Also, macro channels will only be created if the resolution is set to 50 pixels.

When "Unit ID Mode" is set to "Native Mode", all channels and RGB channels on the Cosmic Color Device use a single unit ID (as described above, in basic mode), unless "Unit ID for CCB String 2" is set to "String 2 has own Unit ID", in which case the unit will use one unit ID for string 1, and a second (one higher than the first) for string 2. If it is set to "Legacy Mode", however, circuit IDs will be limited from 1 to 16, and multiple unit IDs will be used. For example, if the selected unit ID is 01, and 50 pixels are chosen, then instead of having unit 01 circuits 1 through 157, the channels and RGB channels to be created will have unit 01 circuits 1 through 16, unit 02 circuits 1 through 16, ..., unit 09 circuits 1 through 16, and unit 0A circuits 1 through 13. The names of all channels and RGB channels will still indicate the base unit ID, though - for example, the fiftieth pixel will be labelled "CCD 01 p50" despite its constituent channels actually using unit ID 09 rather than 01.

When "Channel Mode" is set to "Triples", the circuit IDs are as described above in the "basic mode" section - i.e. the first pixel will have circuit IDs 1, 2, and 3 for red, green, and blue, respectively, the second will have 4, 5, and 6, and so on. If it is set to "Sequential", the circuit IDs will instead be



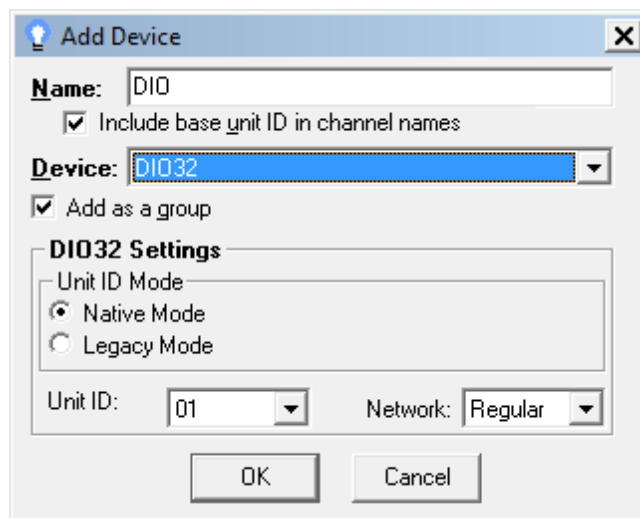
assigned to all of the red channels first, then all of the green channels, then all of the blue channels. For example, with 50 pixels and native unit ID mode, the first pixel will have circuit IDs 1, 51, and 101 for red, green, and blue, respectively, the second will have 2, 52, and 102, and so on.

"String 1 Orientation" and "String 2 Orientation" control whether the pixels on the specified string will be listed from 1 to 50 (the default) or from 50 to 1 ("flipped"). This corresponds to the hardware setting on the Cosmic Color Device indicating whether the first pixel is located closest to the controller itself or farthest from it.

## DIO32

The DIO32 choice for the [Insert Device dialog](#) will add 32 [channels](#), with device type [Light-O-Rama](#) and a specified [network](#). If "Unit ID Mode" is set to "Native Mode", then the specified [unit ID](#) will be used for all 32 channels, which will have [circuits](#) 1 through 32. If it is instead set to "Legacy Mode", then the first sixteen channels will have the specified unit ID and circuits 1 through 16, and the last sixteen channels will have the next unit ID and circuits 1 through 16.

The names of the channels will default to "DIO" followed by an indication of the unit and circuit, such as "DIO 03.7" for unit ID 03, circuit 7.

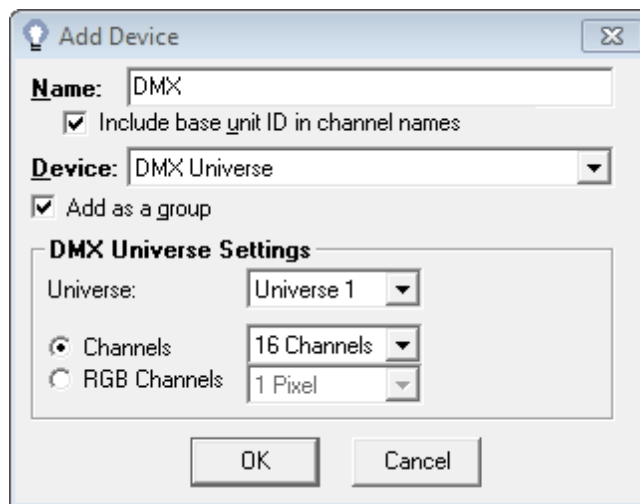


Insert Device: DIO32

## DMX Universe

The DMX Universe choice for the [Insert Device dialog](#) will add either anywhere from 16 to 512 [channels](#), in multiples of 16, or else anywhere from 1 to 170 [RGB channels](#). In either case, device type [DMX](#) and a specified universe will be used.

If channels are used, their names will default to "DMX" followed by an indication of the universe and address, such as "DMX 3.7" for universe 3 address 7. If RGB channels are used, they will default to "DMX" followed by an indication of the universe and pixel number, such as "DMX 3 p7" for universe 3 pixel 7 (which would consist of addresses 19, 20, and 21).

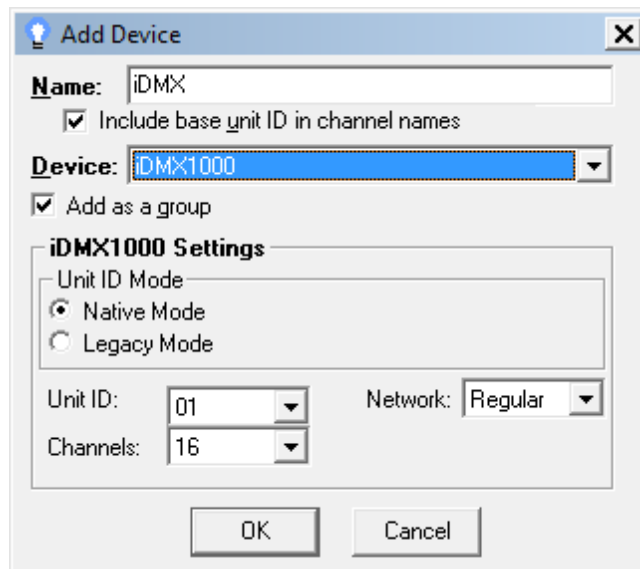


Insert Device: DMX Universe

## iDMX1000

The iDMX1000 choice for the [Insert Device dialog](#) will add anywhere from 16 to 512 [channels](#), in multiples of 16, with device type [Light-O-Rama](#) and a specified [network](#). If "Unit ID Mode" is set to "Native Mode", then a single (specified) [unit ID](#) will be used for all channels, with [circuit IDs](#) ranging from 1 to the number of channels. If it is set to "Legacy Mode", then circuit IDs will be limited from 1 to 16, and multiple unit IDs will be used (assuming more than 16 channels are selected), starting at the specified unit ID.

The names of the channels will default to "iDMX" followed by an indication of the unit and circuit, such as "iDMX 03.7" for unit 03 circuit 7.



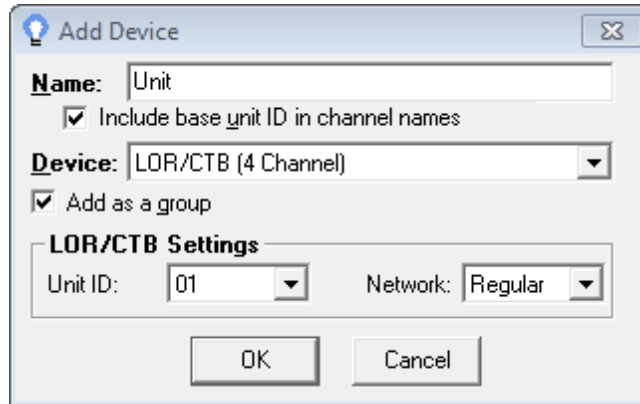
Insert Device: iDMX1000

## LOR/CTB (4 Channel)

The LOR/CTB (4 Channel) choice for the [Insert Device dialog](#) will add four [channels](#), with device

type [Light-O-Rama](#) and a specified [network](#) and [unit ID](#), and [circuit IDs](#) ranging from 1 to 4.

The names of the channels will default to "Unit" followed by an indication of the unit and circuit, such as "Unit 07.3" for unit 07 circuit 3.

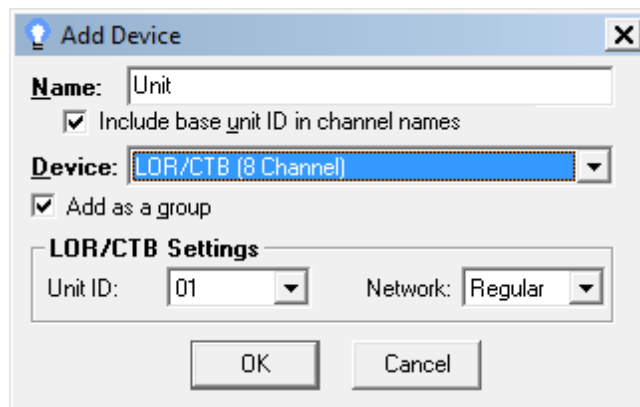


Insert Device: LOR/CTB (4 Channel)

## LOR/CTB (8 Channel)

The LOR/CTB (8 Channel) choice for the [Insert Device dialog](#) will add eight [channels](#), with device type [Light-O-Rama](#) and a specified [network](#) and [unit ID](#), and [circuit IDs](#) ranging from 1 to 8.

The names of the channels will default to "Unit" followed by an indication of the unit and circuit, such as "Unit 03.7" for unit 03 circuit 7.

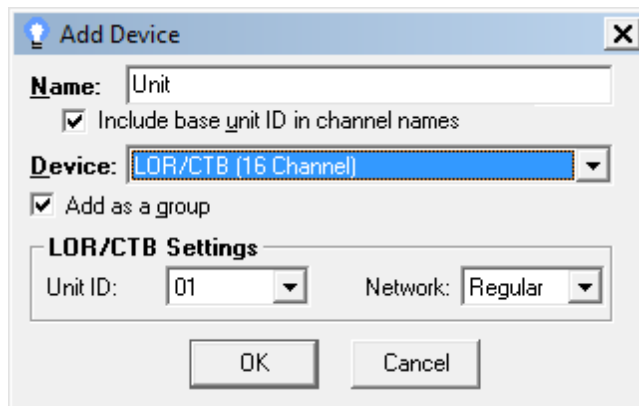


Insert Device: LOR/CTB (8 Channel)

## LOR/CTB (16 Channel)

The LOR/CTB (16 Channel) choice for the [Insert Device dialog](#) will add sixteen [channels](#), with device type [Light-O-Rama](#) and a specified [network](#) and [unit ID](#), and [circuit IDs](#) ranging from 1 to 16.

The names of the channels will default to "Unit" followed by an indication of the unit and circuit, such as "Unit 03.7" for unit 03 circuit 7.

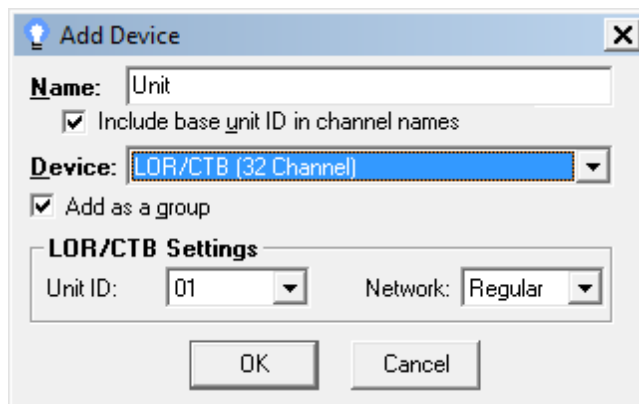


Insert Device: LOR/CTB (16 Channel)

## LOR/CTB (32 Channel)

The LOR/CTB (32 Channel) choice for the [Insert Device dialog](#) will add thirty-two [channels](#), with device type [Light-O-Rama](#) and a specified [network](#) and [unit ID](#), and [circuit IDs](#) ranging from 1 to 32.

The names of the channels will default to "Unit" followed by an indication of the unit and circuit, such as "Unit 03.7" for unit 03 circuit 7.



Insert Device: LOR/CTB (32 Channel)

## PixCon16

The PixCon16 choice for the [Insert Device dialog](#) will add [RGB channels](#) which are [grouped](#) appropriately to represent a [PixCon16](#) device. You can choose whether to use [LOR](#) or [DMX](#) as the device type. In either case, sixteen ports worth of pixels will be created.

If you choose the LOR device type, you can specify the [network](#) and the starting [unit ID](#) of the device, plus the number of pixels per port (from 1 to 170). Each pixel will be represented as an RGB channel, and all pixels on a single port will be grouped together.

If you choose the DMX device type, you can specify the starting universe of the device, the number of universes per port (one or two), and the number of pixels per universe (from 1 to 170). Each pixel will be represented as an RGB channel. All pixels in a single universe will be grouped together, and furthermore all universes on a single port will be grouped together.

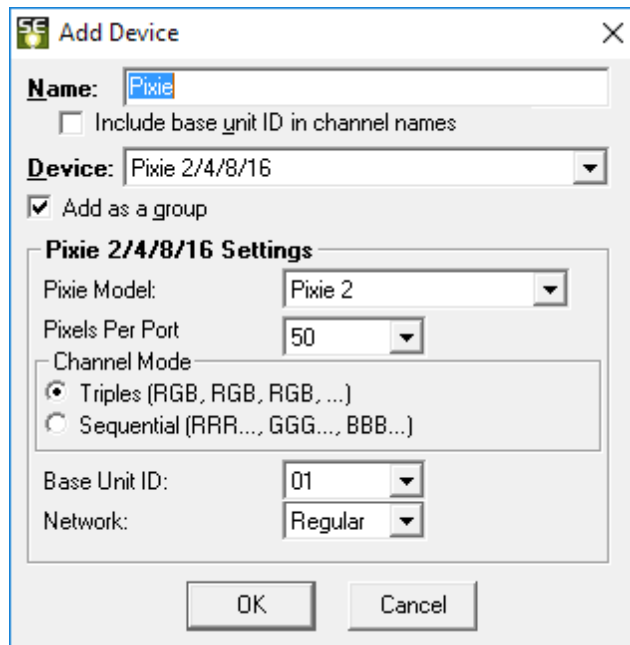
Insert Device: PixCon16

## Pixie 2/4/8/16

The Pixie choice for the [Insert Device dialog](#) will add RGB Channels which are grouped appropriately to represent a Pixie device. You should choose which Pixie device you are inserting (If it has 2, 4, 8 or 16 ports), as well as the [network](#) and the starting [unit ID](#) of the device, plus the number of pixels per port (either 50 or 100). Each pixel will be represented as an RGB channel, and all pixels on a single port will be grouped together.

If the "Channel Mode" option is set to "Triples", then the [circuit IDs](#) will be 1 for the red channel of the first RGB channel, 2 for the green channel of the first RGB channel, 3 for the blue channel of the first RGB channel, 4 for the red channel of the second RGB channel, and so on. If it is instead set to "Sequential", then they will instead be 1 for the red channel of the first RGB channel, 2 for the red channel of the second RGB channel, 3 for the red channel of the third RGB channel, and so on through all of the red channels, then through the green channels, then the blue channels.

The RGB channel names will default to "Pixel" followed by an indication of the base unit ID plus the pixel number; for example, "Pixel 03 p7" for the seventh pixel of the RGB device whose base unit ID is 03.



Insert Device: Pixie Controller

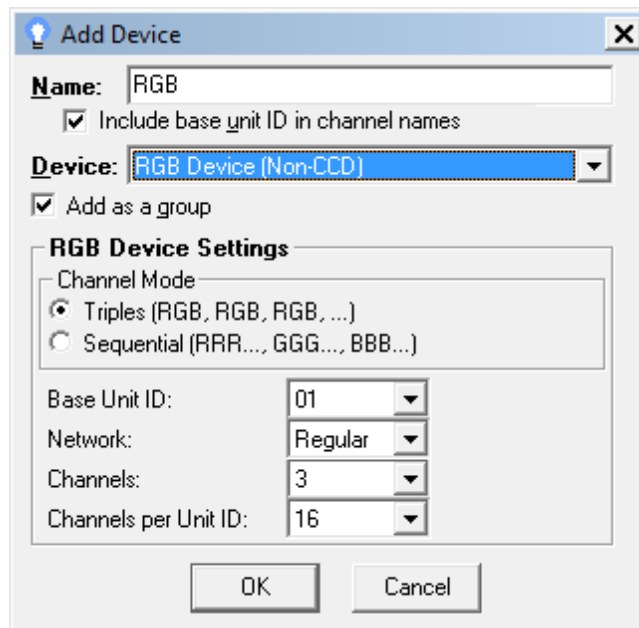
## RGB Device (Non-CCD)

The RGB Device (Non-CCD) choice for the [Insert Device dialog](#) will add anywhere from 1 to 16 [RGB channels](#), with device type [Light-O-Rama](#) and a specified [network](#) and [base unit ID](#). Note, though, that you do not specify the number of RGB channels; instead, you specify the number of underlying [channels](#), with three channels corresponding to a single RGB channel. For example, to add 16 RGB channels, select 48 channels.

The reason for specifying the number of channels instead of the number of RGB channels is because the number of channels per unit ID can also be specified (so that, for example, 48 channels with 16 channels per unit ID will cause three unit IDs to be used, starting from the specified base).

If the "Channel Mode" option is set to "Triples", then the [circuit IDs](#) will be 1 for the red channel of the first RGB channel, 2 for the green channel of the first RGB channel, 3 for the blue channel of the first RGB channel, 4 for the red channel of the second RGB channel, and so on. If it is instead set to "Sequential", then they will instead be 1 for the red channel of the first RGB channel, 2 for the red channel of the second RGB channel, 3 for the red channel of the third RGB channel, and so on through all of the red channels, then through the green channels, then the blue channels.

The RGB channel names will default to "RGB" followed by an indication of the base unit ID plus the pixel number; for example, "RGB 03 p7" for the seventh pixel of the RGB device whose base unit ID is 03.

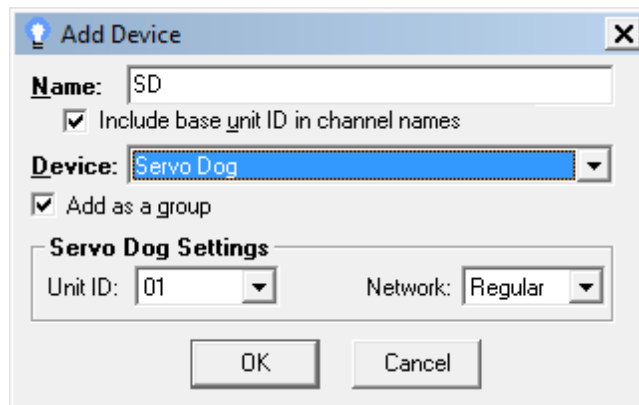


Insert Device: RGB Device (non-CCD)

## Servo Dog

The Servo Dog choice for the [Insert Device dialog](#) will add eight [channels](#), with device type [Light-O-Rama](#) and a specified [network](#) and [unit](#). The [circuit IDs](#) will range from 1 to 8.

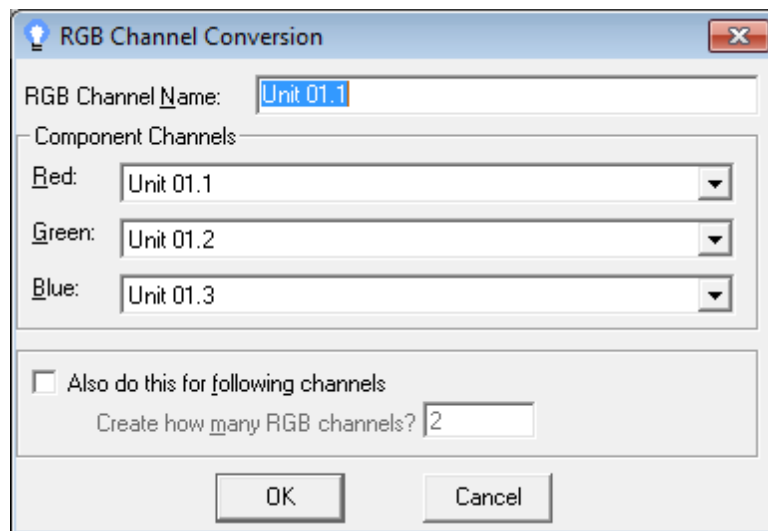
The names of the channels will default to "SD" followed by an indication of the unit and circuit, such as "SD 03.7" for unit 03 circuit 7.



Insert Device: Servo Dog

### 5.3.4.7.3.2 Convert to RGB Channel

The Convert to RGB Channel dialog enables you to convert existing [channels](#) into [RGB channels](#). You can open the Convert to RGB Channel dialog by right-clicking on a [channel's button](#), and selecting "[Convert to RGB Channel](#)" from the [popup menu](#). The RGB channel that is created by the dialog will be placed at the erstwhile location of the channel that you click on, and (by default) will use that channel as its red constituent channel, and the immediately following channels (if any) as its green and blue constituent channels.



The Convert to RGB Channel dialog

### **RGB Channel Name**

The RGB Channel Name field allows you to specify the name of the RGB channel to be created; by default, it will be the same as the name of the channel that you clicked on. The names of the constituent channels will be changed to reflect the name of the RGB channel; for example, if you name the RGB channel "My RGB", then its red, green, and blue constituent channels will be renamed "My RGB (R)", "My RGB (G)", and "My RGB (B)", respectively.

### **Component Channels**

The three component channel dropdown lists allow you to specify the existing channels to use as the component channels. Also, the top entry in each list, "Add a new channel", allows you to say that an entirely new channel should be created and used as that component channel, rather than using an existing channel. By default, the red channel will be the channel that you clicked on, the green channel will be the channel following that, and the blue will be the channel following that.

### **Also Do This for Following Channels**

If the "Also do this for following channels" box is checked, you can specify a number of RGB channels to create (otherwise, only one will be created). The dialog will try to create as many as you specify, using succeeding channels from the track. Exactly which channels are used depends upon the relationship between the three channels that you specify in the "Component Channels" section:

The first mode is intended to support sequences whose channels are currently set up in the order R, G, B, R, G, B, R, G, B, and so on. So, if the specified green channel immediately follows the specified red channel, and the specified blue channel immediately follows the specified green channel, then the next RGB channel will be created from the three channels following those (as R, G, and B, respectively), and the RGB channel after that from the three channels following those, and so on. If this causes the dialog to run out of channels before creating the number of RGB channels that you requested (either due to reaching the end of the track or due to reaching an existing RGB channel instead of a channel), it will stop, and warn you that it was only able to create less RGB channels than you had requested.



The other mode is intended to support sequences whose channels are currently set up in the order R, R, R, ..., G, G, G, ..., B, B, B, .... So, if the specified green channel does not immediately follow the specified red channel, or the specified blue channel does not immediately follow the specified green channel, then the next RGB channel will consist of the channel following the specified red channel as its red channel, the channel following the specified green channel as its green channel, and the channel following the specified blue channel as its blue channel. Again, if this causes it to run out of channels before creating the requested number of RGB channels (either due to the conditions listed previously or else due to reaching a channel that has already been used), it will stop, and warn you that it created less than you asked for.

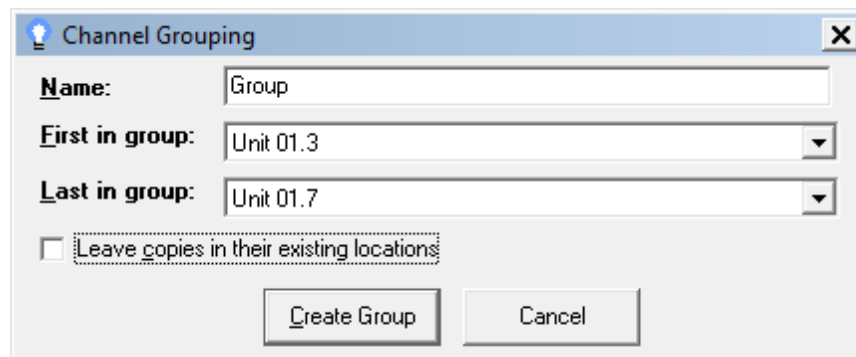
#### 5.3.4.7.3.3 Convert to Channel Group

The Convert to Channel Group dialog allows you to group existing [channels](#) (and [RGB channels](#), etc.) into a new [channel group](#). You can open the dialog by right-clicking on the [channel button](#) of the first channel that you want in the new group, and selecting "[Convert to Group](#)" from the popup menu that will open.

In the dialog, select the name that you want to use for the new group, and the first and last channels that you want placed into the new group, and then click on the "Create Group" button. The new group will be created at the same spot that the first selected channel was at, and will contain the specified range of channels.

Optionally, you can choose to "leave copies in their existing locations", causing the new group to be created without actually removing the existing copies of the channels.

If the channels and RGB channels that you have selected look like they might be intended as a Cosmic Color Device -- that is, if they are a certain specific number of RGB channels potentially followed by a certain specific number of channels -- the dialog will give you an option to make the new channel group be a Cosmic Color Device (and, if appropriate, what kind of CCD - for example a [Cosmic Color Ribbon](#) or a [Cosmic Color Array](#)). This has certain advantages over creating it as a normal channel group; for example, the CCD's macro channels will be skipped when chases are done on the group.



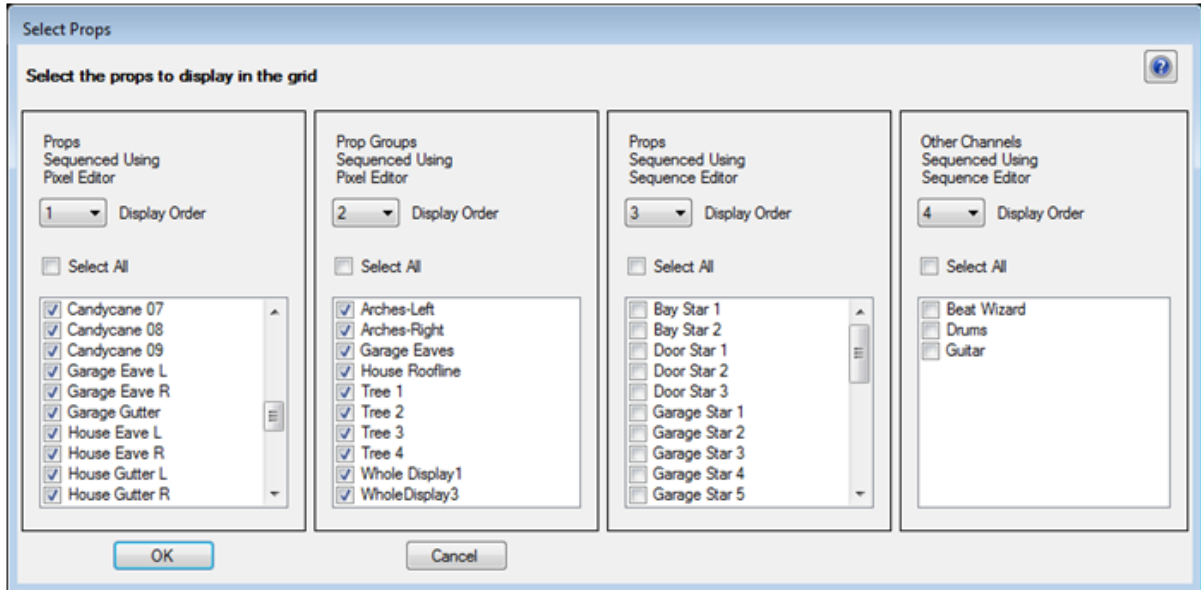
The Convert to Channel Group dialog

#### 5.3.4.8 Prop Views

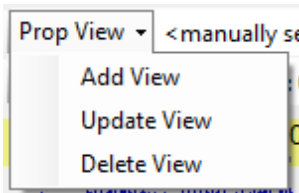
In the Pixel Editor, by default, [props](#) that have a Sequence Method of Pixel Editor and any prop [groups](#) will be listed down the left hand side of the [grid](#). You can change which props are displayed by clicking the Props button.

Use the checkboxes to select which props get displayed in the grid. You cannot change the display order of individual props in the grid, but you can choose the order by type of prop. By default, props in

the left section are displayed first, followed by prop groups listed in the second section, then props list in the third section, and lastly the channels listed in the far right section. Use the “Display Order” drop-down boxes to change the default order. For example, to list beat channels on top, change the display order in the far right section to “1”, then change the other sections to 2, 3, and 4.



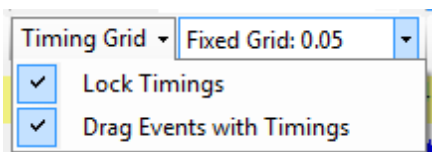
You can save the current list of props so they can be called up later by clicking on the “Prop View” button above the sequence grid, then selecting “Add View” from the menu. Once you do this, the name of the prop view will be added to the Prop Views drop down above the grid.



Selecting “Update View” will update the current prop view with the currently display props and prop groups. Selecting “Delete View” will permanently remove the current prop view.

#### 5.3.4.9 Timing Grids

[Timing grids](#) are stored in the LMS/LAS [sequence](#) file. If you have multiple timing grids defined, they can be selected in the Pixel Editor using the timing grid drop down. By default the timing marks are locked. However, for [freeform grids](#) you can unlock them by clicking on the 'Timing Grid' button above the [sequence grid](#), then selecting 'Lock Timings' from the menu.



Once done, timing marks can be dragged left or right using the cursor. You can also add and remove timing marks by right-clicking within the grid and selecting Timing Mark > Add (or Delete) from the pop-


up menu. If you make changes to the timing marks, when you save the Pixel Editor sequence, your LMS/LAS file will be updated also.

#### 5.3.4.10 Zoom


You can zoom in or out in the Pixel Editor's [sequencing grid](#):

- [Zoom In](#)
- [Zoom Out](#)

### Zoom In

 To zoom in, click the zoom in icon. Or you can drag your mouse across the yellow timeline (and waveform if displayed) and the grid will zoom into the selected region. .

### Zoom Out

 To zoom out, click the zoom out icon, or right-click on the yellow timeline or waveform. You can also zoom out to the default level (15 seconds) by clicking the mouse wheel while cursor is in the timeline/waveform area.

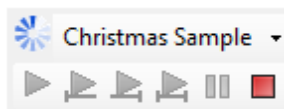
#### 5.3.4.11 Playback

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.

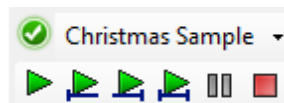
- [Calculating Preview](#)
- [Sequence Playback](#)
- [Playback Specific Prop](#)
- [Playback in Action](#)

### 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:







Once complete, a green checkmark 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.



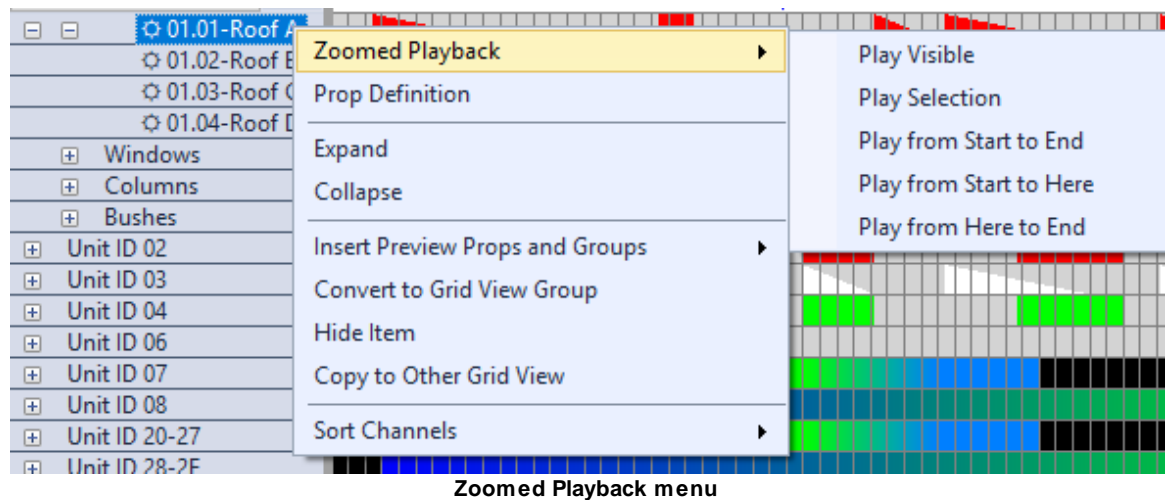
### Sequence Playback

You can play back your [sequence](#) several ways:

-  Play the full sequence
-  Play from the left edge of the sequence grid to the end of the sequence
-  Play from the beginning of the sequence to the right edge of the sequence grid
-  Play the visible portion of the sequence

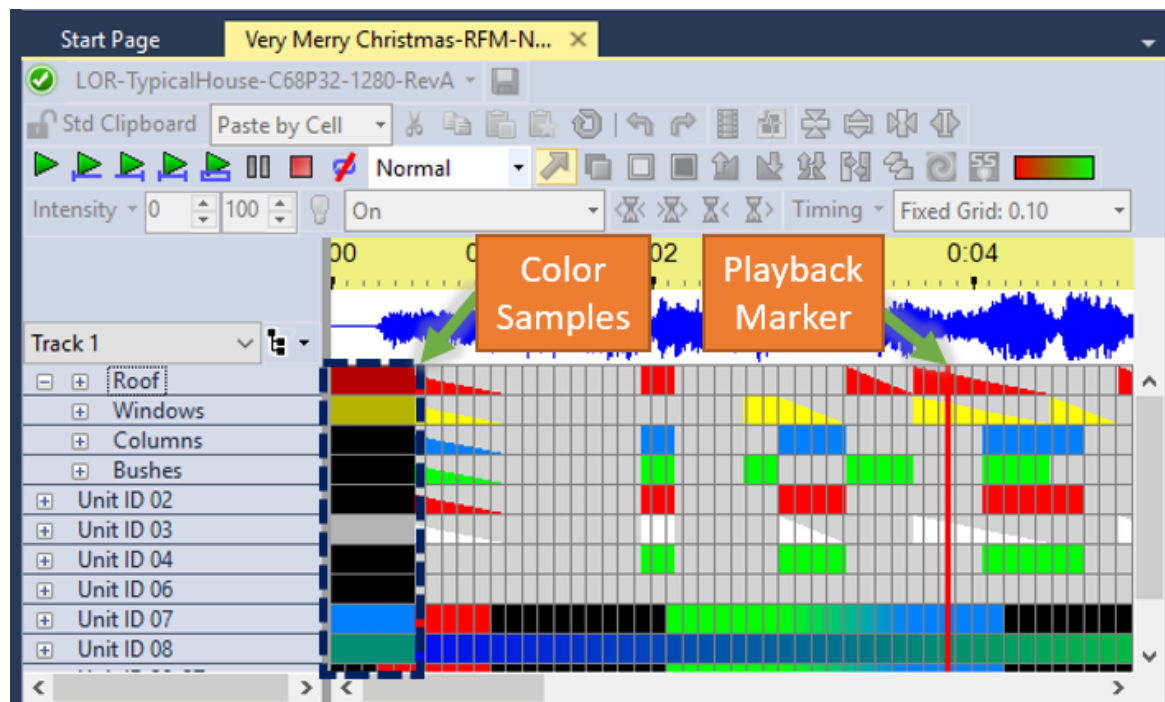
## Zoomed Playback

You can also zoom in on a specific [prop](#) during playback. To do this, right-click on a prop name (not a grid view group) and open the "Zoomed Playback" sub-menu.



## Playback in Action

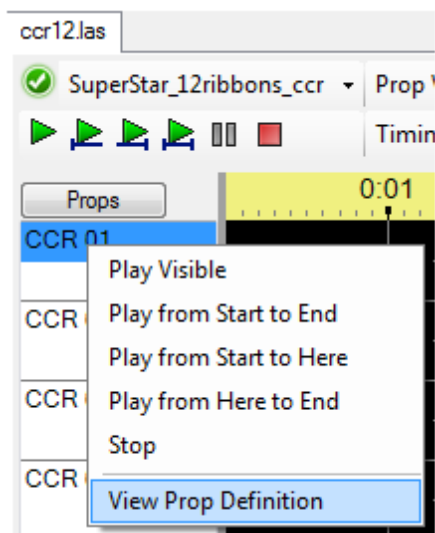
During playback, color samples will be displayed real-time, immediately to the right of the channel name. The color samples will be displayed for traditional channels and RGB channels. They will not be displayed for motion effect rows. A playback marker will move as play progresses. You can change the width of the color samples and the style of the playback marker in [Sequence Grid Preferences](#).



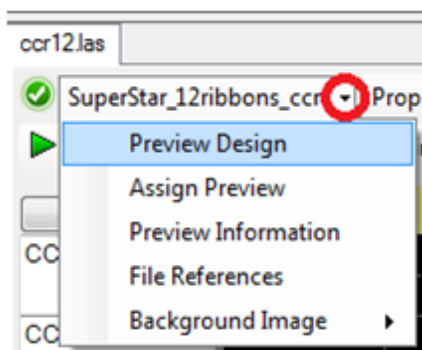
Playback in progress

#### 5.3.4.12 Prop and Preview Information

To see information about a specific [prop](#), right-click on the prop name and select "View Prop Definition". This also works if you right-click on a prop group.



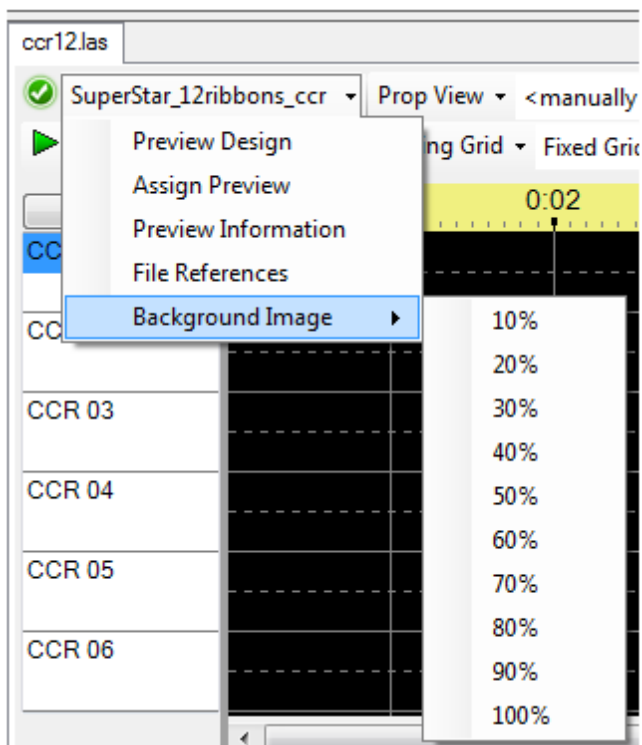
To view or alter the preview design, click the down arrow next to the preview name and select "Preview Design".



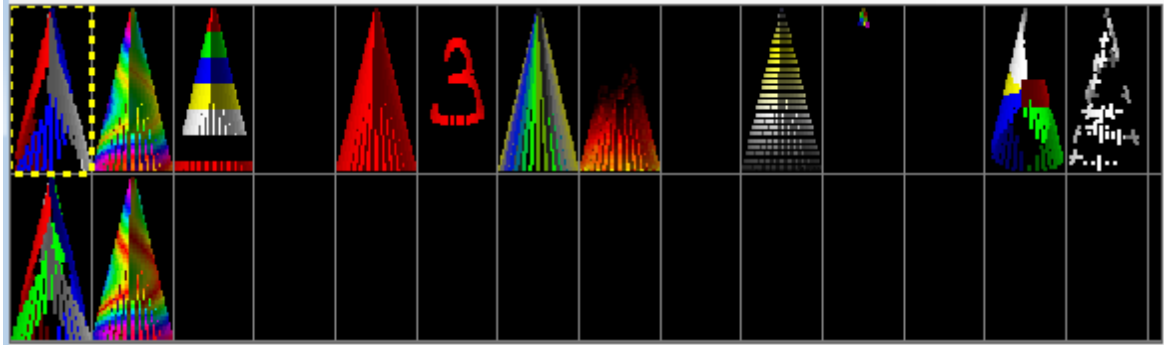
#### 5.3.4.13 Background Brightness

To change the brightness of the [background image](#) that is show during playback in the Pixel Editor:

- If the preview is shown in a separate window, use the “Background” slider in that window.
- If the preview is shown on the main screen, click the down arrow next to the preview name, then select “Background Image”, then choose the desired brightness level.



#### 5.3.4.14 Thumbnails



When you click on an [effect](#) in the Pixel Editor's [sequencing grid](#), the upper-left window will display thumbnails of effects used in the [sequence](#) on similar props. You can click on any of the thumbnails to make it the current effect (plays back on the right-hand window and changes the text below the Effect button):

Effect Generator

spirals/none/Mix\_Average/2.30s on 32x50 tree

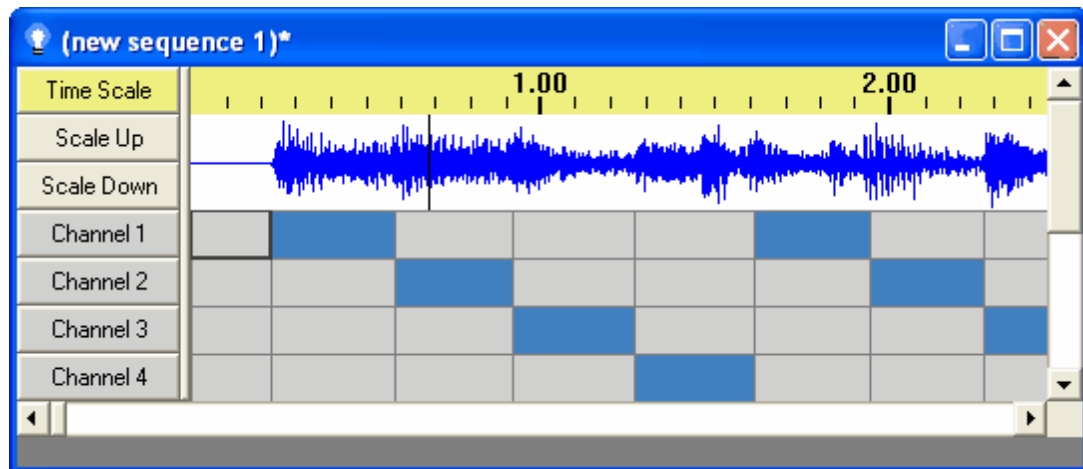
This means the effect is ready to be placed in the grid. Select some blank cells in the grid and right-click to turn the cells on, ramp up, or ramp down (or use the equivalent shortcut keys). The effect that is playing on the right side will be used to populate the selected cells.

#### 5.3.4.15 The Waveform

For certain types of [musical sequences](#), the [Sequencer](#) can display a waveform of the audio at the top of each [track](#). 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. Also, the Waveform Display may not be able to be used with very large media files.

In addition to the waveform itself, a vertical highlight bar is displayed at the current time that your mouse is pointing at.

- [Viewing the waveform](#)
- [Scaling up and down](#)
- [Changing the display type](#)
- [Changing the colors](#)



A musical sequence with an audio waveform displayed

## Viewing the Waveform

To view the waveform for a media file, make sure that "Wave Form" on the View menu is set to either "Full Height" or "Half Height". To hide the waveform, set it to "Off".

"Full Height" or "Half Height" determines the size of the whole display. This should not be confused with [scaling up and down](#), which will keep the size of the display the same, but vary the size of the graph within the display.

The [View Wave Form button](#) on the [Standard Toolbar](#) can be used to toggle between "Off" and whichever of "Full Height" and "Half Height" was last selected.

Additionally, "View Wave Form by Default" in the Display Preferences dialog can be used to control whether or not a waveform will automatically be displayed whenever a musical sequence (of an appropriate type) is opened or created.

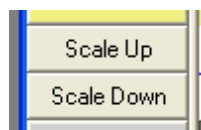
## Scaling Up and Down

When displaying a [waveform](#), the [Sequencer](#) tries to automatically scale the graph's vertical size so that a lot of the wave is displayed. There may be occasional spots where the wave goes past the top of the display - corresponding to very loud spots in the audio - but these should be infrequent.

However, you may want to zoom in or out. To do this, click on the "Scale Up" or "Scale Down" buttons to the left of the waveform display. Note that these buttons are visible if and only if the [channel buttons](#) are visible.

If you do zoom in or out, the Sequencer will remember your zoom settings for this particular sequence for whenever you open it in the future.

