LPC Users Manual

leprecon®
Lighting for Professionals

www.leprecon.com

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For LPC software versions 3.1.0 and above

Contents

Introduction

The LPC console is perfect for users who desire a simple approach to lighting but require the feature set that will grow along with their needs. Theatres, Houses of Worship, Schools, Production, and Rental Houses can use this console and keep it up-to-date with new expanding lighting technology.

Additional copies of this LPC manual can be downloaded from the Leprecon website at www.leprecon.com.

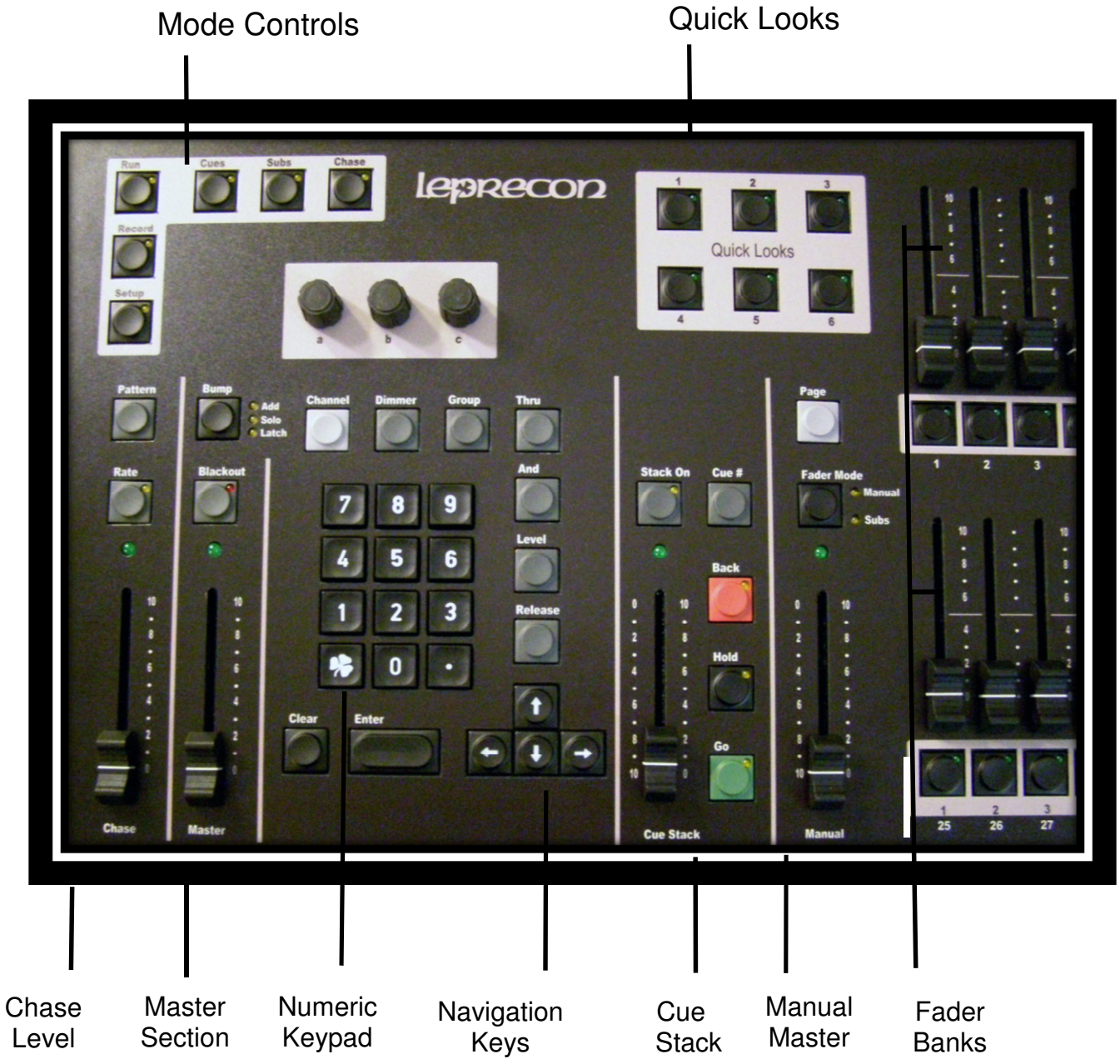
This version of the manual includes updates related to the latest Version 3 software. If you are upgrading from an earlier version of LPC software, please note the following changes:

1) Version 3 shows have a new file format. Show files from Version 2 consoles can be opened in Version 3, but will be automatically converted to the new file format. Version 3 show files CANNOT be opened by Version 2 consoles.

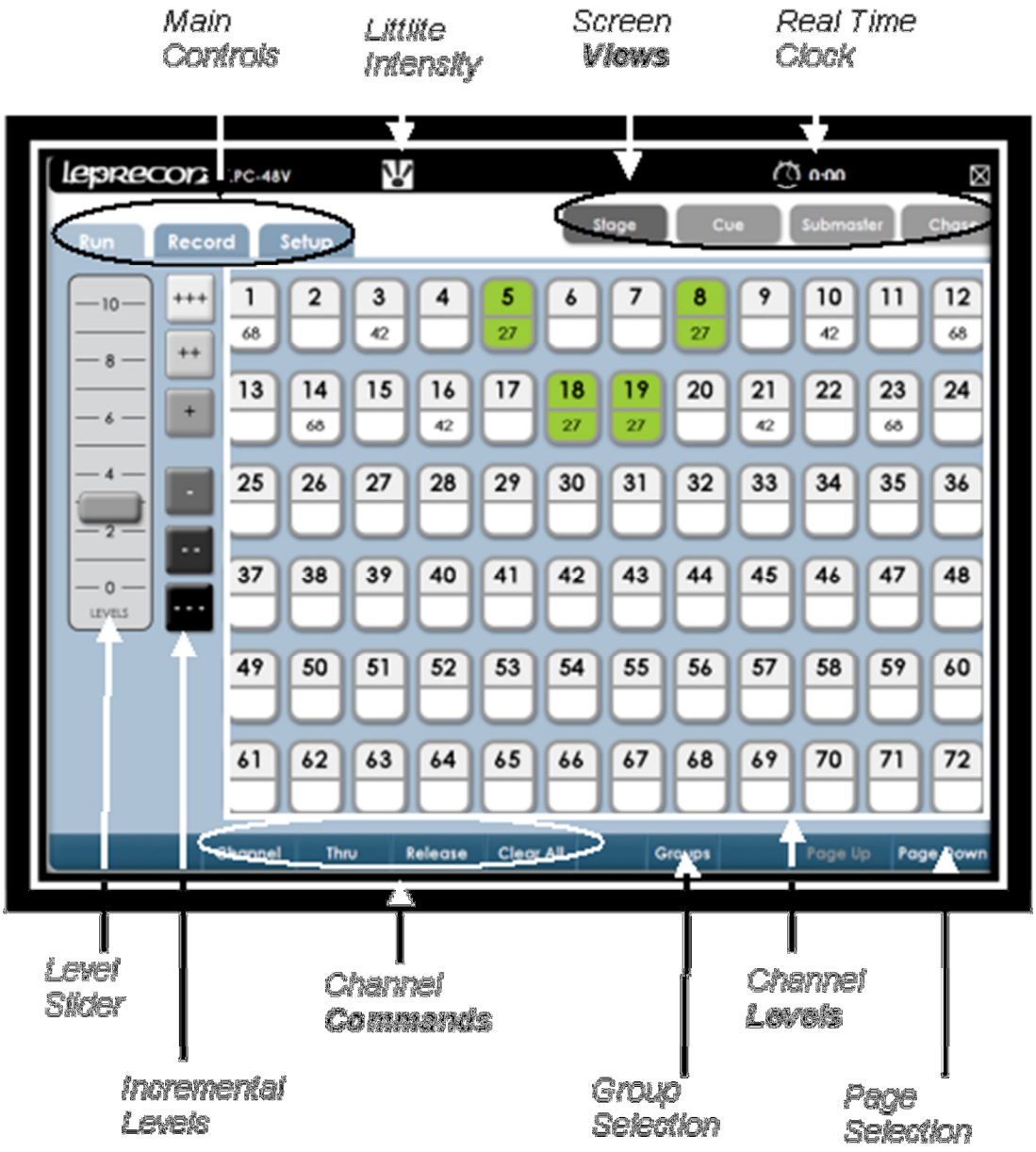
2) Upgrading a console from V2 to V3 may change the Ethernet port used for ArtNet from #1 to #2.

3) The record features have been changed substantially. See section

LPC Console Layout



Video Interface Layout



1 Specifications

The following specifications may be changed at any time without notice. Future software upgrades may affect these system specs.

1.1 Channel capacity

The LPC-48V and LPC-96V manages up to 512 conventional (dimmer) control channels.

1.2 DMX Capacity

LPC models control 2 Universes of 512 DMX channels for a total of 1024 DMX channels. Industry standard 5 pin XLR connectors are used. W-dmx Wireless link is available as an option for the first Universe (512 channels) only. Starting with software Version 3, Art-Net protocol can be used for 4 universes of DMX over Ethernet.

1.3 Power Supply

LPC uses an internal power supply, operating over a voltage range of 85 to 260 VAC. No separate power adapter is used. Line cord connector is IEC type C12.

1.4 Peripherals

A standard VGA monitor and USB mouse are needed for operation. Minimum monitor resolution is 1024 x 768, LPC will auto-detect monitor resolutions up to 1440 x 900. LPC can be used with any standard USB mouse and keyboard.

ELO touch screen monitors are supported by LPC, allowing easy touch control instead of using a mouse. Contact Leprecon for order number and availability information.

1.5 Show Storage

All show data is stored on internal flash. The internal show can be backed up to an external USB flash memory. Note: memory devices formatted for use with Apple products may not work reliably for LPC shows storage.

1.6 Work Lights

The LPC has provisions for two 12 VDC work lights (Littlites®). The 4 pin XLR connectors are located on the far left and right of the console's back panel. The internal work lamp dimmer supports lamps with incandescent or LED light sources.

1.7 Accessories

An optional road case and dust cover can be ordered from your Leprecon dealer.

2 Startup

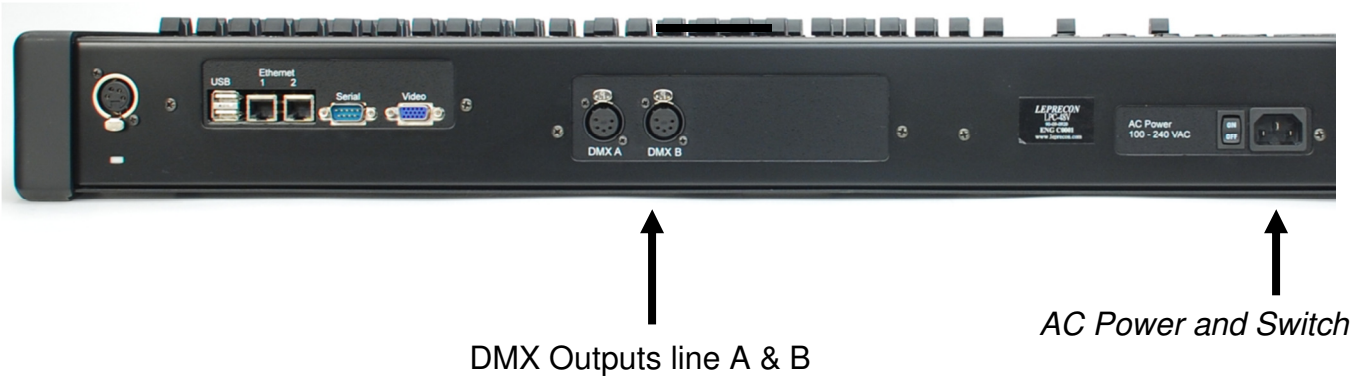
2.1 Connecting to your system

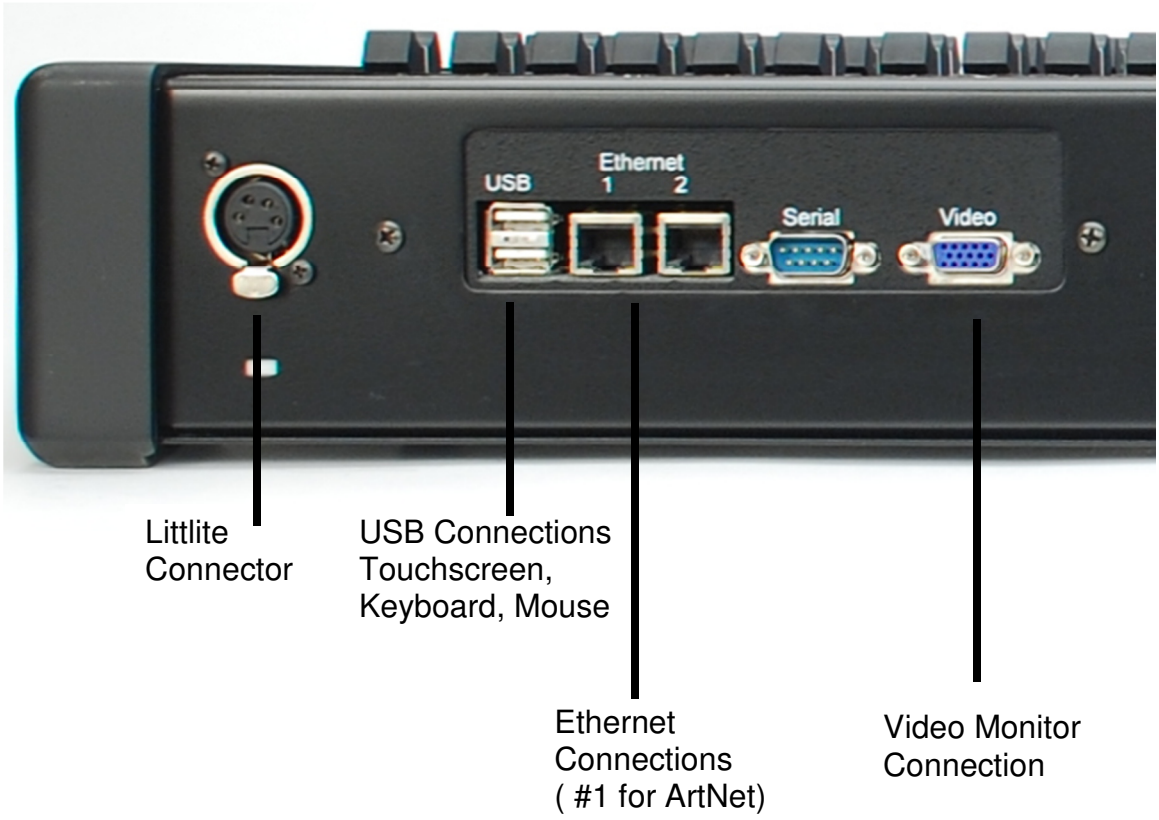
1. Connect the monitor to the Video port. The LPC requires a minimum monitor resolution of 1024 x 768 (Standard VGA)
2. Connect a USB mouse and keyboard, if needed.
3. If an ELO touch screen is being used, connect the monitor using a USB (A to B) cable from touch screen monitor.
4. Connect 5 pin DMX data cable(s) to DMX A or B connector(s).
5. Connect the AC power cord.
6. Turn on the Power switch.

If using the optional wireless DMX transmitter see section 12

2.2 Back Panel Connections

Figure 1: Back Panel Connections





2.3 Boot sequence

When booting, LPC software will display a blank screen, then a Leprecon logo. LPC fully boots in about 45 seconds.

2.4 Power-off

To turn off the LPC:

1. Click on the X in the upper right corner of the screen. A dialog box appears asking 'are you sure?'
2. Confirm the shutdown dialog box by clicking or touching **Yes**.
3. Wait for the applications to shut down, and then turn off the power switch.

3 Setup

The main setup screen shows the current software versions, and contains submenus for all setup functions, (See Figure 3).

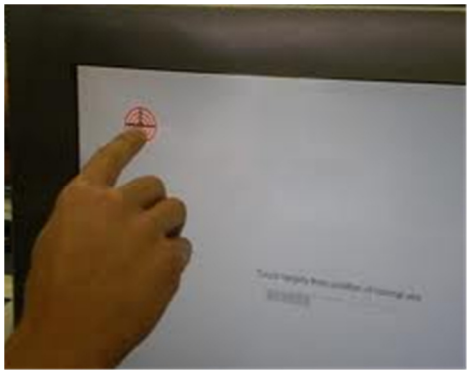
Three software components comprise the LPC system, and the revision level and release date for each of the components is shown in the main Setup screen.

3.1 Touch Screen Calibration

LPC models include software drivers for certain models of ELO touch screen monitors. The first time the monitor is used, the board may need to be calibrated for proper touch control.

To calibrate the monitor, press and hold the ‘shamrock’ key. At the same time, press the ‘setup’ key.

The calibration routine will display a bulls-eye target on the screen in three different locations. Follow the on-screen prompts, and touch the targets when instructed.



Once complete, the calibration values will be saved as part of the LPC configuration. Changing to a different size monitor will require re-calibrating.

3.2 Real Time Clock

The Real Time Clock can be used for real time or as a timer. This feature is located at the top of each screen in the LPC title bar.

Clicking on the clock face will start, pause or reset the elapsed time display.

Figure 3: Setup Screen

3.3 On-screen Keypad

The **On-screen Keypad** allows quick access for entering numeric values in any given field. It is an alternative to using the keypad on the console (See Figures 4 and 5). The on-screen keypad can be found next to any dialog box. This icon follows the action when a dialog box is selected and highlighted in yellow.

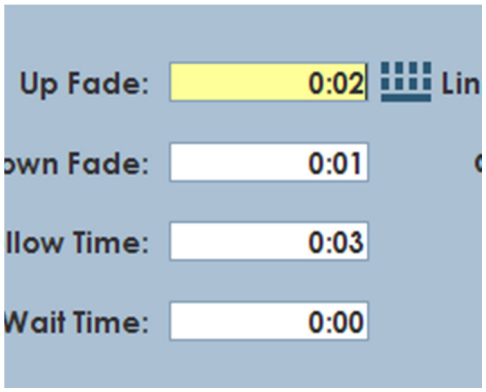


Figure 4: Keypad icon

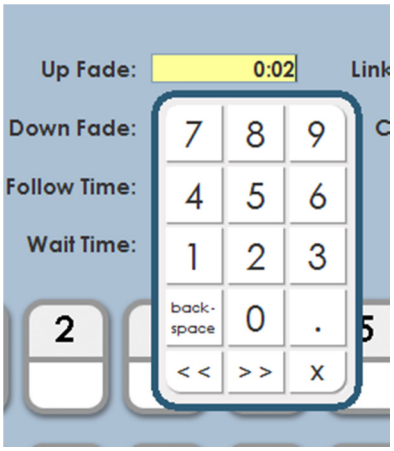


Figure 5: Opened Keypad

Example of use*:*

If the user wants to set the Cue Stack fade-up time value.

- Select the **Keypad icon**
- Select numeric value.
- Close keypad select the **X** located at the lower right corner.

The **Backspace** button will erase the entered numeric values.

3.4 Patch

Patch is a way to reassign the order of desk channels to DMX dimmer channels. The default patch is set 1 to 1, which is to say desk channels 1 through 48 are assigned to DMX dimmer channels 1 through 48. Dimmer to board channel assignments are set in the patch screen. The LPC is set up to store numerous custom patches. Each patch will have a unique name that is given by you, or the patch will be assigned an ID default number.

All patches will be listed in the patch screen (See Figure 6). Only one patch can be used at a time. Applying a patch makes it active, and the dimmer to channel assignment changes at the time it is applied. Patches can be viewed by desk **Channe**l or by DMX **Dimmer**.