This should not be confused with the ["Full Height" and "Half Height" options](#), which change the size of the entire display, rather than the size of the graph on the display.





### The scaling buttons



A portion of a waveform, scaled up



The same waveform, scaled down

## Changing the Display Type

By default, the [waveform](#) display is centered about a line corresponding to zero volume. Loud portions of the song will extend both far above and far below the center. This is known as "full mode".



A portion of a waveform, in full mode

Two other modes are also supported: "fold mode" and "top mode".

"Fold mode" shows zero volume at the bottom of the display, and above it shows whichever half of full mode would be larger, as if the two halves were folded at the center and lain on top of each other. It is then stretched vertically so that the full size of the display is used.



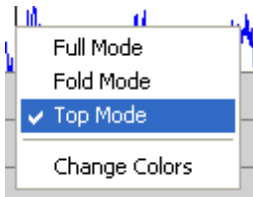
The same waveform, in fold mode

"Top mode" is similar to fold mode, except that only those portions of the display which would have been above the center in full mode are shown.



The same waveform, in top mode

To change between the modes, right-click on the wave form, and choose the desired mode from the popup menu.

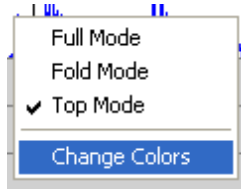


The waveform popup menu, with top mode selected

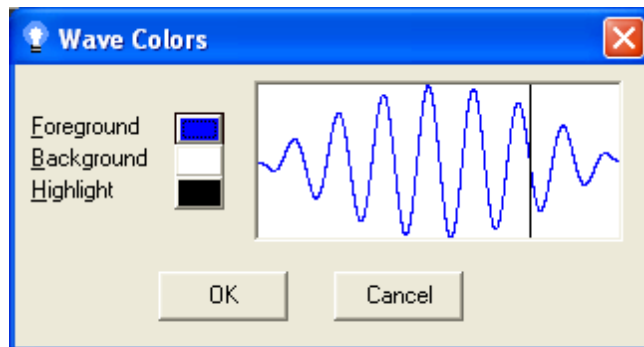
When you choose a mode, the [Sequencer](#) automatically saves it, and uses it as the default mode in the future.

## Changing the Colors

The colors used to display the [waveform](#) can be changed via the Wave Colors dialog, which can be opened by right-clicking on the waveform and selecting "Change Colors" from the popup menu:



"Change Colors" on the waveform popup menu

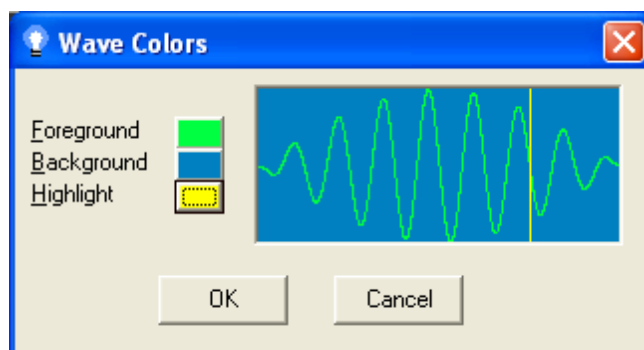


The Wave Colors dialog

Three different colors can be set: "Foreground" is the color of the wave itself; "background" is the field that it is drawn upon; "highlight" is the vertical bar showing the position of the mouse.

The colored buttons on the left can be used to set each of these three colors, and the display on the right shows how a sample waveform would look using these colors.

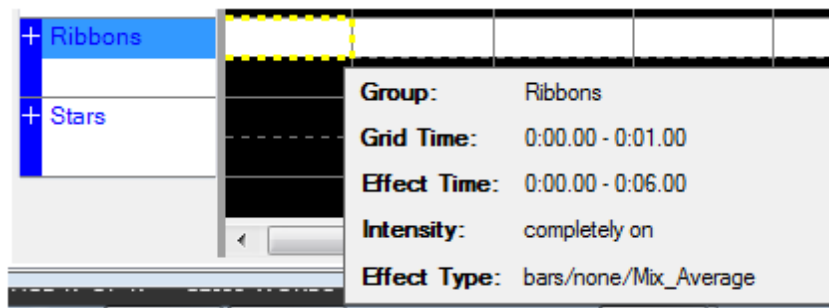
The [Sequencer](#) will remember the colors that you chose, so that other waveforms will automatically be displayed using those colors.



The Wave Colors dialog, with different colors chosen

#### 5.3.4.16 Tooltips

When hovering over a cell in the Pixel Editor's sequence grid, a tooltip can be displayed (very similarly to the way they are displayed in the [Sequencer](#)).



Tooltips 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 are controlled from the Sequencer. To change them, open the Sequencer and select Edit > Preferences > Display Preferences from the menu. Updated tooltip preferences will be read by the Pixel Editor whenever you open a sequence.

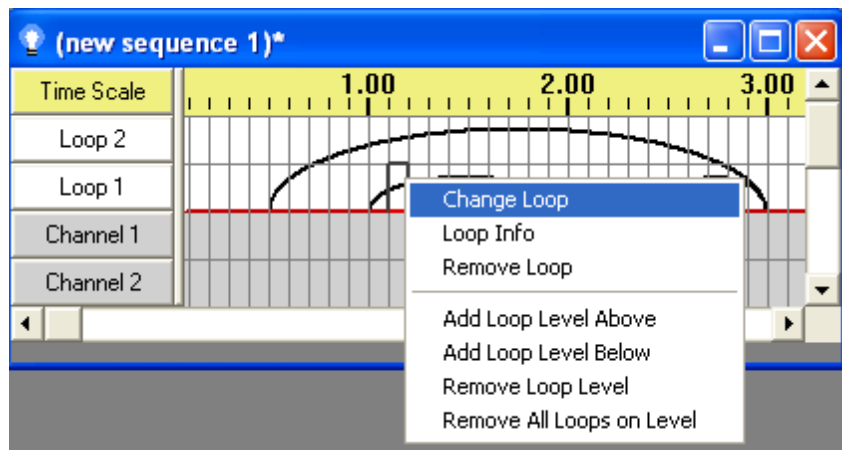
#### 5.3.4.17 Loop Menus

The [Light-O-Rama Sequencer](#) has two popup menus for dealing with [loops](#):

First, clicking on the grid in a loop level opens the [Loop Context menu](#) (loop levels can be recognized as the rows with white background and buttons, as opposed to the light grey of [channels](#)' rows; they are located above the channels, but below the time scale). This can be used, for example, to add, delete, change, or view information about loops, as well as to add or delete loop levels.

Second, clicking on a [loop level's button](#) will bring up a menu that contains a subset of the items of the Loop Context menu. Specifically, it includes those items that deal with the loop level, as opposed to loops on that loop level.

If your [sequence](#) does not contain any loop levels, but you want to add loops to it, first use "Turn On Loops" from the Edit menu. This will insert a loop level into the sequence. Note that loops can only be used in [animation sequences](#), not in [musical sequences](#).



The Loop context menu

##### 5.3.4.17.1 The Loop Context Menu

The [Sequencer's](#) Loop Context menu gives access to various [loop](#)-related functionality. It can be accessed by clicking on the grid in a loop level's row (which can be recognized by its white background, as opposed to the light grey of [channels](#); loop levels' rows are located above the channels' rows but below the time scale).

Different menu items are available depending upon whether a loop already exists at the spot clicked; for example, if one does, there is a menu item to delete it; if none does, there is instead a menu item to insert one.

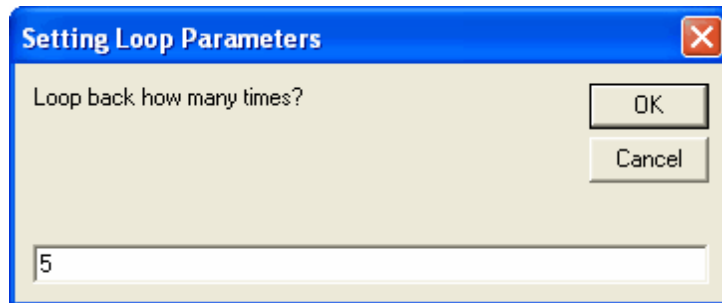
Those portions of the menu that deal with loop levels (as opposed to loops) can also be accessed by clicking on a [loop level button](#).

The items on the menu include:

- [Insert Loop](#)
- [Change Loop](#)
- [Loop Info](#)
- [Remove Loop](#)
- [Add Loop Level Above](#)
- [Add Loop Level Below](#)
- [Remove Loop Level](#)
- [Remove All Loops on Level](#)

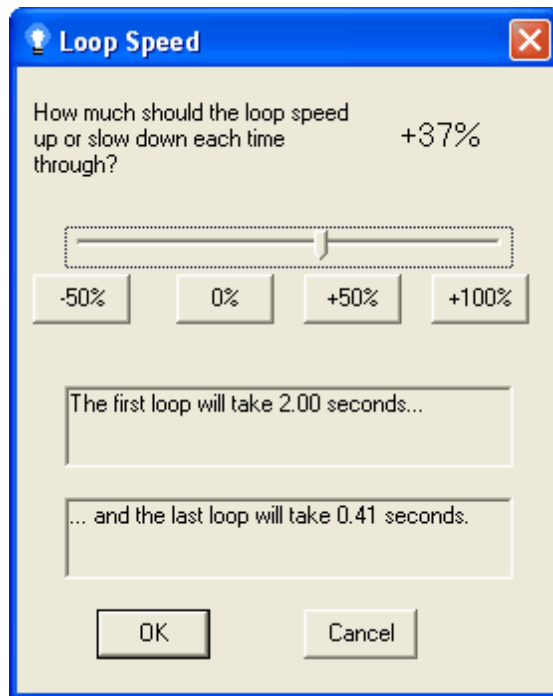
## Insert Loop

This item on the [Loop Context menu](#) inserts a [loop](#) in the selected cell or cells on the selected loop level. After clicking it, you will first be asked how many times the loop should loop back (for example, to play through a loop twice, it should loop back once):



**Looping back five times will cause six passes through the loop**

After that, you will be prompted to say whether (and by how much) it should speed up, slow down, or remain at the same speed with each successive pass through the loop:



**This loop will speed up by 37% with each successive pass**

This menu item is available only if no loop exists in any of the selected cells on the selected loop level.

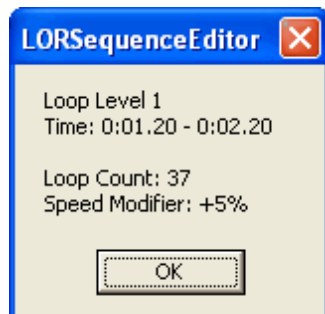
## Change Loop

This item on the [Loop Context menu](#) can be used to change the settings of the selected [loop](#) - i.e. the number of times that it will loop back, and the speed change (if any) with each successive pass. Using it is very similar to using "[Insert Loop](#)"; please see that help file entry for details.

This menu item is available only if the popup menu is opened by clicking on an existing loop.

## Loop Info

This item on the [Loop Context menu](#) displays information about the selected [loop](#), such as how many times it loops back, and the speed change (if any) with each successive pass.



**The Loop Info window**

This menu item is available only if the popup menu is opened by clicking on an existing loop.

## Remove Loop

This item on the [Loop Context menu](#) can be used to delete an existing [loop](#).

This menu item is available only if the popup menu is opened by clicking on an existing loop.

## 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.

If you have removed all of the loop levels from a [sequence](#), but later decide that you want to use loops, use "Turn On Loops" from the Edit menu. Doing so will add a loop level to the sequence.

## Remove All Loops on Level

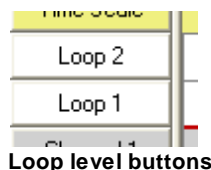
This item on the [Loop Context menu](#) can be used to delete all of the [loops](#) on the selected loop level, but to keep the loop level itself.

If you wish to additionally delete the loop level itself, use "[Remove Loop Level](#)" instead.

### 5.3.4.17.2 Loop Level Buttons

[Loops](#) in a [sequence](#) can be grouped into loop levels. Loops on a higher level can contain loops on lower levels.

In the [Sequencer](#), loop levels are displayed as white rows, above the [channels'](#) rows and below the time scale. On the left of each loop level's row is that loop level's button:



The bottom loop level in a sequence is always labelled "Loop 1"; the one immediately higher than that is

labelled "Loop 2", and so on.

Clicking on a loop level's button will bring up a portion of the [Loop Context menu](#) (specifically, those menu items dealing with loop levels, as opposed to loops). You can use this, for example, to delete the loop level, remove all of the loops from it, or add a new loop level above or below the selected level.

If you wish to add loops to a [sequence](#) but it does not currently have any loop levels, use "Turn On Loops" from the Edit menu. Doing so will add a loop level to the sequence. Note that this is only possible in [animation sequences](#), since [musical sequences](#) cannot contain loops.

#### 5.3.4.18 Sharing Sequences

Pixel Editor sequences can be shared with fellow lighting enthusiasts. To share a complete sequence, you must send the other person both the LMS file and the LPE file. The LPE file contains not only the information about the RGB effects to be played, but also a copy of your preview. So when the other person opens the files in the Pixel Editor, they will be able to see a preview of your display as the sequence is played.

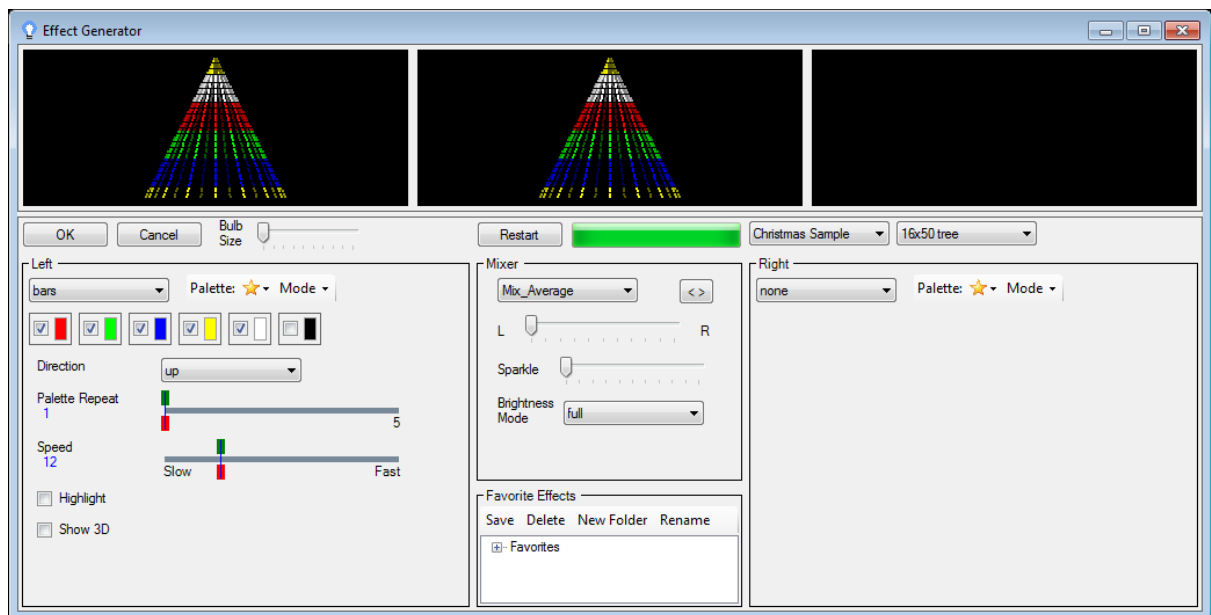
Conversely, if a person shares a sequence with you, place both the LMS and LPE files you receive into the same directory. The first time you open them in the Pixel Editor, you will receive a pop-up message indicating that the preview was imported. The new preview will have a name like "Imported from JingleBells.lms on 6/17/2015".

### 5.3.5 Motion Effect Generator

The Motion Effect Generator is the tool used to create and modify 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](#)
- [Choose an Effect](#)
- [Using the Color Palette](#)
- [Using the Effect Slider](#)
- [Mixing Two Effects](#)
- [Favorites](#)
- [Effect Length](#)
- [Bulb Size](#)



The Effects Generator Window

#### 5.3.5.1 Opening the Motion Effect Generator

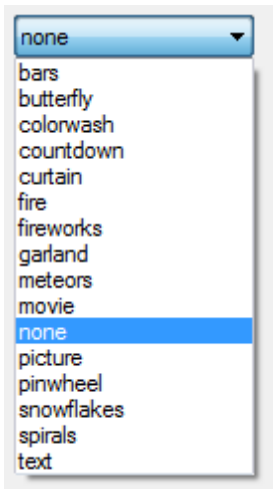
The [Light-O-Rama S5 Sequencer](#)'s [Motion Effect Generator](#) can be opened in several ways:

- From the [Tools menu](#). Use this method when you just want to explore the available effects or you want to create a library of effects before you start [sequencing](#).
- With a [sequence](#) open, click the Effect button located in the center, above the grid (or use the shortcut key E). After building your effect and click OK to close the Effect Generator window, and the effect will be saved in a temporary area and described with text just below the Effect button. Any cells you subsequently turn on (or ramp up or ramp down) in the grid will use this effect.
- Double-click an effect on the grid. This will select the entire effect and then open the Effect Generator preset 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 effects in your sequence.
- Select a range of cells containing one or more effects on the grid, right-click in the selected area, and choose Modify 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 shape (on, ramp up, or ramp down) of the existing effects will be preserved.
- Select an empty set of cells and use one of these shortcut keys: shift-N (on), 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.

#### 5.3.5.2 Choose an Effect

In the Pixel Editor's [Effect Generator](#), start with the left side. Choose an effect type from the drop down list.





The best way to get familiar with the effects is to try each one. See the [Color Palette](#) topic to learn about changing colors. Below the palette selection will be a set of buttons, sliders, and such 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 such will change. Feel free to experiment with all of the options. That is part of the fun of the Pixel Editor – seeing all of the different effects you can make!

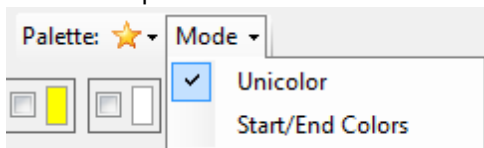
### 5.3.5.3 Using the Color Palette

In the Pixel Editor's [Effect Generator](#), choose the colors for the [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 Butterfly effect doesn't use any. If you haven't selected any checkboxes, the default color will be white.

The palette is fixed at 6 entries (buttons), but each palette button can be set to a color of your choosing. Simply click on the color (not the checkbox), and a color selector will open allowing you to choose a custom color.

For some effects, color order is important. Color order can be changed by dragging a color to a new location. To start dragging, you need to click on a gray section of the square you want to move. You then need to drop it on top of another color square. When you do, the colors will rearrange.

There are 2 palette modes.



By default, the Effect Generator will use **Unicolor mode**. In this mode, each of the 6 colors stays the same during the course of an effect. This is what the palette looks like in Unicolor mode:

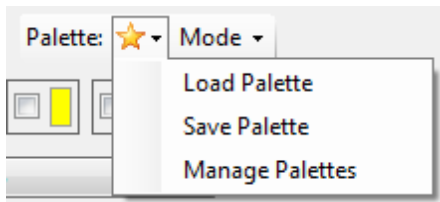


In the second mode you can specify a **start and end color** for each palette square. In this mode, each palette square contains two color entries: the one on the left is the start color, the one on the right is the end color. These can be set separately. So for example, if you are doing a Color Wash effect, you can start off blue and transition to white by setting the left color to blue and the right one to white (in the

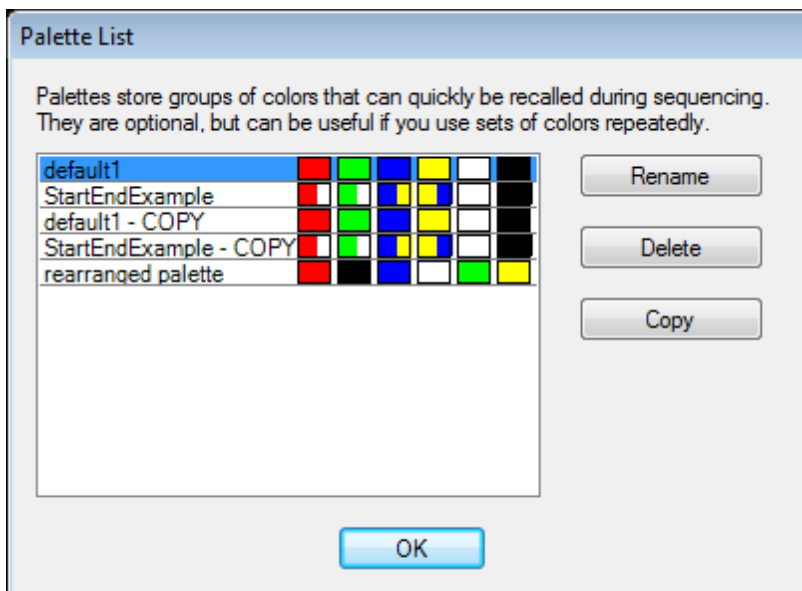
same color square). This is what the color palette looks like in Start/End mode:



Palettes can be saved for later reuse. Click the small star with a down arrow next to it and choose Save Palette from the menu. Similarly, call up a saved palette by selecting Load Palette from the same menu. The Manage Palettes function allows you to rename, copy, and delete the saved palettes.



Selecting Manage Palettes will allow you to copy, remove, or rename your previously saved palettes. Each palette consists of 6 entries, which are shown to the right of the palette name. 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.

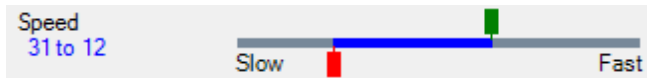


#### 5.3.5.4 Using the Effect Slider

In the Pixel Editor's [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.

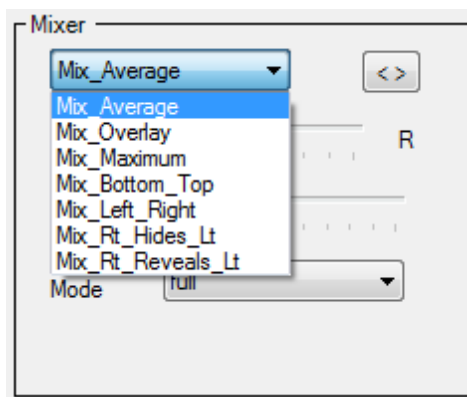


However, if you double-click anywhere along the effect slider, the handles will become unlocked and you can set the start and stop values independently. In the example below, the speed will start out fast and then get slower during the course of the effect. To relock the start and stop positions, just double-click on the slider again.



### 5.3.5.5 Mixing Two Effects

In the Pixel Editor's [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. For some mix types you may want to swap the left and right effects. This is easily accomplished using the "<>" button.



## 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.

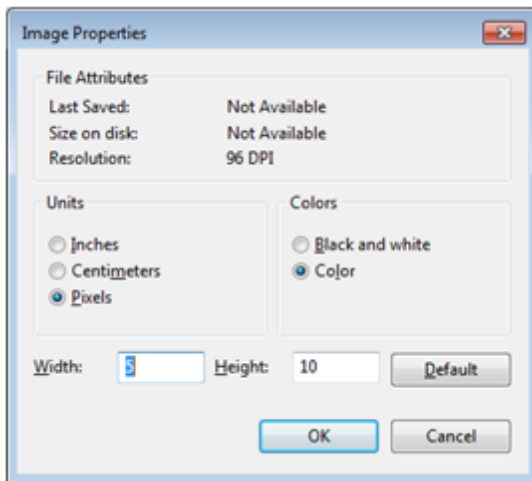
The same technique can be used if you want an effect only displayed at the top or bottom. Just set the mixer to "Mix\_Bottom\_Top".

But what if you want to display only rows or columns in the middle of your prop, or some pattern of rows or columns? This is discussed in the next topic, "[Masking Effects on Arbitrary Rows or Columns](#)":

## 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.

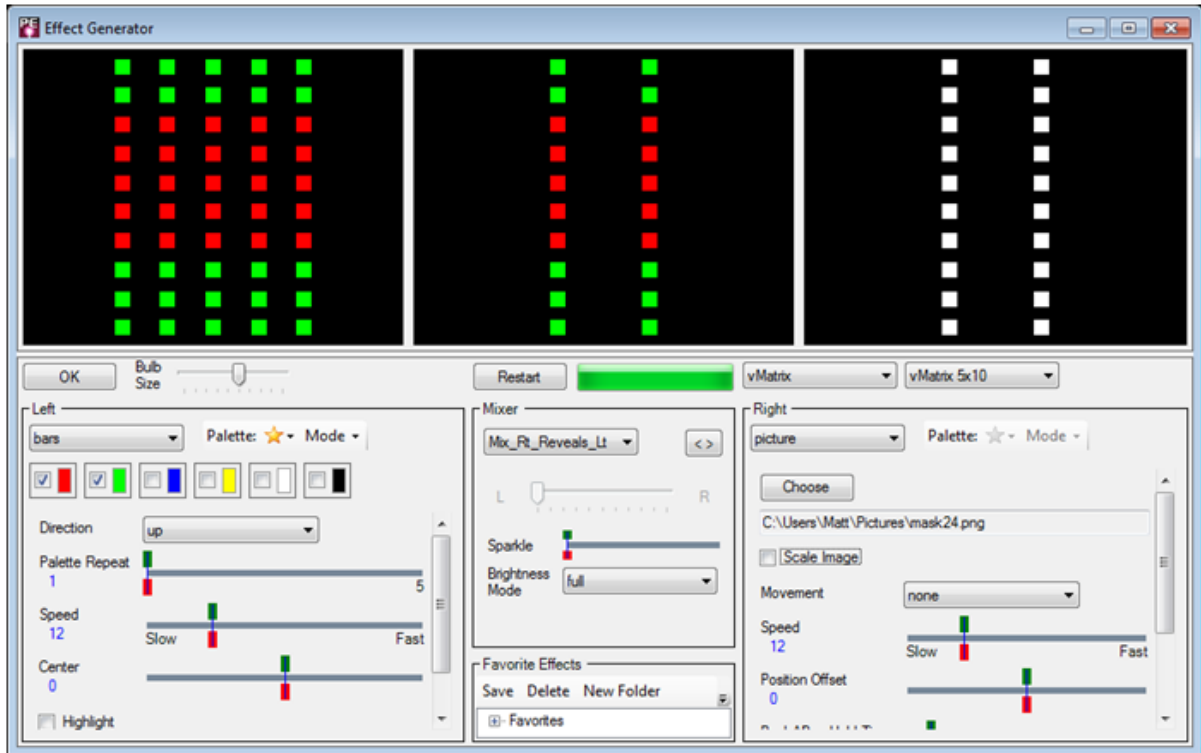


6. Save the result as a PNG image (BMP is OK too), and then close Microsoft Paint. Remember where you save it.
7. Open the Pixel Editor's [Effect Generator](#).
8. On the right side, select the prop you generated the mask for.
9. Change the right effect to "Picture". Click the "Choose" button and select 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):

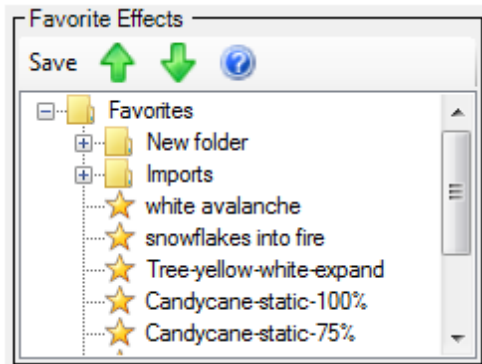


### 5.3.5.6 Favorites

In the Pixel Editor's [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).

- 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 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 to move it to the desired position. Alternatively, you can right-click on the entry, then select Move Up or Move Down from the popup menu.
- You can move effects from one folder to another simply by dragging the effect to the new folder. You can even drag entries branches of the tree if you need to move them.
- To delete an entry or an entire branch, right-click the node to delete, then select Delete from the popup menu.
- To add a new branch to the tree, right-click on the parent folder, then select New Subfolder from the popup menu. Enter the name for the new folder when prompted, then click OK.
- To rename an entry (folder or favorite effect), right-click on the node, then select Rename from the popup menu. Enter the new name when prompted, then click OK.
- To copy an effect, right-click on the node, then select Copy from the popup menu. Enter the name for the copy when prompted, then click OK.

- To export favorites to a file, right-click on a folder, then select Export from the popup menu. Select the directory and file name, then click OK. All children of the selected folder will be exported. This file will have an LPEFAV extension.
- To import favorites from a file, right-click on a folder, then select Import from the popup menu. Select the file to import, then click OK. Imported favorites will become children of the selected folder.



#### 5.3.5.7 Effect Length

In the Pixel Editor, every effect on the [grid](#) has a length. See the [Color Palette](#) topic for instructions on how to transition colors over the course of the [effect](#). The [slider controls](#) can also be set at different positions for the beginning and end of the effect. To see how far along the effect is in playback, look at the progress bar next to the “Restart” button. To watch the effect go through its transition again, just click the “Restart” button.



#### 5.3.5.8 Bulb Size

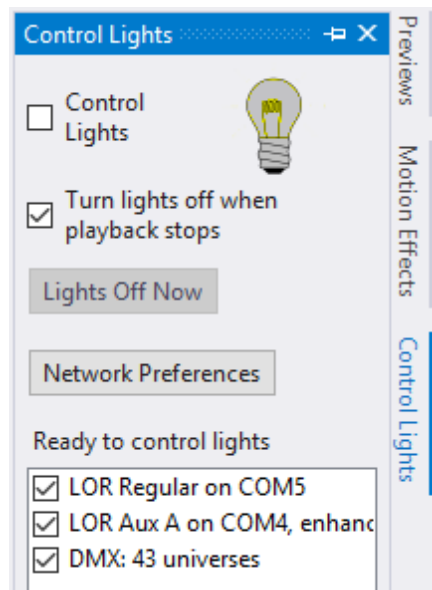
The Pixel Editor's [Effect Generator](#) has a bulb size setting that is separate from the [preview bulb size](#). To change the bulb size on the Effect Generator move the slider next to the OK/Cancel buttons.



### 5.3.6 Control Lights

The "Control Lights" 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. 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](#)



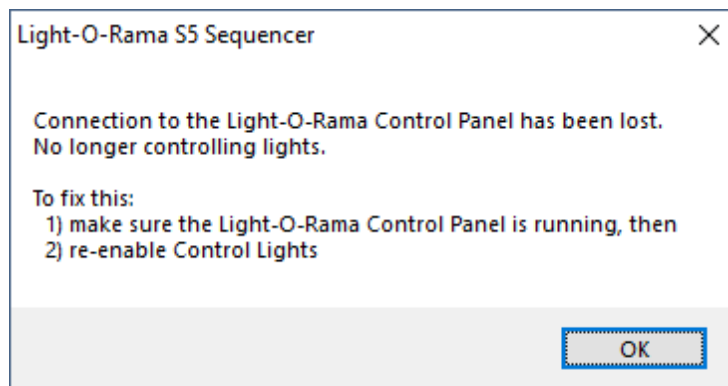
## Control Lights Check Box

If the Control Lights box is checked, then the Sequencer will control your lights. This setting applies to all open sequences.

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).
- 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 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 (lower right corner of your screen).
- 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).

### 5.3.7 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.

- The Playback Window, Previews Window, and Motion Effects Window\* can be docked in any position within the main program window, or they can float outside the program window. They can also be hidden by using the [Window menu](#). They can be pinned so that they stay open, or unpinned so they



auto-hide after use.

- 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. To the right of the name is an "X", which when clicked, will close the sequence.

\* The Motion Effects Window is only displayed when using the PRO license level.

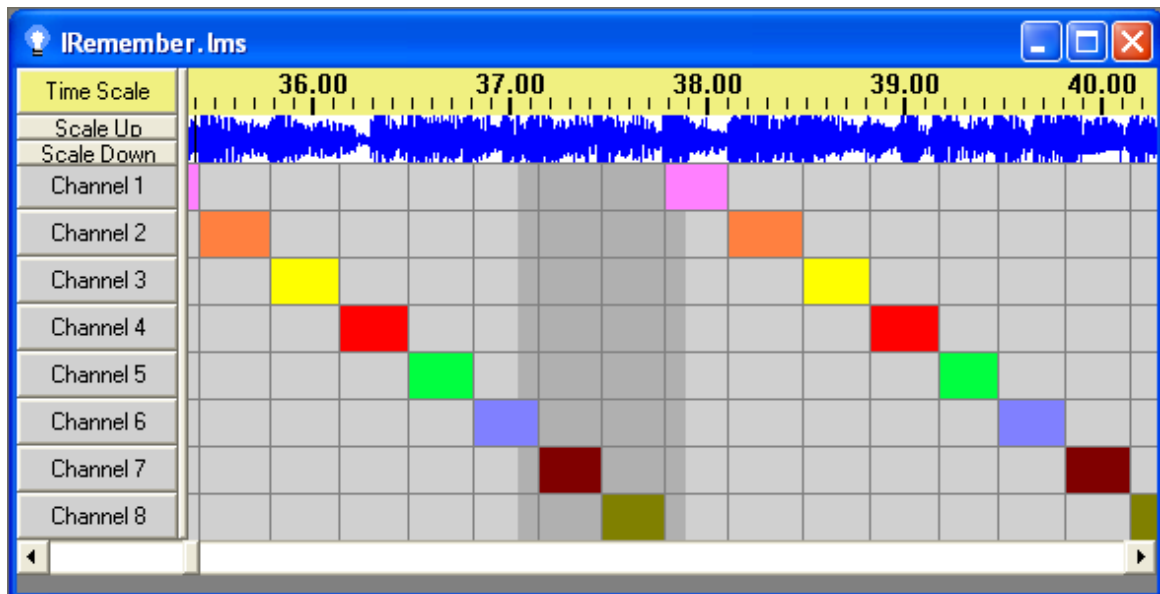
### 5.3.8 Freeform Play Mode

In addition to the various play ranges available on the play menu, the [Sequencer](#) also supports another way of playing a [sequence](#), using the space bar on the [keyboard](#).

When the space bar is pressed, the current sequence will start playing, starting at the start of the current selection and ending at the end of the sequence (this is equivalent to "From Selection" play mode). Pressing space again will stop play, and the selection will be changed to the spot where play stopped. So pressing it a third time will start the sequence again, approximately where you had stopped it. This can be used to effectively pause and unpause play.

However, the space bar may have a different meaning, allowing play in another way:

During play, 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. The freeform play range is displayed with a slightly darker grey background color for its cells:



A sequence with a freeform play range starting at about 37 seconds

If the space bar is used to start play while a freeform play range has been selected, then instead of playing in "From Selection" mode (as described above), it will play from the start of the freeform play range to the end of it.

Using "shift-space" instead of "space" to start play will first get rid of any freeform play range that may be selected. The freeform play range can also be removed (without starting play) by selecting "[Clear Freeform Play Range](#)" from the [right-click context menu](#).

The freeform play range can also be selected (while not playing) by clicking and dragging the mouse on

the time scale, or cleared by clicking (and not dragging).

Note that using the space bar to play does *not* affect the currently selected play mode from the play menu, so playing in any other way (such as using the [Play button](#) on the [Standard toolbar](#)) will still use the last-selected play mode.

### 5.3.9 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](#)

They can be accessed from:

- the [Sequence menu](#)
- by [right-clicking on the sequence grid](#)
- by right-clicking on the name of a [beat channel](#)

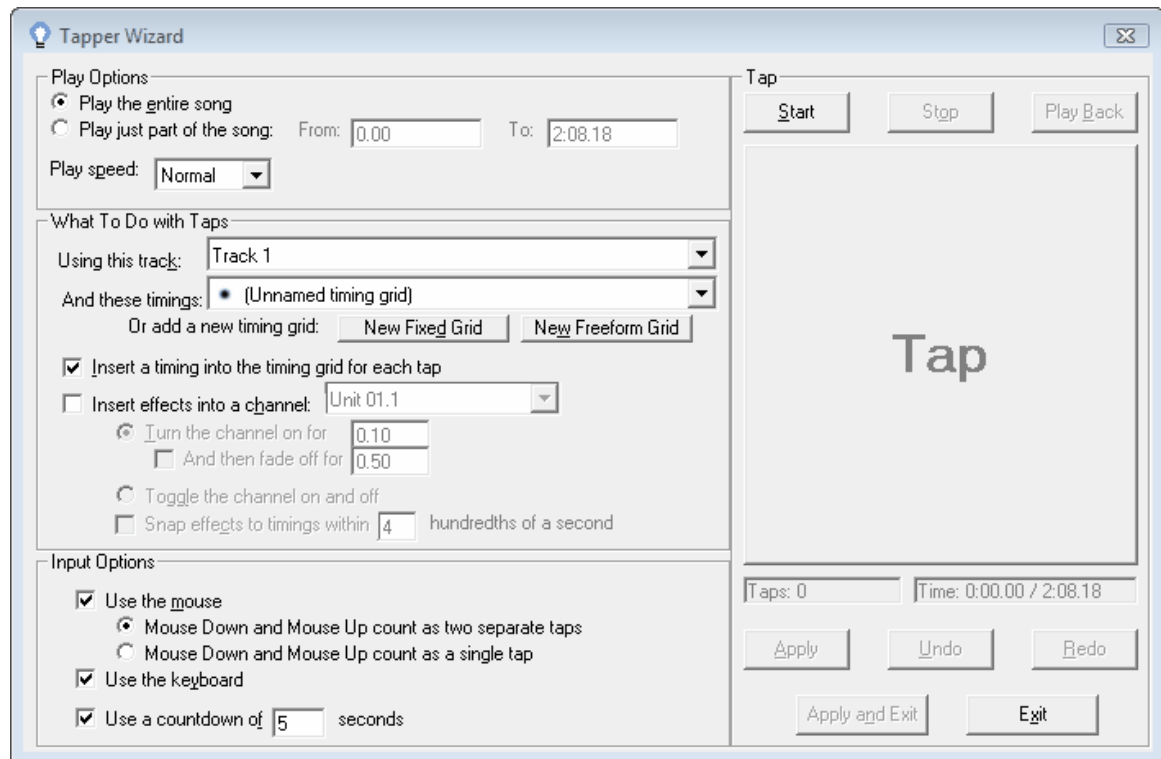
#### 5.3.9.1 The Tapper Wizard

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](#) or a new track, and can later be accessed via "Tapper Wizard" on the Tools menu.

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](#)



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.

When the wizard is first opened, the time range will be automatically set depending upon "Use Play Range for Wizards" from the Play Preferences dialog: If this option is enabled, the range will be set to the [freeform play range](#) if one exists, or the play range as set on the Play menu if not. If the option is not enabled, the range will be set to the entire song. One exception is when the wizard is opened directly from the [New Musical Sequence dialog](#); in this case, the range will be set to the entire song regardless of the value of "Use Play Range for Wizards".

## 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 [track](#) and the [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](#) of the track, or both.

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

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.

### 5.3.9.2 The Beat Wizard

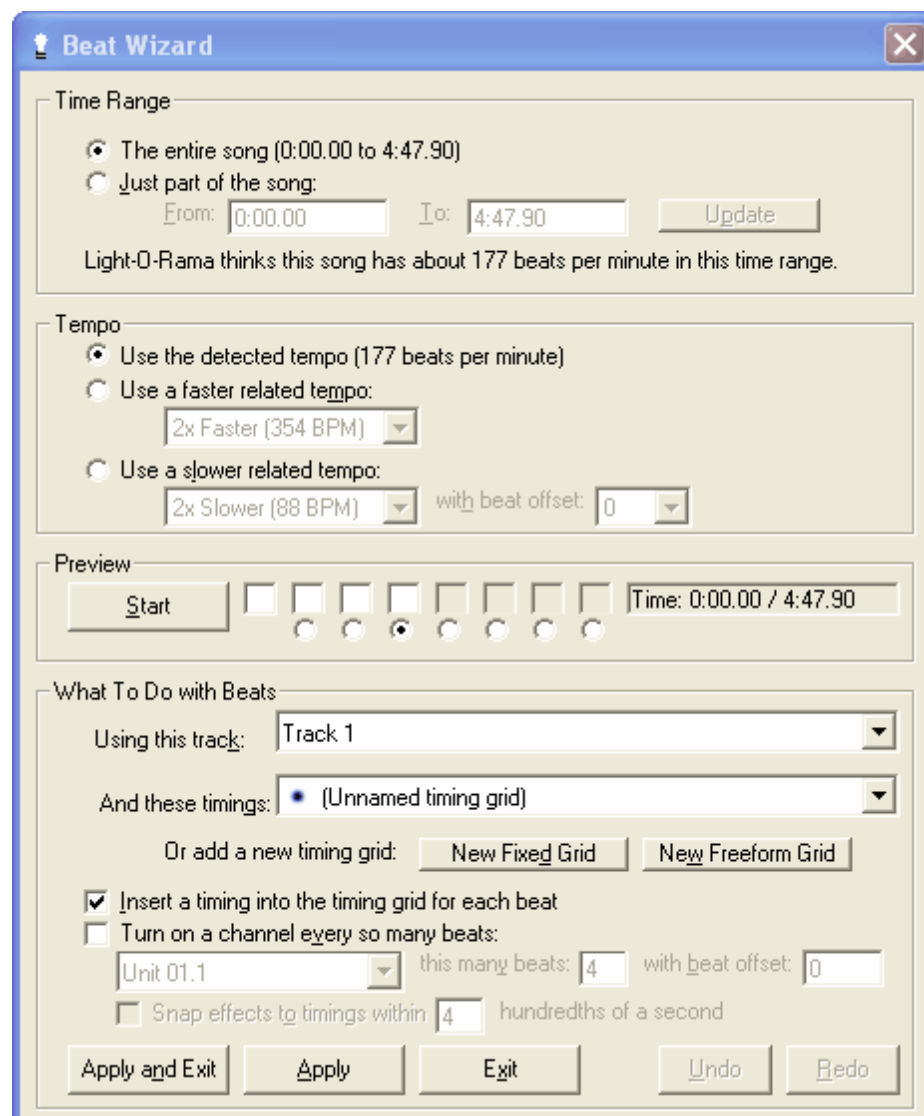
The [Light-O-Rama Sequencer's](#) Beat Wizard can analyze the song associated with a [musical sequence](#) to try to determine its tempo, and can insert [timings](#) and [lighting effects](#) into the [sequence](#) based upon it. These are not necessarily inserted exactly the same distance apart from each other; rather, the Beat 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 musical sequence](#) or a new track, and can

later be accessed via "Beat Wizard" on the Tools 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](#)



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.

When the wizard is first opened, the time range will be automatically set depending upon "Use Play Range for Wizards" from the Play Preferences dialog: If this option is enabled, the range will be set to the [freeform play range](#) if one exists, or the play range as set on the Play menu if not. If the option is not enabled, the range will be set to the entire song. One exception is when the wizard is opened directly from the [New Musical Sequence dialog](#); in this case, the range will be set to the entire song regardless of the value of "Use Play Range for Wizards".

## 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.

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.

### 5.3.9.3 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 musical sequence](#) or a new track, and can later be accessed via "VU Wizard" on the Tools 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](#)



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.

When the wizard is first opened, the time range will be automatically set depending upon "Use Play Range for Wizards" from the Play Preferences dialog: If this option is enabled, the range will be set to the [freeform play range](#) if one exists, or the play range as set on the Play menu if not. If the option is not enabled, the range will be set to the entire song. One exception is when the wizard is opened directly from the [New Musical Sequence dialog](#); in this case, the range will be set to the entire song regardless of the value of "Use Play Range for Wizards".

## 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 selected stereo channel (or channels) has a thick black bar in its row. This bar represents the threshold for what will be considered a peak. Above the bar is a peak; below the bar is not. The bar 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.

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".

#### 5.3.9.4 The MIDI File Wizard

The [Light-O-Rama Sequencer's](#) MIDI File Wizard can be used to automatically populate a [musical sequence](#) that is based on a MIDI file with [timings](#) and [lighting effects](#) based on the MIDI file itself. For example, lights can be set up to chase each other in time to the music, or to turn on and off when certain notes are played.

The MIDI File Wizard is available (for musical sequences based on MIDI files) as an option when [creating a new musical sequence](#) or a new track, and can later be accessed via "MIDI File Wizard" on the Tools menu.