3.5 Creating a Custom Patch.

1. Select the **Set up** tab; select the **Patch** tab.
2. The patch list window will open, and Default (System) (Active) is highlighted in green.
3. Select the **New** tab in the left column. A window will open with the message, "*Enter name for the new patch*".
4. The icon to the right of the dialog box is an onscreen keyboard which can be used to name the patch. If a name is not given, "Patch 01" is the default.
5. Select **Save** and the new patch will appear in the **Patch List** window, (See Figure 6).
6. Select the Newly named patch from the list; it should now be highlighted in green.
7. To make the patch Active, select the **Apply** tab located on the left column. **Active** will appear next to the name in the Patch list.

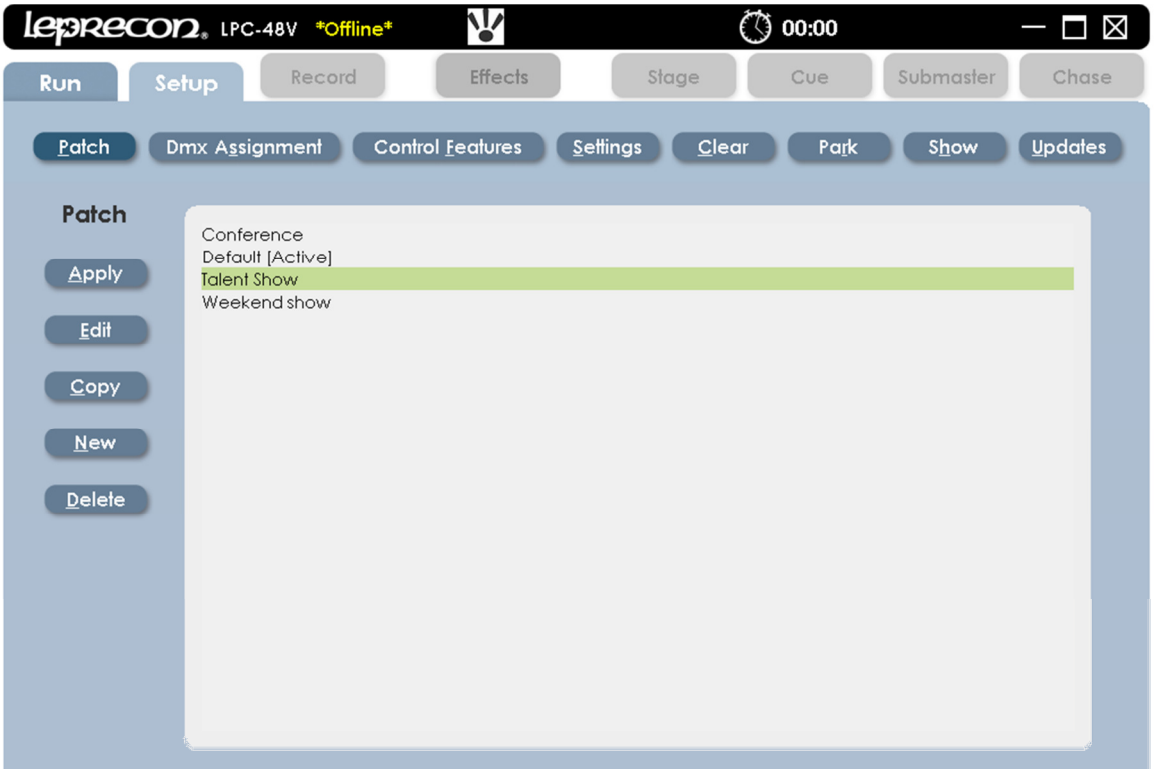


Figure 6: Patch List Screen

3.6 Edit the Custom Patch

The Patch can now be edited in two ways; by Dimmer, or by Channel. The choice can be made by selecting the tabs located on the left column, (See Figure 7). In this example we will create a patch by using the channel method.

1. Select the **Edit** tab on the left column
2. Select the **Add** tab on the left column and the control window opens.
3. **By Channel** (default), select desired Console channel the dialog box.
4. Enter desired light **Level** (default is 100%).
5. Choose **DMX Line** output A or B.
6. Enter desired dimmer DMX channel number(s) by selecting the **Dim Window** which will highlight in yellow.
7. Use the command keys on console **Dim, Thru, Except, And** to enter a patch string. Use the format example: Dim 1 Thru 12 And 22 **Enter**.

8. Select **Save** and **Exit** to go back to the patch list screen.

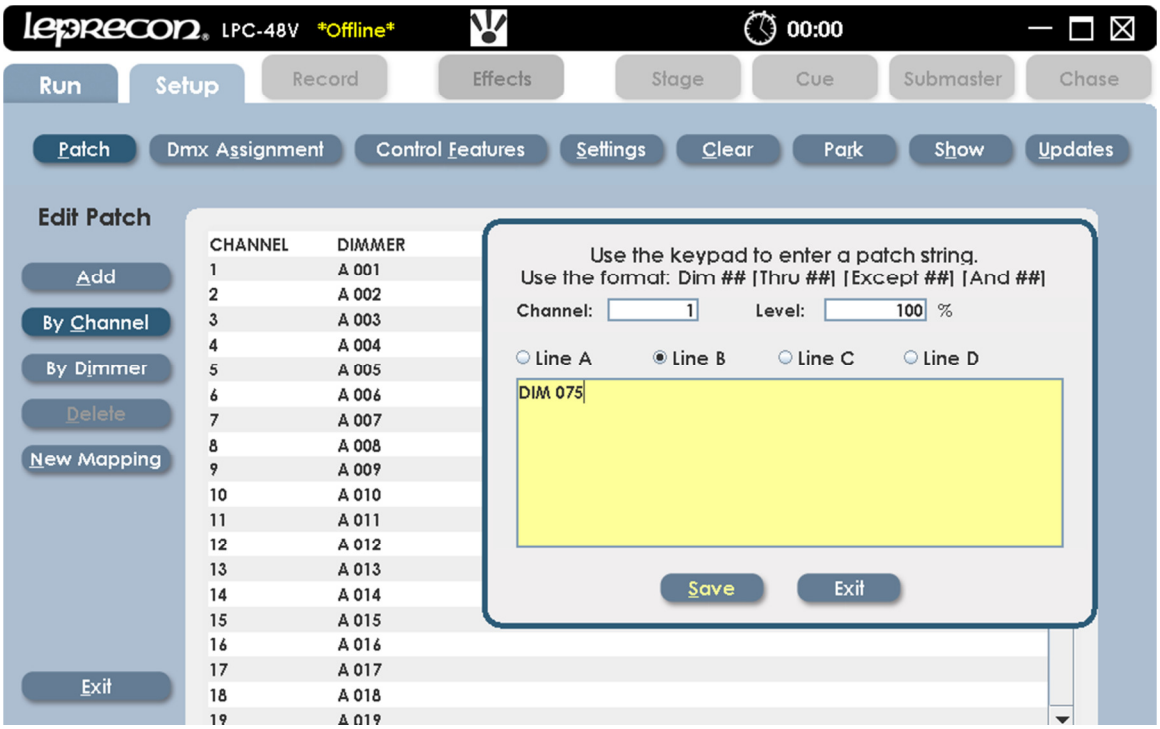


Figure 7: Patch Edit Screen

Note: Multiple dimmer channels can be patched to a single desk channel, but multiple desk channels cannot be patched to a single dimmer channel.

3.7 Patch by Mapping Channels

New mapping is a time saving way to patch a chain of DMX or dimmer channels to desk channels, but starting the patch at a desired channel and given a range (See Figure 8).

1. In the **Patch** screen, select the **Edit** tab in the left column.
2. Select the **New Mapping** tab in the left column.
3. The mapping window will appear where the patch information is entered.
4. The **Start at Channel** dialog box is where the starting desk channel is entered.
5. **Starting DMX line** is where line A or B is entered.
6. **Starting DMX Channel** dialog box is where the dimmer DMX channel

number will start.

7. The **Number of Channels to Map** dialog box is where the range of channels will be entered.

8. Select **Save** and **Exit**.

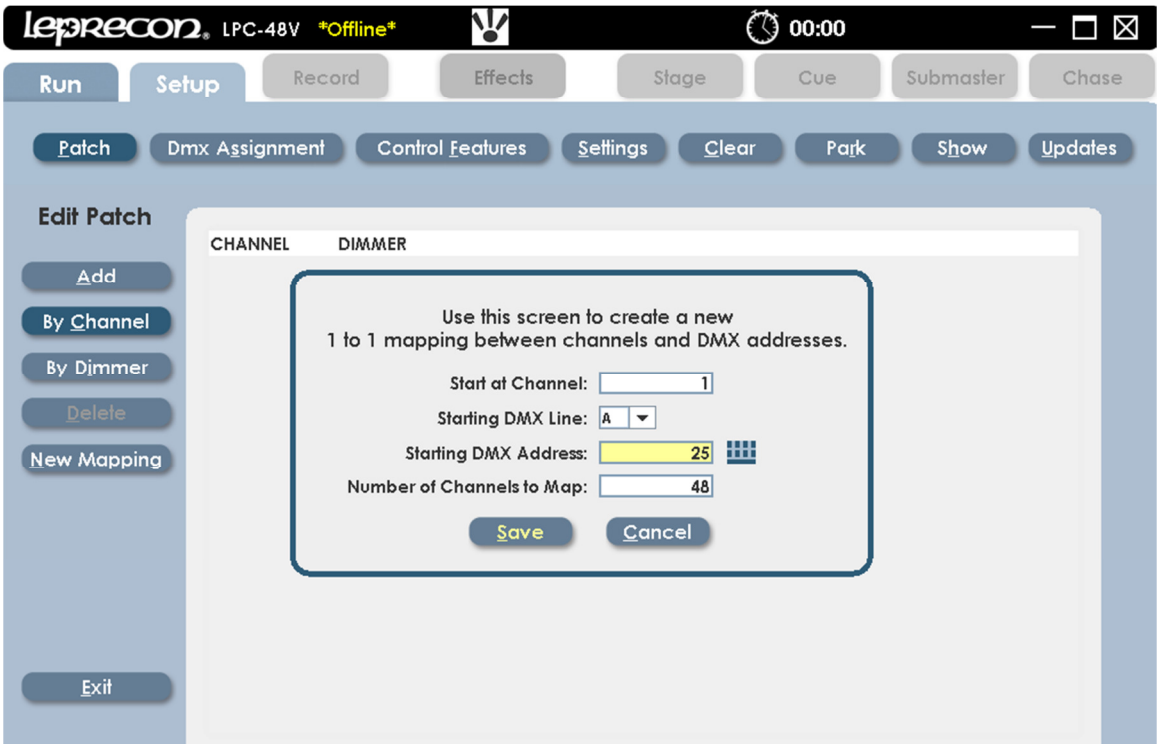


Figure 8: Patch Mapping Screen

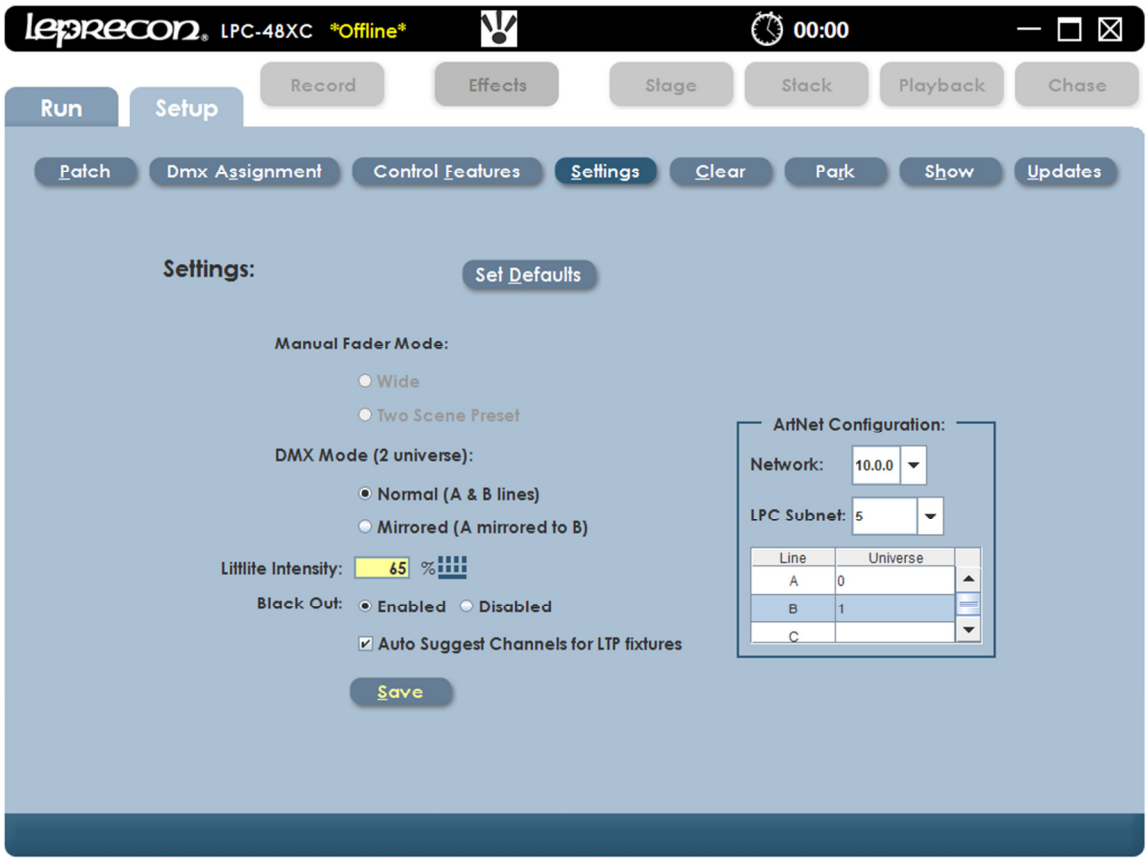
Note: A Warning message will appear if the patched channels are outside the range.

3.8 ArtNet configuration

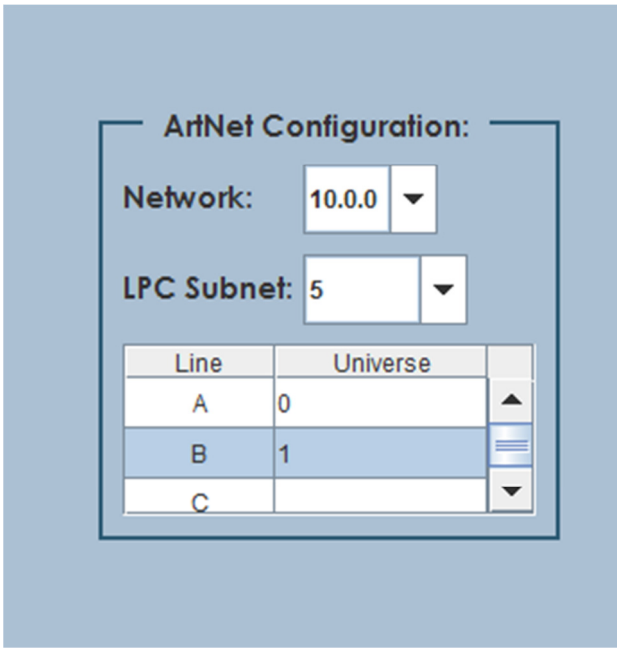
LPC V3 software supports DMX over Ethernet using the ArtNet protocol. ArtNet allows LPC to send DMX data a standard Ethernet network. ArtNet nodes are used to receive data, and convert it back to standard DMX. The LPC and nodes must be configured to communicate properly.

The Setup area of the LPC software provides the controls for setting up ArtNet.

From the Setup screen, click on 'Settings'. The Art Net configuration is on the right side of the setup screen.



The Art Net configuration screen has the following features:



Network: ArtNet usually is used on a network with IP addresses beginning with 2. Updates to the ArtNet specification allows addressing on a network with addresses beginning with 10. This setting must be consistent with the rest of the ArtNet gear in the system. Use the drop down box to pick one of the two network choices.

Subnet: ArtNet data can be transmitted on sixteen different subnets, numbered 0 through 15. Click the arrow to select a specific subnet.

Universe Mapping: The four LPC DMX lines can be assigned to any of sixteen ArtNet universes supported by each Subnet. Use the drop down box to set each LPC line to a unique ArtNet universe.

Once settings are complete, don't forget to save your changes!

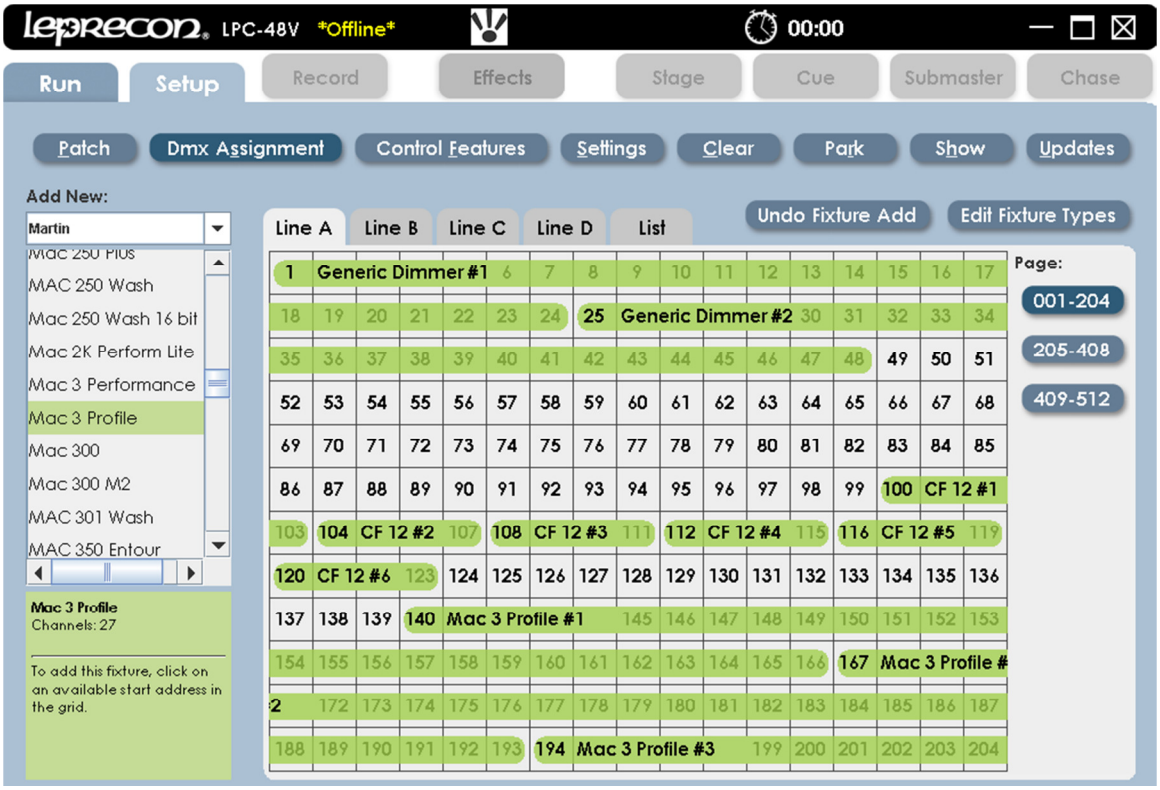
For more info regarding ArtNet:

An introduction to the ArtNet protocol is available from the Artistic License website. See Application Note #13 – What is ArtNet? Several other useful documents regarding ArtNet are available from this site.

3.9 DMX Assignment

The LPC can be configured to control many different types of DMX fixtures. The DMX Assignment controls are used to set up the LPC for the specific fixtures in the lighting system.