The MIDI File Wizard has three main screens, each on a different tab:

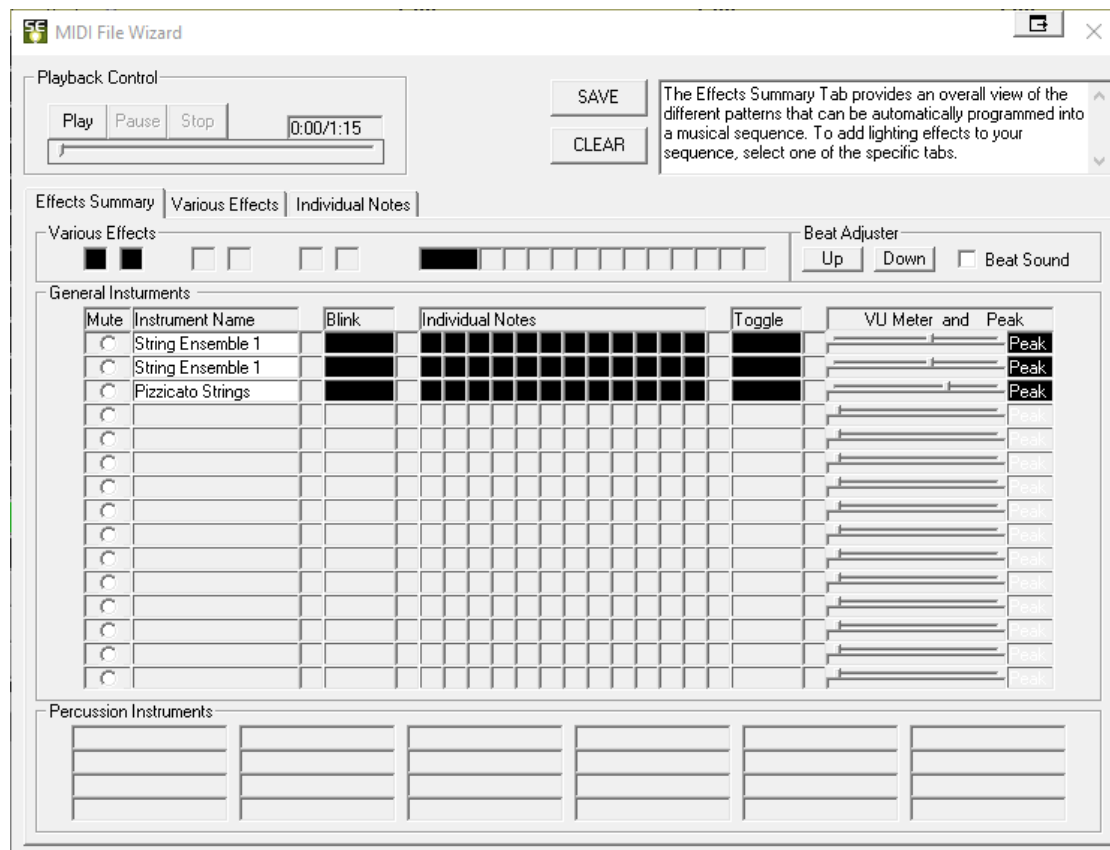
The [Effects Summary tab](#) can be used to visualize the song while it is playing - for example, to see which instruments are playing what notes at what time, and to show the overall beat of the song. It can also be used to listen to only certain instruments in the song, by muting others. This tab cannot be used to insert timings or lighting effects into a sequence - instead, it is used to get an idea of how the other tabs might be used for the song.

The [Various Effects tab](#) can record timings and lighting effects based upon the beat of the song. The lights can be made to behave in a variety of ways, such as chasing each other or rotating around a tree, in various patterns.

The [Individual Notes tab](#) can be used to record timings and lighting effects based upon the notes played by individual instruments in the song. For example, a channel can be set up to turn on whenever a tenor saxophone plays a C note.

For more detailed help, please consult the help file pages for the individual tabs:

- The [Effects Summary tab](#)
- The [Various Effects tab](#)
- The [Individual Notes tab](#)



**The MIDI File Wizard's Effects Summary tab**

#### 5.3.9.4.1 The Effects Summary Tab

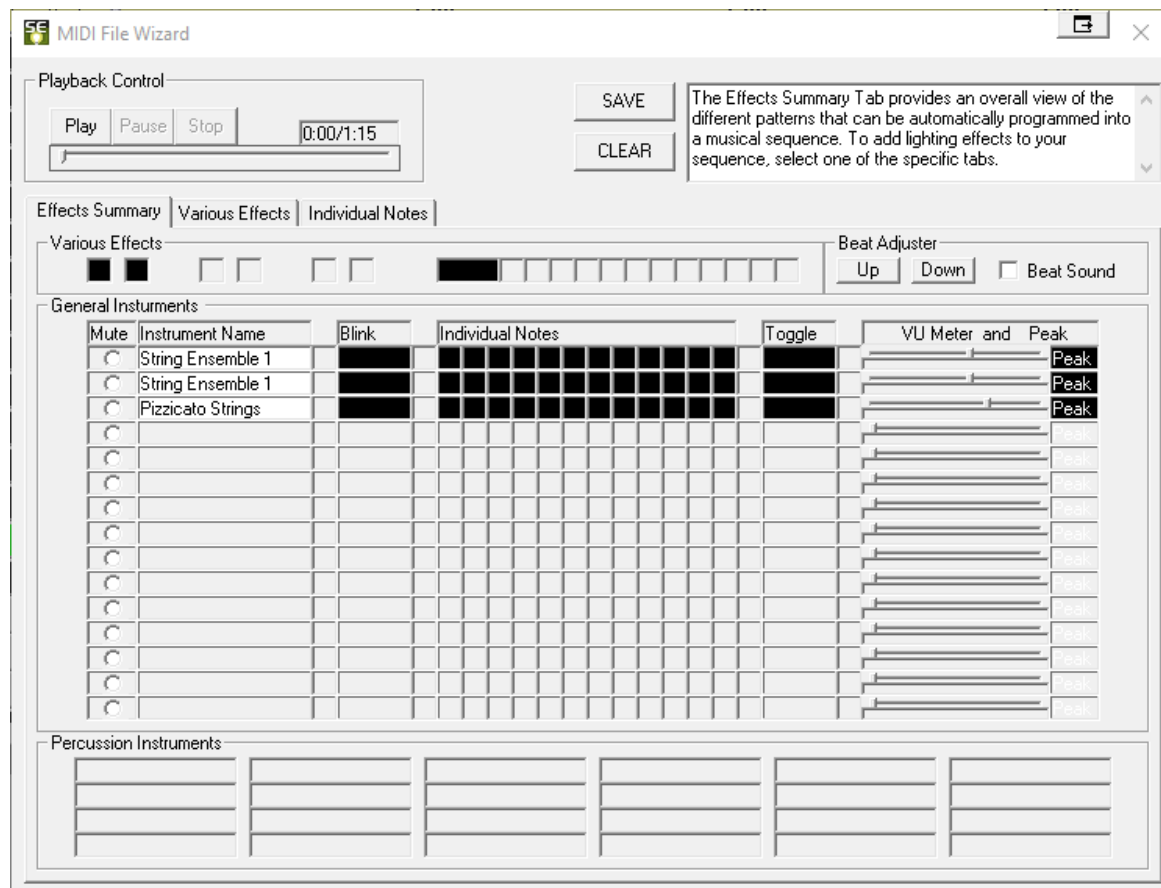
The [MIDI File Wizard's](#) Effects Summary tab can be used to get an overall idea of a MIDI song. It displays, for example, which instrument is playing what note when, and the beat of the song. It can also mute instruments, so that you can listen more specifically to certain other instruments.

The Effects Summary tab cannot be used to insert [timings](#) or [lighting effects](#) into the [sequence](#). To do that, use the other tabs of the MIDI File Wizard - the [Various Effects tab](#) and the [Individual Notes tab](#).

To use the Effects Summary tab, simply hit "Play". The song will begin playing, and the controls on the tab will start lighting up to represent what's happening in the song. The boxes in the "Various Effects" section will light up to represent the beat of the song; the "General Instruments" section will show which instruments are playing which notes when; the "Percussion Instruments" section will show which percussion instruments are playing at what times.

You can choose to mute certain instruments, by selecting the "Mute" radio button next to each, so as to listen more closely to other instruments.

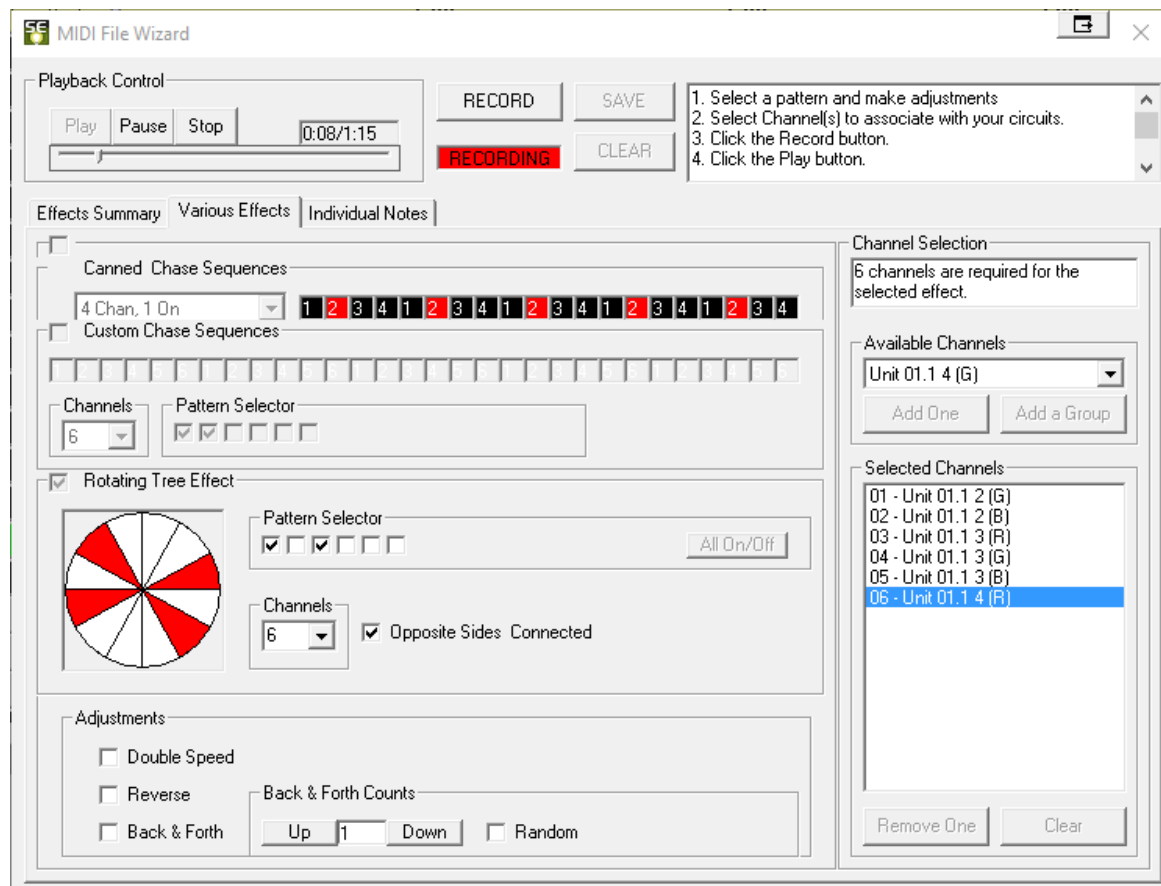
You can also superimpose clicking beat sounds over the song, to more clearly hear where the beat is falling, by checking the "Beat Sound" checkbox in the "Beat Adjuster" section.



The MIDI File Wizard's Effects Summary tab

#### 5.3.9.4.2 The Various Effects Tab

The [MIDI File Wizard's](#) Various Effects tab can be used to populate a [sequence](#) with [timings](#) and [lighting effects](#) based upon the beat of a MIDI file's song. For example, lights can be made to chase each other, in a variety of patterns, to the beat of the song.



The MIDI File Wizard's Various Effects tab, recording a rotating tree effect

There are three main types of effect patterns that can be made here:

- [Canned Chase Sequences](#)
- [Custom Chase Sequences](#)
- [Rotating Tree Effect](#)

There are two ways to use the tab - while recording effects and while not recording effects. By default, hitting "Play" will play the song, and let you choose patterns for the lights, but no effects will be recorded to be inserted into the sequence. This allows you to adjust the patterns to your liking before actually recording effects.

[Adjustments](#) can also be made while recording, but the main type of effect must be chosen before recording begins.

To play without recording, simply hit the "Play" button.

To record, first select the type of behavior you want to record (such as a canned chase sequence or a rotating tree effect). Choose the specific details of the behavior as well (for example, if you choose a canned chase sequence, also choose how many channels to use and how many of them should be on at any given time).

Next, select which [channels](#) from the sequence the effects will be recorded into, using the "Channel Selection" section (which is on the right). Each type of effect has a different number of channels

required; you will not be allowed to record effects until the full number of required channels has been assigned. You can select a channel from the dropdown list, and add it to the selected channels by pressing "Add One", or you can add several channels at once (starting with the selected channel) by pressing "Add a Group". At the bottom of the "Channel Selection" section are buttons enabling you to remove a channel from the selected channel list, or to clear the entire list.

Next, click the "Record" button. If you have not assigned the required number of channels, you will be told that you cannot record until you do so. If, however, you have, the "RECORDING" label (near the top) will turn red, and you can then hit "Play" to actually play the sequence and record effects.

During recording, you can make adjustments to the pattern, such as doubling its speed or reversing its direction, using the controls in the "Adjustments" section. These adjustments are done in real time, so, for example, you can record some of the pattern at normal speed, and then a minute into the song, switch the pattern to double speed; the events recorded in the first minute will still be at normal speed.

After play ends (either at the natural end of the song or by hitting "Stop"), hit "Record" again (at which point the red "RECORDING" label will turn off), and "Save" to save the recorded effects to the sequence. Or, if you were not satisfied with the recorded events, you can hit "Clear" to get rid of them.

## Canned Chase Sequences

The Canned Chase Sequences section of the [MIDI File Wizard's Various Effects tab](#) can be used to set up several [channels](#) of lights to chase each other - e.g. one turning on, then the next turning on while the first turns off, then another turning on while the second turns off, and so on.

Using the dropdown box in this section, you can choose how many channels will be involved in the chase, and how many of them will be on at any given time.

You can adjust the behavior of the chase - for example reversing its direction or speeding it up - using the controls in the [Adjustments](#) section. This can be done both before and during play, and before and during recording.

For more control over the behavior of a chase sequence - for example, to use more channels, or to use a different pattern for which channels are on at any given time - use [Custom Chase Sequences](#) instead.

## Custom Chase Sequences

The Custom Chase Sequences section of the [MIDI File Wizard's Various Effects tab](#) can be used to set up several [channels](#) of lights to chase each other - e.g. one turning on, then the next turning on while the first turns off, then another turning on while the second turns off, and so on. This is similar to the [Canned Chase Sequences](#) section, except that it is more flexible whereas the Canned Chase Sequences section is simpler to use.

In this section, you can select the number of [channels](#) involved in the chase, and, in the "Pattern Selector" section, choose how many channels will be on at any given time, and how far apart channels that are simultaneously on will be from each other.

You can adjust the behavior of the chase - for example reversing its direction or speeding it up - using the controls in the [Adjustments](#) section. This can be done both before and during play, and before and during recording.

## Rotating Tree Effect

The Canned Chase Sequences section of the [MIDI File Wizard's Various Effects tab](#) can be used to set up several [channels](#) of lights set up as vertical sections of a tree to rotate around the tree.

You can select how many channels to use, and then use the "Pattern Selector" section to define how many of them will be on at any given time, and how far apart simultaneously on channels will be.

The "Opposite Sides Connected" checkbox can be used to see how the lights will look if each single channel of lights is actually draped over the tree from one side to the opposite side, rather than each running down only one side of the tree.

You can adjust the behavior of the chase - for example reversing its direction or speeding it up - using the controls in the [Adjustments](#) section. This can be done both before and during play, and before and during recording.

## Adjustments

The Adjustments section of the [MIDI File Wizard's Various Effects tab](#) can be used to adjust the behavior of the selected effects pattern in various ways. This can be done both before and during play, and before and during recording.

Checking the "Double Speed" checkbox will cause the pattern to start going twice as fast as the beat of the song; unchecking it will bring the pattern back to its normal speed.

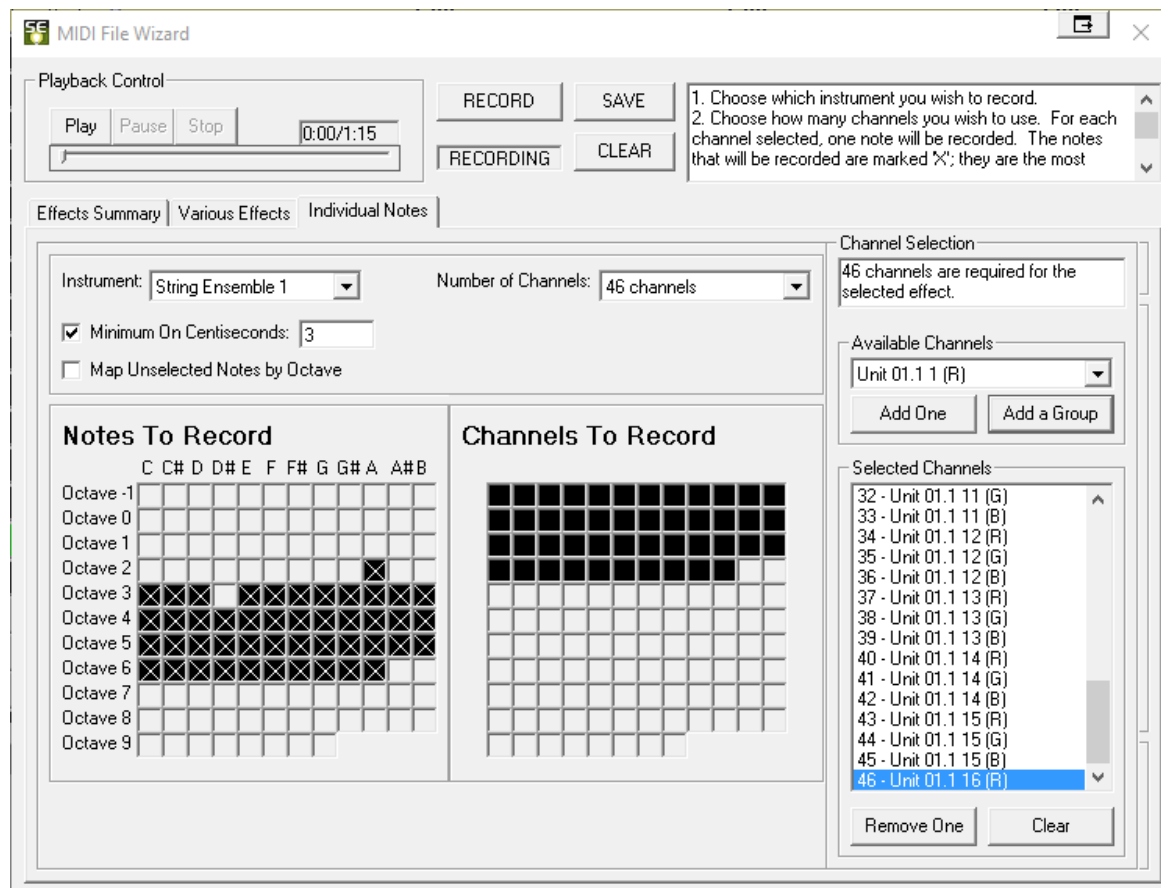
"Reverse" will make the pattern go in the opposite direction.

"Back & Forth" will cause the pattern to periodically reverse directions. Exactly how often it does so can be set using the "Back & Forth Counts" section.

### 5.3.9.4.3 The Individual Notes Tab

The [MIDI File Wizard's](#) Individual Notes tab can be used to populate a [sequence](#) with [timings](#) and [lighting effects](#) based upon the notes that are played in a MIDI file's song. For example, lights can be made to flash whenever a trombone plays a G note.





The MIDI File Wizard's Individual Notes tab

There are two ways to use the tab - while recording effects and while not recording effects. By default, hitting "Play" will play the song, and let you choose patterns for the lights, but no effects will be recorded to be inserted into the sequence. This allows you to adjust the patterns to your liking before actually recording effects.

To play without recording, simply hit the "Play" button.

To record, first select the instrument that you wish to record. The notes that that instrument uses in this song will be displayed as black boxes in the "Notes To Record" section, with white X marks in them.

Next, select the number of channels that you wish to use for the recording. If you choose a number less than the full number of notes that the instrument uses in the song, some of the white X marks will go away; the same number will be left as the number of channels that you selected. Those white X marks indicate the notes that will actually be recorded - one note per channel. They are decided based upon how often each note is played by the instrument in the song; the most frequently used notes will be recorded.

Next, a couple of options can be selected, if you wish:

- Selecting "Minimum On Centiseconds" will force any channel that turns on to stay on for at least the specified duration. This prevents very fast notes from causing your lights to blink very quickly.
- "Map Unselected Notes by Octave" can be used to record notes of the same pitch class into a single

channel. For example, if an instrument uses two or more different F-sharp notes (in different octaves) during the song, and you have not specified enough channels to record them individually, then if a F-sharp that is not directly mapped to a channel is played, but another F-sharp is mapped to some channel, then that note will be recorded into the channel assigned to the closest F-sharp having a channel.

Next, select which [channels](#) from the sequence the notes will be recorded into, using the "Channel Selection" section (which is on the right). You will not be allowed to record effects until the full number of required channels (which you chose in the previous step) has been assigned. You can select a channel from the dropdown list, and add it to the selected channels by pressing "Add One", or you can add several channels at once (starting with the selected channel) by pressing "Add a Group". At the bottom of the "Channel Selection" section are buttons enabling you to remove a channel from the selected channel list, or to clear the entire list.

Next, click the "Record" button. If you have not assigned the required number of channels, you will be told that you cannot record until you do so. If, however, you have, the "RECORDING" label (near the top) will turn red, and you can then hit "Play" to actually play the sequence and record effects.

After play ends (either at the natural end of the song or by hitting "Stop"), hit "Record" again (at which point the red "RECORDING" label will turn off), and "Save" to save the recorded effects to the sequence. Or, if you were not satisfied with the recorded events, you can hit "Clear" to get rid of them.

## 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](#)
- [Visualization Sequences](#)
- [Summary of Commands and Keyboard Accelerators](#)
- [Purchased Sequences](#)

### 5.4.1 Welcome

In the [SuperStar Sequencer](#), you can create:

- [Instant Sequences](#)
- [Custom Sequences](#)
- [Visualization Sequences](#)
- [A quick visualization](#)

### 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 three 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.

## Custom Sequences

Create [custom sequences](#) like the ones that can be seen on [the Light-O-Rama website](#). These sequences were created using scenes, morphs, images, and text actions, which you can learn about in this help file.

## Visualization Sequences

Using the [visualization sequences](#) feature, you can sequence all of your lights using the [SuperStar Sequencer](#). After creating a visualization file using the Light-O-Rama Visualizer, you can import the file into SuperStar by clicking on the File menu and selecting "Import Visualization". Apply effects to your lights and play them back. You can even use the [Instant Sequence](#) feature on the visualization.

## Create a Quick Visualization

Want to use the "[Instant Sequence](#)" feature but don't have a visualization of your lights? SuperStar can create a quick visualization file for you.

- Click on the Tools menu and select "Create Quick Visualization"
- Place a checkmark by each controller that you have. If necessary, change the settings for each controller.
- Click on "Create QuickVis", and it will create a visualization file named "QuickVis.lee". The visualization will be a grid of lights where each light represents a [channel](#). With this grid of lights, you can now use Instant Sequence to create a sequence for your lights.

### 5.4.2 Overview

This page gives an overview of the [Light-O-Rama SuperStar Sequencer](#):

- [A new approach](#)
- [Exporting a sequence](#)
- [Exporting in the new intensity data format](#)
- [Playing a sequence exported as intensity data](#)
- [Exporting in the legacy format](#)
- [Merge Intensity Data Files](#)
- [Playing a sequence exported in legacy format \(play as a standalone sequence\)](#)
- [Playing a sequence exported in legacy format as a subsequence](#)
- [Floating windows](#)
- [Placing a sequence exported in legacy format into your main sequence using "Copy/Paste"](#)
- [Things to note](#)
  - [The Demo version](#)
  - [Default layout](#)
  - [PowerPoint presentations](#)

## A New Approach

The [SuperStar Sequencer](#) is a new approach to light sequencing. Think of the SuperStar Sequencer

as a "front end" to the [Light-O-Rama Sequencer](#). A series of effects are created and can be played to the computer screen, but to play the sequence to your Cosmic Color Ribbons or other lights, you export the SuperStar sequence to a file that the Sequencer can play.

If the exported file is from a [Visualization Sequence](#) and the SuperStar sequence contains all you lights, then you can play the file as a standalone sequence, simply by opening the exported file in the Light-O-Rama Sequencer and playing it.

If the exported file only contains the CCRs of the sequence, then the exported file can be played in one of three ways:

- [As a standalone sequence](#) (just load the file into the Sequencer and play it).
- [As a subsequence](#) in your main sequence.
- [Place the sequence into your main sequence using copy and paste](#) in the Sequencer.

## Exporting a Sequence

To export a [sequence](#), click on the File menu and select "Export to [Sequencer](#)". The "Export to Sequencer" 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.
- "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 New Intensity Data Format

Intensity data gets placed on a line at the bottom of a [Sequencer 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 Sequencer](#). Click on the "Existing Sequence" tab. Select the file you exported, and click on the "OK" button. Click on the [Play button](#).

## 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. This is relatively simple to do and is [described below](#).

To combine a legacy format sequence with a main sequence you can use the [subsequence method](#), or the [copy/paste method](#). These two methods are described below:

## Merge Intensity Data Files

The [Sequencer](#) will only play one [SuperStar](#) intensity data file for any given [sequence](#). In a large light display, you may have more than one mega tree or matrix, and you might sequence each of them separately. To be able to use intensity data for all of them, you can merge the intensity data files together:

First, export each piece of your display as an intensity data file by doing the following:

First, export the individual pieces:

- Click on the File menu and select "Export to Sequencer"
- Select "Export in New Format (as Intensity Data)"
- Select "Add Intensity Data to New Sequence"
- Click on "OK", and type in a file name and export to that file name.
- Do this with each piece of your display that you sequence separately.

Next, merge them together:

- Click on the File menu and select "Merge Intensity Data Files"
- Click on the "Select Intensity Data Files to Merge" button
- In the dialog box that appears, select two or more files (using Ctrl + left mouse click)
- Select "Add Merged Intensity Data to Existing Sequence" or "Add Merged Data to New Sequence"
- Click on OK.

Finally, launch the Sequencer and open the sequence with the merged intensity data. You should see a light blue colored line at the bottom of the sequence that says "Pixel Editor and SuperStar Props", and below that you should see a row labeled "SS Props". The "SS Props" line is the merged intensity data.

## Playing a Sequence Exported in Legacy Format (Play as a Stand-alone Sequence)

Launch the [Light-O-Rama Sequencer](#). In the New and Open dialog, click on the "Existing Sequence" tab. Select the file that you exported from the [SuperStar Sequencer](#) (in the [example given above](#), the exported file name was "MyAwesomeSequence.sup.lms"). Click on the "OK" button, and then click on the Sequencer's ["Play" button](#).

## Playing a Sequence Exported in Legacy Format as a Subsequence

To use an exported [SuperStar](#) sequence as a [subsequence](#), launch the [Light-O-Rama Sequencer](#).

Open your [sequence](#) that you want to put the exported sequence into as a subsequence. Insert a new [channel](#) into the sequence, and click on that [channel's button](#) to open up its [Channel Settings dialog](#).

Change the channel's device type to "Sequence", and then click on the "..." button (near the bottom, on the "Sequence" line) to select the file that you exported from SuperStar (in [the example above](#), "MyAwesomeSequence.sup.lms"). Also change the channel's name and color if you wish.

The subsequence will be played only while the grid boxes for this channel are on, so use the Sequencer's [On tool](#) to turn them on for the time range (or ranges) that you want. For example, to play the subsequence throughout the entire sequence, select the entire row, and apply the On tool to it.

The main sequence and the subsequence should not both try to control the same lights; it is recommended that any circuits referred to in the subsequence are removed from and kept out of the main sequence. Doing otherwise may cause unpredictable results.

## Floating Windows

When using a large number of CCRs, or when [importing a visualization](#) of a large display, 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".

## Placing a Sequence Exported in Legacy Format into Your Main Sequence Using "Copy/Paste"

To place an exported [SuperStar](#) sequence into a main [sequence](#) using copy and paste, launch the [Sequencer](#) and open the sequence that you exported from SuperStar, and select all channels in it, from the beginning to the end. Copy them.

Next, make sure that your Clipboard's paste mode setting is set to Paste by Time.

Then open your main sequence. Define the CCR [channels](#) in it (for example, using the "[Cosmic Color Device](#)" option of the [Insert Device dialog](#) - use a resolution of 50 pixels, native mode for the unit IDs, and triples for the channel mode). Define one such CCR in the sequence for every CCR that you have in SuperStar. Select the first cell in the first row of the CCR channels that you added, and paste.

If the sequence has some star channels, copy and paste them in a similar manner.

## Things To Note

- [The Demo version](#)
- [Default Layout](#)
- [PowerPoint Presentations](#)

### ***The Demo Version***

The Demo version of the [SuperStar Sequencer](#) will not export [sequences](#). However, all other functionality is the same as the [paid versions](#). You can sequence to any number of ribbons and save the sequence in the SuperStar format; you just can't export those SuperStar sequences to the [Sequencer](#).

## **Default Layout**

The default layout is 12 Cosmic Color Ribbons (CCRs) with a star at the top. The star is optional, and the number of ribbons is configurable from 1 to 64. To change the configuration, click on the Tools menu and select "Configuration".

## **PowerPoint Presentations**

There are PowerPoint presentations related to SuperStar which you can download from [the Light-O-Rama website](#).

### **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.

"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, green, 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 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 reached 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 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.

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 assign 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 frequencies 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 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.

## **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](#)
- [Export](#)
- [Creating a Morph](#)
- [Creating an Image Action](#)
- [Import Image](#)
- [Creating an Animation](#)
- [Creating Text](#)
- [Smooth Effects](#)
- [Groups of Effects](#)
- [Select One or More Rows](#)
- [Export Raw Color Values](#)
- [Export Macro Channels](#)
- [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](#)
- [Balanced Color Mode / Full Color Mode](#)
- [Cool White vs. Warm White](#)
- [Smooth Ramps](#)
- [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](#)
- [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.

## 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".

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

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 Export

If you are running the Demo version of the [Light-O-Rama SuperStar Sequencer](#), then Export will not work, but you may want to read through this section just to see how it works in the [full version](#).

The SuperStar Sequencer stores the effects in ".sup" files, but the effects can be exported as ".lms" or ".las" files so that the [Light-O-Rama Sequencer](#) can read and play them.



- [Initialize the screen](#)
- [Launch the Scene dialog box](#)
- [Create a scene using the first pixel of the first ribbon](#)
- [Save as an .sup file](#)
- [Export as an animation sequence](#)
- [Open the animation sequence with the Sequencer](#)
- [Load the file as a subsequence in the Sequencer](#)
- [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 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.

## Create a scene using the first pixel of the first ribbon

Click on the upper left pixel of the pixel grid, then click on the "Add" button in the Scene dialog box.

## Save as an .sup file

Click on the File menu, then click on "Save As". In the Save As dialog box, type "OnePixel". Click on the Save button, and the effect will be saved as OnePixel.sup.

## Export as an animation sequence

Click on the File menu, and then click on Export. If you are running the Demo version, you will get an error box saying that Export is not available, but if you are running the full version, the "Save as Light-O-Rama Animation Sequence" dialog box will appear. The name of the file will default to "OnePixel.sup.las"; click on the Save button, and the file will be saved in the Light-O-Rama Sequences directory.

## Open the animation sequence with the Sequencer

Launch the [Light-O-Rama Sequencer](#) and open the file "OnePixel.sup.las". On the left side, the first 16 [channel buttons](#) will be labelled "Star 01" through "Star 16". The 17th button will be labelled "CCR01-P01-Red", and on this row there will be a fade from 1.00 to 2.00 seconds. Note that "CCR01" means "Ribbon 1", and "P01" means "Pixel 1".

Also note that with a star and 12 ribbons there are 1936 channels in the Sequencer. Imagine trying to sequence 12 ribbons using this huge grid! The SuperStar Sequencer makes it so that you do not have to deal with this grid.

## Load the file as a subsequence in the Sequencer

- Close the "OnePixel.sup.las" file in the [Sequencer](#).

- Open any existing [animation sequence](#) or [musical sequence](#) that you already have.
- Right click on the first [channel button](#) at the top of your sequence.
- In the [popup menu](#), select "[Insert Channel Above](#)".
- Right click on the "New Channel" button that you just inserted.
- In the popup menu, select "[Change Channel Settings](#)"; the [Channel Settings dialog box](#) will appear.
- Change the name of the [channel](#) to something like "SuperStar".
- In the "Device Type" dropdown list, select "Sequence".
- On the "Sequence" line (near the bottom of the dialog), click on the "..." button. The "Open" dialog box will appear.
- Select the file "OnePixel.sup.las", and click on the "Open" button.
- Click on the "OK" button in the Channel Settings dialog box.

You are not done yet! The [subsequence](#) will only be played while the grid boxes for this channel are on. So, you want to set the grid boxes on for the entire row, all the way to the end of the sequence. To do this:

- Select one of the boxes on the row. Click on the Edit menu, hover over Select, and a flyout menu will appear. On the flyout menu click on "Row(s)". This will select the entire row.
- Right click on one of the boxes in the row, and select "[On](#)" from [the popup menu](#). This will turn the entire row on.

Now when you play your sequence, the subsequence will be played at the same time.

The main sequence and the subsequence should not both try to control the same lights; it is recommended that any circuits referred to in the subsequence are removed from and kept out of the main sequence. Doing otherwise may cause unpredictable results.

## Discussion

The file extension ".lms" stands for "Light-O-Rama Musical Sequence", and ".las" stands for "Light-O-Rama Animation Sequence". The file in the exercise was saved as an [animation sequence](#) because there was no music file loaded. If you opened a song file for "OnePixel.sup", it would have been exported as a [musical sequence](#) ("OnePixel.sup.lms") instead of an animation sequence ("OnePixel.sup.las").

In the exercise, we used the default name of "OnePixel.sup.las". However, you could name it anything you want, so long as it ends with ".las" or ".lms". For example, you could call it "OnePixel.lms" or "FromSuperStar.lms". But the idea is that if you already have a musical sequence for your other lights, called "MyAwesomeSequence.lms", and you want to incorporate your Cosmic Color Ribbons as a part of that same show, then in the [SuperStar Sequence](#) you could call it "MyAwesomeSequence.sup", and when it gets exported it will be called "MyAwesomeSequence.sup.lms". Thus it would be clear that it is an .lms file exported from an .sup file.

It is expected that MyAwesomeSequence.lms and MyAwesomeSequence.sup.lms both use the same music file and both are of the same length. However, if MyAwesomeSequence.sup.lms were shorter than the main sequence, and the [channel](#) assigned to the [subsequence](#) were on for the entire length of the main [sequence](#), then the subsequence will loop and start playing over.

#### 5.4.4.3 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

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.

## 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 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.

### 5.4.4.4 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.

## 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.

## 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.

### 5.4.4.5 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

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:

- 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.

#### 5.4.4.6 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](#)

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.

## 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 will 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.
- 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

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 button 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.

### 5.4.4.7 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!

- [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](#)
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- [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.

## 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
- 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 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.

- 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.

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 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!

#### 5.4.4.8 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 three types of smooth effects: [Shockwave](#), [Spiral](#), and [Fan](#).

### 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.

### 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 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 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.

## **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 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 will 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.

### ***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
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.

#### **5.4.4.9 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, choose "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

### 5.4.4.10 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.

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.

### 5.4.4.11 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.

#### 5.4.4.12 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".

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 or 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 field, 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.

### 5.4.4.13 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  $12 \times 50 \times 3 = 1800$  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.

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 sequence 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 duration to 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.

### 5.4.4.14 "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.

## 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.

### 5.4.4.15 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.

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.

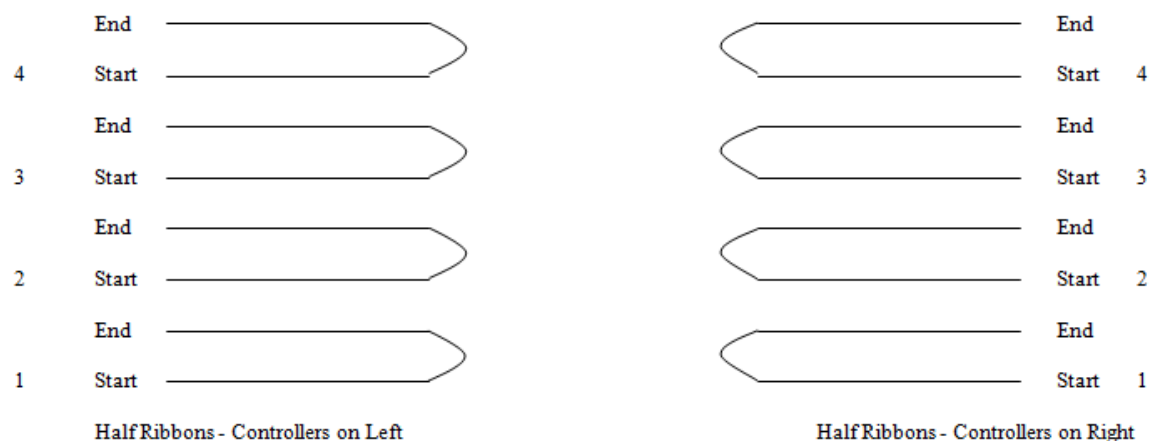
When using half ribbons you must lay out your ribbons as diagrammed below:

- [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](#)

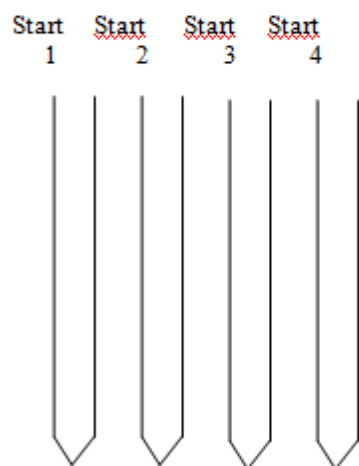
### ***Location of Ribbon Controllers when Ribbon Length is Set to Half and Ribbon Orientation is Set to Horizontal***



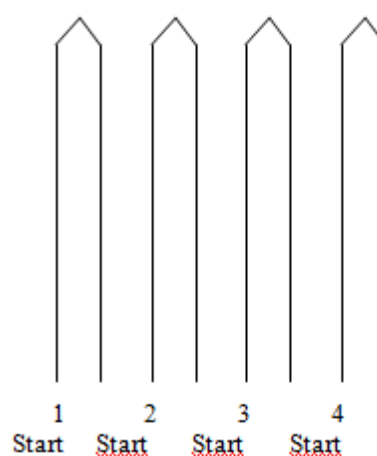
- Set "Left" if your CCR controllers are on the left end of your ribbons.
- Set "Right" if your CCR controllers are on the right end of your ribbons.
- Note that for a horizontal layout, the first controller should be at the bottom, and the last controller at the top.

### ***Location of Ribbon Controllers when Ribbon Length is Set to Half and Ribbon Orientation is Set to Horizontal***

Half Ribbons – Controllers on Top



Half Ribbons – Controllers at Bottom



- 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.



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.

### *Pixel Editor 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.

Click on the "File" menu and select "[Export to Sequencer](#)" to play the sequence from the [Sequencer](#).

#### 5.4.4.16 Balanced Color Mode / Full Color Mode

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:

First, 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.

Second, 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.

Third, 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 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](#)
- [Balanced Color Mode](#)
- [Full Range Color Mode](#)
- [Go Back to Balanced Color Mode](#)

### 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.

### 5.4.4.17 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 also completely on, they will look yellowish.

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.

### 5.4.4.18 Smooth Ramps

As discussed in the [Balanced Color Mode / Full Color Mode](#) 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 example, try the following:

- [Set Smooth Ramps mode](#)
- [Add a non-smooth ramp](#)
- [Add a smooth ramp](#)
- [What are we doing?](#)
- [Observe the difference](#)
- [Summary](#)

## Set Smooth Ramps mode

- Click on the Tools menu and select Configuration.
- Select Smooth Ramps in the Configuration dialog box.

## Add a non-smooth ramp

- 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.

## 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.

## 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).

## 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).

## 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.

#### 5.4.4.19 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 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.

#### 5.4.4.20 Export Macro Channels

Light-O-Rama Cosmic Color Devices have seven macro channels. [SuperStar](#) does not use the macro channels, so the default is to not export them. If you want to see the macro channels in your exported [sequence](#), then select "Export Macro Channels".

#### 5.4.4.21 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](#).

#### 5.4.4.22 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.

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 hexadecimal, 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 hexadecimal 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.
- **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
- 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 Sequencer](#).
- Click on the Edit menu.
- Move the mouse down to Preferences at the bottom of the Edit menu; a flyout menu appears.
- Select Network Preferences from the flyout menu; the Network Preferences dialog appears.
- Select a comm port for each [network](#) that you plan to use.
- **Important:** For all networks you are using, select "[Short Range \(Faster\)](#)"

### 5.4.4.23 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.

### 5.4.4.24 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 Visualization Sequences

The [Light-O-Rama SuperStar Sequencer](#) can import visualizations created using the Light-O-Rama Visualizer.

- [Import Visualization](#)
- [Special notes on Import Visualization](#)
- [Import Visualization Pair](#)
- [Create Wrapped Tree Visualization](#)
- [VisEffects](#)
- [Instant Sequences using a visualization](#)
- [Instant Sequences using a quick visualization](#)
- [Is the SuperStar program now a Visualizer program?](#)
- [Selecting a light fixture](#)
- [Adding an effect](#)
- [Play the effect](#)
- [Add a morph](#)
- [Play it](#)
- [The concept](#)
- [Instant Sequence](#)
- [Visualizer Keywords/SuperStar Settings in Visualizer Props and Fixtures](#)
  - [Visualizer Prop Parameters](#)
  - [Visualizer Fixture Parameters](#)
- [Future enhancements](#)

## Import Visualization

To use this feature, click on the [SuperStar Sequencer's](#) File menu and select "Import Visualization...". The Import Visualization dialog box will appear:

- **Scrunch the Sequencing Grid:** "Scrunch the Sequencing Grid" and it will scrunch everything into as few rows as possible. Using "Scrunch the Sequencing Grid" makes it so if you have 100 light fixtures or less, you will be able to fit all of them onto two sequencing rows. Note: [Instant Sequence](#) will work best if you do not "Scrunch the Sequencing Grid".
- **Sorted by Rows:** This setting will produce the best Instant Sequences, and is the recommended setting for importing a visualization. Your lights will be sorted by rows, and each light fixture will be represented by a box on the green sequencing rows. The program does its best to sort your lights along the rows that it sees. Many light displays have two or three rows of lights; for instance, there could be lights at the roof line, the window line, and the ground line. In that case, the program will create three rows of green sequencing squares above your visualization. The first row will contain the light fixtures that the program found at the roof line, the next row will contain the light fixtures that the program found at the window line, and the third row will contain the light fixtures the program found at the ground line. Note that this is just an example; the program may find a different number of rows in your visualization.

A sequencing row can only have 50 boxes, so if you have more than 50 light fixtures in a row on your visualization, then the light fixtures will be split into more than one sequencing row. If you have a prop with many light fixtures in it, the program does its best to not split the prop between lines. Props are assigned to a row as a group. The center of the prop is used to decide which row the prop will be placed in.

**Important note:** The fixtures in a prop will be placed onto the row in the same order that they were added in the Visualizer. To change the order of the fixtures, do the following:

1. Launch the Visualizer program.
2. Bring up the Properties dialog box for that prop.
3. In the "General" tab, click on the "Change Order of Fixtures" button at the bottom.
4. Save the visualization file.
5. Import the visualization file into SuperStar.
6. Click on the fixtures in the prop, and you should see that they are ordered differently in the green sequencing row.

CCRs are always placed first. The sorting applies only to props and light fixtures.

In short, the program sorts things in a way that makes it easiest to sequence, and will produce the best instant sequences.

- **Sequencing Grid:**

**Max Length:** This sets the maximum length of a sequencing row. The max length can be set from 25 to 200. The default is 50, and this works best for most visualizations. If you have a row of lights in your visualization that will not fit into one sequencing row, then you can increase the length of a row so that the row of lights will all fit into one sequencing row. Do not make this value any larger than necessary, because it can make the size of the squares in the sequencing grid small and harder to click on.

**Horizontal:** Most light displays are wider than they are tall. For most displays, it is suggested that you use a horizontal display. This will place a horizontal sequencing grid above your visualization, and leaves the most room for your visualization.

**Vertical:** Vertical orientation is designed for displays that are taller than they are wide. For example, if you are sequencing a visualization of an RGB megatree then you would want vertical orientation. A vertical orientation will place a vertical sequencing grid to the right of your visualization.

**Normal:** Normal mode creates one green sequencing square for each fixture or CCR pixel on your visualization.

**Wrap Around:** Wrap Around mode creates a duplicate set of sequencing squares to the right of the normal set of sequencing squares so that you end up with two green sequencing squares for each fixture or CCR pixel on your visualization. This mode is designed for use with 360 degree trees. It allows easier creation of effects so you can start them at any point on the tree and wrap around to any other point on the tree. For example, you can start a morph in the middle of the tree and end it on the middle of the wrap around part of the sequencing grid. The resulting morph will start in the middle of the tree, cross the last string onto the first string, and end in the middle of the tree.

- **Maximum Detection Lines (green lines on the visualization):** This setting defaults to 4, and with a setting of 4 means that your lights will be assigned to four rows or less. The detection lines are drawn in green across the visualization. A setting of 4 works well for most displays. However, if your display is large or just has a lot of different rows, then try increasing the number. For example, if you have a row of mini-trees, you would want them all in the same sequencing row and to be consecutive in the row. If other fixtures are being placed in between some of the mini-trees, then you could increase the Maximum Detection Lines setting to 5 or 6 or higher until all the mini-trees get put consecutively into their own rows.

In some cases, you will need to move the fixtures and props a bit in your visualization to isolate them into their own areas so that they get placed into rows in the desired manner.

## Special notes on Import Visualization

The SuperStar Sequencer allows fixtures with identical channel assignments. For example, you may have a snowman fixture and a bell fixture that are both plugged into the same channel, so that they have the same channel assignment. In this example, the snowman and the bell will be treated as if they were one fixture, and will be assigned to the same square on the sequencing grid.

When importing your visualization, you may get the following warnings:

- **"Warning: Found one or more fixtures with unassigned channels. Fixture [Bush 01] has no channels assigned. This and any other fixtures with no channels assigned will be dark gray and will be inactive."** This warning means that the fixture mentioned (in this example, "Bush 01") has no channels assigned to it. A fixture with no channels assigned cannot be exported because the program has no channel information for that fixture. Therefore, the fixture is drawn in dark gray and cannot be selected, nor can any effects be assigned to it. Note that the fixture mentioned in the warning is the first fixture found with no channels assigned; there could also be other fixtures with no channels assigned. Also realize that you can still sequence all the other fixtures and export the sequence, and all other fixtures will work.
- **"Warning: Found some fixtures that share a channel yet don't share all channels. Channel [White] in Fixture [Mega Tree bundle 01] and Channel [Red] in Fixture [Mega Tree bundle 04] are both assigned to 0A.02. This usually happens when a wrong channel is entered by mistake. Please use the Visualizer program to check the two fixtures mentioned to see if a channel was entered by mistake. The SuperStar Sequencer allows fixtures that have identical channels but does not allow fixtures where some channels are the same and some are not. When this happens, the first occurrence of a channel will be active, the duplicate occurrences of a channel thereafter will be inactive."** This very long warning attempts to explain that the program allows fixtures to have identical channel assignments, but if two fixtures share some channels but have some channels that are different, it is difficult for the program to decide how you would want those fixtures assigned to the sequencing grid, and so it disables the duplicate channel assignments. As mentioned in the warning, this may have happened because you entered incorrect channel information by mistake. However, if you intentionally assigned the channels in this manner, the program doesn't know how to handle it. You are encouraged to use a different channel assignment scheme, but if you can't, it just means that manual sequencing for those fixtures could be difficult. You can still use Instant Sequence, and the sequence should look OK, and will export and play fine.
- **"Warning: A Cosmic Color Device such as a CCR, CCB, or CCP shares a channel with another fixture. Fixture [CCR 02] and Fixture [Bush 03] both use channel 02.03. This usually happens when a wrong channel is entered by mistake. Please use the Visualizer program to check the two fixtures mentioned to see if a channel was entered by mistake."**

**The SuperStar Sequencer does not allow a Cosmic Color Device to share channels with other fixtures. Fixture [Bush 03] will be dark gray and will be inactive.** This warning is self-explanatory. Using the same channel assignment for a fixture that is in a CCR is invalid. The fixture will be drawn in dark gray, and you will not be able to select it. As with the other warnings, realize that all other fixtures will sequence and export just fine.

## Import Visualization Pair

To use this feature, click on the "File" menu and select "Import Visualization Pair...". Use the "Choose Row Visualization..." button and the "Choose Real Visualization..." button to choose the visualization files you want to import. Then use the "Import Visualization Pair" button to import both of the files.

**Purpose of having two visualizations:** Import Visualization Pair allows the import of a "Row Visualization" and a "Real Visualization". If you already have a visualization of your light display, you probably laid the lights out to appear as they do in your actual display. Use this visualization as your "Real Visualization". You can move the fixtures and props around to organize them in rows and then save that visualization with a different name, and that becomes your "Row Visualization". SuperStar will create the sequencing grid based upon how you have organized your "Row Visualization". While entering normal effects, the "Row Visualization" will be displayed on the SuperStar screen. During the playback of the sequence, the "Real Visualization" will be used. When entering [visEffects](#), the "Real Visualization" will be displayed.

**Example of using two visualizations:** This is a powerful feature that allows you to design how your lights are mapped to the sequencing grid. For example, in your "Real Visualization", you might have some candy cane props where each candy cane has 12 channels, and you have four candy canes in a row. By default, SuperStar looks for rows of lights, and it will fit as many lights as it can in each row on the sequencing grid. But in this case, it is desirable to have each candy cane on its own row, so that you have four rows, each row with 12 squares for the 12 channels in each candy cane. Then it is easy to create effects that go up and down all the candy canes, as well as effects that travel across the candy canes. So, to accomplish this, you can move each of the four candy canes to their own row on the "Row Visualization", and still use the "Real Visualization" for playback and for entry of [visEffects](#).

In the samples folder, there is a file named CandyCanes\_sample.sup". Open and play this file, and you will see how it uses two visualizations to arrange the candy canes in a way that makes them easy to sequence.

## Create Wrapped Tree Visualization

Use this feature to create a visualization of Cosmic Color Pixels or Cosmic Color Bulbs wrapped around a tree. This is different than creating a mega-tree. Traditional mega-trees have vertical strings of lights. A wrapped tree has one long string of lights wrapped around the tree. This gives a more traditional look to the tree and also makes it so the concentration of lights is the same in all areas of the tree.

To create a wrapped tree visualization, click on the Tools menu and select "Create Wrapped Tree Visualization":

- **Units:** select inches or centimeters
- **Nbr of Trees:** Enter the number of wrapped trees you want to do. For example, you might have

8 mini-trees that you want to wrap with Cosmic Color Pixels.

- **Blank Grid Lines Between Trees:** If you have more than one tree you may want some blank columns on the sequencing grid between each tree. For example, if you have several mini-trees and you do a shock-wave effect on one, the effect may “bleed “ over to the trees next to it if there are no black lines in the sequencing grid.
- **Top Diameter:** This is the top diameter of the tree. It defaults to 0 but you can set it to any value from 0 up to the value set as the Bottom diameter.
- **Bottom Diameter:** This is the bottom diameter of the tree. This value must be 10 or greater. The upper limit of the value depends on the number of pixels you have and the spacing between the pixels. The diameter is measured starting from one point at the bottom of the tree and getting to the other side of the tree going through the trunk.
- **Top Circumference:** This field is linked to the Top Diameter field. Setting the diameter will also change the value in the circumference field. Setting the value in the circumference will also set the value in the diameter field.
- **Bottom Circumference:** This field is linked to the Bottom Diameter field. Setting the diameter will also change the value in the circumference field. Setting the value in the circumference will also set the value in the diameter field. The circumference is measured from a point at the bottom of the tree and going around the tree to arrive back at the same place you started.
- **Slant Height:** This is the slant height of the tree. Note that this is not the vertical height of the tree. In other words, it is the height of the tree measured from the outside edge of the base of the tree up to the top of where the lights stop on the tree. Note the top of the tree may be different from where the lights end at the top of the tree. You want to measure from where lights start to where the lights stop.
- **Pixel Spacing:** This is the space between the pixels on you string(s). For Cosmic Color Pixels this is 6 inches. But it is best to stretch out your string of lights and measure the length of the string to get the actually average spacing of your lights. For example, a string of Cosmic Color Pixels has 50 lights. Lay the string on the floor and pull on the end of the lights to give enough tension on the light string to equal the amount of tension you expect to be on the string as you wrap the tree. Then measure from the first pixel to the last pixel and then divide by 49. Note that you do not divide by 50, you divide by one less than the number of pixels because that is the number of spaces in what you are measuring. The idea is that the same spacing you are measuring on the floor is the same spacing you will have on the tree.
- **Nbr of Pixels:** This is the number of pixels in all of the strings of lights you are going to wrap around each tree. For example, if you have 4 strings of Cosmic Color Pixels, there are 50 pixels in each string so you have a total of 200 pixels. This means that you will be connecting the strings end-to-end and will treat them as one long 200 pixel string. One way to “connect them end-to-end” is to overlap the wires of the strings and use 2 zip ties to wrap around the overlapping wires. Adjust the overlap of the wires so that the spacing from the last light of the string to the first light of the next string is equal to the spacing of your pixels on the rest of the string.
- **Pixel Size:** This sets the size of the pixels in the visualization.
- **Create Wrapping Guide and Visualization:** This creates the wrapping guide and the visualization of the wrapped tree. Click on the combo box above this button to see the wrapping

guide values. The "Vert Marks" are the distance from the bottom of the tree to the start of each wrap. The "Wrap Marks" are the Pixel Count at the start of each wrap. For example, if the Vert Mark for wrap 3 is 10.75 then it means wrap 3 starts at 10.75 inches from the bottom of the tree. And if the "Wrap Mark" is 64.32 it means that wrap 3 starts at 64.32 pixels from the start of the string of pixels.

What you want to do is mark all the "Wrap marks" on your string of lights before you start wrapping. The first pixel starts at the bottom of the tree and marks the 0 pixel, then you count the pixels from there. So the first pixel is the 0 pixel, and the second pixel is the 1 pixel and the third pixel is the 2 pixel and so on. That means "wrap mark" 0.50 would be half way between the first and second pixel. 1.50 would half way between the 2nd and 3rd pixels. So to find pixel 64.32 you would start at the beginning of the string and skip the first pixel and start counting at the second pixel until your count gets to 64 and then mark a point that is about .32 beyond 64.

Note that a new wrapping guide and visualization only gets created if you click on the "Create Wrapping Guide and Visualization" button.

## VisEffects

The standard effects are placed on the green sequencing grid, and get played to the visualization. The visEffects are placed directly on the visualization, and also get played to the visualization. The difference is that visEffects use the position of the lights in the visualization instead of the position of the lights on the sequencing grid. You must have an imported visualization on the SuperStar screen in order to do visEffects.

Currently, visEffects are only supported by [morphs](#). Click on the Tools menu, and select "Morphs..." to bring up the "Morph Setup" dialog box. at the bottom of the dialog box, click on the "VisEffect" box. The visualization will become smaller, and you will see the "1a-1b" and "2a-2b" morph lines. Click on the Add button in the "Morph Setup" dialog box and play it. You will see the morph smoothly applied to all the lights in the visualization.

In the samples folder, there is a file named "CandyCanes\_sample.sup". Open and play this file, and you will first see some standard effects played to the candy canes. At the end, you will see some visEffects.

## Instant Sequences using a visualization

The Instant Sequence also feature works for visualizations, using the following steps:

- Click on the File menu and select "Import Visualization"
- Select a visualization file that you created using the Light-O-Rama Visualizer
- Press Ctrl+I to launch the Instant Sequence dialog box, and use the three 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

## Instant Sequences using a quick visualization

Want to use [Instant Sequence](#) but don't have a visualization of your lights? The [SuperStar Sequencer](#) can create a quick visualization file for you:

- Click on the Tools menu and select "Create Quick Visualization".
- Place a checkmark by each [controller](#) that you have. If necessary, change the settings for each controller. For example, if you have four 16 [channel](#) controllers and they have [unit IDs](#) 01, 02, 03, and 04, simply place a checkmark by the first four controllers listed in the dialog box.
- Click on "Create QuickVis", and it will create a visualization file named "QuickVis.lee". The visualization will be a grid of lights where each light represents a channel. With this grid of lights, you can now use Instant Sequence to create a sequence for your lights.
- After creating the sequence, click on the File menu and select "Export", and you will then be able to play the sequence to your lights using the [Light-O-Rama Sequencer](#).

## Is the SuperStar program now a Visualizer program?

No. The [SuperStar Sequencer](#) imports the visualization file and displays it in the SuperStar work area. The SuperStar Sequencer can only display the visualization file; the Light-O-Rama Visualizer is used to create or modify visualizations.

## Selecting a light fixture

After importing a visualization file, you can click on any of the light string fixtures to select them. A single click selects one item, while Ctrl+click can be used to select additional items. A click and drag will select any item within the drag rectangle. Each light string fixture is also mapped to a box in the green sequencing grid. When clicking on a light fixture, you will see it become selected, and will also see a green square get selected. You can also select fixtures by clicking on the green squares. Left click selects, and right click deselects.

## Adding an effect

- Select one or more light fixtures.
- Click on the Tools menu and select Scenes. The Scene dialog box will appear.
- Click on the Add button in the Scene dialog box. A white bar will appear in the time layer area. This bar represents the effect you just added.

## Play the effect

In the toolbar is a group of buttons that look like the controls on a tape recorder. Press the Play button (the button with a right-facing triangle); this will play eight seconds of the sequence. After pressing Play, you should see your selected light fixtures turn on when the play cursor runs across the white bar which represents the effect that you just added.

## Add a morph

- Click on the Tools menu and select Morphs. The Morph dialog box appears, and the first and last boxes in the green sequencing grid should have "1" and "2" on them.
- In the yellow time scale, select from 3.00 seconds to 4.00 seconds.
- Click on the Add button in the Morph dialog box.

A white bar with a tail should appear in the time layer area.

## Play it

Click on the Play button again. When the play cursor runs across the white bar with a tail, the morph will turn on every fixture, one at a time. In other words, the effect starts at the "1" on the green sequencing grid, and travels to the "2" on the green sequencing grid. This ends up doing a sweep or a chase across all the fixtures.

## The concept

Every light in your visualization has a location and a color. When selecting a fixture, you have selected a location. You select the color by using the red, green, blue and white color controls on the left side of the [SuperStar Sequencer](#). The default is to have all four color controls "on". However, if you want to turn on all the red lights in your display, turn on only the red color controls and select all your fixtures. Add a scene, and you will see only the red lights in your display turn on when you hit the Play button.

Note: Click on the word "Main" above the color controls, and it will cycle through the basic rainbow colors.

## Instant Sequence

You can use the [Instant Sequence](#) feature on your visualization:

- Click on the Tools menu and select "Instant Sequence".
- If you don't already have an audio file loaded, click on the "Open Audio File" button in the Instant Sequence dialog box.
- Click on the "Sequence All" button.
- After all the processing is done, click on the "Play/Stop All" button.

If you want to change the number of effects that are being created, click on the Timing Map button in the upper left of the Timing Map dialog box, and change the Sensitivity setting.

To create a different instant sequence, click on the "Roll Dice" button in the Instant Sequence dialog box. Then click on Sequence All, then Play/Stop All.

## Visualizer Keywords/SuperStar Settings in Visualizer Props and Fixtures

When you [import](#) a Visualization, [SuperStar](#) does its best to map the lights to the sequencing grid in a sensible way. But there are cases where you may want to change how the lights are mapped to the sequencing grid. In older versions of SuperStar, you used keywords that you placed in the comment area of a Prop or Fixture in a visualization. The keywords are still supported for backward compatibility, but the preferred way to apply these settings is now through the use of settings that are visible by pressing the "superstar" button that is in the Visualizer Prop dialog box and the Visualizer Fixture dialog box. By clicking on the "superstar" button you will be able to set all the same settings that were done by the keywords.

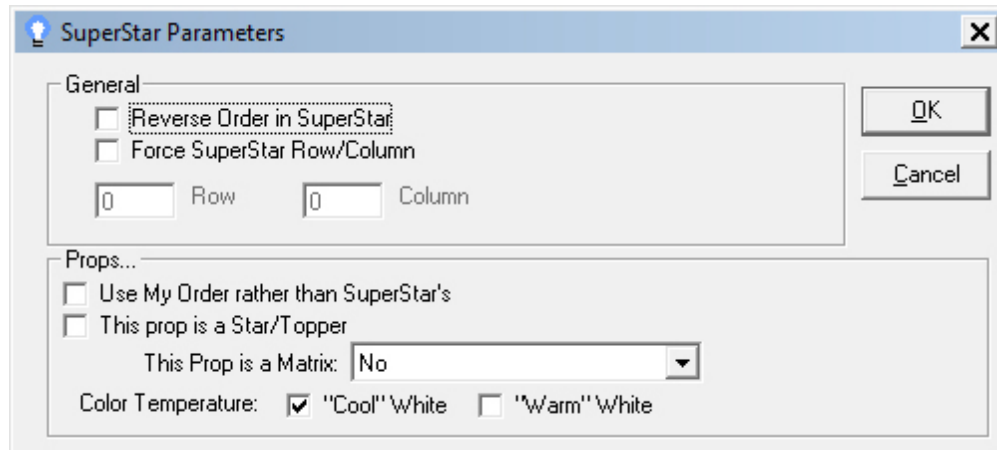
The following describes the old use the keywords. It is documented for backward compatibility. Instead of using the keywords, you should now use the "superstar" settings that are in the Prop dialog box and the Fixture dialog box in the Visualizer. Note that if you use keywords and Visualizer superstar settings, the keywords will take priority.

The word "superstar" in the comment area tells SuperStar that you have placed a keyword in the comment. After the word "superstar" you can place one or more of the keywords listed below. For example, if you wanted to mark your prop as a matrix, you would enter "superstar matrix" in the



comment area of the Prop Properties box in the Visualizer.

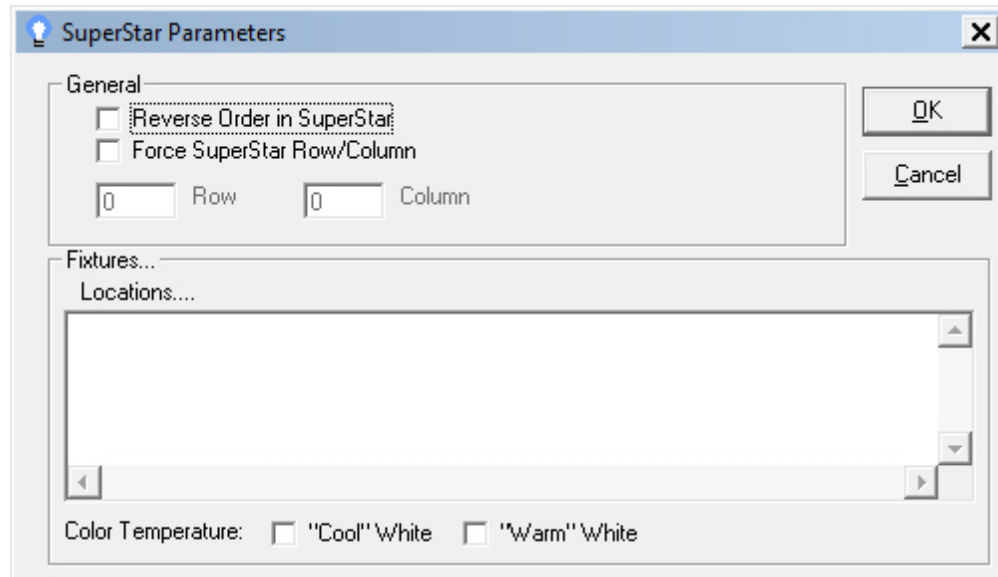
### ***Parameters that can be used with props***



**SuperStar Properties for Props, found in the Visualizer program**

- **Reverse Order in Superstar** - [Superstar](#) attempts to layout the fixtures in your prop in a logical order, but if it didn't do it in the order you want, then use this check-box to reverse the order of the fixtures in the prop. Note that reversing the order of the props using the Prop Properties dialog box will not change the order that SuperStar will use.
- **Force Superstar Row/Column** - Use this check-box along with the following 'Row' and 'Column' fields to change the row and column of the prop on the sequencing grid. Note that the row and column notation was created for a [vertical](#) import; if you use a [horizontal](#) import, then row and column will seem reversed. To see an example of the use of row and column, look at the 24x25Tree\_4RowGlob.lee visualization file from the Samples folder. You can open this file in the Visualizer to see how the keywords are used in the comment area of the props. You can also import this file into [Superstar](#) to see how the props have been moved down in the sequencing grid.
- **Use My Order rather than Superstar's** - This tells [Superstar](#) to disregard what row the fixtures are in, and instead add the fixtures in the same order as they have been added to the prop. Note that in the Prop Properties dialog box in the Visualizer, there is a "Change Order" button that allows you to change the order of fixtures in a prop. You can change the order there, and SuperStar will change the order in the sequencing grid as well. Also, if the prop contains CCRs, then the this check-box also tells SuperStar to add the pixels of the CCR in the same order as in the visualization.
- **This Prop is a Star/Topper** - This marks the prop as a star of a [Superstar](#) display. Use this to make sure that the star commands of a SuperStar sequence get mapped to the star in your visualization.
- **This Prop is a Matrix** - This marks the prop as a matrix of pixels. [Superstar](#) will automatically detect most matrix layouts. But if, for example, you have some CCRs or DMX Pixels arranged in a fan shape, you probably want the pixels arranged as a matrix in the sequencing rows, but SuperStar will not recognize the fan shape as a shape that should be a matrix. So, you can mark the fan prop as a matrix using this keyword.

### ***Parameters that can be used with fixtures***



**SuperStar Properties for Props**

- **Reverse Order in Superstar** - [SuperStar](#) attempts to lay out the pixels in a CCR or DMX Pixel fixture in a logical order, but if it didn't do it in the order you want, then use this check-box to reverse the order of the pixels in the fixture.
- **Force Superstar Row/Column** - Use this check-box along with the following 'Row' and 'Column' fields to change the row and column of the fixture on the sequencing grid. Note that the row and column notation was created for a [vertical](#) import; if you use a [horizontal](#) import, then row and column will seem reversed.
- **Locations** - Use this area to add a list of row and column locations for each light in the fixture. The row and column should be separated by a comma, and then there should be a space between each row, column pair. For example, "1,2 1,3" would mean place the first light in the fixture at row 1, column 2, and place the second light in the fixture at row 1, column 3. To see an example, look at the 24x25Tree\_4RowGlobe.lee visualization file from the Samples folder. You can open this file in the Visualizer to see how the location of pixels is specified for the globe fixture. You can also import this file into [SuperStar](#) to see how the lights in the globe fixtures have been moved down in the sequencing grid.
- **Color Temperature** - These check-boxes are used for fixtures containing RGB lights, marking such fixtures as having "cool white" LEDs or "warm white" LEDs. [SuperStar](#) uses these keywords to determine how to best balance the colors in RGB lights.

## Future enhancements

While a wide range of visualizations have been tested with the [SuperStar Sequencer](#), there is an even wider range of possible visualizations, and so it is difficult to test every scenario. So, as you work with your particular visualization, feedback is welcomed on ways that support can be improved for your particular needs. Please send such feedback to [wishlist@lightorama.com](mailto:wishlist@lightorama.com).

## 5.4.6 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](#)

### 5.4.6.1 Toolbar Summary

The following is a summary of the various buttons in the toolbar of the [Light-O-Rama SuperStar Sequencer](#):

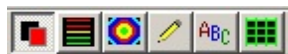


New Sequence, Open Sequence, Save Sequence, Cut, Copy, Paste

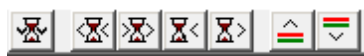


Delete a selected group, Fast Rewind, Rewind, Pause or Freeze Frame, Stop, Play 8 seconds, Forward, Fast Forward, Play All

Note: The space bar is an accelerator for "Play All".



Scene Mode, Morph Mode, Smooth Effect Mode, Image Mode, Text Mode



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](#).


#### 5.4.6.2 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

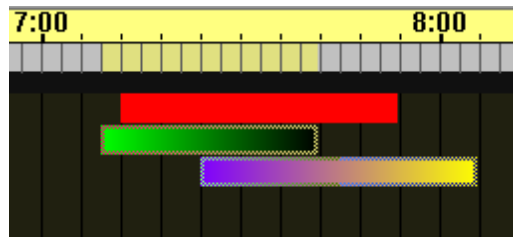
Ctrl +  = Big nudge length left

Ctrl +  = Big nudge length right

See also [Toolbar Summary](#).

#### 5.4.6.3 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.

#### 5.4.6.4 Top Part of Color Controls

The top part of color controls in the [Light-O-Rama SuperStar Sequencer](#):



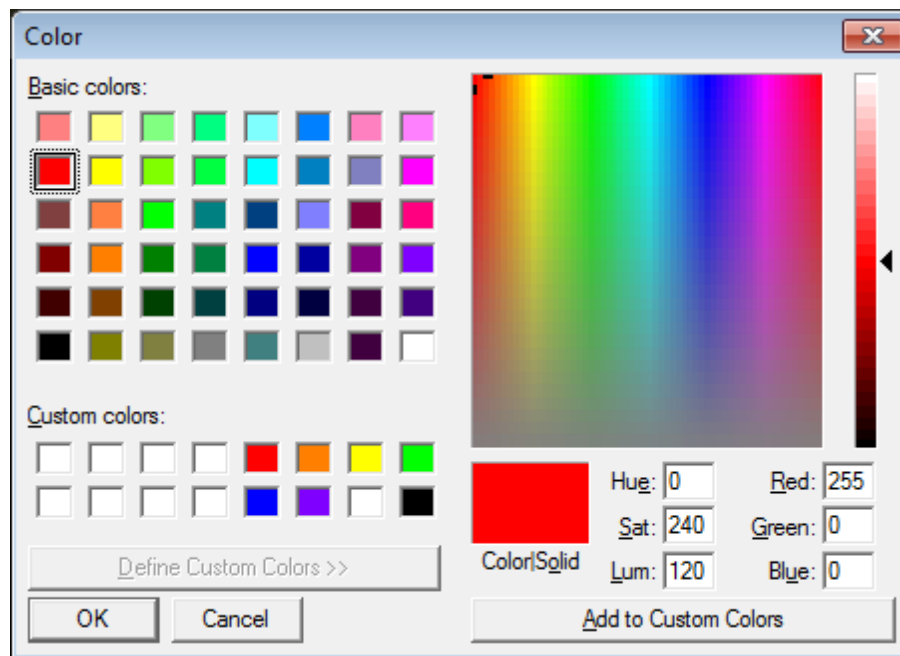
Top part of color controls

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](#).

#### 5.4.6.5 Color Picker Dialog Box

The Color Picker dialog box of the [Light-O-Rama SuperStar Sequencer](#):



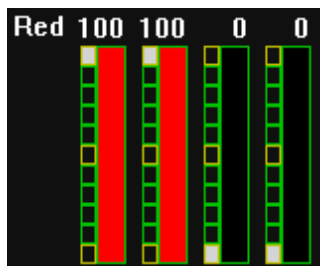
The Color Picker dialog box

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.

#### 5.4.6.6 Bottom Part of Color Controls

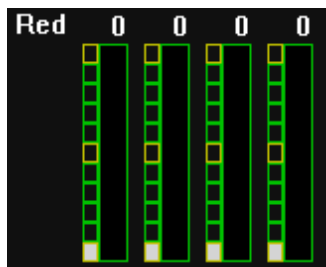
The bottom part of color controls in the [Light-O-Rama SuperStar Sequencer](#):



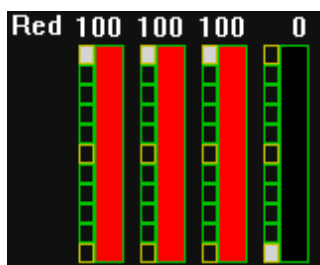
Bottom part of color controls

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:



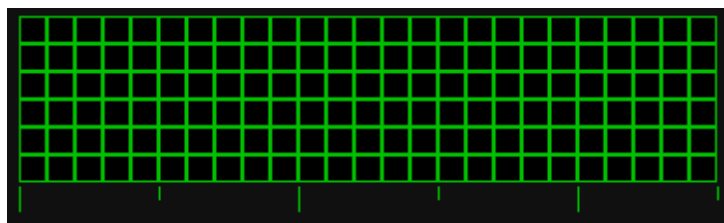
Before a double click on the first color



After a double click on the first color

#### 5.4.6.7 Sequencing Grid Commands for Scenes

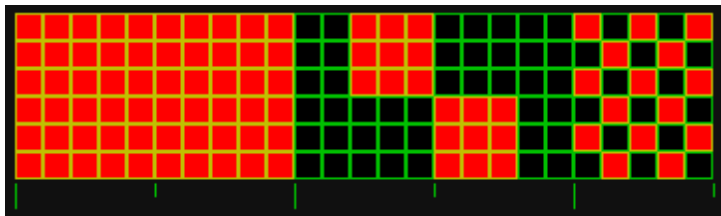
Sequencing grid commands for scenes in the [Light-O-Rama SuperStar Sequencer](#):



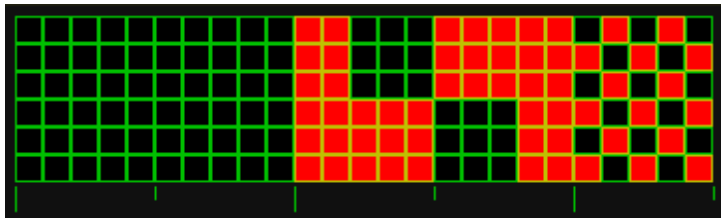
Sequencing grid for scenes

- Left mouse click = Set a pixel.
- Right mouse click = Clear a pixel.
- Left mouse drag = Set pixels.
- Right mouse drag = Clear pixels.
- Ctrl+left mouse click = Set all pixels.
- Ctrl+right mouse click = Clear all pixels.
- Shift+left mouse click = Toggle pixel.
- Shift+left mouse drag = Toggle pixels.

Example of a toggle:



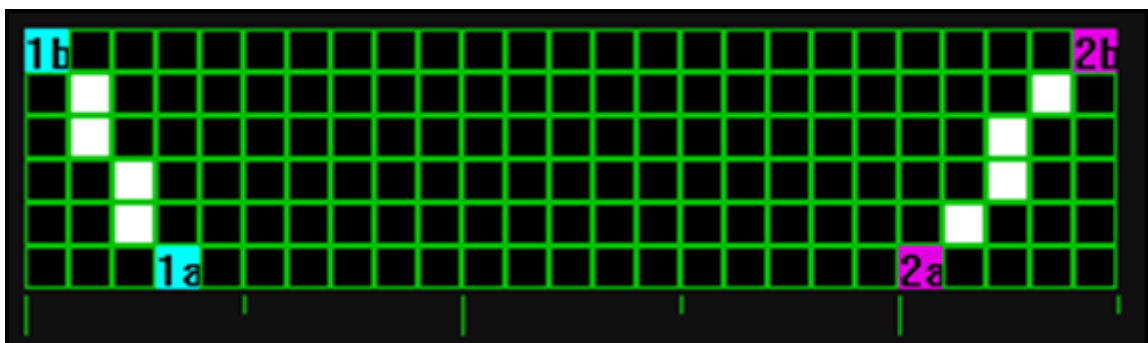
Before Shift+left mouse drag



After Shift+left mouse drag

#### 5.4.6.8 Selection Grid Commands for Morphs

Selection grid commands for morphs in the [Light-O-Rama SuperStar Sequencer](#):



Selection grid for morphs

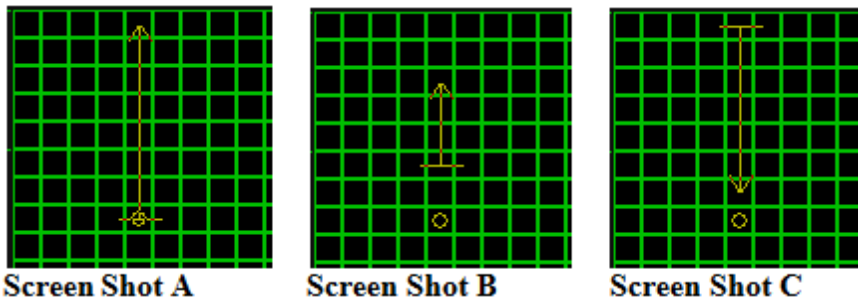
Left mouse drag to set the State 1 line: "1a" marks the beginning of the left mouse drag; "1b" marks the end.

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".

#### 5.4.6.9 Sequencing Grid Commands for Smooth Effects (Shockwave, Spiral and Fan)

Sequencing Grid commands for [Smooth Effects](#) ([Shockwave](#), [Spiral](#) and [Fan](#)) in the [Light-O-Rama SuperStar Sequencer](#):



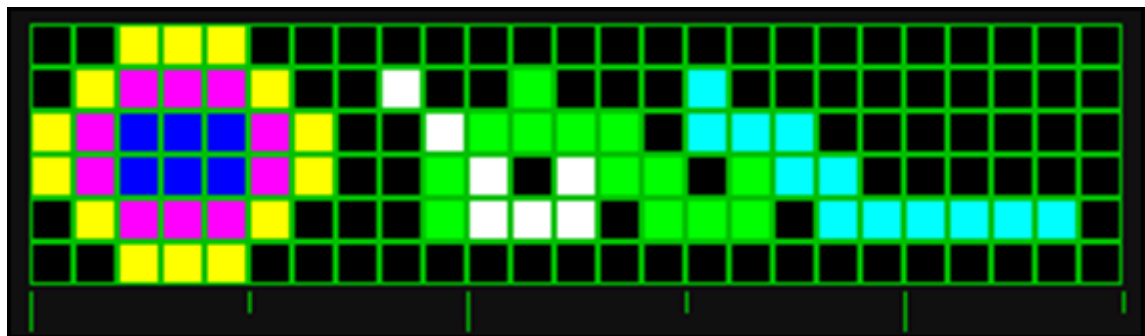
Use left mouse drag to set the center point and start angle. For example, Screen Shot A was created with a left mouse drag that started at the circle and ended at the arrow head.

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.

#### 5.4.6.10 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 click = Set all pixels
- Ctrl + right mouse click = Clear all pixels



- Shift + left mouse click = Set the color control to the color of the pixel
- Shift + left mouse drag = No action performed

### 5.4.7 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](#).

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:

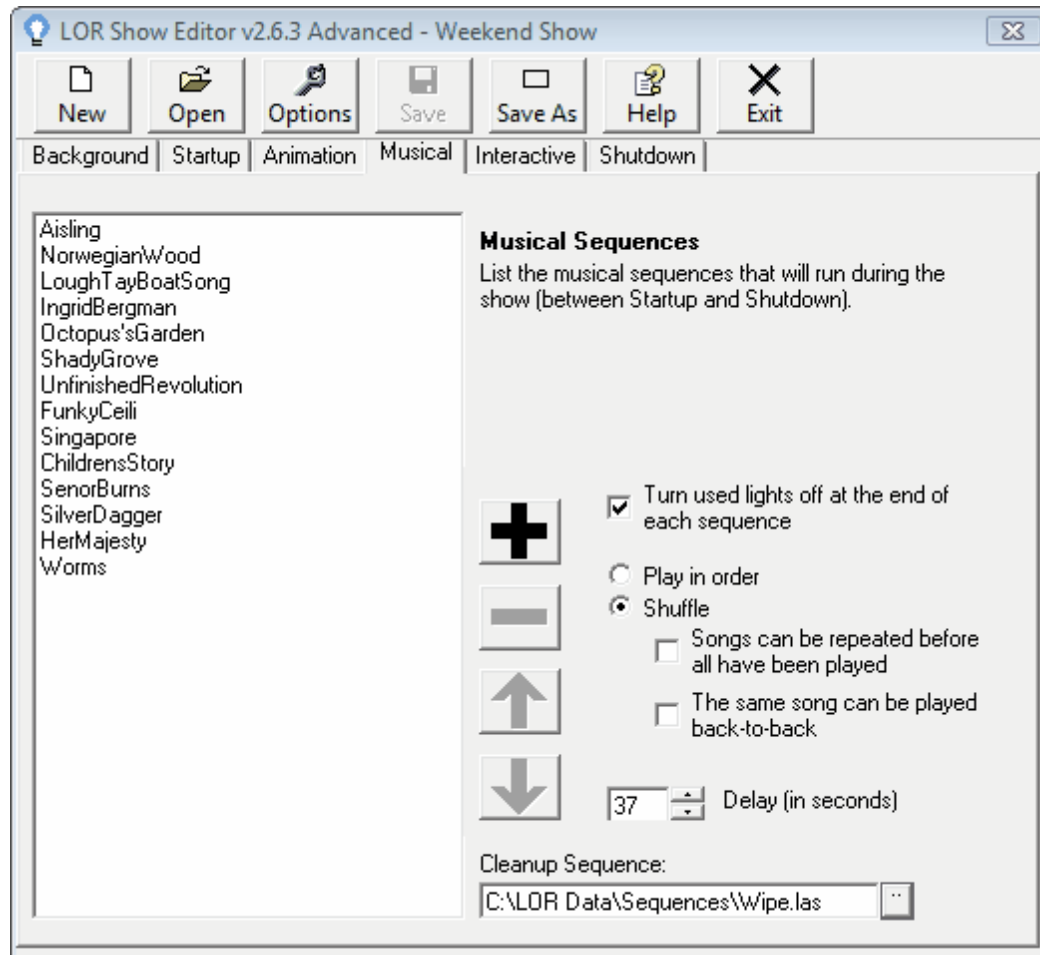
- [The Background Section](#)
- [The Startup Section](#)
- [The Animation Section](#)
- [The Musical Section](#)
- [The Interactive Section](#)
- [The Shutdown Section](#)

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.



The Show Editor's tab for the musical section of a show

## 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

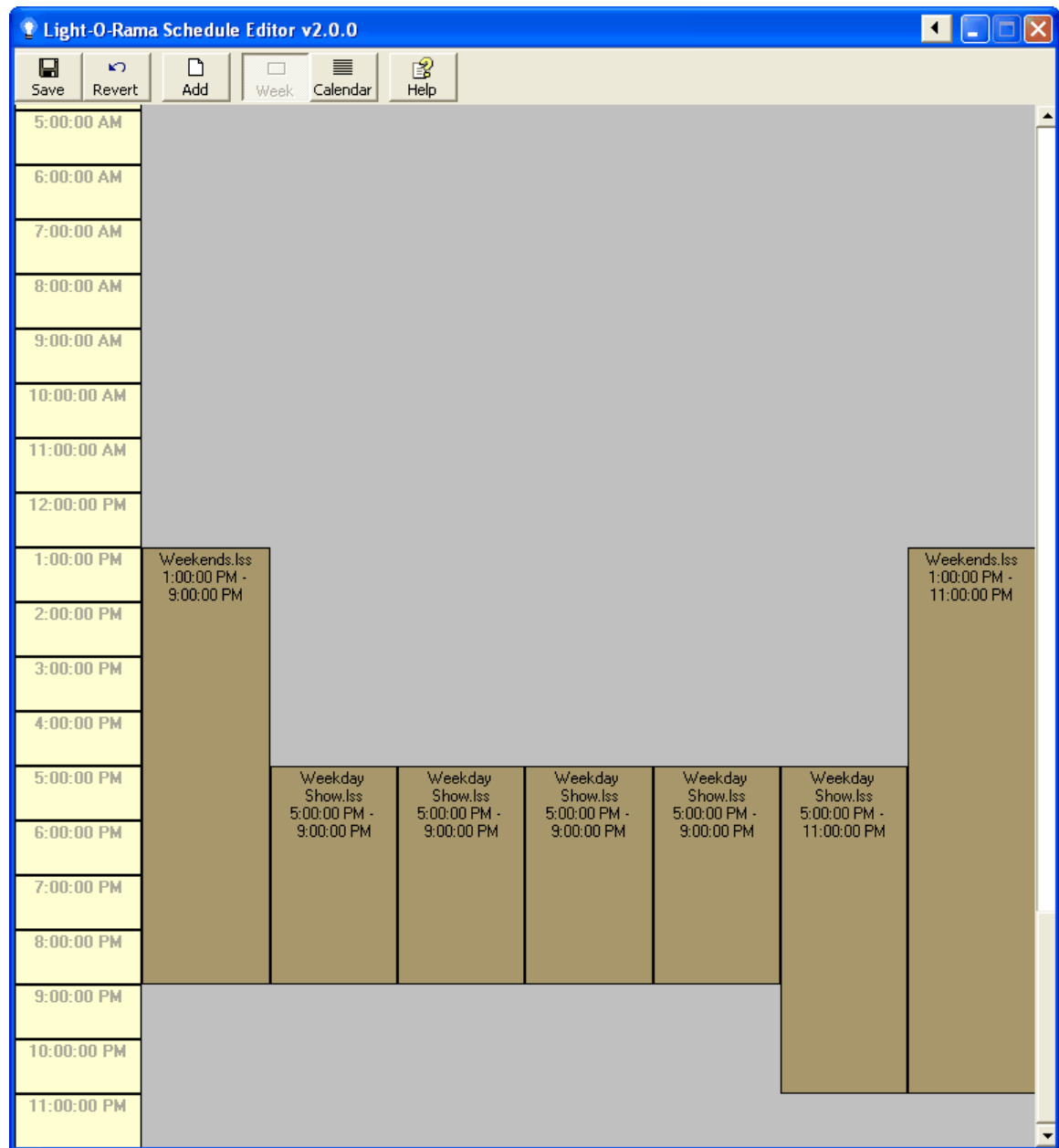
"Schedule Editor" from the popup menu that will open.

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](#)
- [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.

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

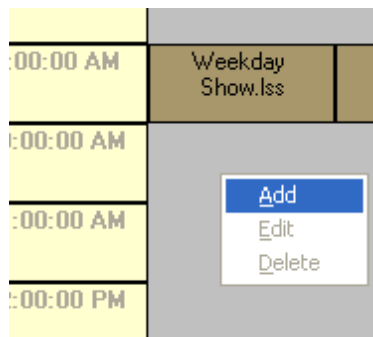
The [schedule](#) consists of two parts - the [weekly schedule](#) and the [calendar schedule](#). The [Schedule Editor](#) only displays one of these two at a time, although both are always in effect.

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

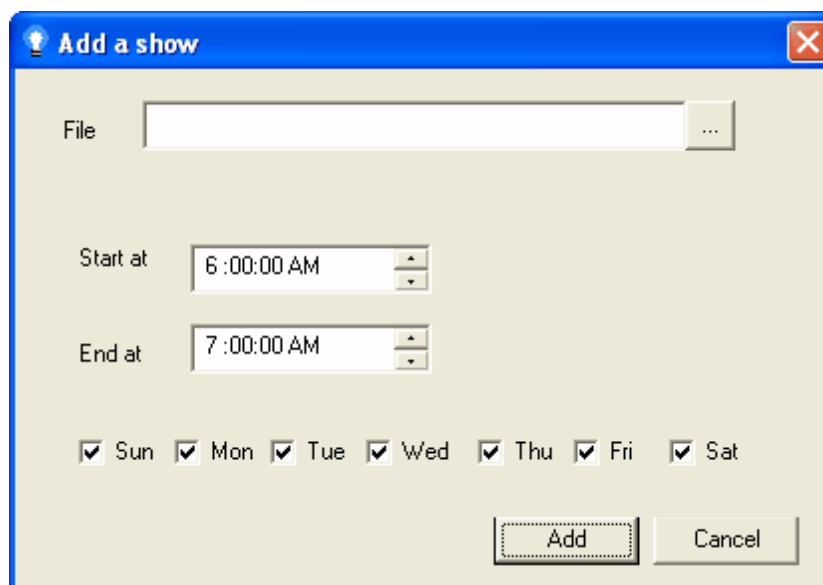
With the [weekly schedule displayed](#), there are two ways to add a [show](#) to it:

- 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:



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.