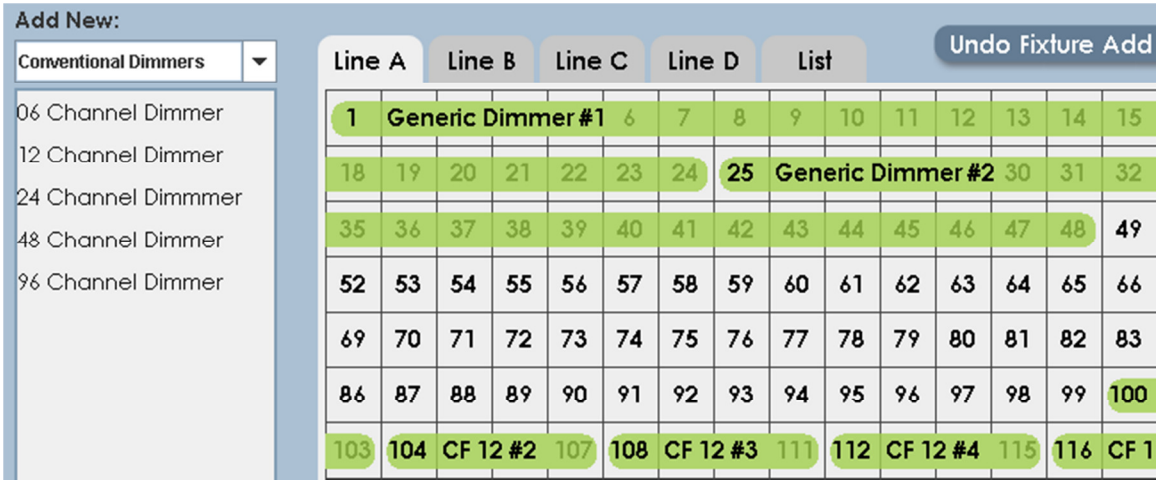
Conventional dimmers (intensity control only) as well as intelligent fixtures are all added to the system in DMX Assignment.



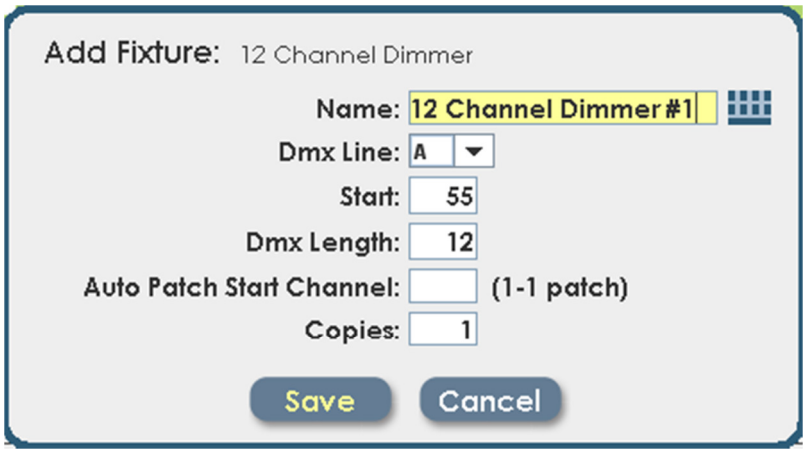
Tabbed folders Line A through Line D are used to show the state of the DMX universes, and add or remove DMX devices. The List View tab summarizes all DMX devices in a single table.

3.9.1 Adding conventional dimmers

The default (empty) show in an LPC contains 48 channels reserved for dimmers. This is shown as two 24 channel ‘generic’ dimmers as shown above. More dimmers can be added to the system by clicking on the ‘Add New’ box on the right side of the screen, and choosing ‘conventional dimmers’



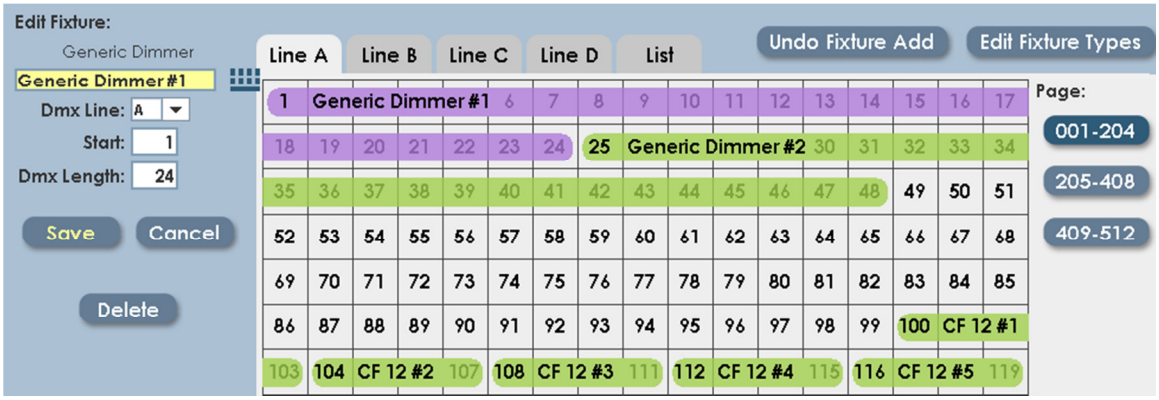
Once the dimmer type is selected, drag or simply click on the destination DMX address. Once the fixture is placed, a dialog will be displayed allowing a name to be entered, and changes made if needed to the start address or DMX length before the data is finally saved.



The ‘auto patch’ feature can be used to assign the new dimmer to board channels without going into the Patch screen. Enter a value in the Start Channel field, and all channels in the newly assigned dimmer will be patched to consecutive board channels.

3.9.2 Modifying existing assignments

Dimmers already placed in the DMX Assignment can be moved or re-named later. Simply click on the displayed dimmer, when it has been selected it will turn magenta:



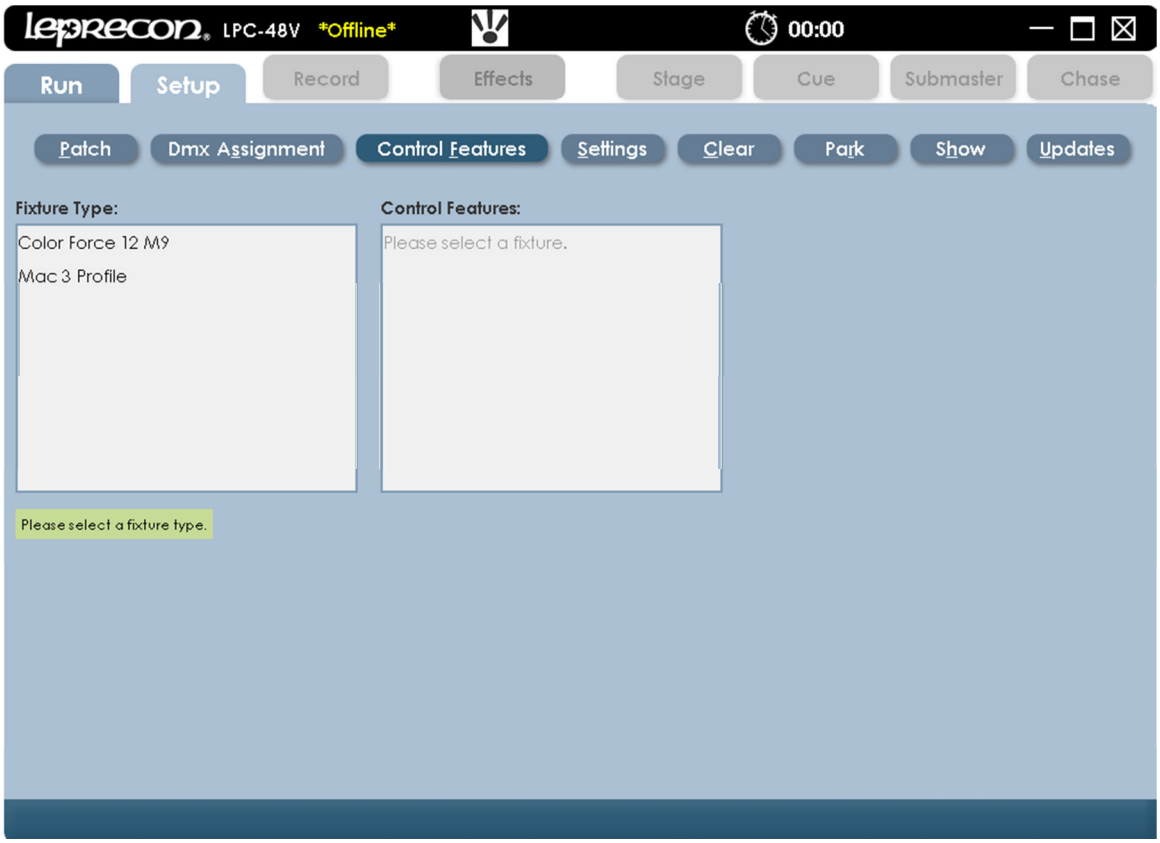
The selected dimmer can be ‘dragged’ to a new start address, or the text boxes on the right side of the screen can be used to change the address. Click ‘Save’ to update the assignment with the new data.

The DMX assignment screen is also used to add LED and automated fixtures to your show. Details are in Chapter 8; Intelligent Fixture Programming.

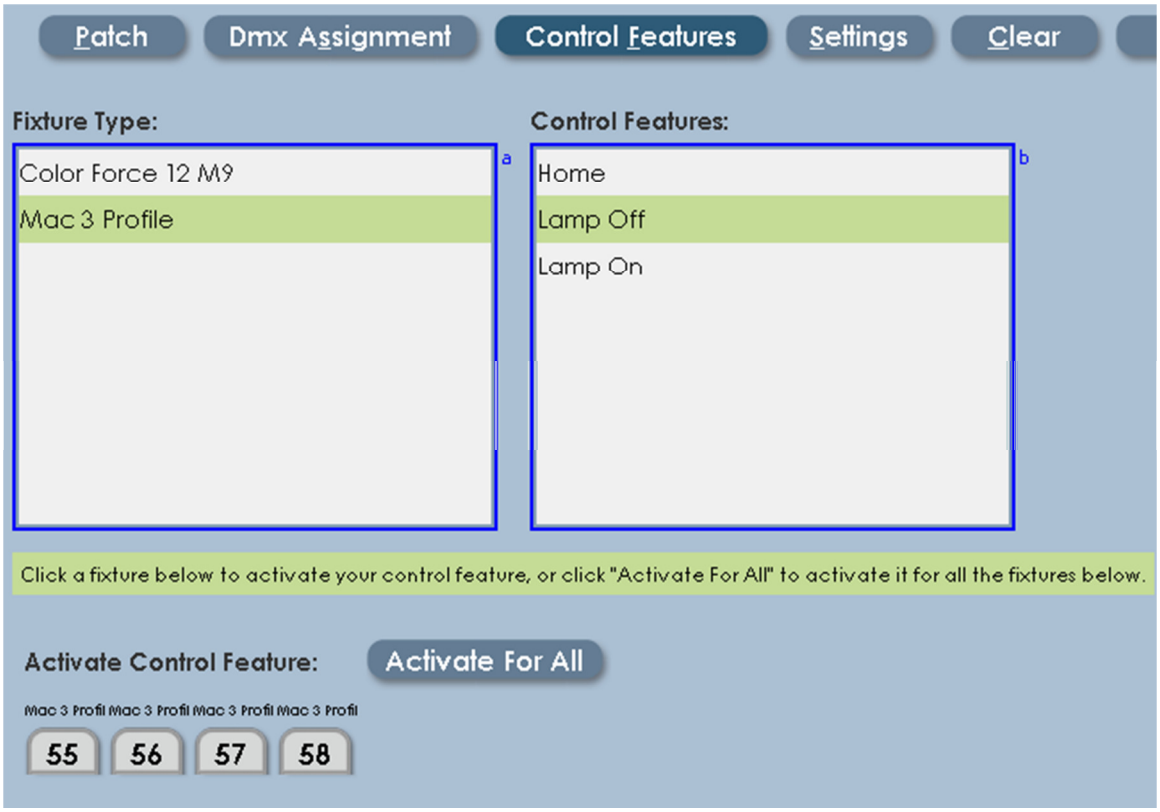
3.10 Control Features

Control features are used to send special commands to intelligent fixtures. These commands are used to turn on and off the lamps in the fixture, and to reset (home) the fixture. Not all fixture type support control features, and in some cases it's possible to disable control features at the fixture itself.

From the Setup screen, click on Control Features. Selecting a fixture type from the list of fixtures in your show will display the control features available for that fixture type.



Select the control feature, and LPC will show a list of individual fixtures.



The image above shows Lamp ON selected. Click on individual fixtures to send Lamp On commands to those fixtures, or click 'Activate For All' to send Lamp On commands to all of the MAC600 fixtures.

Note: Control Features are applied one at a time to the selected fixture. This prevents excessive current draw when using Lamp On for a large number of fixtures.

3.11 Settings

The Settings screen is where one can change the application of the console. The manual fader operation, DMX output, Littlite® intensity, and Blackout enable can be set in this screen, (See Figure 9).

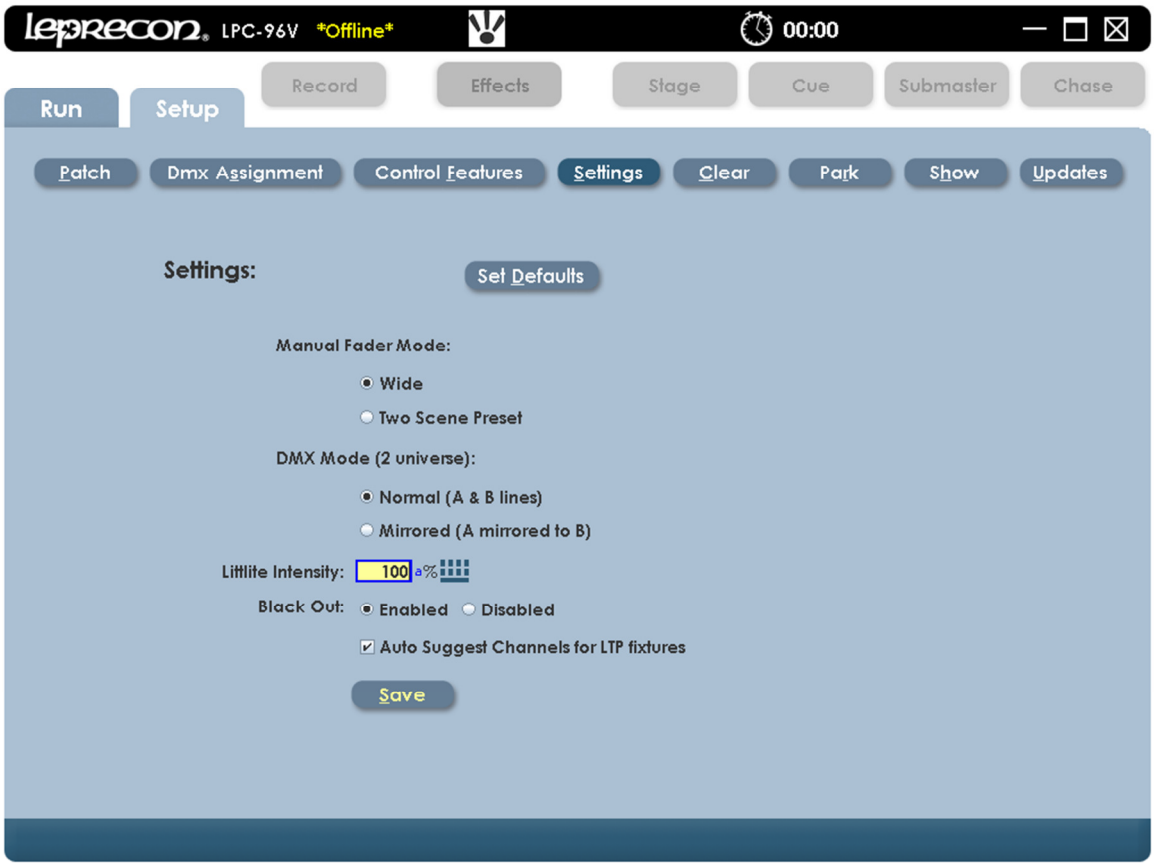


Figure 9: Settings Screen

3.12 Manual Mode

This selects 2 scene preset, or wide mode for the manual faders, (See Figure 9).

- **Wide Mode** – allows the upper and lower bank faders to be a single scene.
- **Two Scene Preset Mode** – mixes between the upper and lower bank of faders channels using the manual fader as control.

Note: This change can disrupt stage output, so is set as a configuration item.

3.13 DMX Mode

The DMX Mode allows the user to have a choice in how the DMX channels are output. The console has the capability to output a total of 1024 channels on DMX line A and line B. An alternative choice would be to send a total of 512 DMX channels on 2 separate outputs; DMX line A will mirror line B.

Note: Setting DMX Mode has no effect on ArtNet universes C and D.

The DMX Mode has two settings

- **Normal** (A & B lines) – This mode allows the user to control a total of 1024 DMX channels on two lines.
- **Mirrored** (A mirrored to B) – This mode allows the user to control 512 DMX channels; Line B will mirror the output of Line A.

3.14 Littlelite® Intensity

This control sets the light level of the gooseneck work lamps. Use the on screen keypad to set the level (See Figure 9).

3.15 Blackout Enable / Disable

When Blackout **Enabled** option is selected the Black Out button on the console, which is located above the Grandmaster fader, will set all desk channels to Zero when pushed. Alternatively when the Black Out is **Disabled** option is set, the Black Out button will not activate when pushed (See Figure 9).

3.16 Littlite® Intensity Shortcut

The **Littlite®** intensity setting shortcut is located on the LPC title bar at the top of every screen, and is represented by the icon in Figure 10. When the screen is open the user can move the slider to the desired light level (See Figure 11).

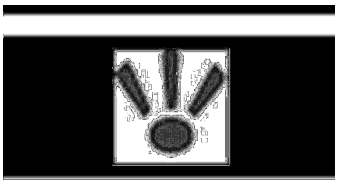


Figure 10: Littlite® Icon

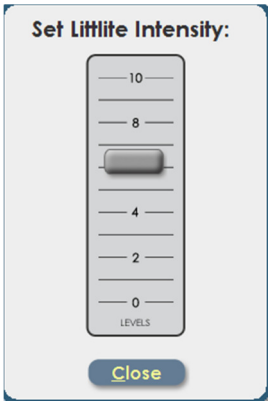


Figure 11: Intensity Setting

3.17 Defaults

The Defaults area is used to set standard cue times for the LPC.

This includes default fade times for Cue stacks, Submasters, Quicklooks, and Chase properties. These defaults are applied to newly created items, (See Figure 12).

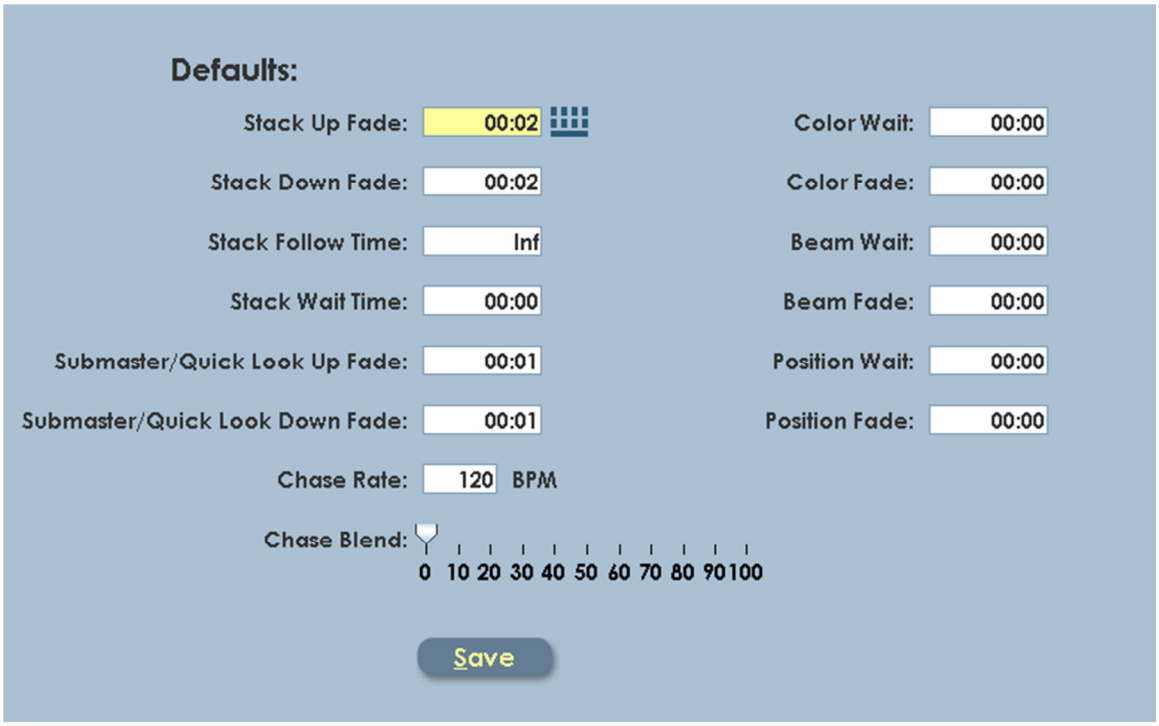


Figure 12: Default Settings

3.18 Clear

Clear functions are used to erase selected areas or the entire board memory, (See Figure 13).