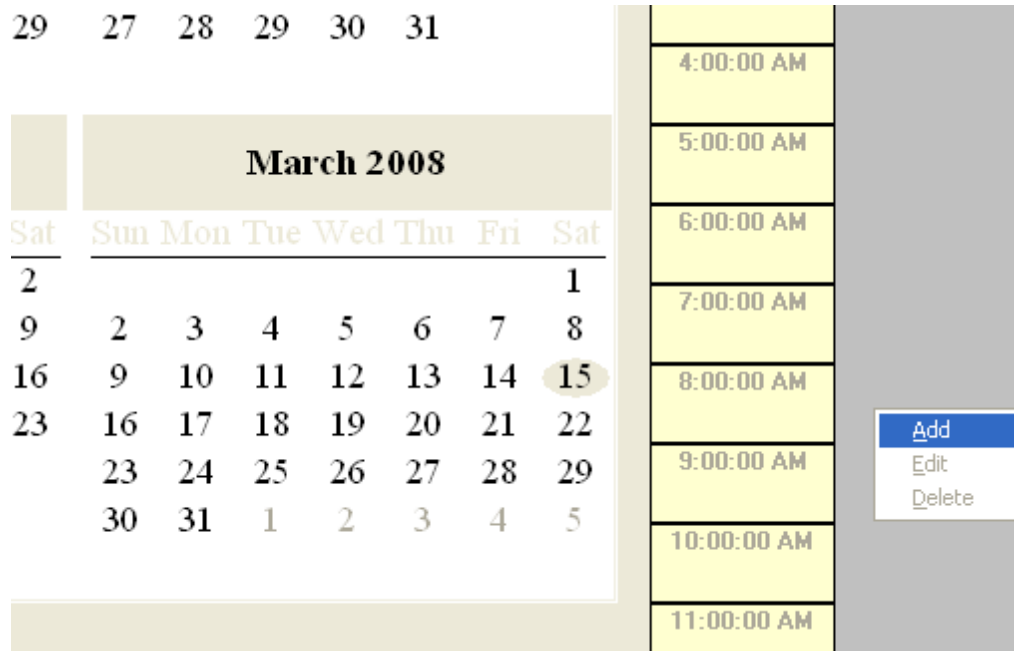
Next, choose the start and end time for the show, and then select the day or days of the week that you wish this show to run.

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

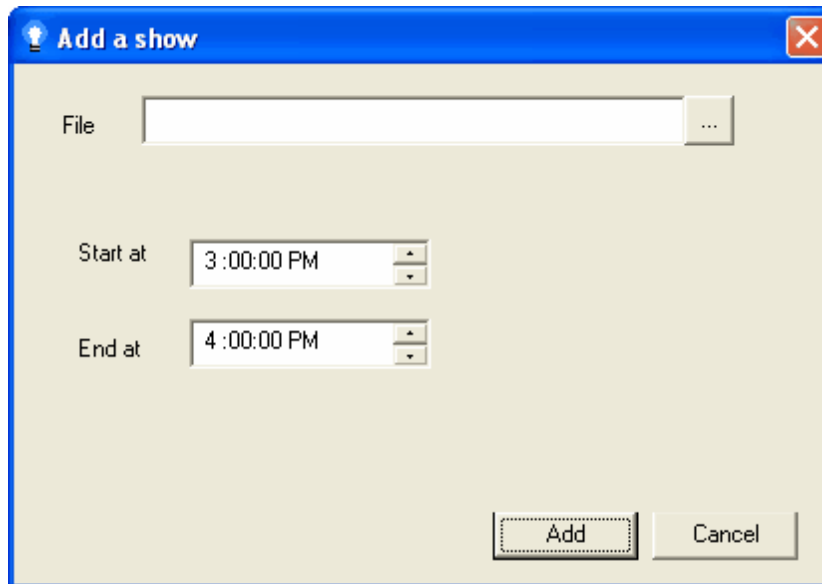
With the [calendar schedule displayed](#), there are two ways to add a new [show](#). In either case, first select the day that you want to schedule the show for (by clicking that day in the calendar), and then either:

- Click the toolbar's Add button, or
- Click on an unscheduled area of the schedule and select "Add" from the popup menu.



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

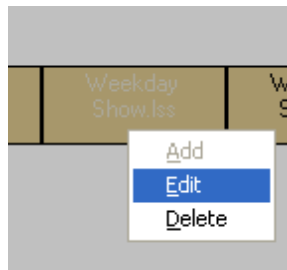
above dialog would have automatically been set to 3:45 rather than 4:00. Note that this conflict checking is only done for other shows in the calendar schedule, not for shows in the weekly schedule; this is because the purpose of the calendar schedule is to easily override the weekly schedule for specific 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 wish 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

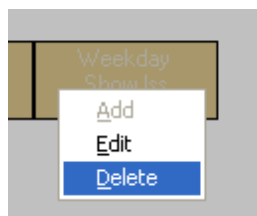
This will open a dialog very similar to the one you originally used to add the show. It will allow you to modify the name of the show file to be used, the start and end time, and, in the weekly schedule, the days of the week that the show will run on.

Finally, remember to [save your changes](#) using the toolbar's "Save" button (or, if you wish 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



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 wish to discard your changes, "Revert" instead).

## 5.7 Simple Show Builder

The Light-O-Rama Simple Show Builder is an alternative to the [Show Editor](#) and the [Schedule Editor](#), allowing you to create [shows](#) and to [schedule](#) them to be played at certain times. While the Simple Show Builder is easier to use, the Show Editor and the Schedule Editor are more flexible and powerful.

The Simple Show Builder progresses, step by step, through a few screens:

First, a "[Welcome](#)" screen is displayed, giving some brief instructions on what you will need to have ready in order to use the Simple Show Builder.

Next, you are given a [choice of what type of device type](#) you want to use for your show.

Then, you can [select the sequences](#) that you want to use for the show.

Next, you can [pick the time or times that the show should run at](#).

If you chose to use an MP3 device, you will then be asked to [insert your SD card into your SD card reader/writer, and to tell the Simple Show Builder when you have done so](#). Your show will then be downloaded to your SD card.

Otherwise, you will be presented with a [final screen](#), showing some directions on how to enable the Show Player to run the show that you have just scheduled.

### Welcome

The first screen in the [Simple Show Builder](#) shows a list of things that it would help to have ready before you use it. After you have these things ready, simply click "Next".



The Simple Show Builder's welcome screen

## Choose the Device Type

The next screen in the [Simple Show Builder](#) allows you to select the type of device that you want to control your show. You can run it from your PC (using the [Light-O-Rama Show Player](#)), or any of a few types of Light-O-Rama MP3 devices. Choose the device you wish to use, and click "Next".



Select the device type that will control your show

## Select Sequences

The [Simple Show Builder](#) will next ask you which [sequences](#) you wish to use in the [show](#). On the left is a list of your existing [musical sequences](#) - either those with 16 [channels](#), those with 32 channels, or all of your musical sequences, based on your choice of the radio buttons at the bottom (note: this is not really based on the number of channels; it is based on "16" or "32" being contained in the sequence's filename).

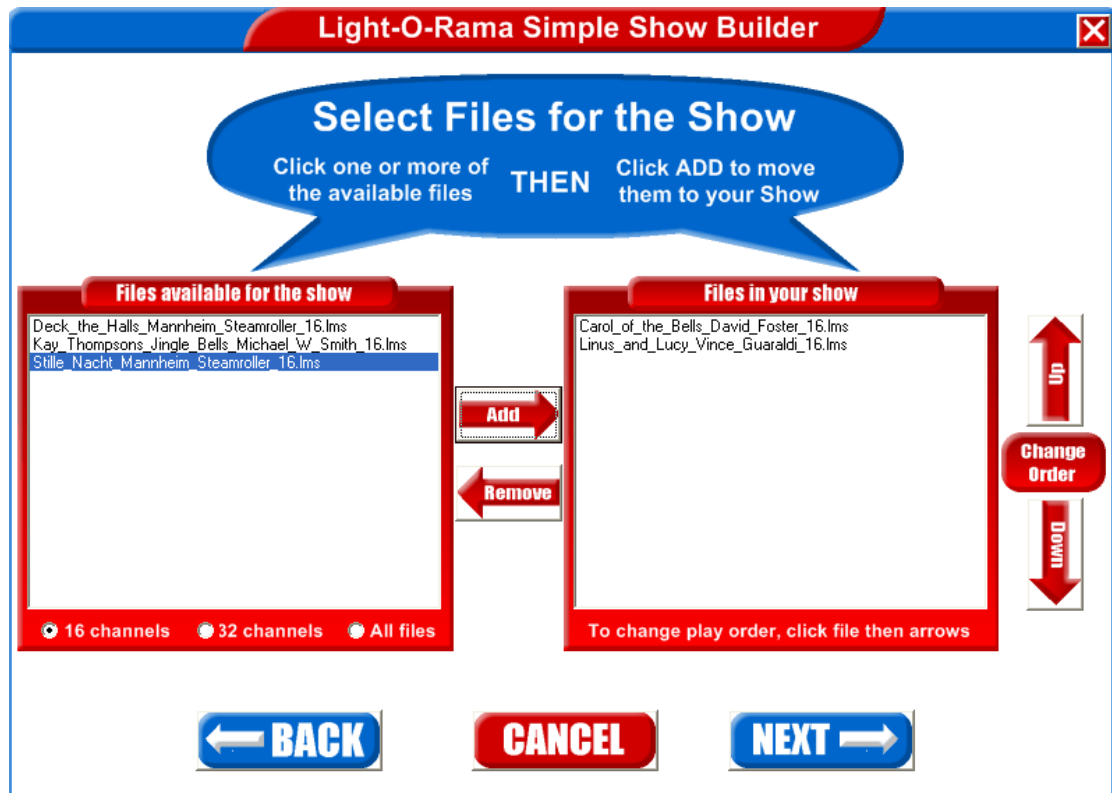
Add a sequence to the show by highlighting it and then clicking the "Add" button; this will move the show from the left pane to the right pane, which is the list of sequences in your show. Similarly, remove one from your show by highlighting it and clicking "Remove".

The sequences will be played in the order that you list them, but you can change the order simply by clicking on the "Up" or "Down" arrow (on the right-hand side).

When you are satisfied with the sequences in your show and their order, continue by pressing the "Next" button.

Note that if any other than "Use a PC" is selected, only [effects](#) on [channels](#) that are set up to use the Regular Light-O-Rama [network](#) will be downloaded.

Note that only musical sequences can be scheduled using the Simple Show Builder. If you wish your show to have [animation sequences](#), you must instead use the [Show Editor](#) and the [Schedule Editor](#).



Select the sequences to be played in your show, and the order they will be played in

## Choose the Times

The [Simple Show Builder](#) will then ask you to select the times at which you want your [show](#) to run. You can have different times for up to two different sets of days of the week. You can select any days you want to be in either set, but typically this is used to have your show played during different times on weekdays and weekends. Note that "weekends" here might mean "Friday and Saturday", rather than "Saturday and Sunday", since your show will probably be playing while it's dark out, and so "weekend" is really "the night before a weekend day". In fact, this is how the Simple Show Builder operates by default, but again, you can change this however you want.

After selecting the days of the week, select the start and end times for each.

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.

When you are satisfied with the scheduled times, click "Next".

The screenshot shows a software window titled "Light-O-Rama Simple Show Builder" with a close button in the top right corner. The main heading is "Schedule When Your Show Plays".

There are two sections for selecting days:

- Select days for Regular Hours:** A row of checkboxes for Sun, Mon, Tue, Wed, Thu, Fri, and Sat. Sun, Mon, Tue, Wed, and Thu are checked. An arrow points to the checkboxes.
- Select days for Weekend Hours:** A row of checkboxes for Sun, Mon, Tue, Wed, Thu, Fri, and Sat. Fri and Sat are checked. An arrow points to the checkboxes.

Below the weekend checkboxes, a note states: "On weekends you may want the show to run a little later".

Time selection controls are on the right:

- Regular Start Time:** 6:00PM with up/down arrows.
- Regular End Time:** 10:00PM with up/down arrows.
- Weekend Start Time:** 6:00PM with up/down arrows.
- Weekend End Time:** 11:00PM with up/down arrows.

Below these, a blue box titled "At Scheduled Times" contains three radio button options:

- ☒ Run Continuously
- ☐ Once Every Hour
- ☐ Once Every Half Hour

At the bottom are three buttons: "BACK" (blue with a left arrow), "CANCEL" (red), and "NEXT" (blue with a right arrow).

Select the times that you want the show to run at

## Download to the SD Card

If you had asked the [Simple Show Builder](#) to control your [show](#) via a Light-O-Rama MP3 device, rather than via the [Show Player](#) on your computer, you will then be prompted to insert your SD card in your SD reader/writer. When you have done so, click the large "CLICK HERE to write the SD card" button, and wait for confirmation that your show has been written to the SD card.

The Simple Show Builder is then complete; simply move your SD card to the Light-O-Rama MP3 device, and the [sequences](#) that you selected will play at the times that you selected.



Download the show to your SD card

## Finished

If you had asked the [Simple Show Builder](#) to control your [show](#) via the [Show Player](#) on your computer, rather than via a Light-O-Rama MP3 device, you will be presented with a final screen giving directions on how to enable the Show Player. After you have read and understood them, simply click "Finish", and your show will be [scheduled](#).

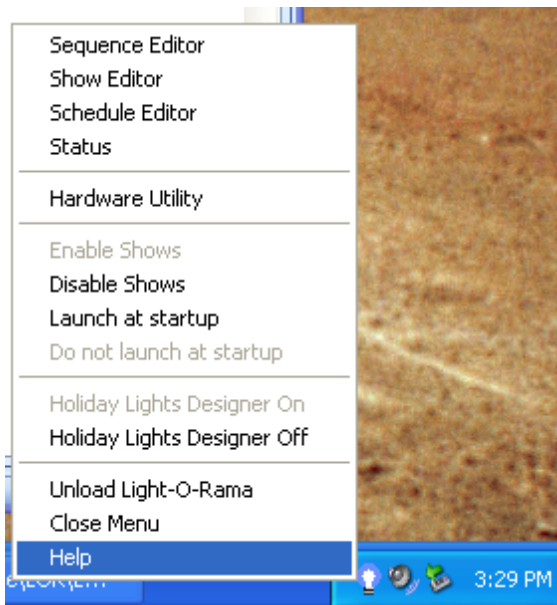


Final directions from the Simple Show Builder

## 5.8 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.

## 5.9 Network Preferences



[Light-O-Rama software](#) running on a computer can control several different types of [hardware devices](#) via several different methods. In most cases, the devices are connected to the computer via a serial port (if your computer does not have any available serial ports, adapters such as the USB-RS485 are available from Light-O-Rama). Light-O-Rama also supports [E1.31/ACN](#), which allows for control of various devices via Ethernet and a gateway device, and various other types of hardware.

Typically, [Light-O-Rama controllers](#) are on up to sixteen different serial ports - that is, sixteen different "[networks](#)". In many cases, a Light-O-Rama user will use only a single network -- that is, a single serial port -- for all of his or her controllers: the "Regular" network. Should additional networks be needed, fifteen auxiliary networks ("Aux A", "Aux B", and so on, up to "Aux O") are also available, each of which would be controlled via a different serial port.

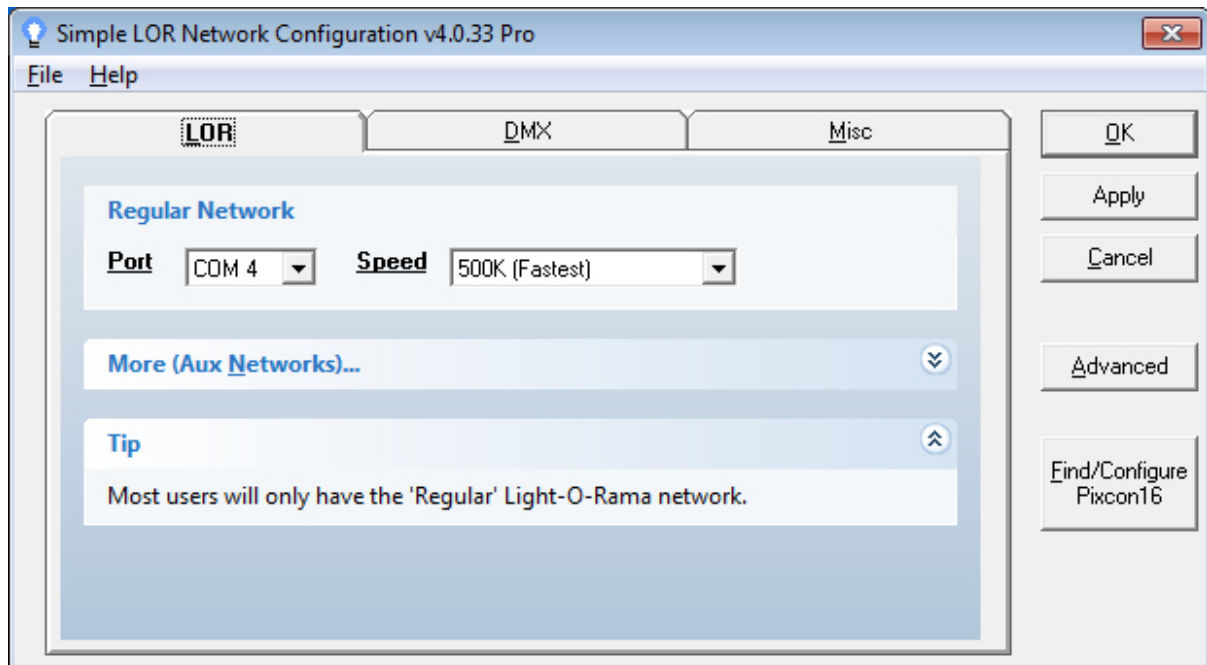
The Light-O-Rama Network Preferences program allows you to configure all of these Light-O-Rama networks, as well as configure various other communications networks such as [DMX universes](#) and X10.

The Network Preferences program has two operating modes: "[Simple](#)" and "[Advanced](#)". Most users will only need the Simple mode. The Advanced mode is only needed by users who have more than sixteen DMX networks, or users who have E1.31 devices. To change between modes, use the button on the right side marked "Simple" or "Advanced".

The Network Preferences program is also used to [configure Light-O-Rama E1.31 devices](#), like the [PixCon16](#).



- [Simple Mode](#)
- [Advanced Mode](#)



The Light-O-Rama Network Preferences program

## 5.9.1 Configuring LOR E131 Devices

E1.31 devices, like the PixCon16, are usually used for high channel density configurations. For example, a fully populated PixCon16 can control over 10,000 channels across 20 DMX universes. Using just a few of these controllers can quickly saturate a Local Area Network (LAN). Improperly configured networks can also generate additional traffic. Unlike the traditional LOR network of controllers which are run on a serial port, using E1.31 devices may require advanced knowledge of TCP/IP routing and configuration.

E1.31 devices may also negatively impact an existing LAN with the additional traffic. Light-O-Rama recommends that you run E1.31 devices on a separate physical network from your home or office LAN. If you are knowledgeable in TCP/IP and/or Ethernet devices, you may be able to successfully run your existing devices and the new E1.31 devices by segregating your network, running multiple adapter cards, etc. How to successfully do that however is beyond the scope of this documentation.

### 5.9.1.1 E131 Device List

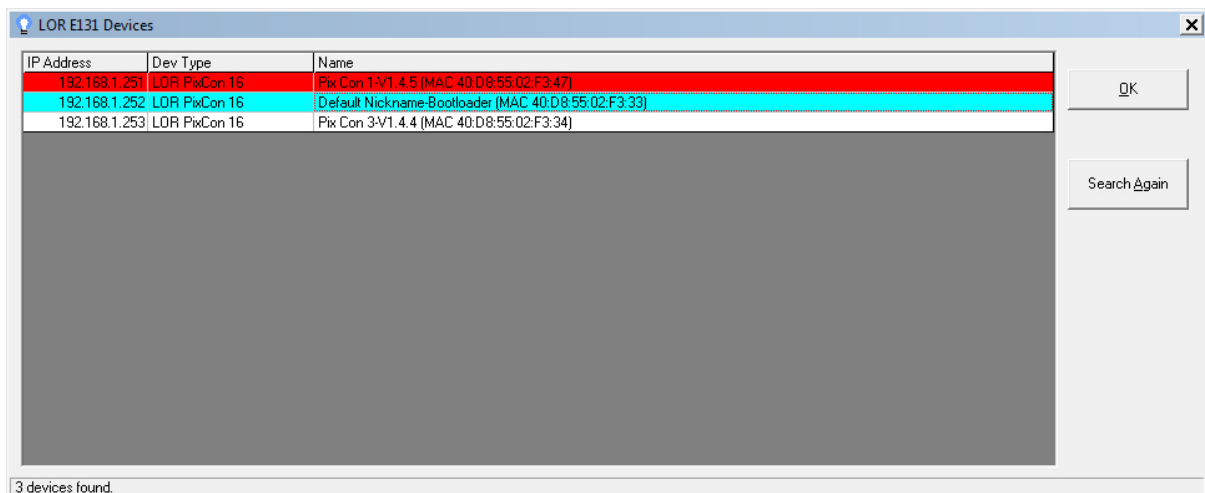
The E1.31 device list will show all detected LOR E1.31 devices found on the network. The E1.31 devices should be powered up before accessing the list. If there are any missing devices, be sure they are powered up and press the 'Search Again' button.

Under some circumstances, the program may not be able to detect all the controllers connected to your LAN. This can be due to multiple issues since the routing and configuration of TCP/IP can be tricky:

- Typically if a previously found device can no longer be found, it 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 may want to stop any running show before attempting to configure a 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 on 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.
- Your board may also be in a state which is preventing it from booting up properly. If that is the case, you will need to place the board into boot-loader mode using the switch. The boot-loader mode will force the board to the IP address of 192.168.0.50. Please see the hardware manual for the board for more information about boot-loader mode.



#### The LOR E1.31 device list

The E1.31 device list shows the current IP address of the board, the board's type, as well as its user assigned name and MAC address to help you identify the actual physical hardware. When you click a row in the E1.31 device list, you will be brought to the configuration screens for that particular board. Remember, boards that are shown in red can not be configured, and those in blue must first have firmware loaded to them.

Depending on the status of a particular E1.31 device, the list will be shown in one of 3 background colors:

- Red: Devices listed in RED can not be configured. Either these devices are not manufactured by LOR, or are at a firmware level that is not supported by the software.
- Blue: Controllers listed in blue are currently in 'boot-loader' mode. That is, they are awaiting firmware to be sent to them. Clicking on a blue device will bring you to a screen that will allow you to update the firmware.
- White: Any controller listed in White is operating normally and ready to be configured. Clicking on a row in white will bring up one or more screens allowing you to configure the device.

#### 5.9.1.1.1 IP Troubleshooter

The E131 Device List will show all LOR E1.31 devices that can be found on the local network. However those devices could be at IP addresses that can not be directly configured from the computer you are attempting to use due to with how TCP/IP packets are routed. More information on routing and setup can be found in our "[An Introduction to DMX and E1.31 for Pixel Control](#)" document found on the [LOR Website](#).

If you click on a board whose configuration can not be loaded, you will be offered the opportunity to run the IP Troubleshooter. This troubleshooter will look at the configuration of your E131 device as well as the network configuration of your computer and attempt to resolve the issue.

You may need to run the troubleshooter multiple times as it may need to configure several different parameters.

The following messages can be generated by the Troubleshooter:

- **This is not an LOR PixCon16 device. Please contact the board manufacturer.**  
This device while presented in the list of devices is not manufactured or supported by LOR. You will need to contact the manufacturer of the device for more information.
- **This device needs to have firmware loaded. Please follow the device 's instructions on how to update firmware.**  
The device is currently awaiting a firmware load. IP Settings can not be changed while the board is waiting for new firmware. Power the board off then back on and see if it boots normally, then try again.
- **This version of the software does not know how to handle a device with this firmware version. You most likely need to update your LOR Software.**  
The Light-O-Rama Showtime Software suite in use is too old. This is most likely because the firmware on the device is newer than what the software can understand. You will need to either downgrade the firmware, or install the latest version of Showtime. Installing the latest version of Showtime may require a license renewal.
- **This troubleshooter will allow you to configure the board when directly connected to the computer. However if you plan on using E1.31 and later move this board to a network with a router/switch it may no longer be able to communicate. You should connect the board and the computer in the configuration you will run shows in, then run the troubleshooter.**  
You said that you are directly connected to the board instead of connected through a switch or router. If you intend on running in this configuration, OR if you intend on eventually running the board in ELOR mode, you can ignore this message completely. If however you intend to use the board on a network with other computers and/or E131 devices, you should connect them in the configuration you intend on running them in.
- **Your computer is using Dynamic IP addresses. Have you tried setting the board to run a Dynamic Address as well?**  
The Troubleshooter has determined that your computer is using a DHCP address, and that your board should be using one as well. Answering NO will force the board to use a DHCP address. Answering YES will continue the troubleshooter. You should initially allow the troubleshooter to set the dynamic IP by answering NO.
- **Troubleshooter 1-Force DHCP failed.**  
You indicated that you wanted to use a dynamic IP address, however while attempting to set that parameter something went wrong. Run the Troubleshooter again, and if you get the same error,

please contact support and include the error message.

- **Setting the board to Dynamic should have fixed the issue. Are you sure you selected the correct adapter? Many computers have multiple adapters which can all have different IP addresses.**

You indicated that you previously set the board to use a dynamic IP address, and that should have fixed the error. However the computer is still not able to communicate with the board. This could be that you selected a network adapter in the drop down that is not connected to the device. Be sure you have selected the correct adapter.

- **Have you rebooted your entire network? If not shut down and power off ANY device that is connected to your LAN (Computers including this one, Lighting Controllers, Hubs/Switches/ Routers, TVs and Media Players,etc). Reboot your router, and then turn your network devices back on.**

You indicated that you have in fact selected the correct adapter. The Troubleshooter now wants you to reboot your entire network (LAN). That includes ALL devices that are attached to the LAN including devices that are not lighting controllers.

- **As a last resort, would you like to try to set a static IP address?**

You indicated that you rebooted the entire network but are still unable to communicate with the board. The troubleshooter can attempt to set a Static IP address to see if that will help.

- **Troubleshooter 2-Force DHCP negative.**

The reboot failed, and you indicated you did not want to force a static IP. This will prevent the board from being able to be configured.

- **Your adapter is using a Static IP address. Your board should probably be using one as well. We can force a new IP onto the board which may fix the issue.**

Your computer appears to be using a static IP address, so your device should be as well. The troubleshooter would like to know if you want to proceed to try a static IP address.

- **Troubleshooter 3-User did not force Static.**

You did not want to attempt to set a static IP. This will prevent the board from being able to be configured.

- **We will now try to set the board to use IP address: [xxx.xxx.xxx.xxx]. We have tested this address and it appears to not be in use on your network, HOWEVER another device on your network that is not currently powered may attempt to use this same address in the future. You should ensure that this address is not in use on any other device.**

The Troubleshooter has determined that the computer is using a static IP address, and the device should be as well. The suggested IP address should work and allow the device to be configured. The troubleshooter checked to see if the address was already in use on your network and it appears to be unused. However, another device that is currently powered off may attempt to use the same address in the future. You should ensure that the suggested address is not in use anywhere else. If it is, you can temporarily use it to gain access to the device. You must then change the IP to a known unique one.

- **Troubleshooter 4-Force IP failed.**

You indicated that you wanted to use this IP address, however while attempting to set that parameter something went wrong. Run the Troubleshooter again, and if you get the same error, please contact support and include the error message.

### 5.9.1.2 PixCon16 Configuration

The LOR PixCon16 is configured from this screen. No configuration changes are sent to the Plxcon16 until you select either the OK or Apply button. Should you exit the screen without pressing these buttons, all changes are lost.

The configuration screens are designed to handle multiple different firmware revisions. If an option is disabled, it may be that the firmware on the board needs to be update to a more recent version. This can be done on the Misc tab.

- [Dual Modes \(E1.31/LOR Enhanced\)](#)
- [Network Configuration](#)
- [Pixel Port Setup](#)
  - [Simple Mode](#)
  - [Advanced Mode](#)
- [Misc settings](#)
- [Automatic configuration of Network Preferences for DMX/E1.31](#)

#### ***Dual Modes (E1.31/LOR Enhanced)***

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 in either E1.31 mode (via an Ethernet network), or as an LOR device on an LOR ENHANCED network at 500K. If you would like to use the PixCon16 as an LOR device, be sure to select 'LOR Mode', explained below.

#### ***Network Configuration (Tab 1)***

The screenshot shows the 'LOR PixCon 16 Configuration (192.168.1.62)' window. The 'Unit Name' field is set to 'Default Nickname'. The 'Network Configuration' tab is active, showing options for 'Static' (192.168.0.50) and 'DHCP' IP settings, and a 'Subnet Mask' of 255.255.255.0. Below this, the 'LOR or Auxiliary DMX Ports' section has a checkbox for 'J3/J4 (DMX#1) are LOR RS485 Network IN/OUT, not DMX [use board in LOR mode]'. Four ports are listed, each with an 'Enabled' checkbox and a 'Universe' dropdown menu, all currently set to 'Universe 1'. The 'Test Mode' section has 'OFF' and 'ON' buttons, a color dropdown set to 'Red/Green/Blue/White', and a small color swatch.

**Network Configuration tab of the PixCon16 configuration**

The first tab of the Pixcon 16 configuration screen allows you to change the name of the board (can be accessed on all tabs), various network IP settings, as well as the Auxiliary DMX ports available on the board. There is also a section that allows the board to be put into test mode.

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.

The IP address section allows you to change if the board is to use a Static or a Dynamic IP address. If you are familiar with IP addressing, it is recommended that you use a static address. Using a Dynamic (DHCP) IP address is best if you will eventually run in LOR mode.

*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.

*Mode of Operation:* The PixCon16 can be run in 2 different modes -> As an E1.31 controller on an Ethernet network, or as an LOR device on an LOR RS485 network. To run the board as an LOR device, select the check box labeled 'J3/J4 (DMX #1) are LOR RS485 Network IN/OUT, not DMX [use board in LOR mode]'. Be sure to also move the jumpers on the board from the ESTA side to the LOR side near J4.

*The Auxiliary DMX Ports* 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.

*The Test Mode* section allows you to put your PixCon16 into test mode. This is the same mode that is described in the PixCon16 hardware manual, except when run from the PixCon16 configuration program, a new test that allows for a custom color can also be used. This mode is not available with the hardware buttons.

### ***Pixel Port Setup (Tab 2)***

This tab allows you to set up how the 16 pixel ports behave on your Pixcon 16. For most users, simple mode should suffice. However there is an Advanced mode that allows for more control.

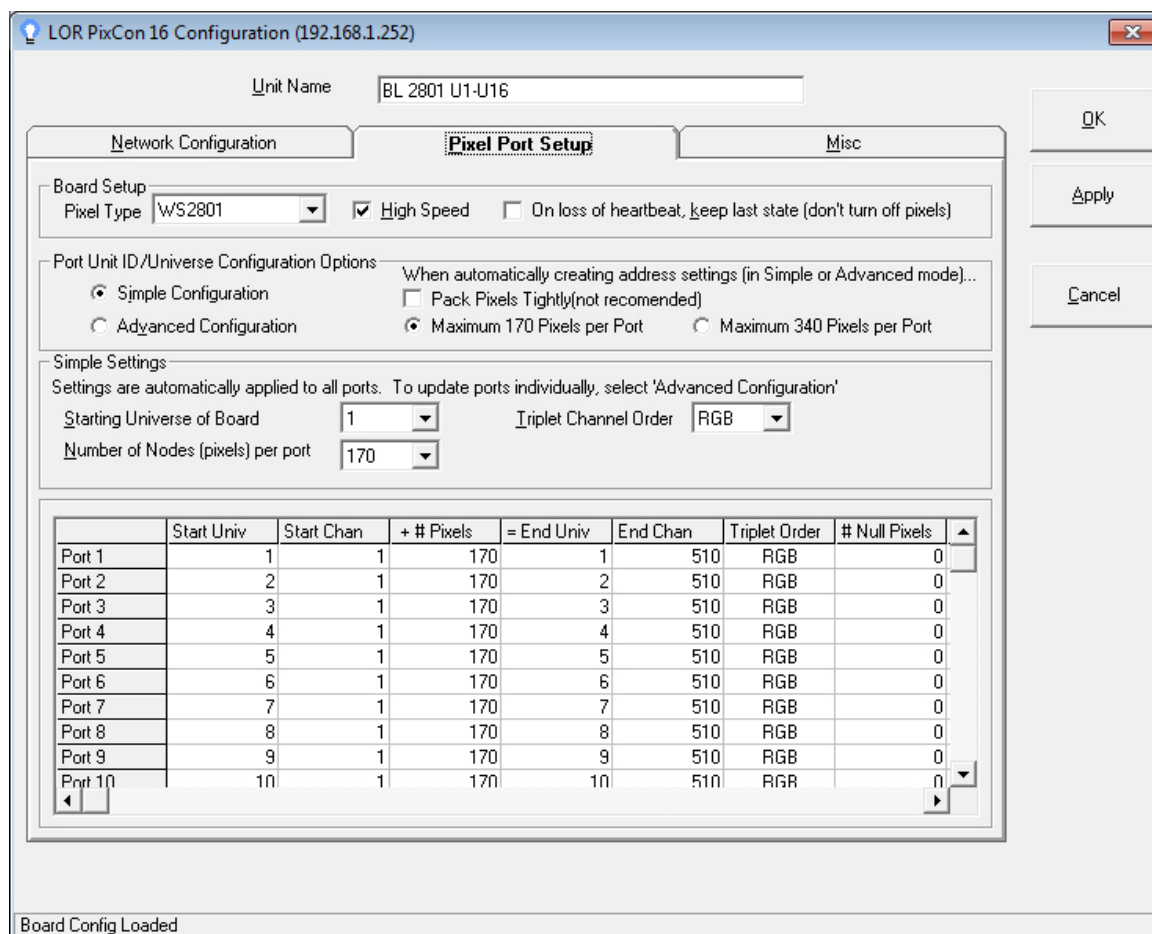
*Pixel Type:* The Pixcon 16 can support multiple different pixel chip-sets, depending on the firmware loaded to the board. Select your pixel's chip-set here. Most LOR pixels use the WS2801 chip-set.

*High Speed:* Some pixel chip-sets have a low and high speed. If your chip-sets supports high speed, check the box.

*Loss of Heartbeat:* Typically when a DMX device loses the DMX signal, it will reset to a known state (usually OFF). If you check this box however, the PixCon16 will continue sending the last known DMX data to each port/universe. This will basically 'freeze' all the pixels/devices into the last state they heard.

There are 2 modes available for setting up the pixel ports of a PixCon16, simple and advanced. For most users simple is all that will be needed, however for more complex configuration options please use the advanced mode. Please keep in mind that Simple Mode and Advanced Mode update separate parameters on the board and are mutually exclusive. That means if you switch from easy mode to advanced mode, (or vice versa) some or ALL of your changes may be lost.

### **Simple Mode Setup:**



**Pixel Port Setup in Simple Configuration mode**

### *Pack Pixels Tightly*

#### **Notes about addressing using the Pixcon 16 in *simple* mode:**

The pixel ports on the PixCon16 can be automatically configured using two different schemes, either 'Unpacked' or 'Pack Tightly'.

Unpacked is self explanatory. Each port will be assigned a sequential Universe/Unit ID, starting with the Universe/UID specified for port 1, and continuing for all 16 ports. This mode may be most familiar to those people who have used Cosmic Color controllers previously. For example, the Cosmic Color Bulb or Cosmic Color Pixel controller can be configured in 'Dual Normal' mode. That means string 1 is controlled with the UnitID specified, and string 2 is controller with the next higher unit ID. In the 'One ID per Port' mode, each string will have a sequential Unit ID number based on the first ports Unit ID.

The Plxcon16 can also minimize the number of universes/unit IDs and channels/circuits required to run your RGB nodes. This mode is called 'Pack Tightly' or 'Packed Pixels'. In the typical configuration, each port on the PixCon16 will have 50 pixels, and the starting channel for the board would be 1. That would mean that port 1 consumes 150 channels from 1-150, port 2 would be 151-300, port 3 would be 301-450, all on the same starting universe. At port 4, the PixCon16 will continue to assign FULL pixels until it runs out of channels. In this case it will assign 20 pixels (Channels 451-510). While there are 2



channels left (511 and 512), that is not enough for a FULL pixel. The PixCon16 will then assume that the next pixel will start with channel 1 on the NEXT universe. It will assign 30 more pixels (since there are 50 on a string), and end with channel 90 on that next universe. Addressing like this will continue for the entire board if desired. If you wish to use a different scheme, please use the advanced mode.

These addressing notes apply to using the board in both LOR mode and E1.31 DMX mode.

#### **Notes about addressing using the Pixcon 16 in *advanced* mode:**

In the advanced mode, you are responsible for all addressing and ensuring that addresses do not overlap, etc. There are several options that are available when editing a port to set the addresses or parameters of other ports.

*Maximum 170/340 pixels per port:* The PixCon16 can support up to 340 pixels per port in DMX (not LOR) mode. If you are going to use more than 170 pixels per port, please change this setting to 340. Note that you can set the pixels per port to 340 even if you are using LESS than 170 pixels. Doing so will change how the ports are addressed, so care must be taken to ensure that you have the correct settings.

*Starting Universe/Unit ID of Board:* Select the universe that this board should start at. The first pixel port will be this address, and then each higher universe will be incremented from this value, depending on the addressing mode selected. If you did not select 'Packed Tightly' then each port will get one or two IDs depending on the max 170/340 selection. If you selected 'Packed Pixels' the Unit/Universe will be dependent on the starting channel as well as the number of pixels. For example, setting the starting universe to 5 (with 170 pixels on a port, starting channel 1) means that port 1 will be universe 5, port 2 will be universe 6, all the way up to port 16 which will be universe 20 when using 170 pixels per port.

*Number of Nodes (Pixels) per port:* This is the number of physical pixels that are attached to each physical port on the board.

*Triplet Order:* If the strings that you are using are not in RGB order, you can change it here. In general most strings are RGB and you should not need to change this.

*Port Table:* The Port Table will be updated each time you make a change showing how each physical port will be configured. In simple mode, this table is read only.

#### **Advanced Mode Setup:**

LOR PixCon 16 Configuration (192.168.1.252)

Unit Name: BL 2801 U1-U16

Network Configuration | **Pixel Port Setup** | Misc

Board Setup  
Pixel Type: WS2801 ☒ High Speed ☐ On loss of heartbeat, keep last state (don't turn off pixels)

Port Unit ID/Universe Configuration Options  
☐ Simple Configuration ☒ Advanced Configuration  
☐ Pack Pixels Tightly(not recommended)  
☒ Maximum 170 Pixels per Port ☐ Maximum 340 Pixels per Port

When automatically creating address settings (in Simple or Advanced mode)...

	Start Univ	Start Chan	+ # Pixels	= End Univ	End Chan	Triplet Order	# Null Pixels
Port 1	1	1	170	1	510	RGB	0
Port 2	2	1	170	2	510	RGB	0
Port 3	3	1	170	3	510	RGB	0
Port 4	4	1	170	4	510	RGB	0
Port 5	5	1	170	5	510	RGB	0
Port 6	6	1	170	6	510	RGB	0
Port 7	7	1	170	7	510	RGB	0
Port 8	8	1	170	8	510	RGB	0
Port 9	9	1	170	9	510	RGB	0
Port 10	10	1	170	10	510	RGB	0
Port 11	11	1	170	11	510	RGB	0
Port 12	12	1	170	12	510	RGB	0
Port 13	13	1	170	13	510	RGB	0
Port 14	14	1	170	14	510	RGB	0
Port 15	15	1	170	15	510	RGB	0
...	...	...	...	...	...	...	...

Board Config Loaded

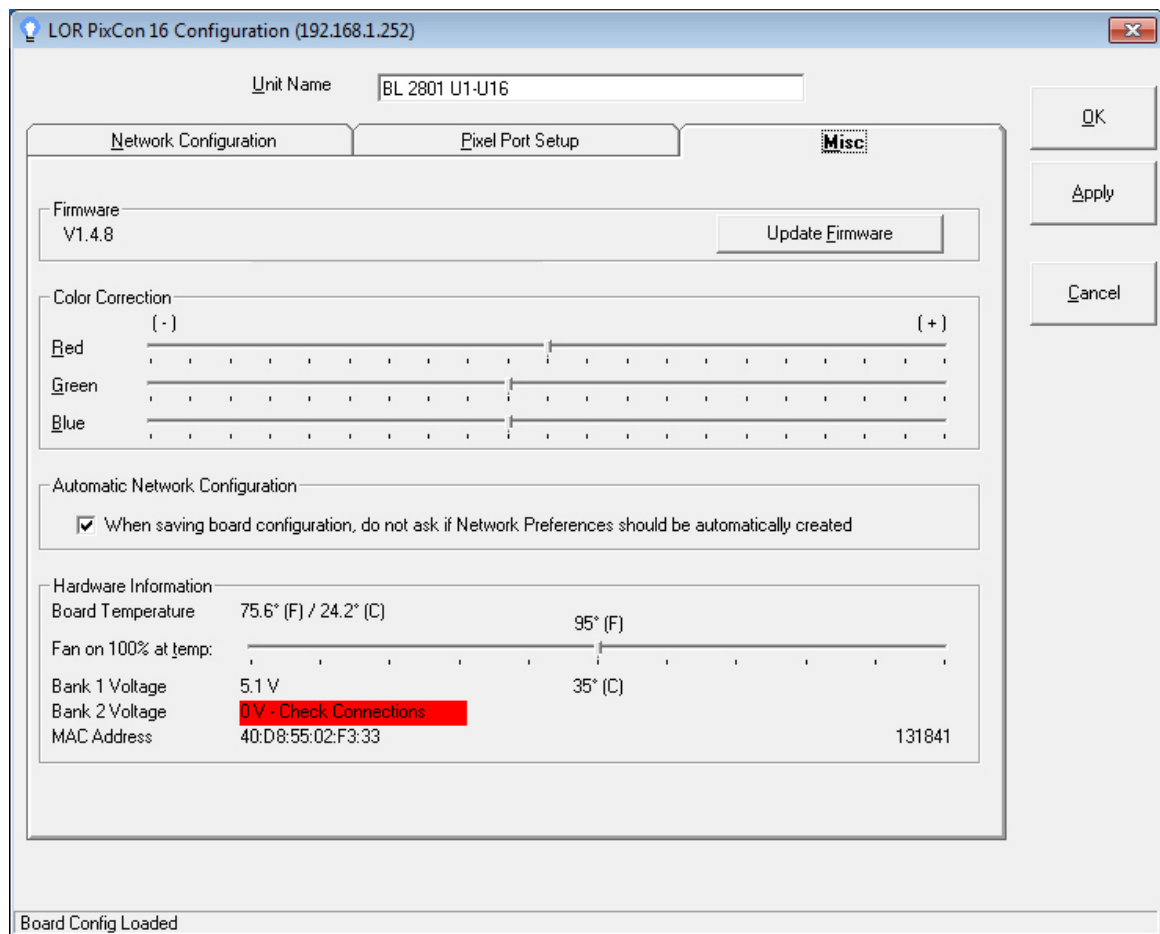
OK  
Apply  
Cancel

**Pixel Port Setup in Advanced Configuration mode**

The table shows the settings of each port of the PixCon16. Scroll the list down to see higher ports, and scroll the list to the right to see additional settings. Clicking on a port will bring up the [advanced port configuration screen](#) for that port.

### Misc (Tab 3)

The miscellaneous tab allows you to update the firmware on the board, change the color curves, and set up the aux power port to power a fan or other cooling device.



**Misc PixCon16 settings**

### 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.

When updating the firmware of a PixCon16, the power and status lights will flash on/off in different patterns. Please 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.

The PixCon16 will only operate and be able to be updated by Light-O-Rama signed firmware. No other companies firmware can be used on the board.

### **Automatic Network Configuration**

When saving the configuration of a PixCon16, the program can also [optionally create all of the entries needed in the DMX Configuration of Network Preferences using Multi-Cast settings](#).

However you may have already set up proper parameters for this board and don't want to be bothered again. This setting is saved with the board.

### **Color Correction ('Color Curving')**

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.

### **Fan Percentage**

A fully populated PixCon16 can draw a significant amount of power and needs to be properly cooled. To help with this, the Pixcon 16 can automatically regulate power to the accessory power connector based on the temperature the board is currently sensing. The slider here will control when the power is at 100% based at what the current temperature is. You should consider the amount of load on your PixCon16 as well as the typical ambient temperature of your installation.

### ***Automatic configuration of network preferences for DMX/E1.31***

When you press the OK button and have configured the PixCon16 to use DMX/E1.31 you will be asked if you would like to automatically create the necessary Network Preferences entries. If you select yes, the program will automatically determine all of the universes that this board will use and then create the correct multi-cast entries in the DMX tab of LOR Network Preferences. The system will warn you if there are already conflicting settings present and allow you to opt-out of the changes.

The program will only create Multicast entries for the universes in use. If you would rather use the boards Unicast address, you will need to edit the entries created and specify the static IP address of the board. If you are not an expert in IP addressing, you may wish to leave the boards in multicast mode.

## 5.9.1.2.1 Advanced Port Configuration

The Advanced Port Configuration screen allows you to change many parameters on a port-by-port basis.

**LOR PixCon16 Port 7 Settings**

**Addressing**

Starting Universe of Port: 7      Number of Nodes (pixels) per UNIVERSE or Unit ID: 170

Starting Channel of Port: 1

(End of Port - Universe 7 Channel 510)

**Port Parameters**

Number of Null Pixels: 0      Max Intensity: 100 %

Number of Zig Zags: 0      Triplet Channel Order: RGB

Group: 1      ☐ Reversed node order (highest pixel is nearest controller)

**Update Options**

☐ Set Port Parameters on all ports the same as this one      ☐ Automatically compute Addresses of all ports after this one

OK      Cancel

**Advanced Port Configuration**

*Starting Universe of Port, Number of Nodes (Pixels), and Triplet Channel Order* work nearly the same as they do on the [simple configuration](#) with the exception that they only affect the selected port, not the whole board.

*Starting Channel of Port:* Setting this allows for a port to start at a channel other than 1. Please note that it is best to leave the starting channel for a port at 1 to reduce confusion.

*Number of Null Pixels:* Most pixel strings have a limit on the length of wire between any 2 pixels. This is because each pixel 'regenerates' the signal for the next pixel in line. However, there may be instances where the distance to your first pixel exceeds this length. In this case, null pixels can be used between the board and the first 'real' pixel on the string. The only thing these NULL pixels do is regenerate the signal. They do not consume any channels or light up. Select the number of those null pixels here.

*Number of Zig-Zags:* For some uses, it is much more efficient to continue to use pixels in reverse order. For example, you may create a left-to-right matrix that is 10 pixels wide by 17 pixels tall. The first row of pixels would be 1-10 from left to right. However, the most efficient way to build the next line is from right to left. Doing that will put pixel 11 under pixel 10, not on the left side as expected. Selecting the number of Zig Zags allows the Pixcon 16 to internally re-map those pixels so while physically it may be pixel 20 that is on the left, numerically it is #11.

*Group:* If you like, you can group one or more nodes into a single pixel. For example, if you set the group to 2, then every 2 nodes will act identically.

*Max Intensity:* DMX uses values of 0-255 to set an intensity. Setting a channel to 255 will tell the light

to turn on at 100%. This field however lets you limit that at the port level. For example, perhaps the pixels attached to this port are brighter than your other pixels. You can adjust the Max Intensity of this port lower so that it more correctly matches the other pixels.

*Reversed Node Order.* Typically, the lowest number pixel is the closest to the controller. Selecting this option reverses that. When selected the HIGHEST pixel is now closest to the controller.

#### **Quickly Configuring other ports:**

There are two options available when updating the port to quickly update other ports on the same board. If neither option is selected than only this particular port will be updated when you press OK. If you select one or both, the following will occur:

- Checking 'Set Port Parameters...' and pressing OK will set all 16 ports to the same values as specified in the 'Port Parameters' - that is all ports will be updated with these parms but not any addresses.
- Checking 'Automatically compute Addresses...' and pressing ok will set this port to the address parameters specified, and then compute the correct addresses for all FOLLOWING ports, using the parameters here along with the number of nodes and if you are using 'Packed Pixels'. The ['Notes about Addressing the Pixcon 16' section](#) has more information on how addressing will happen with this option.

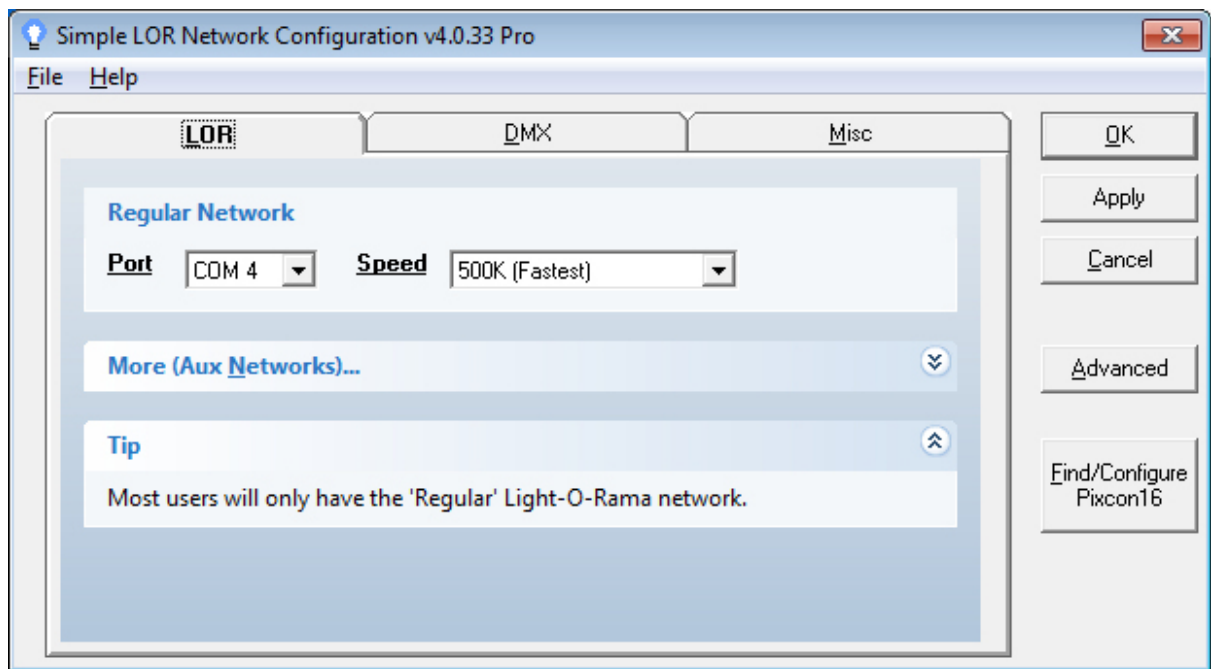
### **5.9.2 Simple Mode**

Most Light-O-Rama users will only need the Simple mode of the [Network Preferences program](#). Simple mode allows for the configuration of all sixteen [Light-O-Rama networks](#), sixteen [DMX universes](#) that use adapters (rather than E1.31), the X10 network, the Dasher network, and various options.

Please note that if at any time you see a row or setting with a yellow background, that indicates that the network or universe uses advanced settings, and can only be modified using the [Advanced mode](#). If you attempt to change something that uses an advanced setting here, you will be reminded to switch to Advanced mode.

Simple mode has several different tabs:

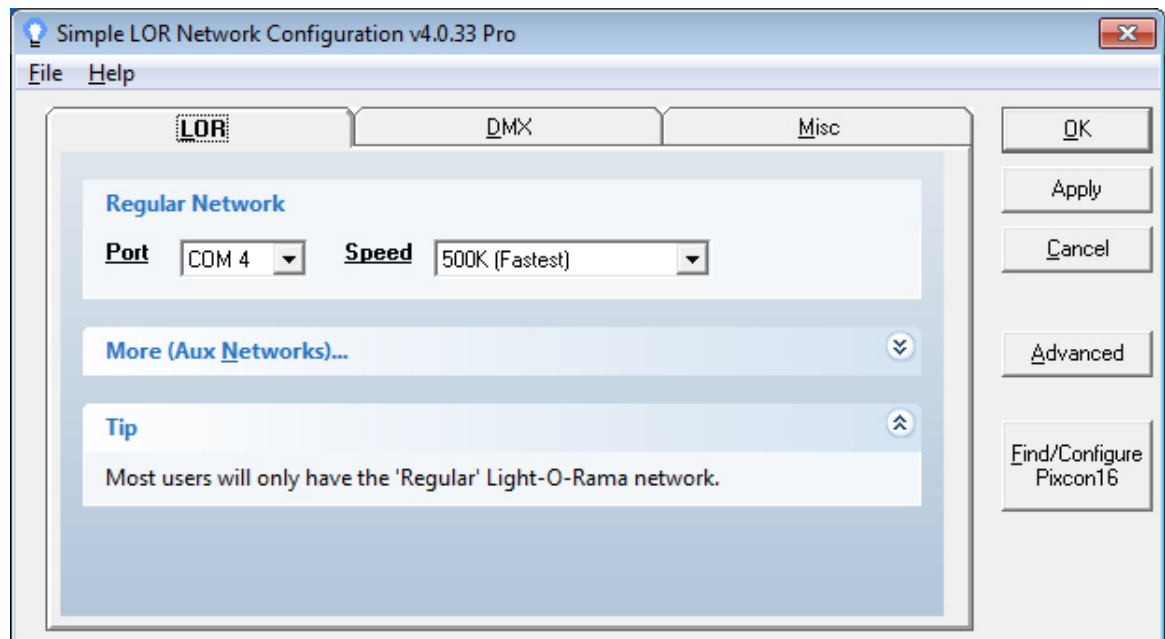
- [The LOR tab](#)
- [The DMX tab](#)
- [The Misc tab](#)
- [Find/Configure LOR PixCon16 Devices](#)



Simple mode of the Light-O-Rama Network Preferences program

#### 5.9.2.1 The LOR Tab

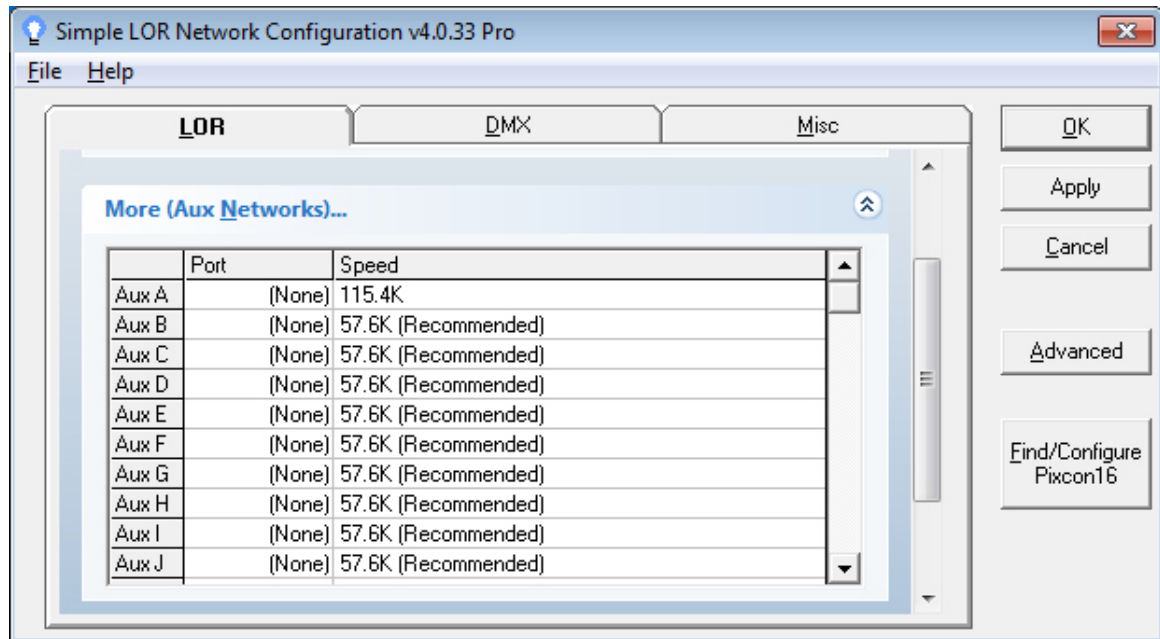
The LOR tab of [Simple mode](#) of the [Light-O-Rama Network Preference program](#) enables you to specify up to sixteen different [networks](#) for [Light-O-Rama controllers](#), each using a different serial port. The communications speed of each network can be set independently. Many users will only ever require a single network, referred to as the "Regular Network". You can quickly configure the Regular network using the two dropdown boxes: [Port](#) and [Speed](#).



The LOR tab, showing only the Regular network

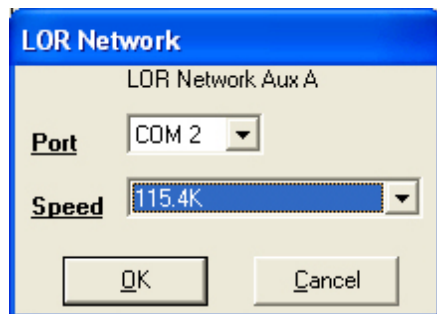
If you need to configure additional networks (referred to as "auxiliary networks" or "Aux networks"),

expand the second section (entitled "More (Aux Networks)"). Here you will be presented a list of all available auxiliary networks:



The Aux networks

Clicking on any row in the list of auxiliary networks will bring up a dialog box allowing you to set the [port](#) and [speed](#) for that particular network:



The Aux network configuration dialog

If you need to set a network up to be an [enhanced network](#), use [Advanced Mode](#) (by clicking on the "Advanced" button).

## Serial Ports ("Port")

In the dropdown box for each [Light-O-Rama network](#) that you wish to configure, chose the serial port that you wish to use for that network. Make sure that they do not conflict with each other, or with the [Dasher port](#), [X10 port](#), or [DMX adapters](#).

If you do not want to use all possible networks, you can simply set the adapters for some of them to "(None)". Using only a single Light-O-Rama network is perfectly sufficient for the needs of many users.

## Connection Speed ("Speed")

Light-O-Rama can communicate with [Light-O-Rama controllers](#) using various communication speeds.



These speeds can be set independently for each Light-O-Rama network:

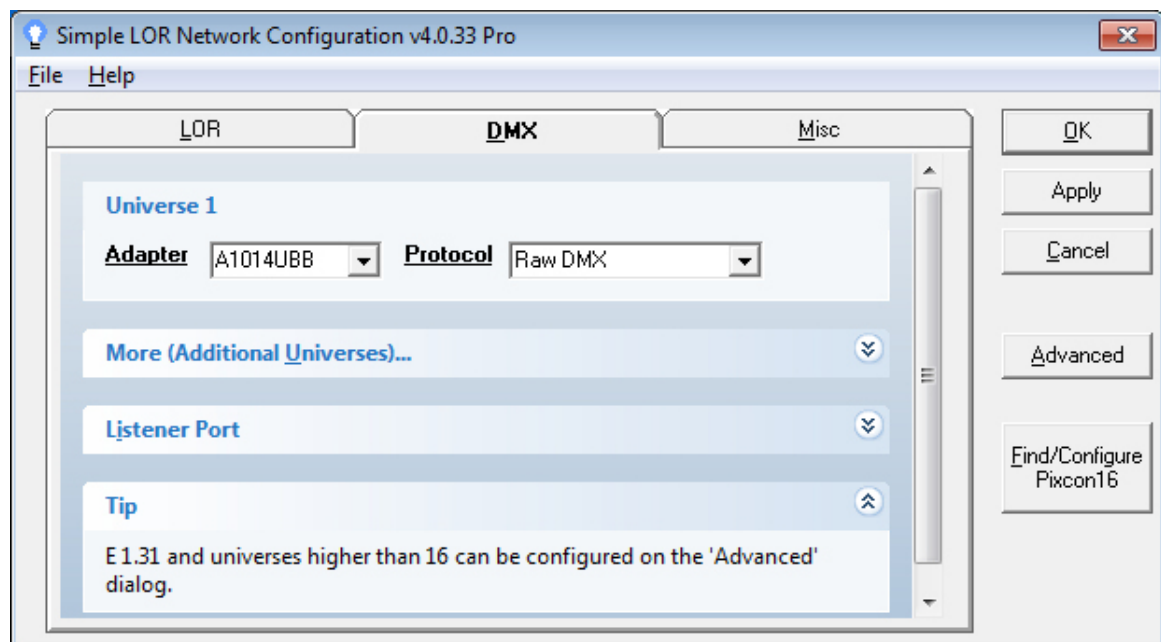
- If you do not have extraordinary needs, "57.6K (Recommended)" is suggested.
- If you have controllers that are hooked up to your computer using a very long or poor quality communications cable, you may need to set the speed to "19.2K (Slowest)".
- If you have many circuits with very fast action, you may need to set the speed to "115.4K", or even "500K (Fastest)". Note that these settings are not supported if you are using Light-O-Rama Easy Light Linkers for wireless communications, and that 500K is currently supported only on G3 controllers, Cosmic Color Ribbons, Cosmic Color Bulbs, Cosmic Color Pixels, and the Pixcon 16. You may also have to upgrade your firmware to use 500K.
- If this network **ONLY** contains Pixcon 16 controllers running on an Enhanced LOR Network, you may select 1000K. 1000K speed can be selected in ['Advanced' mode](#).

## Comments

Use the comment field as you see fit for notes/etc.

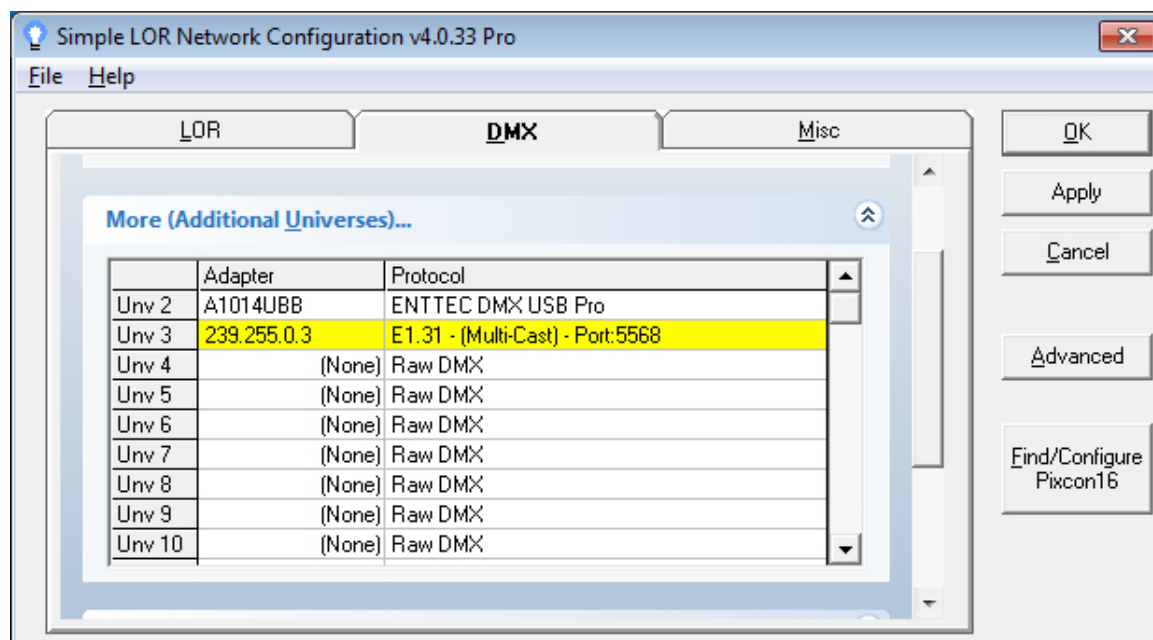
### 5.9.2.2 The DMX Tab

The DMX tab of the [Simple mode](#) of the [Light-O-Rama Network Preferences program](#) can be used to specify up to sixteen different [DMX universes](#), each using a separate adapter (to configure more universes, or universes that use E1.31 instead of adapters, you will need to use [Advanced mode](#) instead of Simple mode). The protocol used for each universe can be individually specified as well. Many users will not use DMX, and many of those who do will only require a single DMX universe (typically universe 1), and so by default only universe 1 is shown:



The DMX tab, showing only universe 1.

To configure additional universes (numbers 2 through 16), expand the "More (Additional Universes)" section of the tab:



The DMX tab, showing additional universes

For each universe, the Network Preferences program presents a dropdown 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 for 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 dropdown box.

A row that is highlighted in yellow (such as universe 3's row in the picture above) indicates that the universe is currently configured with advanced settings, and can only be changed using [Advanced mode](#). Clicking on any other universe's row will bring up a dialog box enabling you to set the [adapter](#) and [protocol](#). You can also set the [DMX listener port](#) by expanding the third section of the tab (labeled "Listener Port").

## DMX Adapter ("Adapter")

Each DMX universe (other than those that use E1.31, which are configured using [Advanced mode](#)) 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. If you are attempting to reassign an adapter, you may need to stop and restart various programs in the LOR suite. See earlier on this page for details.

Note that there are different types of DMX protocols that can be used. Please be sure to [select the correct protocol for your adapter](#).

## 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 USB Pro
DMXKing UltraDMX RDM Pro	ENTTEC DMX USB Pro
ENTTEC DMX USB Pro	ENTTEC DMX USB Pro
ENTTEC Open DMX USB* *: Some old ENTTEC Open devices, built in approximately 2008 or earlier, may not be supported	Raw DMX
LOR USB485	Raw DMX
LOR USB485B	Raw DMX
LOR USB485-ISO	Raw DMX
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.

## DMX Listener Port ("Listener Port")

This section can be used to configure the port that the [LOR Comm Listener](#) will listen on for lighting commands to be sent to DMX devices. The default port of 8837 should work for nearly all users, but can be changed here if needed.

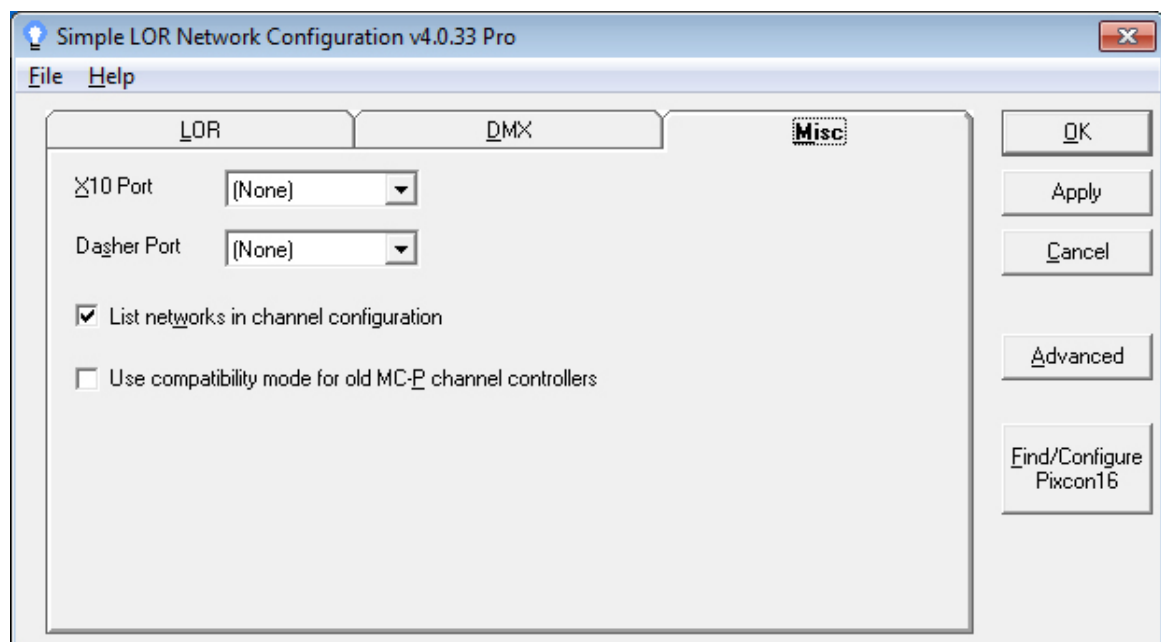
If you set the port to 0, the Comm Listener will be disabled, and lighting commands will not be sent to your DMX devices.

## Comments

Use the comment field as you see fit for notes/etc.

### 5.9.2.3 The Misc Tab

The Misc tab of the [Simple mode](#) of the [Light-O-Rama Network Preferences program](#) enables you to configure a [Dasher network](#) and/or an [X10 network](#), along with general communications options. Most Light-O-Rama users will not have need for this tab.



The X10/Dasher tab

## X10 Port

If you are using any X10 controllers, they must be hooked up to your computer using their own exclusive serial port, and that port should be specified here.

Make sure that the selected port does not conflict with any [Light-O-Rama networks](#), [the Dasher port](#), or any [DMX universes](#).

If you are not using X10 controllers, set this port to "(None)".

## Dasher Port

If you are using any Dasher controllers, they must be hooked up to your computer using their own exclusive serial port, and that port should be specified here.

Make sure that the selected port does not conflict with any [Light-O-Rama networks](#), [the X10 port](#), or any [DMX universes](#).

If you are not using Dasher controllers, set this port to "(None)".

## List Networks in Channel Configuration

Although Light-O-Rama supports up to sixteen separate [networks](#) of [Light-O-Rama controllers](#), the needs of many users will be adequately met with a single network. If this is the case for you, you may wish to turn off this checkbox. Doing so will simplify using the [Sequencer](#) by disabling various dropdown boxes which allow you to assign a network to a [channel](#) (such as on the Channel Configuration screen or the [Channel Settings dialog](#)). Instead, the Regular network will automatically be used.

## 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.

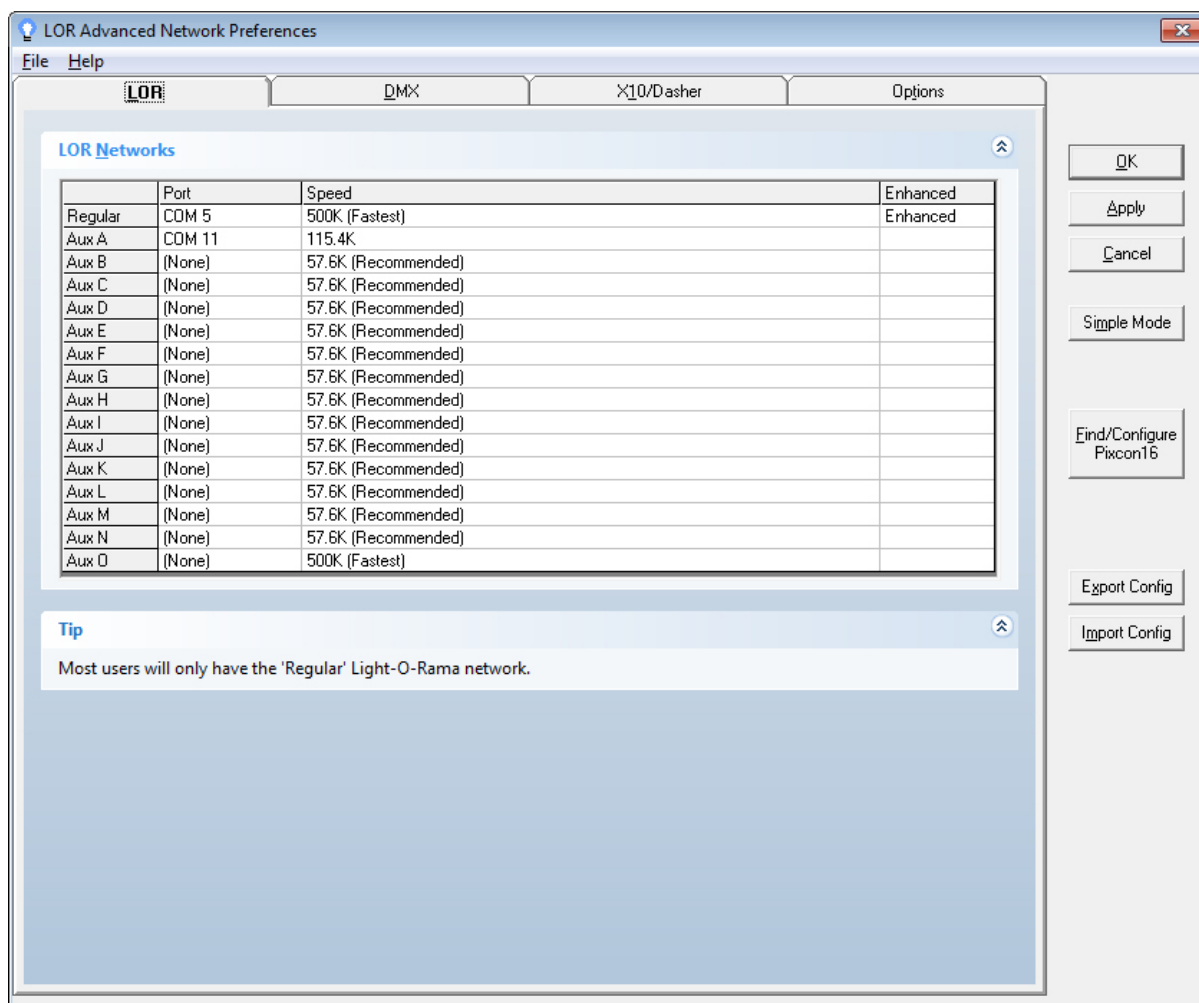
### 5.9.3 Advanced Mode

Most users' network configuration settings can be handled using the [Simple mode](#) of the [Network Preferences program](#). However, for certain types of configuration, the Advanced mode is required. These types include having more than sixteen [DMX universes](#), and having DMX universes that use E1.31 instead of adapters. The Advanced mode also supports all of the same options that Simple mode does, so even if you do not need any advanced configuration options, you may still find that you prefer to use Advanced mode.

If at any time you are in Simple mode and see a device or port that is shown in yellow, that means that it is currently using advanced configuration options and can only be modified from Advanced mode.

Advanced mode has several different tabs and options:

- [The LOR tab](#)
- [The DMX tab](#)
- [The Misc tab](#)
- [Find/Configure LOR PixCon16 Devices](#)



Advanced Network Preferences with Find/Configure LOR E1.31 devices button.

### 5.9.3.1 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 things like X10 and Dasher networks, MCP Compatibility mode, etc.

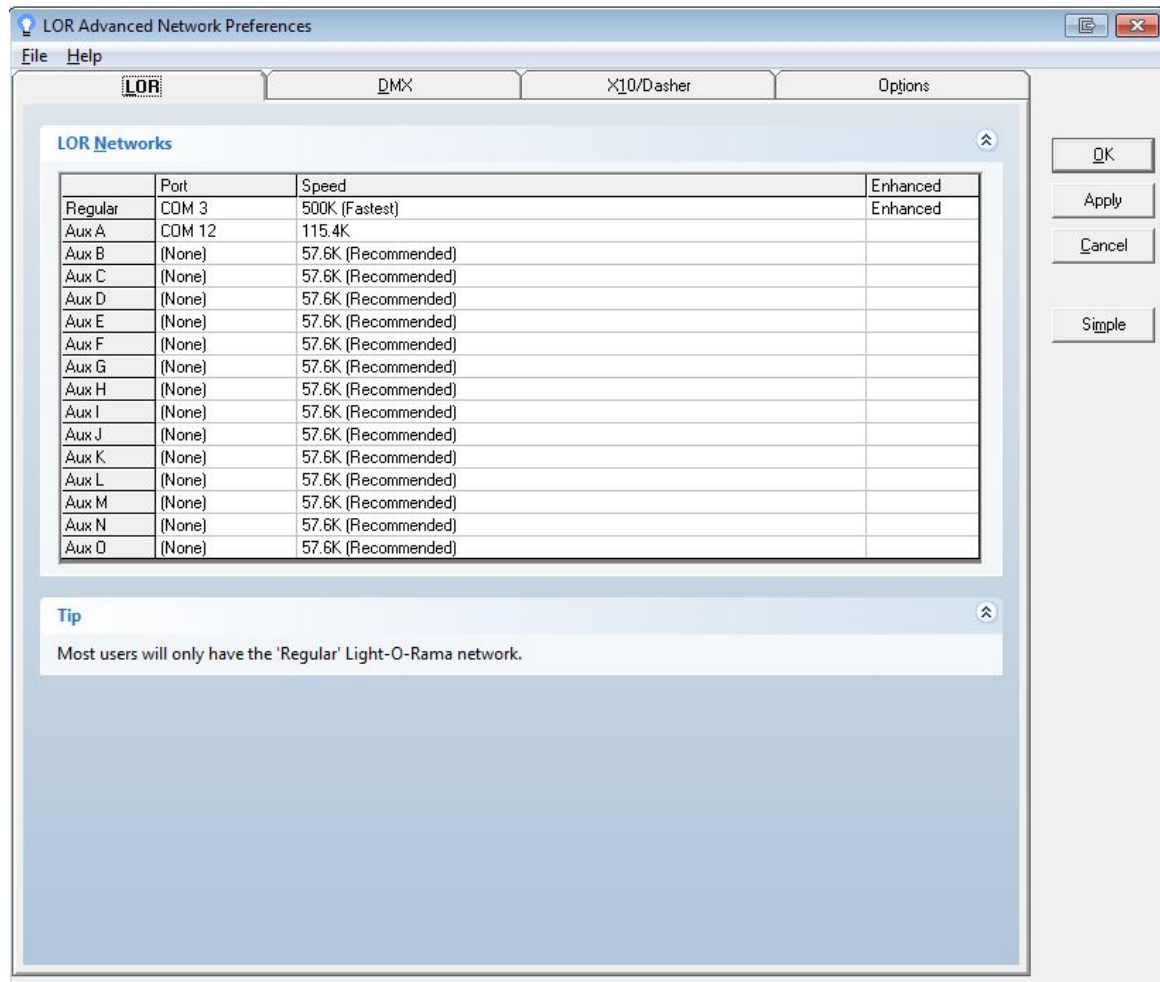
Please be careful when importing a network configuration from another computer. While the hardware and software give a best-effort to configure themselves the same way across physical machines, that is not guaranteed. This is especially true of COM port settings, and IP addresses. After importing a configuration, 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 .LNP extension.

To import a configuration, press the Import button and select the configuration to import.

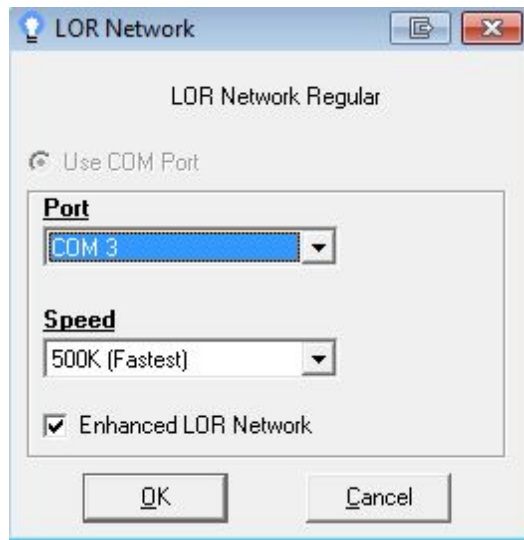
### 5.9.3.2 The LOR Tab

The LOR tab of the [Advanced mode](#) of the [Light-O-Rama Network Preferences program](#) presents a list of all sixteen available [Light-O-Rama networks](#), including the Regular network and all of the auxiliary networks (Aux A through Aux O):



The LOR tab in Advanced mode

Clicking on any row will bring up a dialog box allowing you to set the port and speed for that particular network, as well as choosing whether or not the network should be an [enhanced network](#):



Configuration for an LOR network

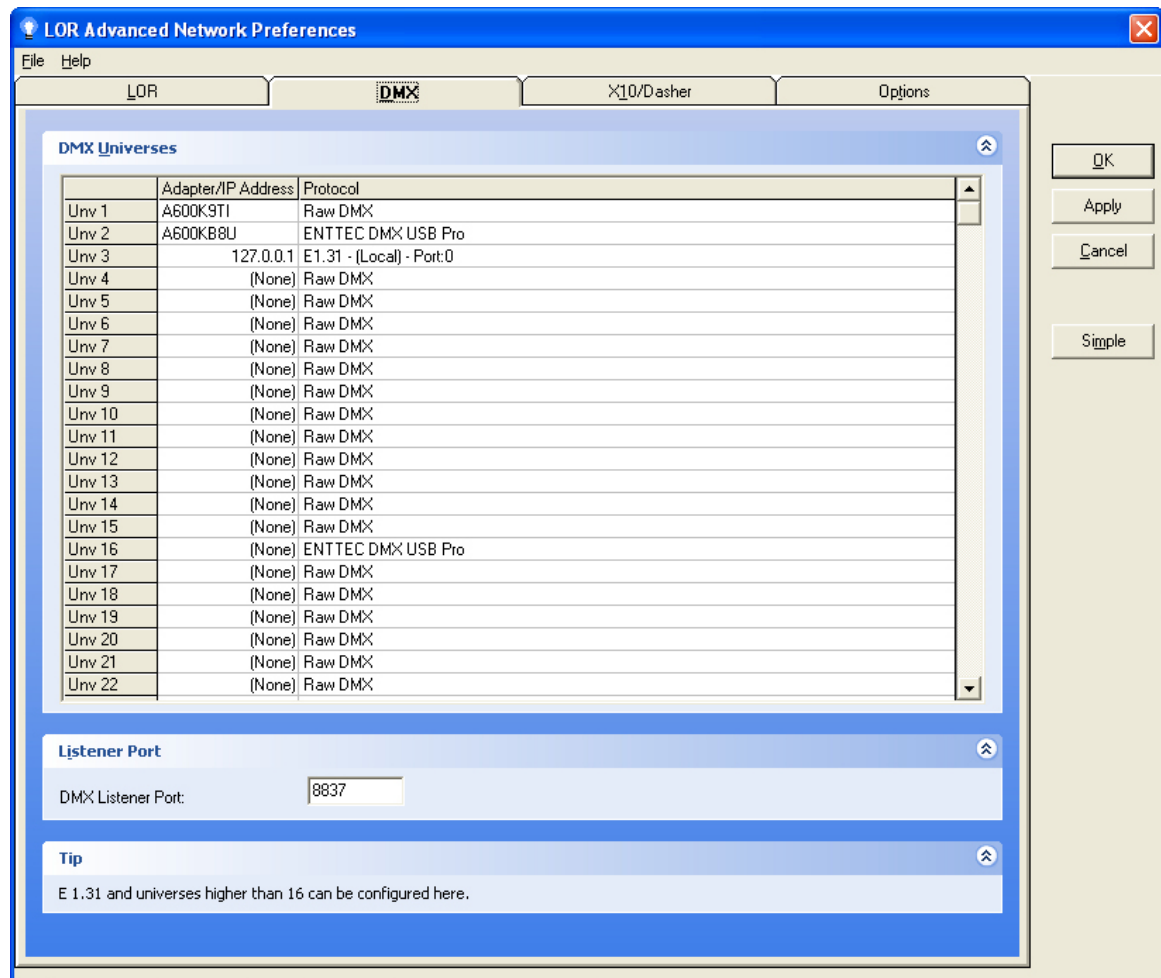
Please refer to the Simple mode's documentation for further details on [port](#), [speed](#), and [comments](#).

#### 5.9.3.3 The DMX Tab

The DMX tab of the [Advanced mode](#) 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 can be specified; for those using E1.31, [the remote IP address and port can be specified](#). You can also use this tab to specify the [COMM listener port](#).

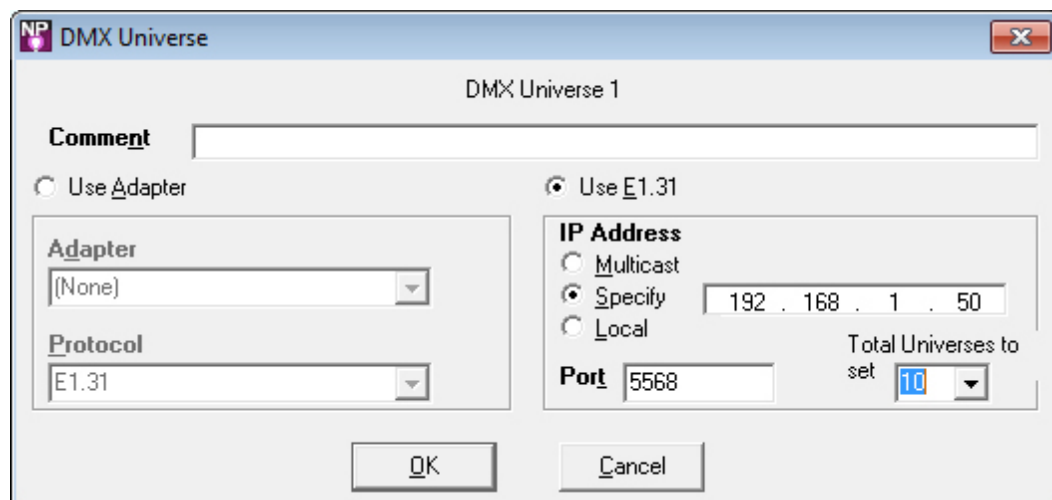
Note that the DMX tab can also be used in [Simple mode](#), but Advanced mode is required to configure universes beyond number 16, and also to configure E1.31 universes.





The DMX tab in advanced mode

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](#)":



The Advanced DMX Universe Configuration dialog

## Use Adapter

If you select "Use Adapter", you will then be able to choose the adapter to use for the universe and the protocol that the adapter uses. Please refer to [Simple mode's](#) documentation on [adapters](#) and [protocols](#) for details.

## Use E1.31

If you choose "Use E1.31", you will then be able to select the IP configuration for the universe to use, by specifying the [IP address](#) and [port](#) that the E1.31-to-DMX gateway devices are listening on.

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:

- **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-to-DMX gateway 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.
- **Specify:** Selecting this option will cause the universe to use unicast mode, and lighting commands for the universe will be received by a single specific E1.31-to-DMX gateway device, using the IP address that you specify.
- **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***

The IP port that the remote device or devices will listen on for lighting commands should be specified here. In most cases, the default 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.

## COMM Listener Port

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 DMX networks. Please refer to the [COMM Listener Port section](#) of the [Simple mode](#) documentation for details.

## Comments

Use the comment field as you see fit for notes/etc.

### 5.9.3.4 The Misc Tab

The Misc tab of the [Advanced mode](#) of the [Light-O-Rama Network Preferences program](#) allows you to configure an X10 network and/or a Dasher network, or change various communications options. It is equivalent to the [Misc tab](#) of [Simple mode](#); please refer to that documentation for details.

## 5.10 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.

## 5.11 Hardware Utility



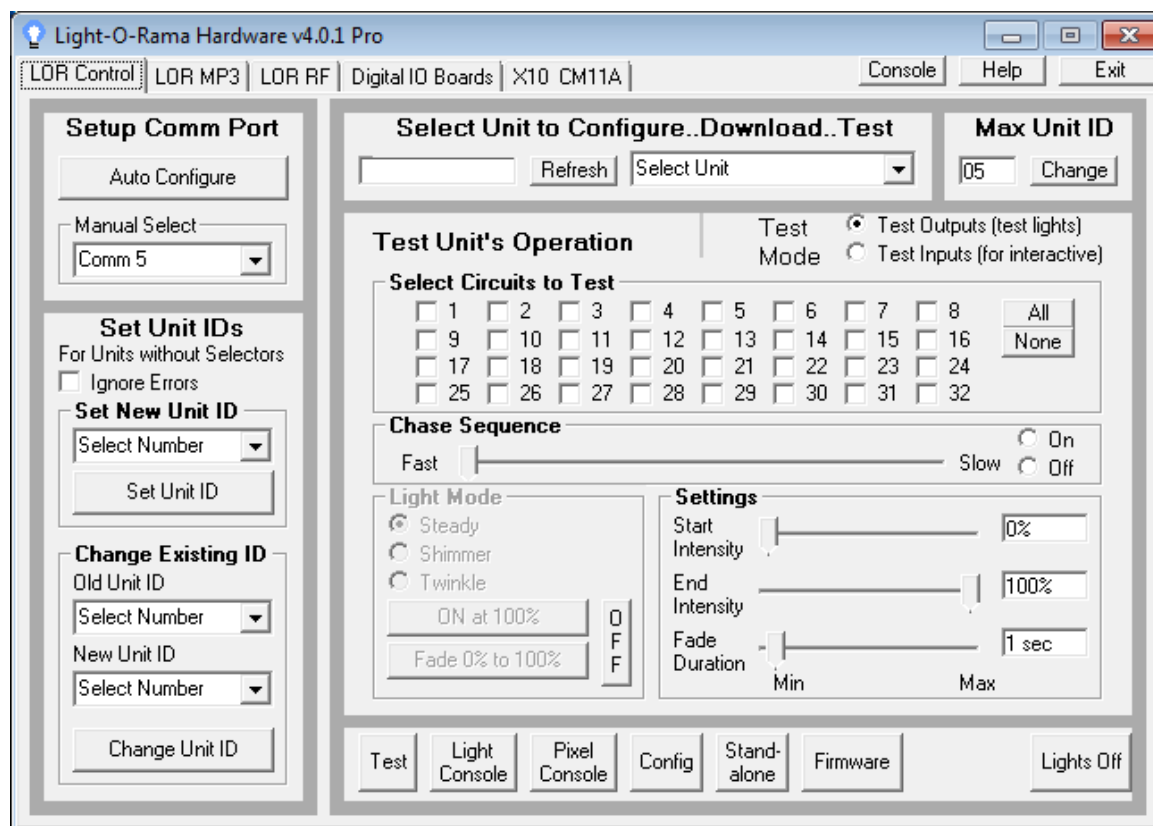
The Light-O-Rama Hardware Utility is used to manage the [hardware](#) that you use to control your lights. This includes several types of controllers as well as other devices such as Light-O-Rama MP3 Directors and Light-O-Rama wireless devices.