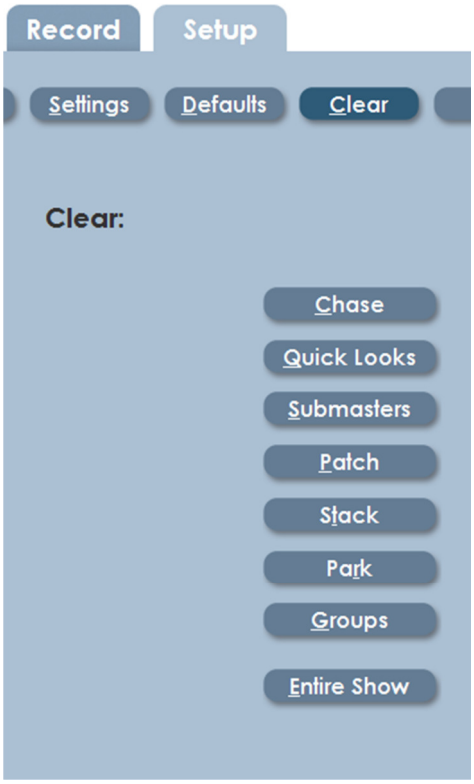


Figure 13: Clear Settings

3.19 Park

Board channels or specific DMX dimmer circuits can be set to a specific value for the duration of a show or programming session. This is called **Parking**. This can be useful to turn on work lights or turn off an improperly focused fixture. Parked channels levels are not included in Cues or Submasters that are recorded while the channels are on.

The interface for Park is shown in figure 14.

Select the **Park** tab and the Park screen will appear.

- To park a desk channel use the left dialog box.
- To park a DMX or dimmer channel use the right dialog box

1. Select the desired dialog box and the on-screen keypad will appear.
2. Enter the **Channel** number and **Level**
3. The parked channel number and level will appear in a list to the right of the dialog box.
4. To Un-Park a channel, highlight a desk channel or dimmer channel from the list and select **Delete**.

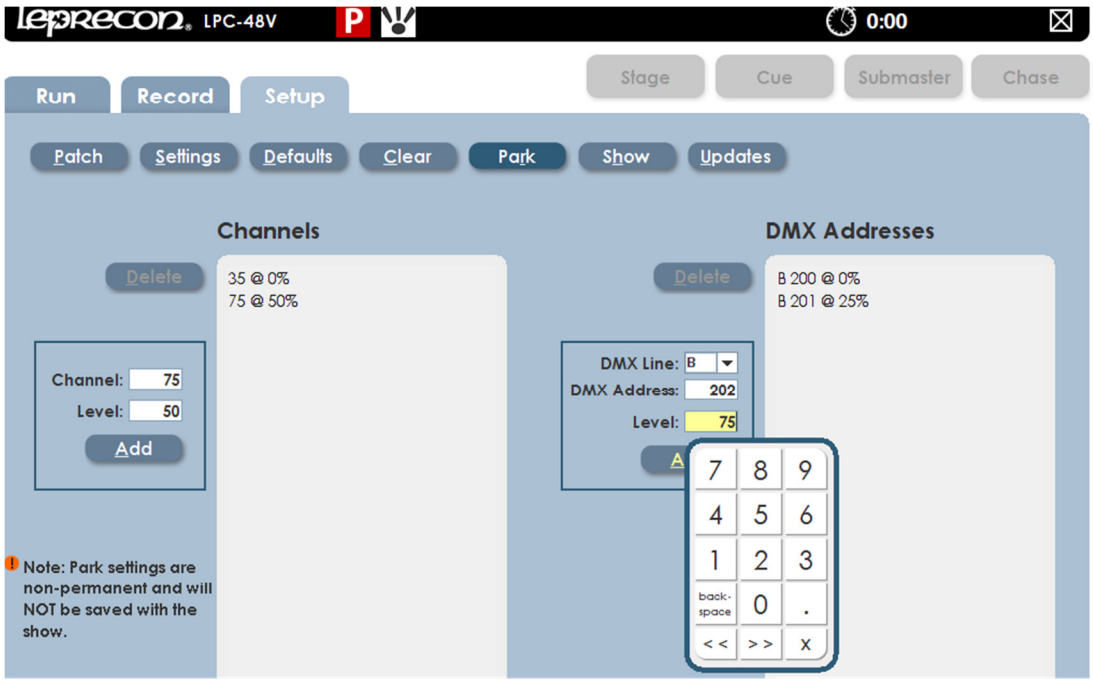


Figure 14: Park Screen

If any channels or dimmers are Parked, a red indicator with the letter 'P' is shown on the title bar at the top of the screen.

3.20 Show

Backing up and restoring show data can be achieved using an external flash device seen in figure 15. The access to this function is in the **Show** screen, (See Figure 16).

Figure 15: Front USB Location

Shows can be Loaded and Saved in the following example.

1. In the **Setup** section, select **Show.**
2. Insert the USB storage devise**.**
3. Select **Load Show** and the window will open with the information from your USB storage devise.
4. Select the desired show and select **Open.** The show will take a moment to load.
5. The show name can be entered or edited with the **On Screen keyboard**.

Save Show works in a similar way as loading a show.

1. In the **Setup** section, select **Show.**
2. Insert USB storage devise**.**

3. Select **Save Show** and the Save Show window will open.
4. Select the desired file location for the Show.
5. Using the **On Screen Keyboard** name the show.
6. Select **Save.**

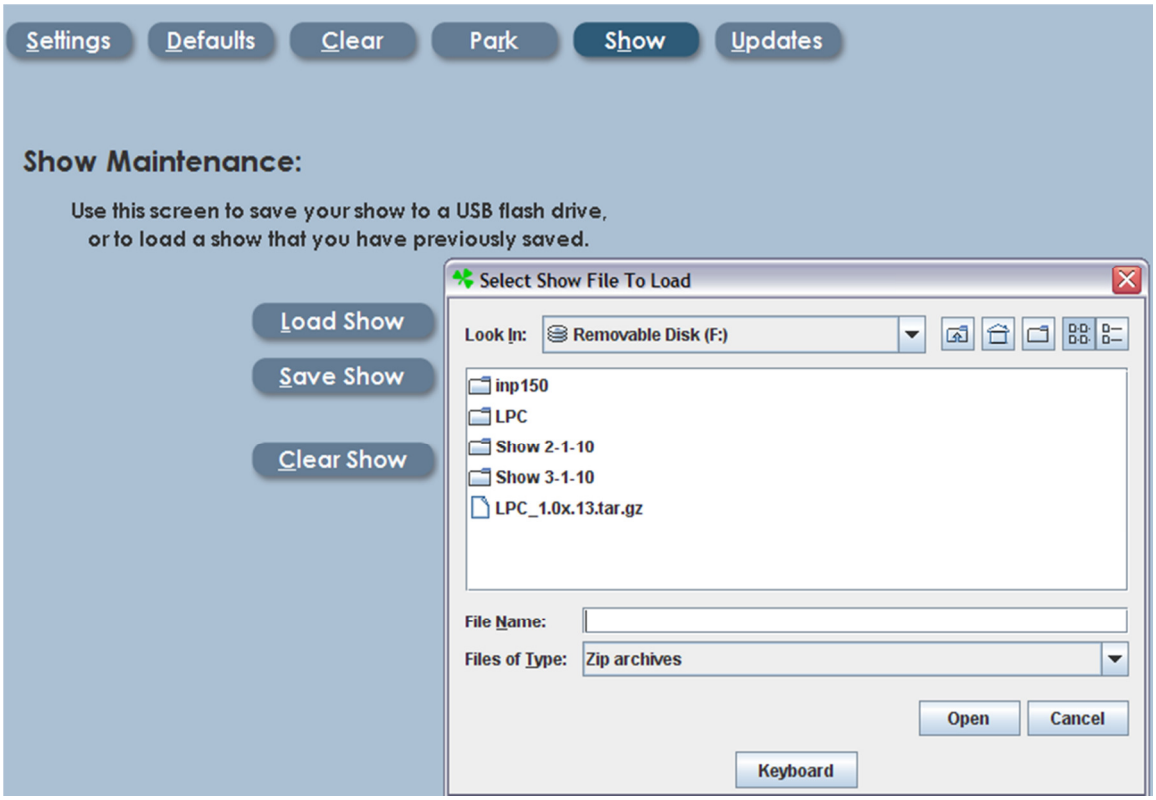


Figure 16: Load Show Screen

3.21 Updates

Software updates are installed in LPC in the Updates screen, (See figure 17). Files are loaded from flash memory to LPC program storage. Updates may contain new features and performance enhancements.

Future software updates may be obtained from the Leprecon website.

Figure 17: Software Update Screen

4 Stage View - Manual Channels

The LPC allows manual channel control using front panel faders. Channels beyond the fader range are set using the video interface or keypad, and are referred to as **Virtual Channels**.

The **Manual Fader** on the left side of the fader banks controls the output of the desk channel faders. Getting output from the manual scene requires the Grand Master and the Manual fader to be up. LPC must be in Run Mode to see Stage view. Submaster Run and Cue Run controls and features are similar.

4.1 Using Channel Faders

Operation of the desk channel faders are chosen in the Settings screen, (see section 3.3.1.) The desired use of the desk faders is selected by either **Wide Mode** or **Two Scene Preset Mode**. The **Fader Mode** key, located above the manual fader, is a secondary control of the operation, (See Figure 18).