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](#)
- [Light-O-Rama MP3 Directors](#)
- [Light-O-Rama Wireless Devices](#)
- [Digital IO Boards](#)
- [X10 Controllers](#)
- [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.



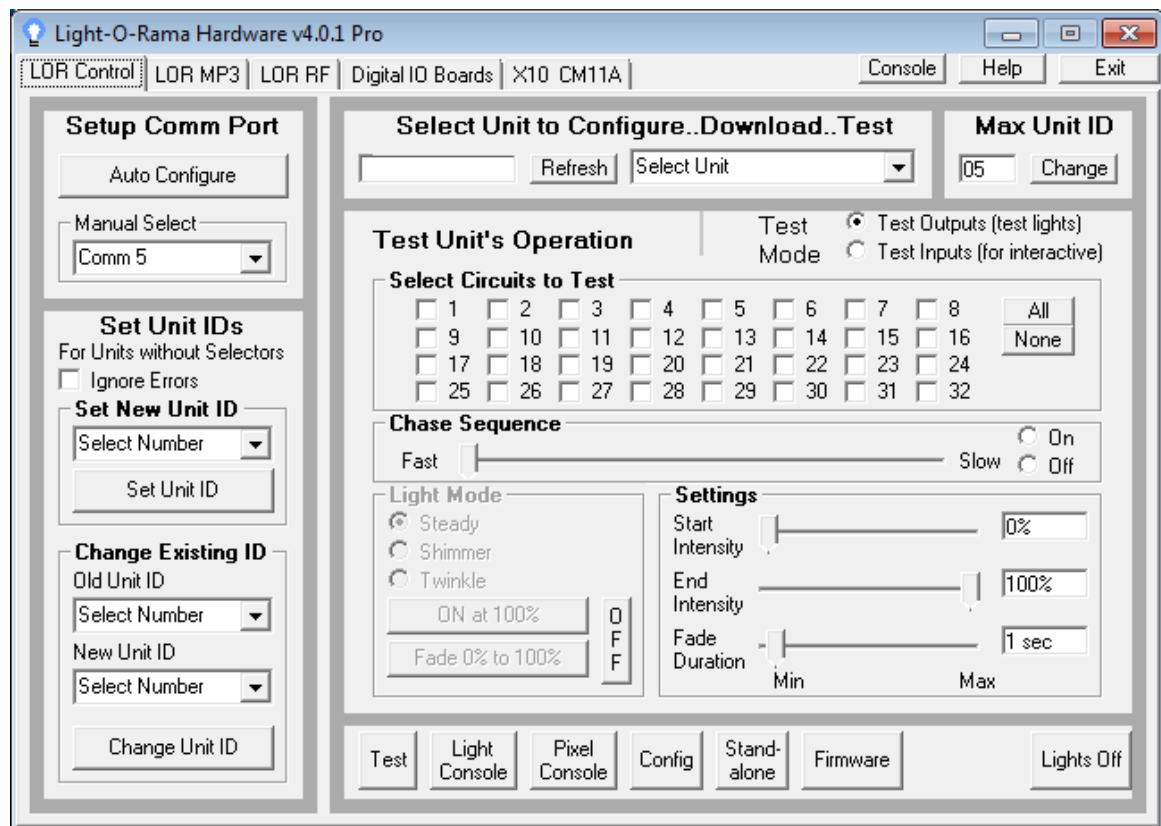
The Hardware Utility's tab for Light-O-Rama controllers

### 5.11.1 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](#)

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

#### 5.11.1.1 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.

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.

#### 5.11.1.2 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.

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

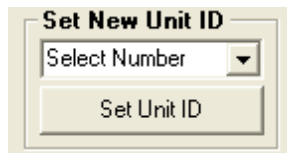
The first step in setting a [Light-O-Rama controller's unit ID](#) using the [Hardware Utility](#) is to connect the unit to the computer, for example using an SC485 adaptor or a USB-RS485 adaptor. Make sure that the selector switches are correctly set for the type of cable used (units are shipped ready 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

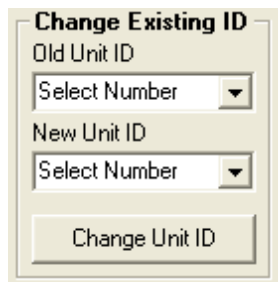
If this is a new unit that has not previously been assigned a [unit ID](#), use the "Set New Unit ID" section of the [LOR Control tab](#) of the [Hardware Utility](#). Simply select the unit ID you want to assign, and click the "Set Unit ID" button.



Setting the ID of a new unit

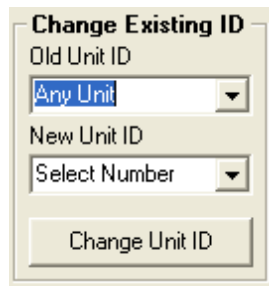
## Change the ID of an Existing Unit

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

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.

### 5.11.1.3 Configuring Units

Some [Light-O-Rama controllers](#), such as the MC-Px and CTBxxD 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](#)

## 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:

**General Configuration**

**Intensity Range**

Maximum: 100%

Minimum: 0%

**MC-P Port Selector**

A	B	
<input checked="" type="radio"/>	<input checked="" type="radio"/>	Triac Board
<input type="radio"/>	<input checked="" type="radio"/>	SSR
<input type="radio"/>	<input type="radio"/>	Servo Motor

**Input Channels**

	1	2	3	4	5	6	7	8
Switch N/O	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Switch N/C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9 10 11 12 13 14 15 16

Switch N/O: ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒

Switch N/C: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

**Update Unit**

DIO32-Servo Screen    Cosmic Color/Pixie Config    Advanced Configuration

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".

**Intensity Range**

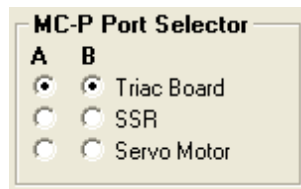
Maximum: 100%

Minimum: 0%

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.



**MC-P Port Selector**

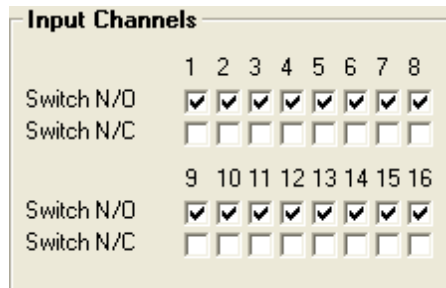
A	B
<input checked="" type="radio"/>	<input checked="" type="radio"/> Triac Board
<input type="radio"/>	<input type="radio"/> SSR
<input type="radio"/>	<input type="radio"/> Servo Motor

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).



**Input Channels**

	1	2	3	4	5	6	7	8
Switch N/O	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Switch N/C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

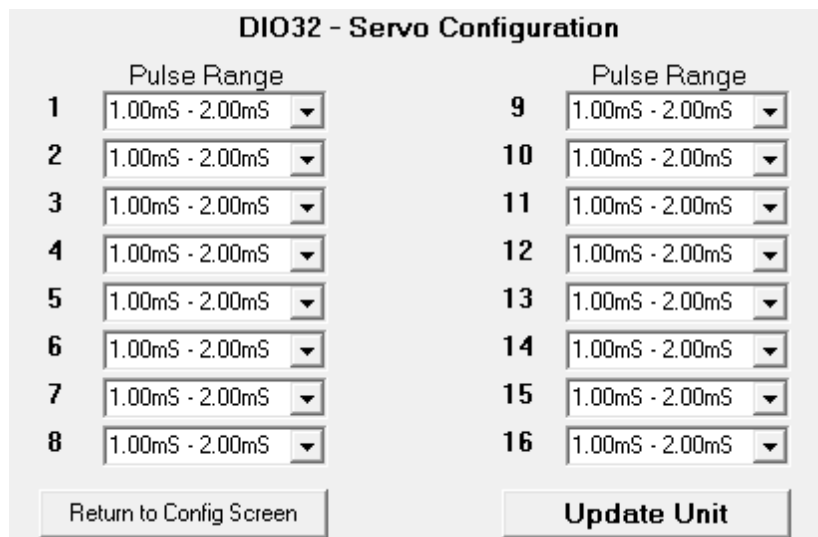
  

	9	10	11	12	13	14	15	16
Switch N/O	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Switch N/C	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**

	Pulse Range		Pulse Range
1	1.00mS - 2.00mS	9	1.00mS - 2.00mS
2	1.00mS - 2.00mS	10	1.00mS - 2.00mS
3	1.00mS - 2.00mS	11	1.00mS - 2.00mS
4	1.00mS - 2.00mS	12	1.00mS - 2.00mS
5	1.00mS - 2.00mS	13	1.00mS - 2.00mS
6	1.00mS - 2.00mS	14	1.00mS - 2.00mS
7	1.00mS - 2.00mS	15	1.00mS - 2.00mS
8	1.00mS - 2.00mS	16	1.00mS - 2.00mS

Return to Config Screen      Update Unit

DIO32 servo configuration options

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.

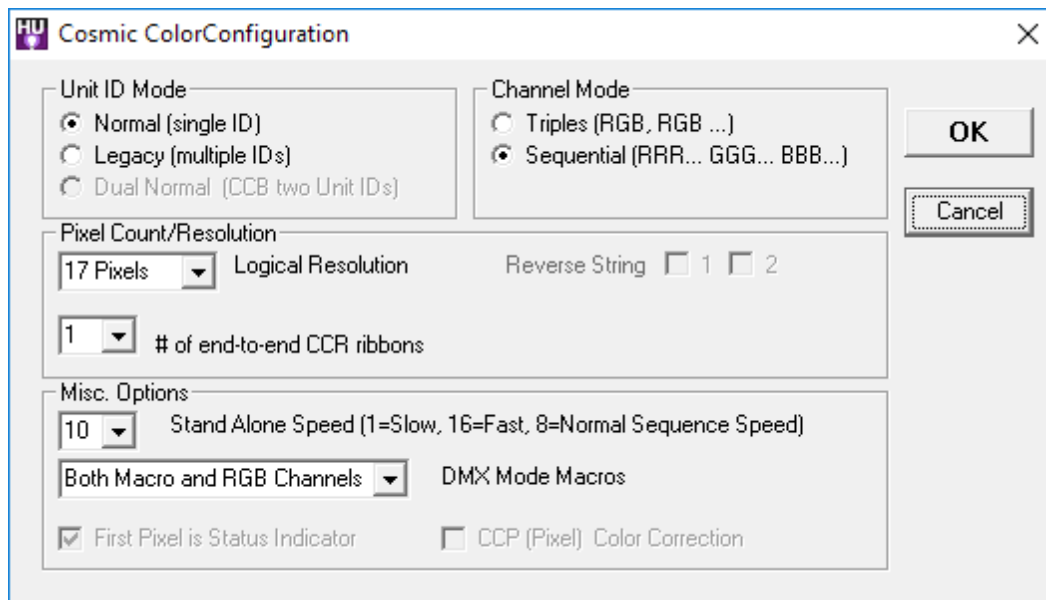
Note that only sixteen circuits are displayed, though the DIO32 has 32 circuits. This is because its 32 circuits are spread among two [unit IDs](#). For example, the first sixteen circuits might be for unit ID 01, in which case the next sixteen would be for unit ID 02. Both sets of sixteen can be configured 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**

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.

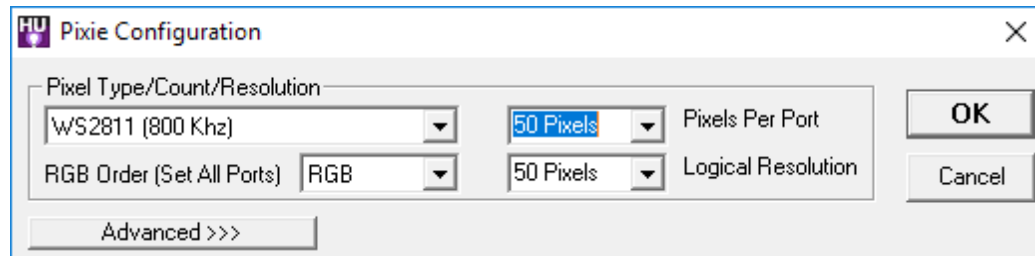
## Configuring Pixie Controllers including Cosmic Color 2 Ribbons, Bulbs, Pixels

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](#); 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:

**Pixie Configuration**

Pixel Type/Count/Resolution  
 WS2811 (800 Khz) 50 Pixels Pixels Per Port  
 RGB Order (Set All Ports) RGB 50 Pixels Logical Resolution

OK Cancel

<<< Simple

**Port Settings**

Port	Color Order	Reverse	Prop
Port 1	RGB	<input type="checkbox"/>	(no prop selected)
Port 2	RGB	<input type="checkbox"/>	
Port 3	RGB	<input type="checkbox"/>	Elden - Elden Singing Face - @ 100 Pixels
Port 4	RGB	<input type="checkbox"/>	
Port 5	RGB	<input type="checkbox"/>	Ralphie - Ralphie Singing Face - @ 100 Pixels
Port 6	RGB	<input type="checkbox"/>	
Port 7	RGB	<input type="checkbox"/>	Ralphie - Ralphie Singing Face - @ 100 Pixels
Port 8	RGB	<input type="checkbox"/>	
Port 9	RGB	<input type="checkbox"/>	
Port 10	RGB	<input type="checkbox"/>	
Port 11	RGB	<input type="checkbox"/>	
Port 12	RGB	<input type="checkbox"/>	
Port 13	RGB	<input type="checkbox"/>	
Port 14	RGB	<input type="checkbox"/>	
Port 15	RGB	<input type="checkbox"/>	
Port 16	RGB	<input type="checkbox"/>	

**Misc. Options**

☐ First Pixel is Status Indicator

8 Stand Alone Speed (1=Slow, 16=Fast, 8=Normal Sequence Speed)

RGB Channels Only DMX Mode Macros

**Triplet order**

☒ Triples (RGB, RGB ...) [Recommended] ☐ Sequential (RRR... GGG... BBB...)

### 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.

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 one 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.

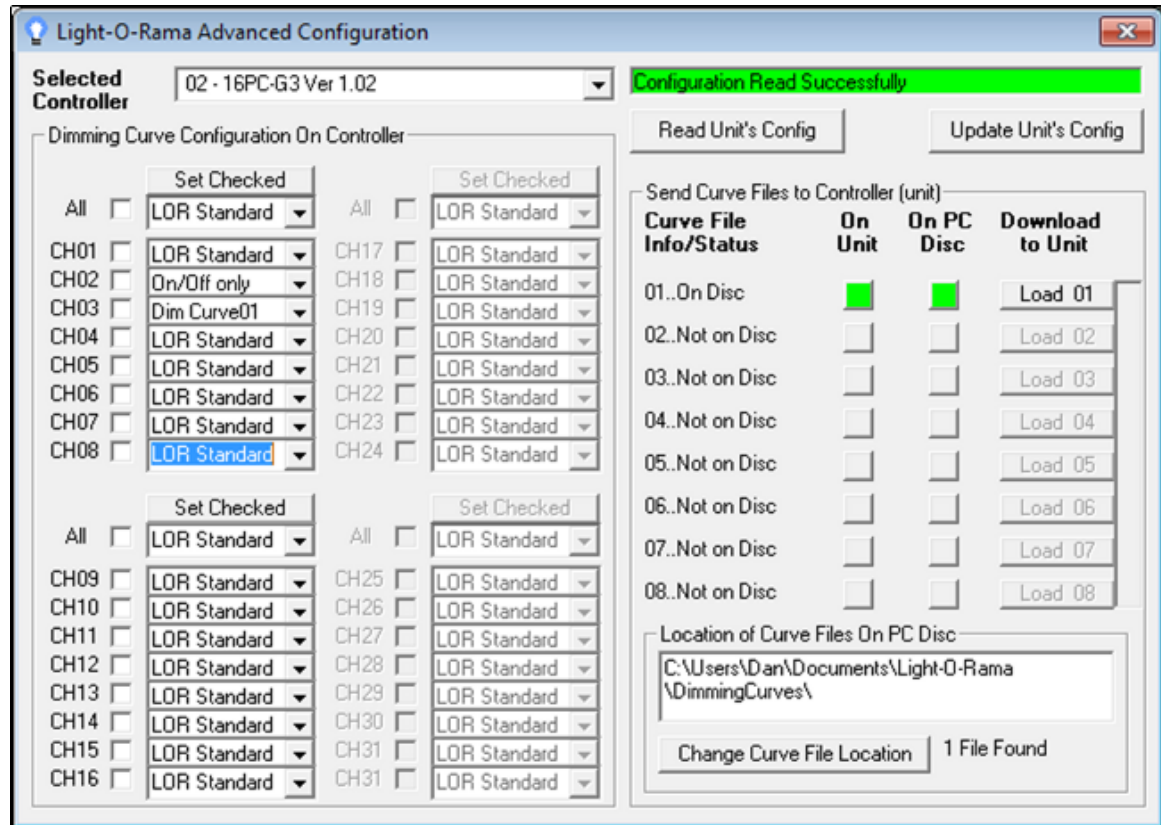
Dimming curves determine the output of a [channel](#) versus the intensity setting of that channel. For example, the On/Off only curve has the output set at 100% for intensity values greater than 50% (or DMX 128), and the output at 0% for any other intensity value.

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 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.

### 5.11.1.3.1 Light-O-Rama MP3 Directors

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.

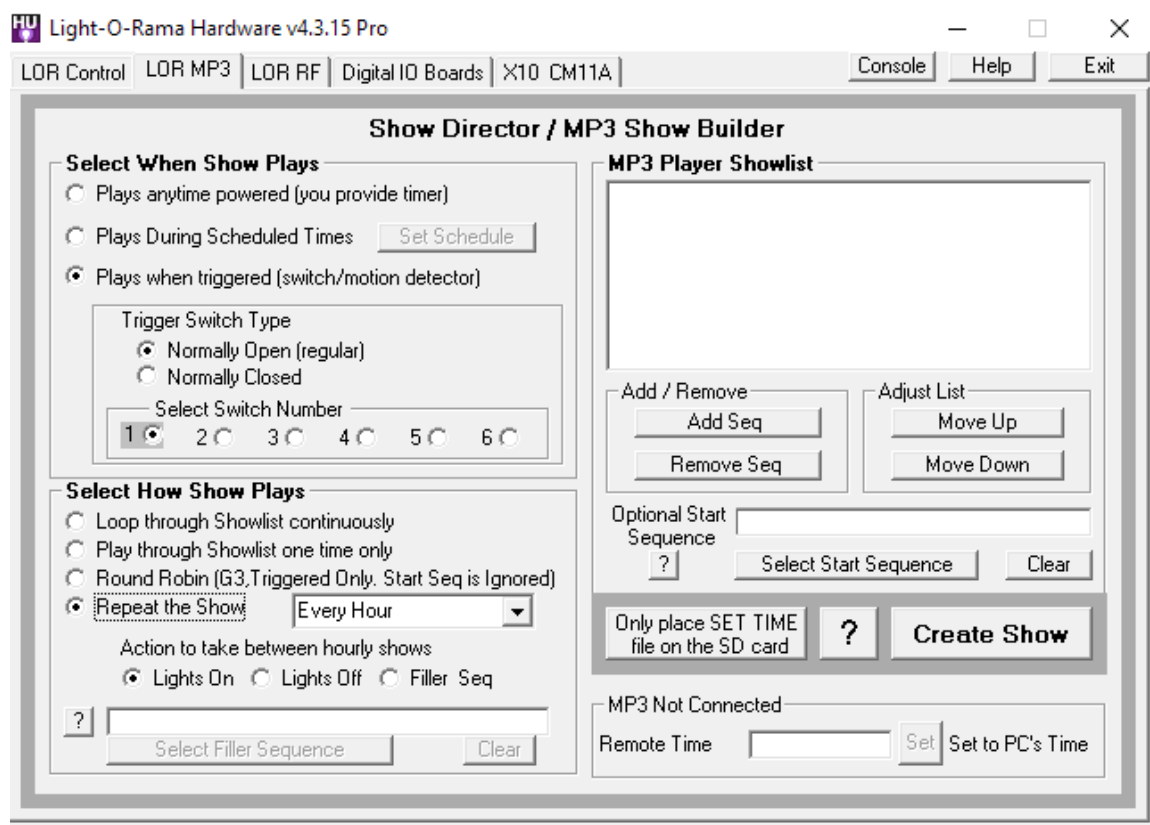
Newer Generation 3 MP3 Directors, like the MP3g3 Dual Network Director, can drive both LOR and DMX hardware.

Note, that any [loops](#) in an animation sequence will be ignored. Up to nine separate shows can be

downloaded to an MP3 director.

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](#)



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 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***

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 channel configuration.

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	<a href="#">(*)</a>	Only one network, so it is placed on port 1. <a href="#">See note for port 2.</a>

Your sequence contains....	PORT 1 on the director controls	PORT 2 on the director controls	Notes
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. <a href="#">See note for port 2..</a>
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 channel configuration. 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

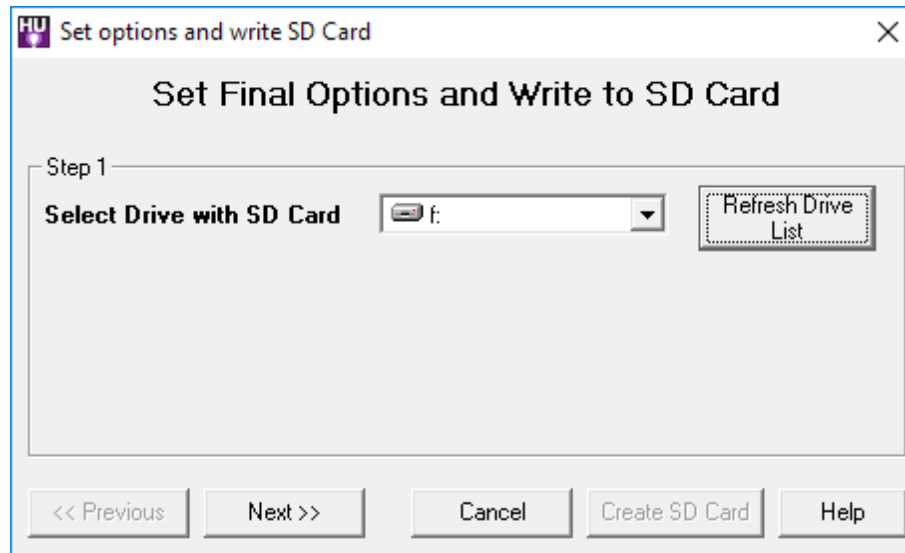
When you have selected the show's options and the [sequences](#) to be played, you can download the show to an SD card (which can later be placed into the MP3 director). Make sure that you have your SD card reader/writer hooked up to your PC, and click on the "Create Show" button. This

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.

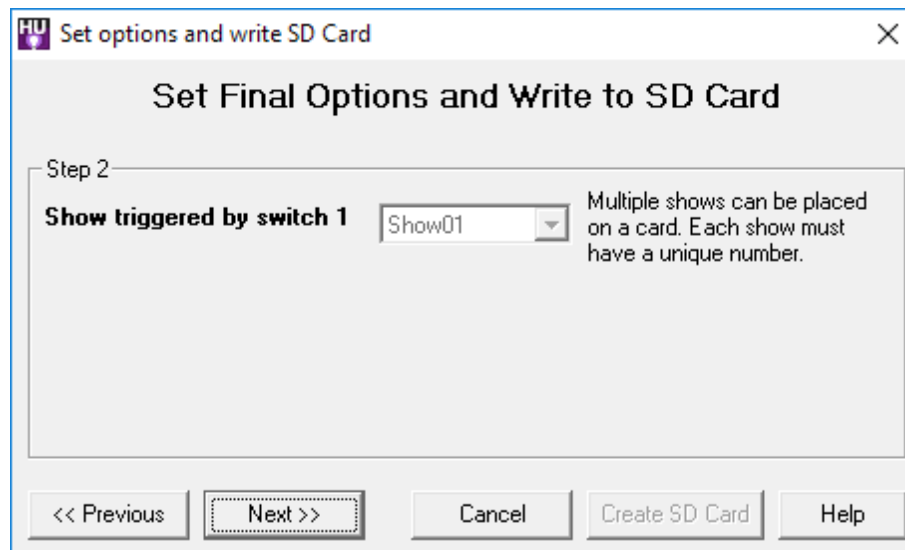
### Step 1

Select the drive that contains your SD card.



### Step 2

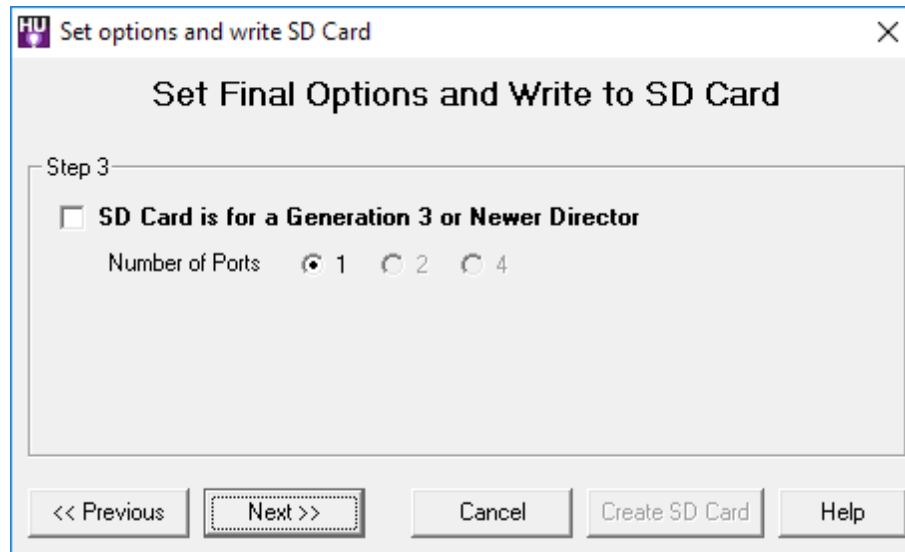
Select the show number that you want to use for this show. Each show on a card must have a unique number assigned. If multiple shows are scheduled at the same time, the lowest numbered show will take priority.



### Step 3

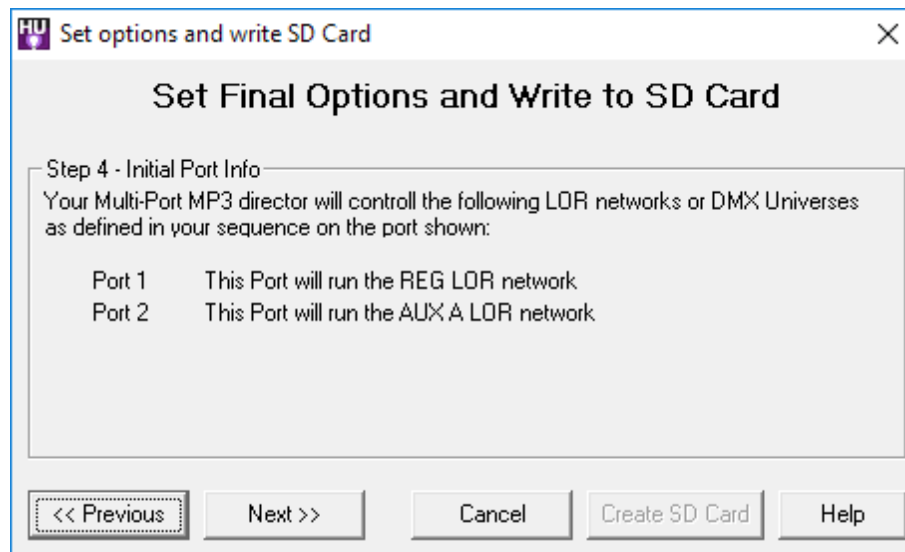
if you have a G3MP3 director, select the check box here, and then specify the number of ports for

your director.



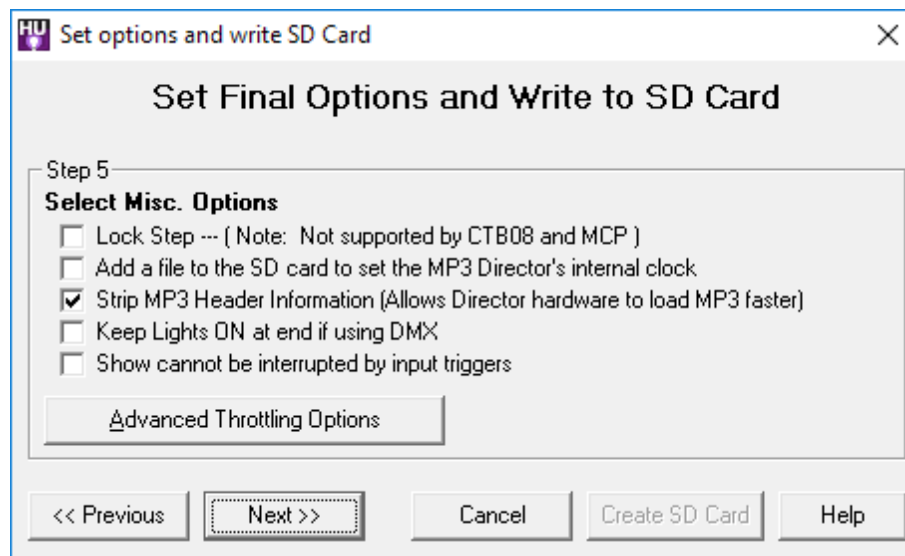
#### Step 4

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:

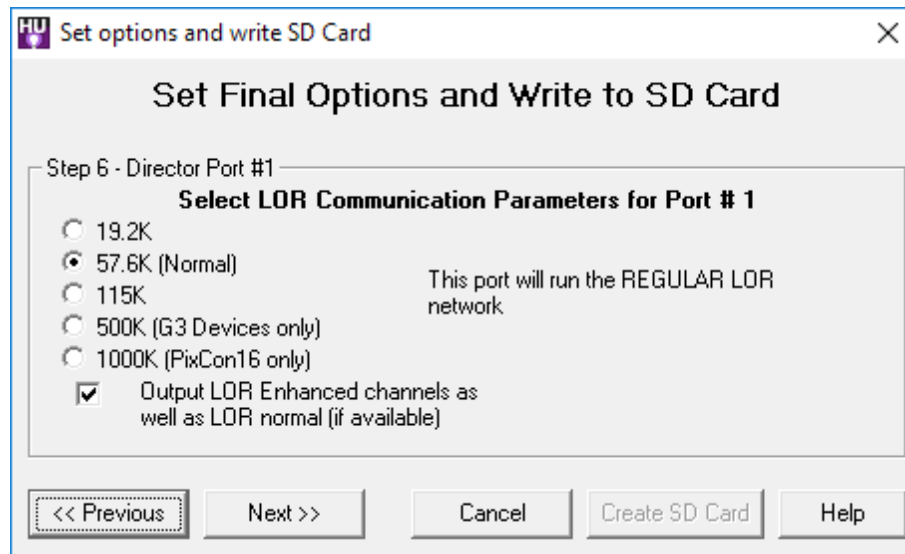


- **Lock Step:** If you have a very large display, selecting "lock step" may help the different controllers used in the display react with a higher degree of synchronization. This is not supported on all controller types, and the level of firmware in the controllers must be 3.0 or higher.
- **Set MP3 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.





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 first 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.

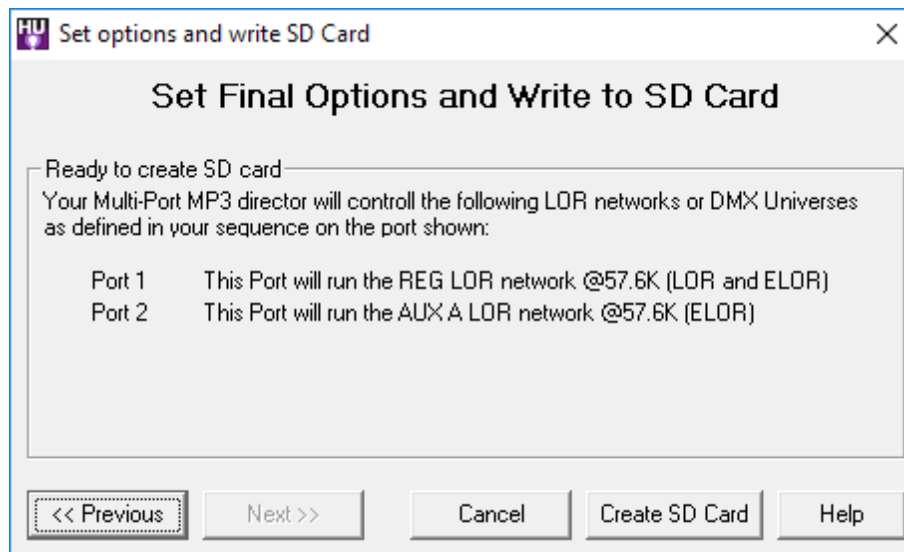
- G3 directors (and higher) have an additional speeds of 500K and 1000K available. The 500K speed is approximately four times faster than the previous high speed of 115.4K, but is only supported on Generation 3 (G3) devices with updated firmware.
- The 1000K speed can ONLY be used with networks that 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.

### 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).

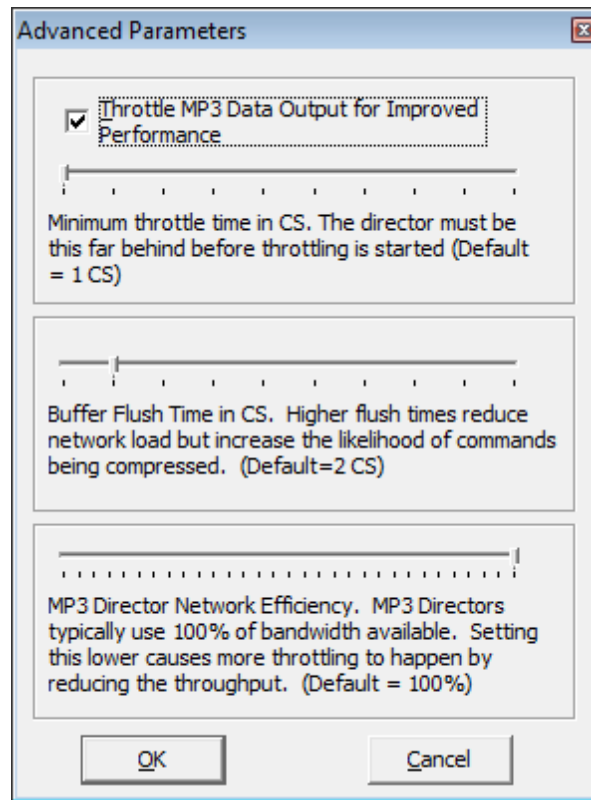
If you cannot (or do not wish to) hook the MP3 director up to your PC, you can instead create a "time file" to be placed on an SD card. The first time that SD card is placed in the MP3 director, the director's clock will be set to the time specified in the time file (which you can choose, so that you 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.



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%).

#### 5.11.1.4 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.



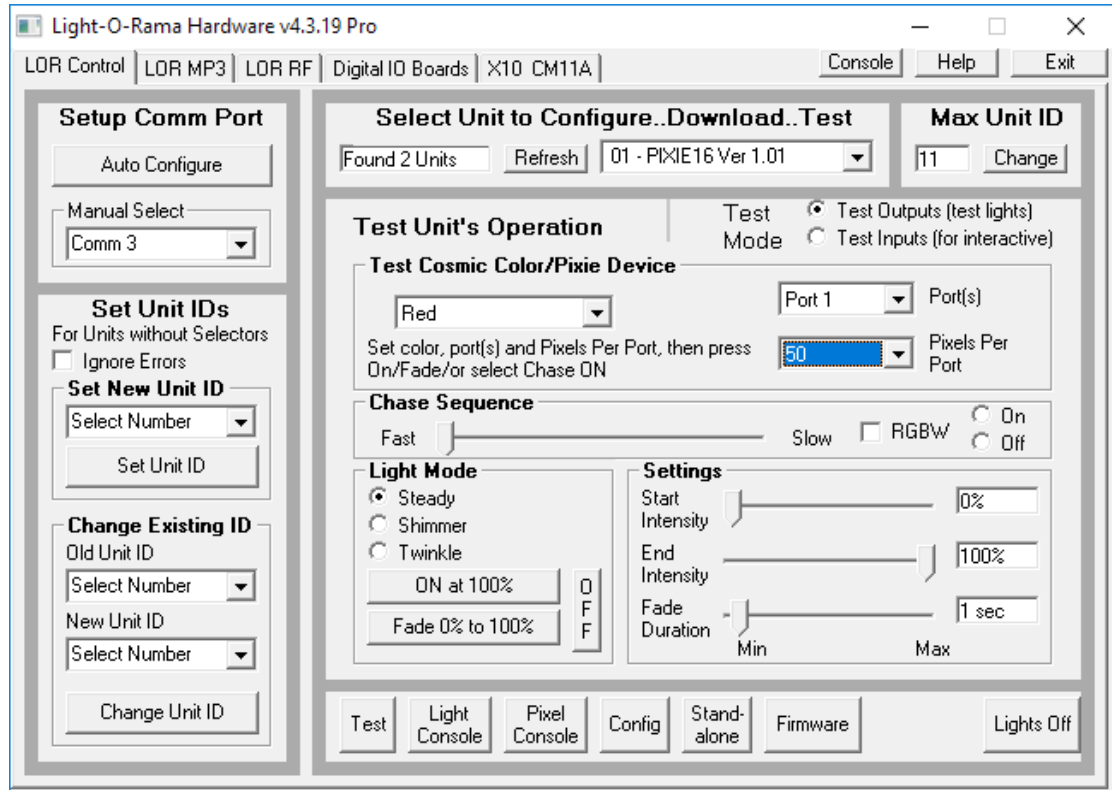
Selecting the unit to use

### 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 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.

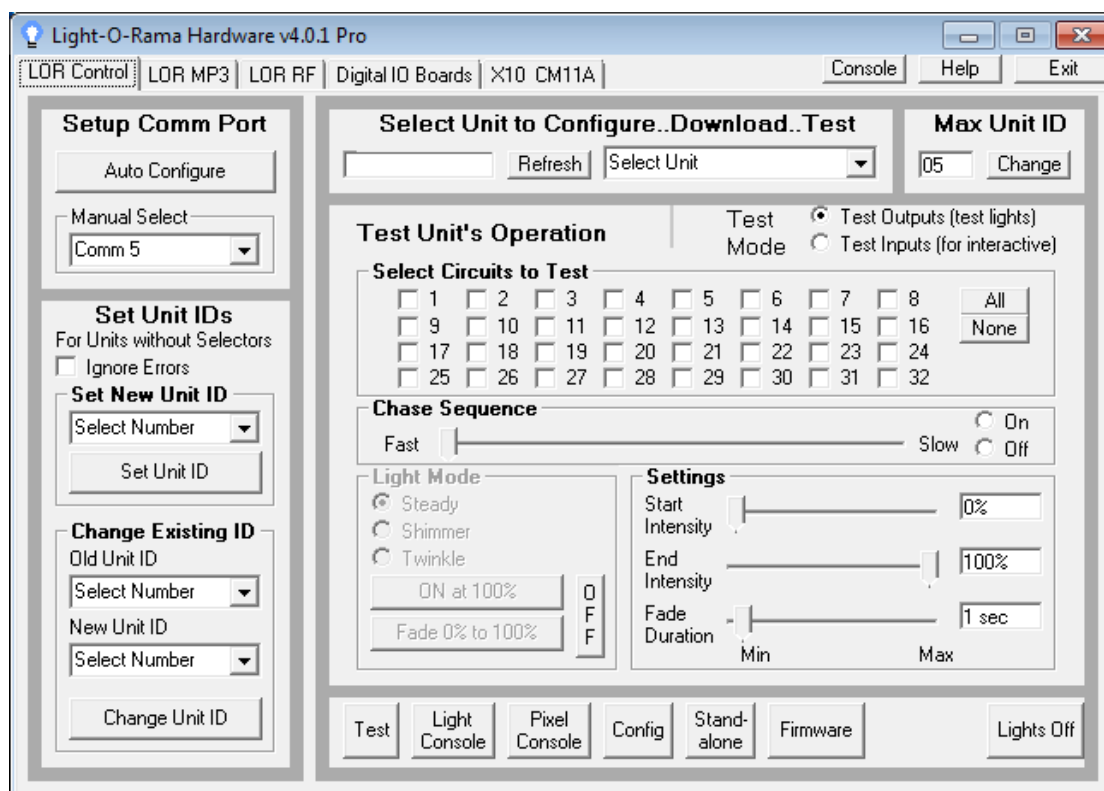
Because of the large number of circuits available on Cosmic Color Devices like the Cosmic Color Ribbon or Cosmic Color Bulbs, you do not test individual circuits. Instead, you can select a color to be displayed across the device/port. You can select from a list of pre-determined colors, or select 'Custom' 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:



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".

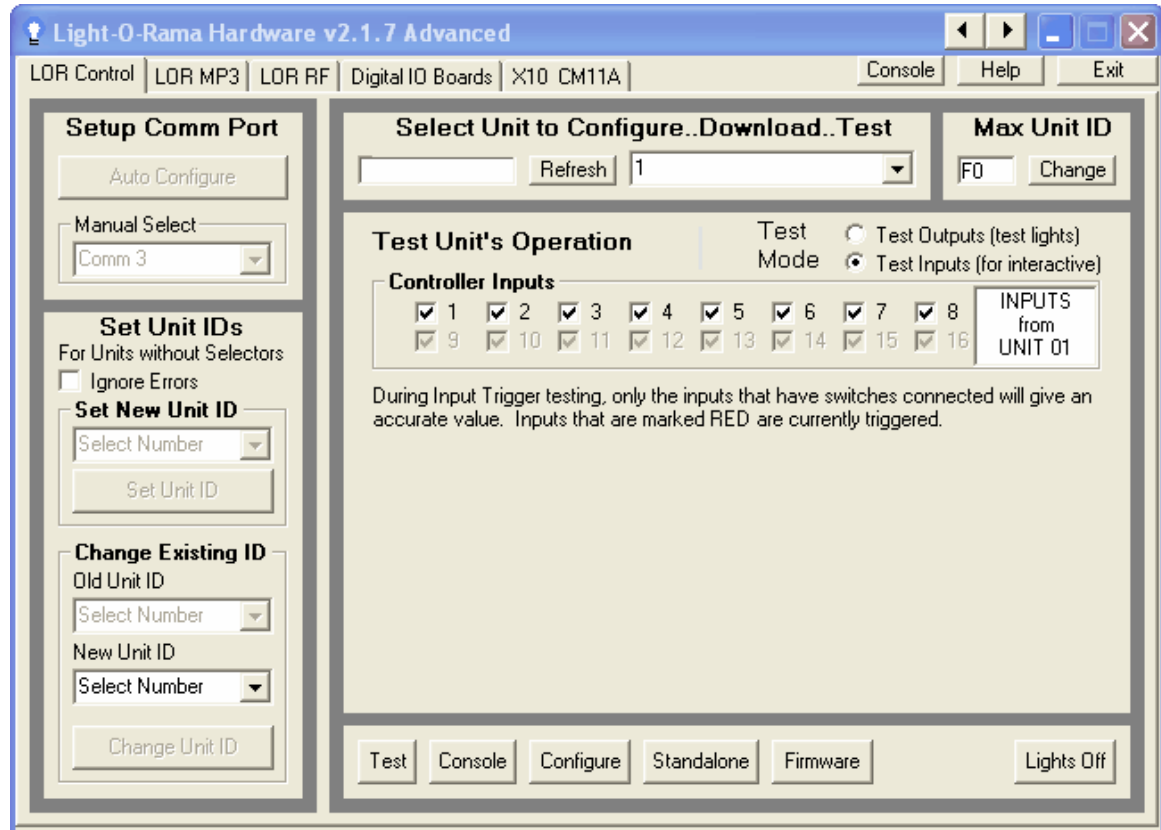
Alternatively, the "Chase Sequence" section can be used to turn the selected [circuits](#) on and off in sequence.

### ***Test Inputs (for interactive)***

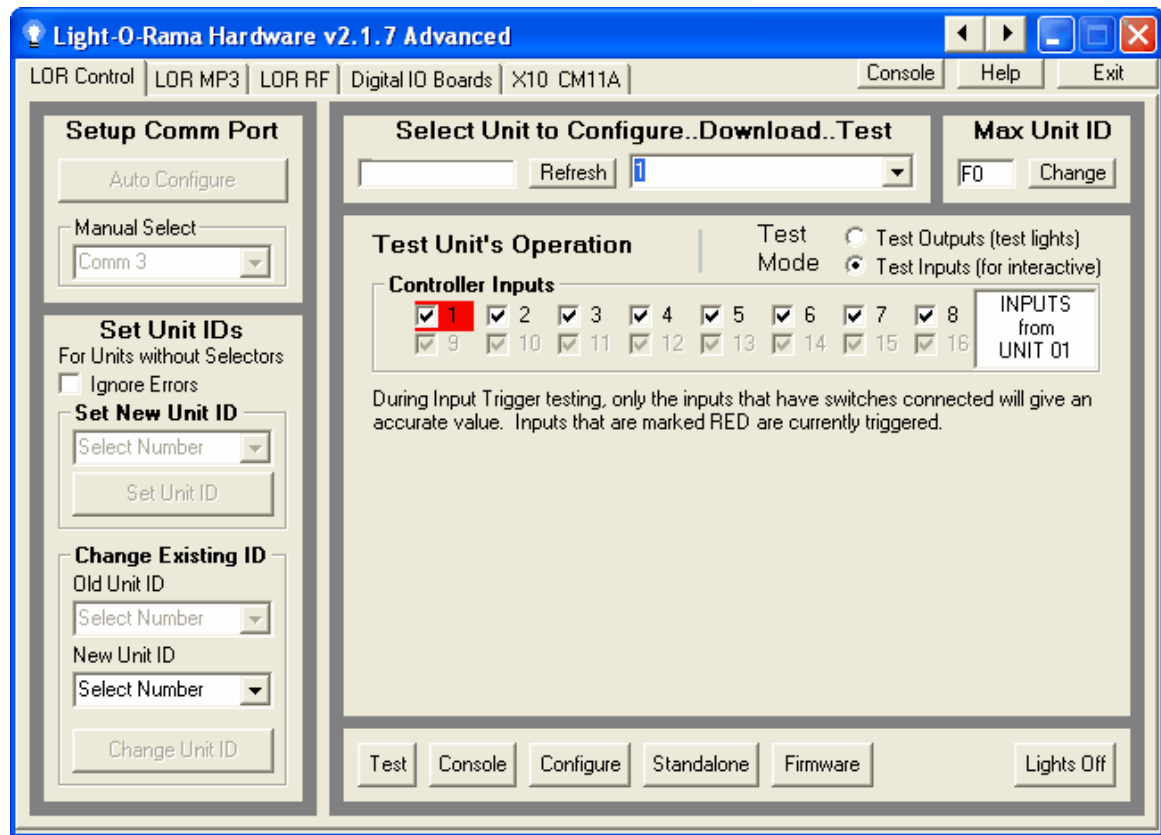
To test that your controllers can generate [interactive triggers](#), select "Test Inputs (for interactive)" as your "Test Mode".

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.

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



The input testing section of the LOR Control tab, with circuit 1 tripped

#### 5.11.1.5 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.

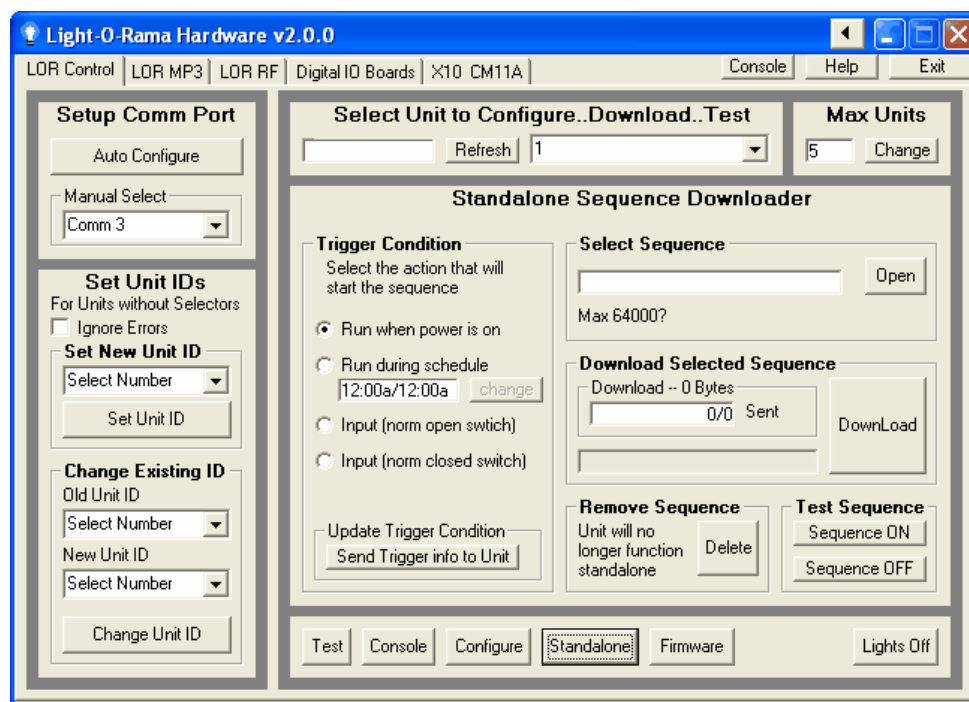
To download a sequence to a controller to be used in standalone mode, take the following steps:



- [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](#), you must assign [unit IDs](#) and [circuit IDs](#) to the [channels](#), 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.

- 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:

- The sequence must contain only one [track](#).
- The sequence should only contain commands for controllers on a single [network](#); unexpected results may occur if you have more than one network listed in the sequence.
- [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.

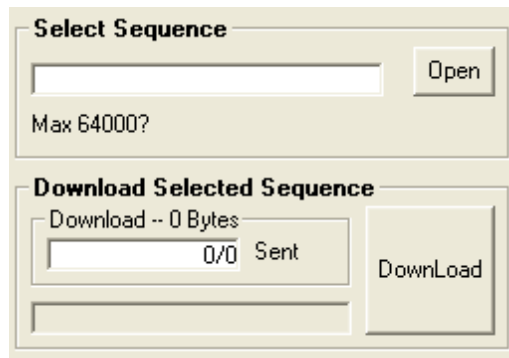
**NOTE:** Scanning the network may take some time. If you have set the unit IDs of your controllers to low values, you can use the "Max Unit ID" section to speed up this scan drastically. It is therefore a good habit to assign your controllers unit IDs starting at 01, and increasing sequentially through 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:

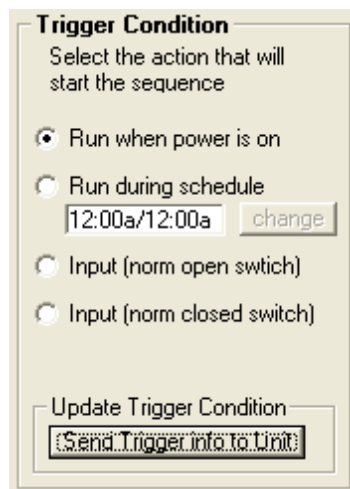


Selecting and downloading the sequence

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

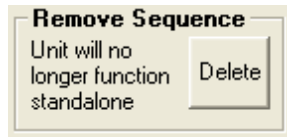
Select the condition you want to start the sequence, and click "Send Trigger info to Unit".

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:



Removing a sequence

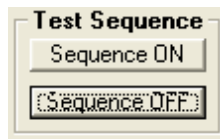
**Note:** This does not *actually* remove the sequence from the controller; rather, it makes it so that the controller will no longer play the sequence. So, if you later decide to use the sequence again, you can simply [reschedule the sequence](#) to run, rather than [downloading the sequence](#) again.

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.

### 5.11.1.6 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).

**Firmware**

**Caution:** Updating firmware should be undertaken when absolutely necessary. Carefully follow directions and make every attempt not to interrupt the download of firmware..

**Step1 - Select Unit**

☒ Selected unit listed above    ☐ MP3 Player  
☐ Only one unit is connected    ☐ Wireless Unit

**Step 2 - Select firmware file**

Selected file:

**Step 3 - Press Download Button**

Update progress:

**Status**

Activity:

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.

**Step1 - Select Unit**

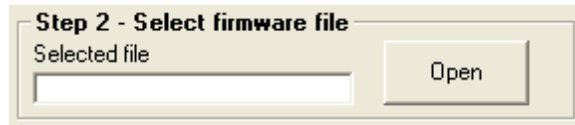
☒ Selected unit listed above    ☐ MP3 Player  
☐ Only one unit is connected    ☐ Wireless Unit

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.

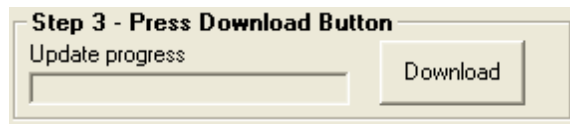


Selecting the firmware file

## 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.***

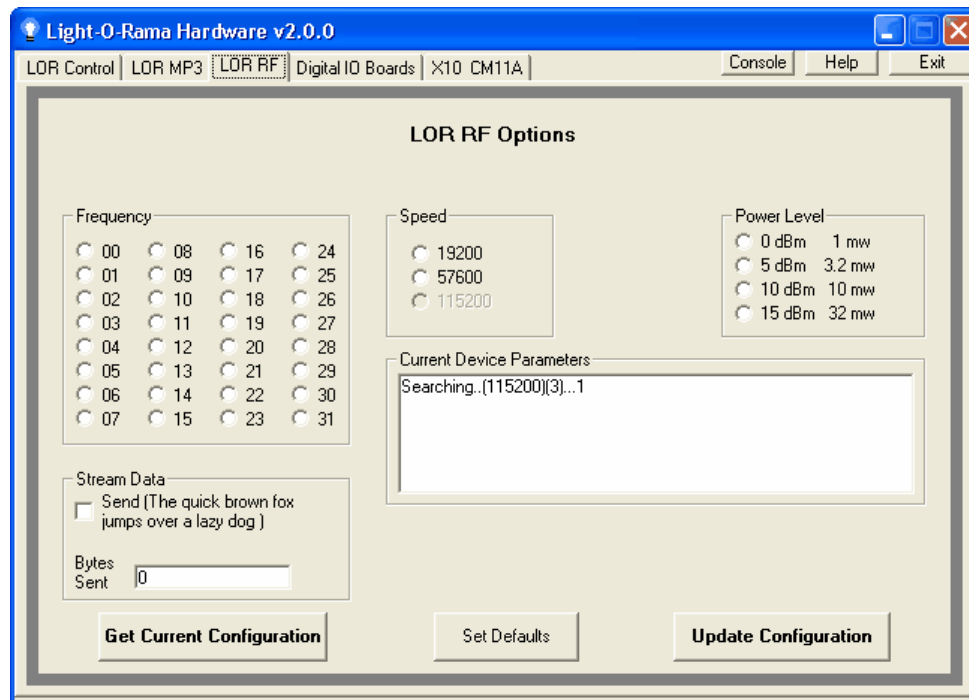
### 5.11.2 Light-O-Rama Wireless Devices

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](#)



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.

## 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.

### 5.11.3 Digital IO Boards

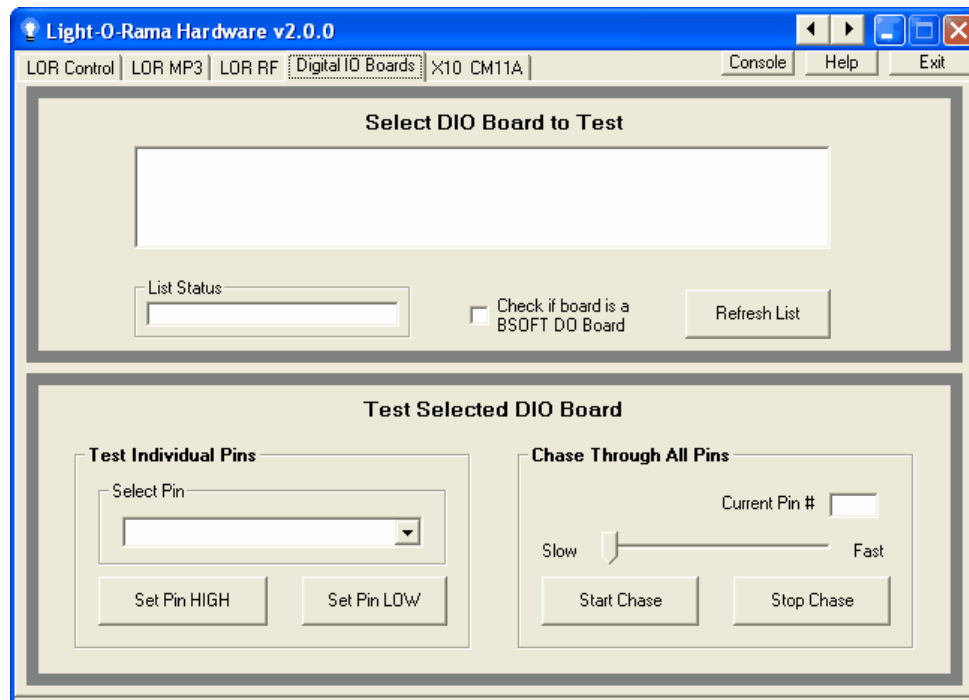
The Digital IO Boards tab on the [Light-O-Rama Hardware Utility](#) can be used to determine if Light-O-Rama can properly communicate with digital IO boards (including BSOFT digital IO boards) installed on your computer. In order to use these boards with Light-O-Rama, your computer must have the Universal Library and InstaCal installed.

To get a list of the boards that Light-O-Rama can find installed on the PC, click the "Refresh List" button. Once a list of boards appears, you can select a board to test. If the board is a BSOFT digital IO board, make sure that you check the appropriate checkbox.

After a board has been selected, you can test either individual pins on the board, or chase through all pins.

If you cannot control the board using the Hardware Utility, then you will not be able to control the board using any Light-O-Rama software, including the [Sequencer](#) or the [Show Player](#).





The Digital IO Boards tab of the Hardware Utility

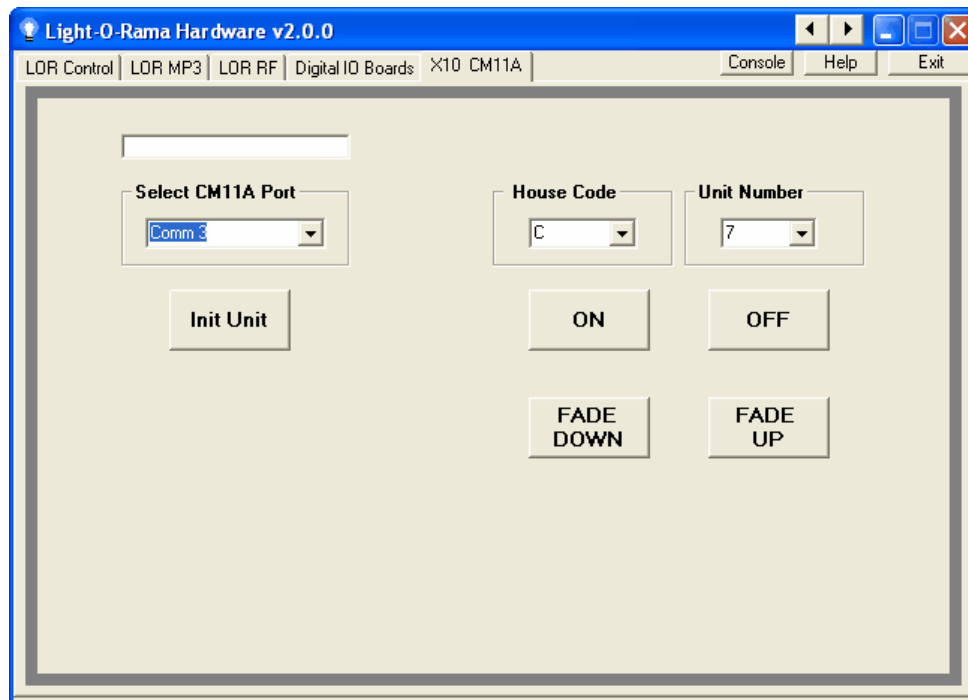
#### 5.11.4 X10 Controllers

Light-O-Rama can control industry standard X10 modules using CM11A X10 controllers (available for purchase at a variety of online stores). The X10 CM11A tab of the [Light-O-Rama Hardware Utility](#) can be used to test the connection and functionality of such controllers.

To do so, first connect the controller to a serial port, using the cable supplied with the CM11A.

Select the port that you believe the CM11A to be on in the "Select CM11A Port" dropdown list, and click on the "Init Unit" button. In the status window above the port selection dropdown list, you will see if the unit has been located on the selected port. **Note:** Occasionally there will be a false report of a CM11A being located on comm ports that are actually internal modems. This is generally Comm 3.

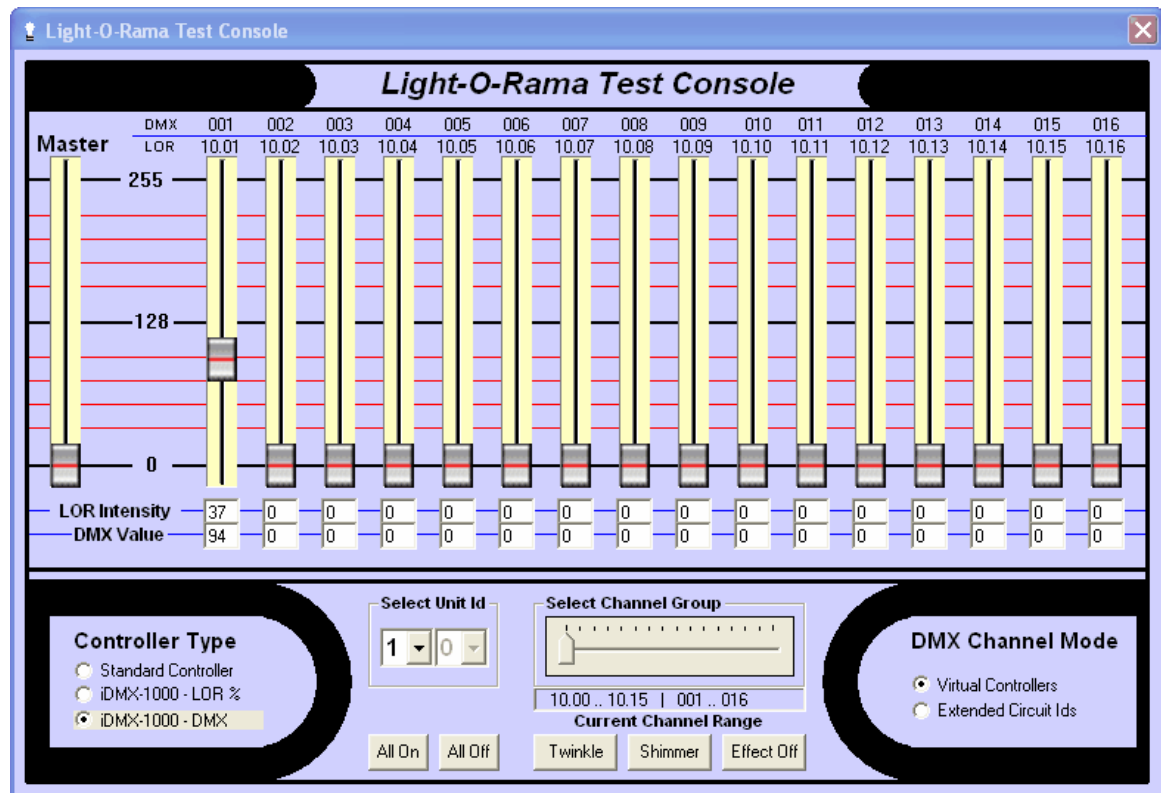
Select the house code and unit number of the controller, and test the unit using any of the "On", "Off", "Fade Down" and "Fade Up" buttons.



The X10 CM11A tab of the Hardware Utility

### 5.11.5 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](#).



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

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.

### 5.11.6 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:

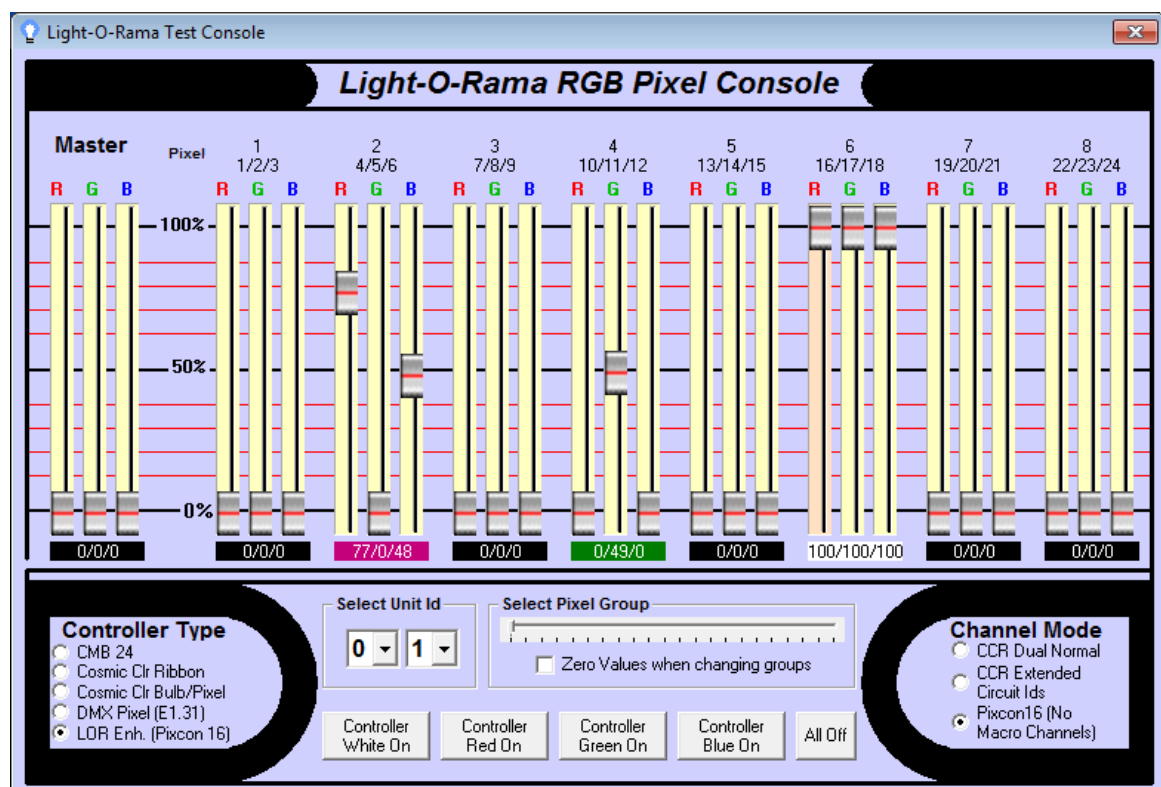
1. Your software is registered and your [license level](#) supports Native DMX Devices (Advanced or

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

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 your 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 (Pixcon 16) 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 (Pixcon 16) 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 Bulbs or Pixels that are in Dual Normal mode will only update the string the Unit ID corresponds to.

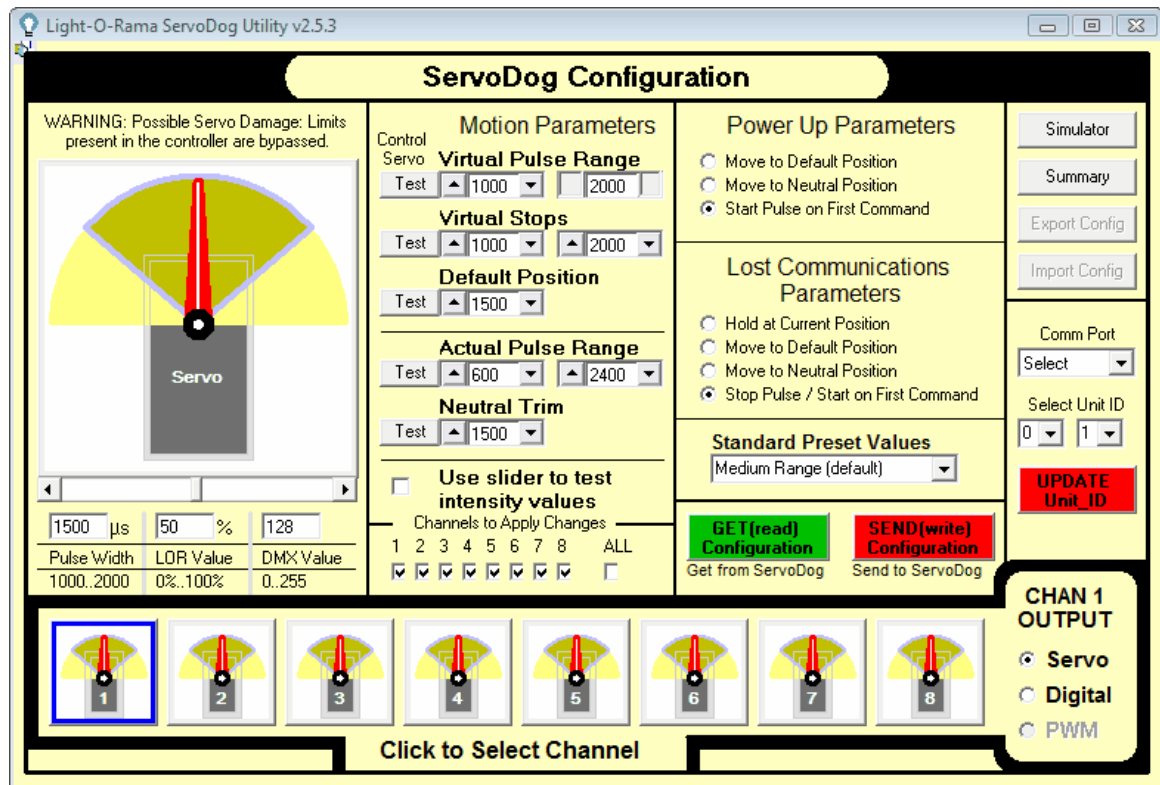
Using these buttons with an incorrect Channel Mode selected will produce unintended results.

## 5.12 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](#).



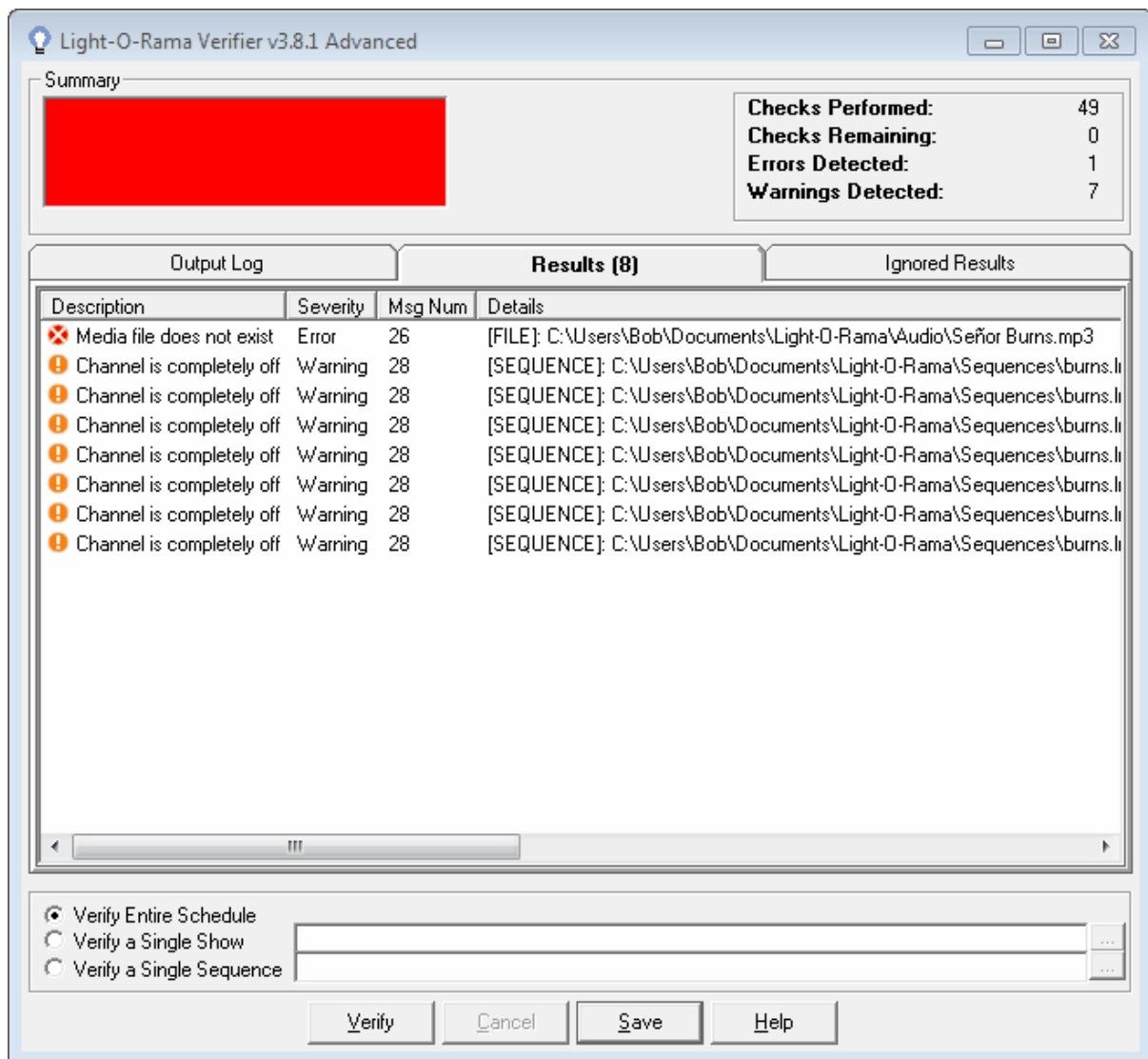
The Light-O-Rama ServoDog Utility

## 5.13 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.

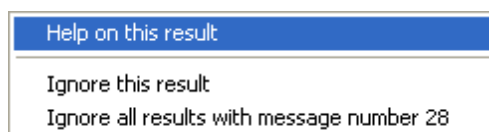
As the Verifier is checking for issues, it will display what it is doing in its "Output Log" tab; when it is complete, it will switch to its "Results" tab, showing a list of the issues that it has found:



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



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.

### 5.13.1 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**
- [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**

#### 5.13.1.1 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**

5.13.1.1.1 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](#)  
[List of Verifier Messages](#)

5.13.1.1.2 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](#)

5.13.1.1.3 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](#)

5.13.1.1.4 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.

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](#)

5.13.1.1.5 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](#)

5.13.1.1.6 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.

---

[The LOR Verifier](#)

[List of Verifier Messages](#)

5.13.1.1.7 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](#)

5.13.1.1.8 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](#)

5.13.1.1.9 9: Unsupported version of Windows Media Player

**Message Number:** 9

**Severity:** Warning

**Summary:** Unsupported version of Windows Media Player

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](#)

#### 5.13.1.1.10 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](#)

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#### 5.13.1.2 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**

## 5.13.1.2.1 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](#)

## 5.13.1.2.2 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](#)

[List of Verifier Messages](#)

## 5.13.1.2.3 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](#)

## 5.13.1.2.4 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](#)

5.13.1.2.5 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](#)

5.13.1.2.6 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.

[The LOR Verifier](#)  
[List of Verifier Messages](#)

5.13.1.2.7 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](#)

5.13.1.2.8 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](#).

---

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[List of Verifier Messages](#)

5.13.1.2.9 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

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.

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[The LOR Verifier](#)

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5.13.1.2.10 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](#)

### 5.13.1.3 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**

5.13.1.3.1 21: Show file does not exist

**Message Number:** 21

**Severity:** Error

**Summary:** Show file does not exist

**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](#)

#### 5.13.1.3.2 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](#).

---

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#### 5.13.1.3.3 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.

If it was deleted, check your computer's 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](#)

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5.13.1.3.4 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](#)

5.13.1.3.5 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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[List of Verifier Messages](#)

5.13.1.3.6 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](#)

5.13.1.3.7 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:

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](#)

5.13.1.3.8 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](#).

---

[The LOR Verifier](#)

[List of Verifier Messages](#)

5.13.1.3.9 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](#)

5.13.1.3.10 30: Channel is missing settings

**Message Number:** 30

**Severity:** Warning

**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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[The LOR Verifier](#)

[List of Verifier Messages](#)

#### 5.13.1.4 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**

##### 5.13.1.4.1 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 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](#), or a Dasher or X10 controller, each of which can only have one network defined for all controllers of their type.

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, via the channel's [Channel Settings dialog](#), or via the Channel Configuration screen.



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 Sequencer's Network Preferences dialog to specify a comm port for the network to use.

---

[The LOR Verifier](#)

[List of Verifier Messages](#)

5.13.1.4.2 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](#)

5.13.1.4.3 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.

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5.13.1.4.4 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.

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[The LOR Verifier](#)  
[List of Verifier Messages](#)

5.13.1.4.5 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](#)

5.13.1.4.6 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.

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[The LOR Verifier](#)  
[List of Verifier Messages](#)

5.13.1.4.7 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.

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[The LOR Verifier](#)

[List of Verifier Messages](#)

## 5.13.1.4.8 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](#)

## 5.13.1.4.9 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.

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[The LOR Verifier](#)

[List of Verifier Messages](#)

## 5.13.1.4.10 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.

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[The LOR Verifier](#)[List of Verifier Messages](#)

## 5.13.1.5 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**

## 5.13.1.5.1 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.

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](#)

#### 5.13.1.5.2 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](#)

#### 5.13.1.5.3 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.

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](#)

5.13.1.5.4 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.

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[The LOR Verifier](#)

[List of Verifier Messages](#)

5.13.1.5.5 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](#)[List of Verifier Messages](#)

## 5.13.1.5.6 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](#)

## 5.13.1.5.7 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](#)

5.13.1.5.8 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](#)

5.13.1.5.9 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.

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](#).

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[The LOR Verifier](#)

[List of Verifier Messages](#)

5.13.1.5.10 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.

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[The LOR Verifier](#)

[List of Verifier Messages](#)

#### 5.13.1.6 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**

5.13.1.6.1 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](#)

5.13.1.6.2 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](#).

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[The LOR Verifier](#)

[List of Verifier Messages](#)

5.13.1.6.3 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.

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[The LOR Verifier](#)

[List of Verifier Messages](#)

5.13.1.6.4 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

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.

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[The LOR Verifier](#)

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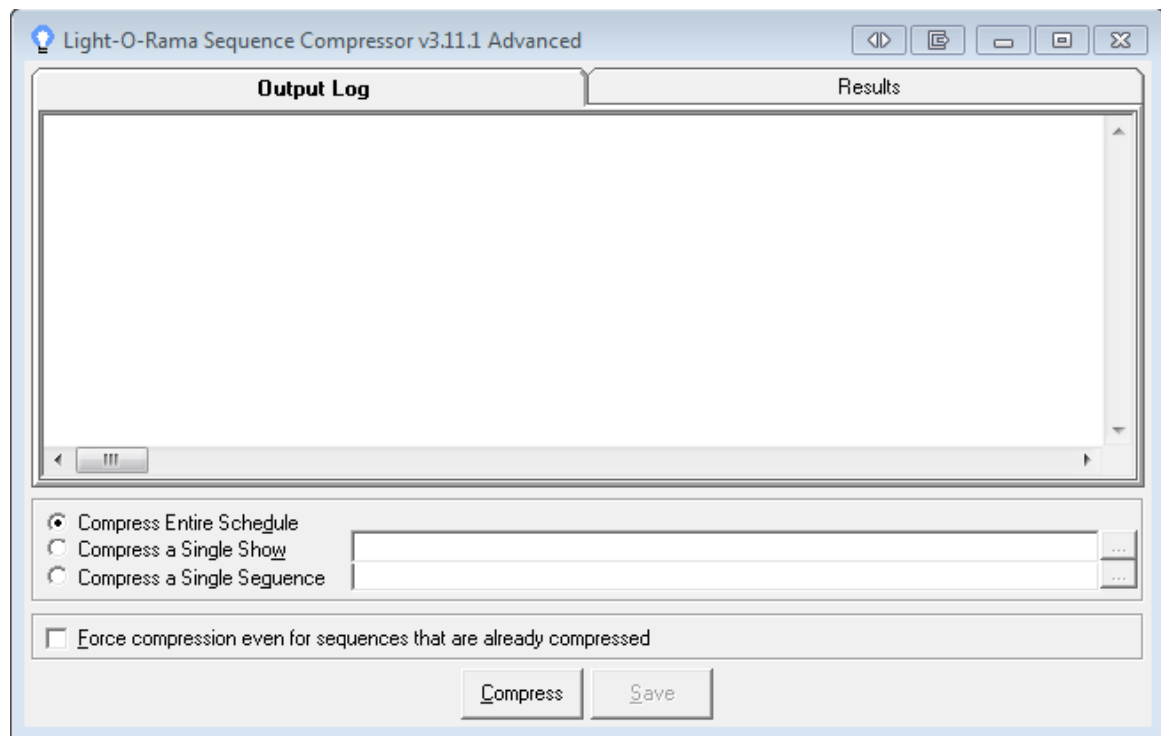
## 5.14 Sequence Compressor

By default, when a [sequence](#) is saved in the [Sequencer](#), the Sequencer will also save a [compressed](#) version of the sequence. 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. For many customers, this default behavior of automatically saving a compressed sequence every time the sequence itself is saved is fine. However, for large sequences, saving the compressed sequence could take a noticeable amount of time. Therefore, the user has the option to disable automatic compression. Even if this behavior is disabled, though, it would still behoove the user to make sure that up-to-date compressed sequences exist before running their show. The Sequence Compressor program can be used to do this.

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 sequence that contains two or more [tracks](#) with different time lengths. If such a sequence is encountered, the Sequence Compressor will issue a "warning" (not an "error") about it. This is because it's perfectly valid to make a sequence that (for example) contains two or more tracks with different time lengths, and if that's what you want to do, then that's fine, so it's not an "error". But having two or more tracks of different lengths might be unintentional, and so the Sequence Compressor will "warn" about it, just so that you are aware of it, and can easily double check whether it is really what you want.



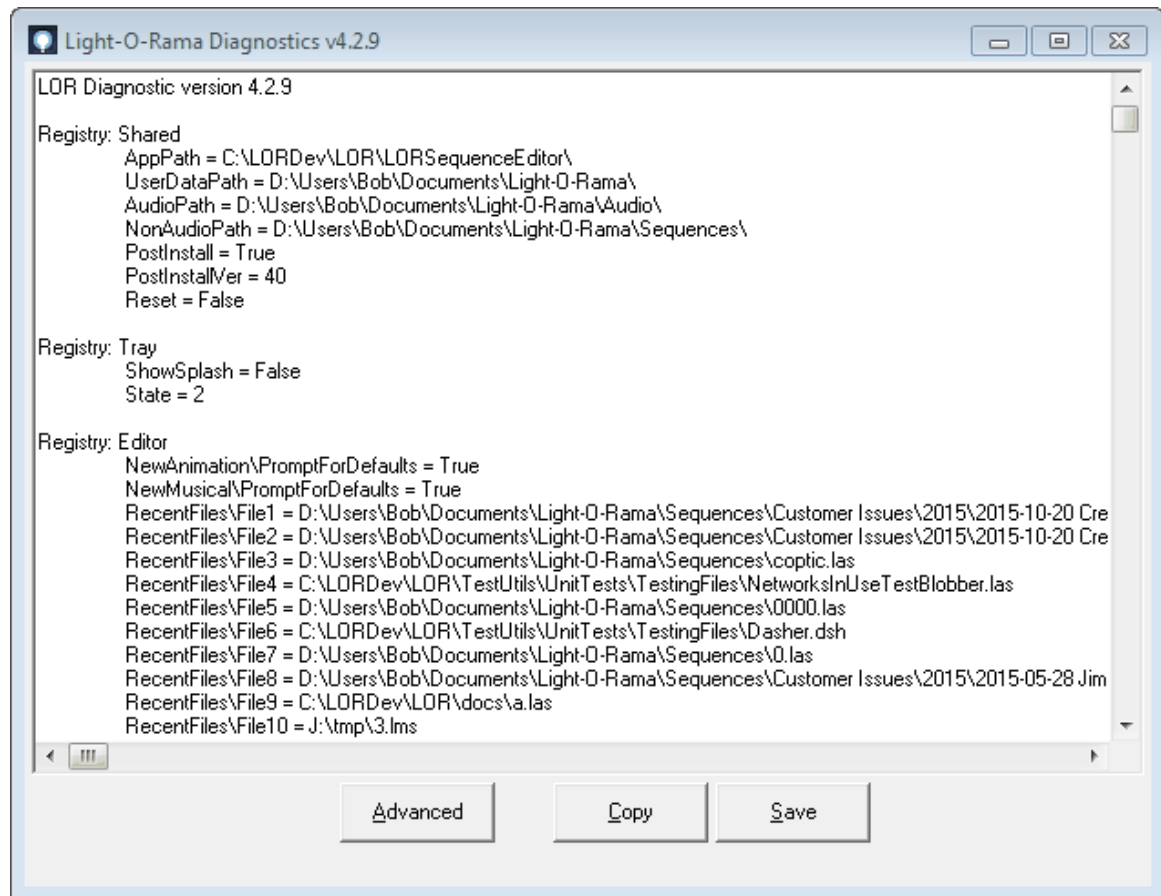
The Light-O-Rama Sequence Compressor

## 5.15 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.



The Light-O-Rama Diagnostic tool

## 5.16 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.

**LOR Offline Registration v2.8.3**

**Step One**  
Enter the name that your Light-O-Rama registration is for. Note that you'll have to get upper and lower case exactly the same as they are in your registration information.  
Customer Name:

**Step Two**  
Enter your license key. This will be eight groups of five characters, with each character being either a number from 0 through 9 or else a letter from A through F. If any of the eight boxes turns red, that means that the group of five characters in that box is incorrect, so double check what is typed in there.  
License Key:

**Step Three**  
Enter the offline registration key from the computer to be registered. This will be similar to the license key - eight groups of five characters, each character being 0 through 9 or A through F, and a box turning red indicating a mistake in that group of characters. If you do not see an offline registration key, make sure that you are using the offline registration form on the computer to be registered, that you have entered your name and license key on that form, and that you have clicked the "Show Offline Registration Key" button.  
Registration Key:

**Step Four**  
Click on the register button, and wait for registration. If registration succeeds, Step Five will turn on. Otherwise, an error message will appear.

**Step Five**  
Enter the following authorization key in the offline registration form on the computer to be registered. If you see a box turn red, it indicates a mistake in that box.  
Authorization Key:

**Error Text**

The Offline Registration Utility

## 5.17 Add-Ons

In addition to the standard programs that come with the [Light-O-Rama software package](#), there is one add-on program available:

- Light-O-Rama Add-Ons
  - [The Light-O-Rama Registry Wiper tool](#)

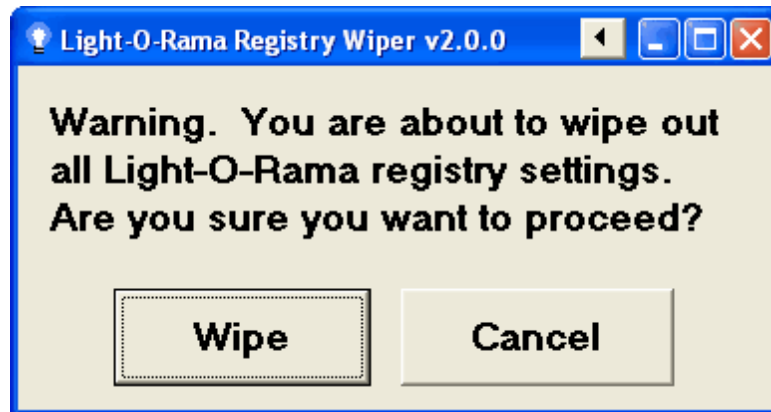
### 5.17.1 Registry Wiper

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.

**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, 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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