The two banks of faders can be used in the following ways:

Wide Mode

- Fader Mode – **Manual:** all desk channel faders are used as a single scene. The manual fader has control over the desk and virtual channel output.
- Fader Mode – **Subs:** the lower bank faders are Submasters only, and the manual fader does not affect their output. The upper bank and virtual channel outputs are controlled by the manual fader.

Two Scene Preset Mode

- Fader Mode – **Manual:** upper and lower bank of desk channel faders are set as two separate scenes. The manual fader is used to crossfade between the two scenes, and the virtual channels are not affected.

- Fader Mode – **Subs:** the bottom faders are Submasters only and the manual fader does not affect their output. The manual fader has control over the

virtual channels.

Figure 18: Fader Mode

4.2 Bump buttons

LPC bump buttons are used to flash a channel or Submaster to full level. The bump buttons are under their associated fader channel. The four modes of bump operation are chosen with the **Bump** key, which is located above the blackout key, (See Figure 19).

- **Off** - bumps are disabled.
- **Add** - pressing a bump button brings up a channel or Submaster without affecting other channels.
- **Solo** - pressing a bump button brings up a single channel or sub, and blacks out all other channels.
- **Latch** - pressing and releasing a bump turns on a channel or sub. Pressing the bump a second time turns off the channel or sub.

When a Submaster is turned on with Latch mode, it will fade up and down using Submaster fade times.

4.3 Using the Keypad

LPC includes a numeric keypad and function keys to set channel levels.

Pressing the **Channel** key brings up the dialog for selecting and setting channel levels.

Example: **Channel** xx **Thru** xx at **Level** xx **Enter.**

With channels selected, use the level slider to tweak levels.

Repeating the channel selection process allows a new group of channels to be selected, (See Figure 19).

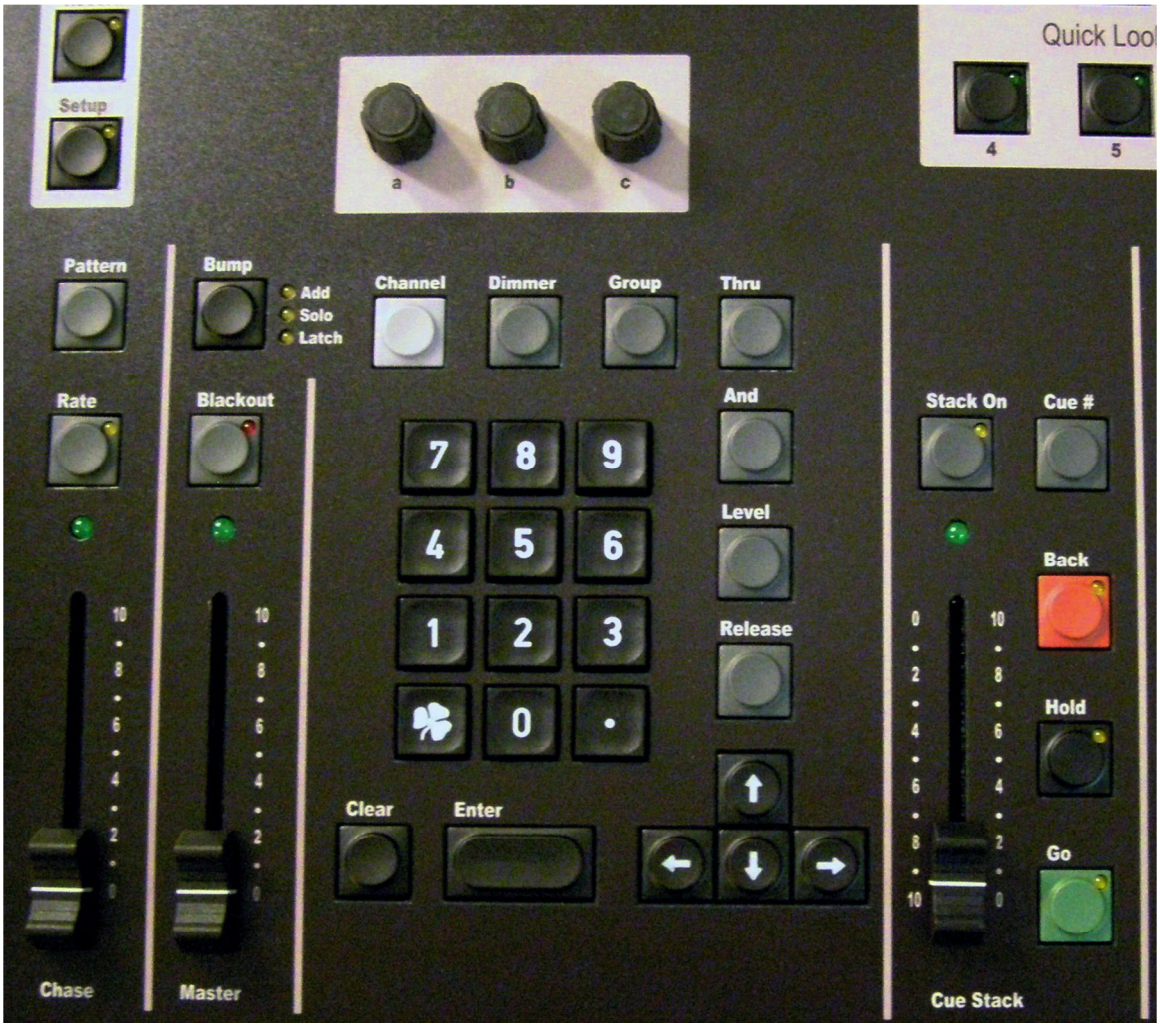


Figure 19: Keypad

4.4 Setting Channels with Video Interface

If a touch screen is connected, touch a channel selection to capture it. Swiping across a number of channel numbers will select the entire range. The channel number and level field will turn green. Use the **Level slider** located left of the channel markers to set the channel levels, (see figure 20). Touching or clicking channels will select and de-select them.

If there is not a touch screen installed, selecting elements with the mouse has the same effect.

The commands at the bottom of the screen are used to control channel operation, (See Figure 20).

- Touching the **Channel** command opens a dialog box where the user can select channels and levels using the keypad.

- A group of channels can be set by touching the first channel number, select the **Thru** command at the bottom of the screen, and the last channel number. A string of channel numbers should turn green. Touch the Level Slider and move to set levels.

- The **Release** command deselects channels, and the green highlight disappears. New channels can now be selected.

- Pressing the **Clear All** command sets all channels to zero.

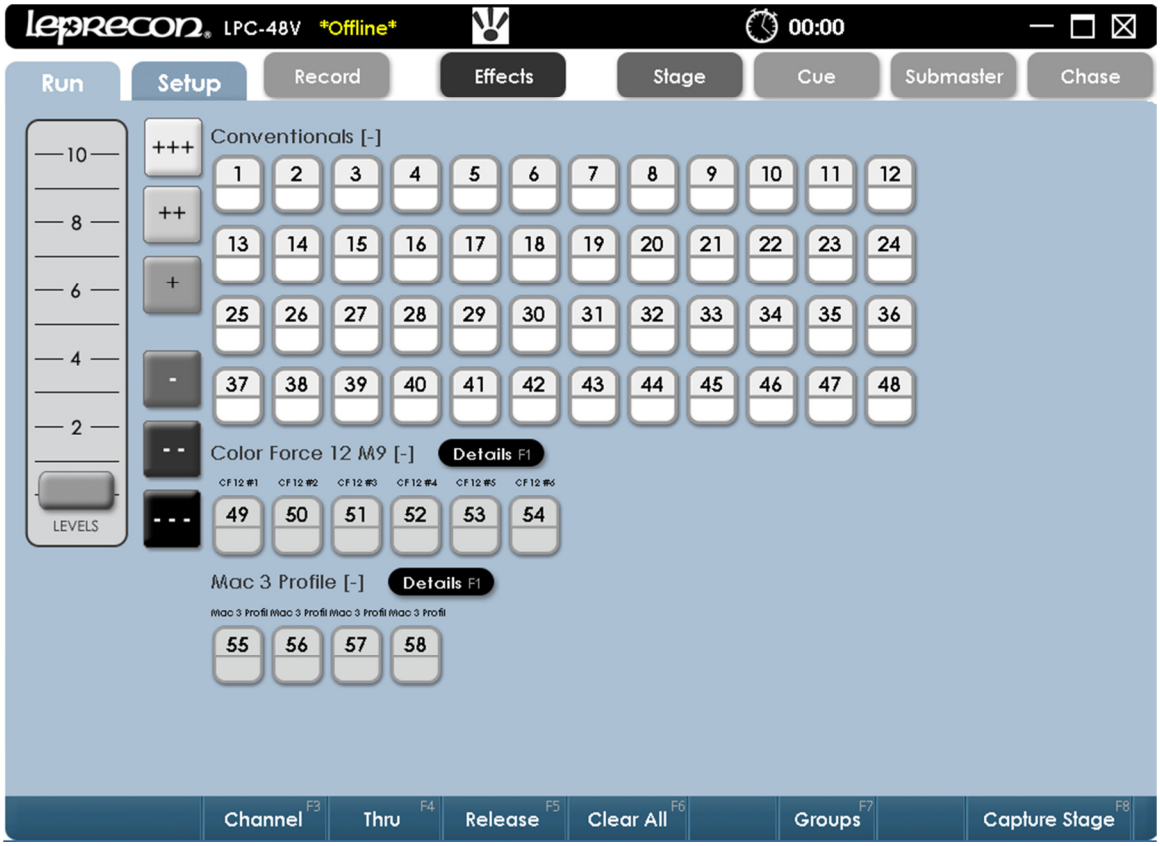


Figure 20: Stage Run Screen

4.5 Incremental Levels

The 6 **Incremental selectors** are located to the right of the level selector and are represented by the icons in figure 21. The purpose of the Increment icons is a time saving way to change the overall light level of a look while keeping the individual channel levels in proportion. So instead of changing the level of individual channels, the user can select one of the Incremental icons which will affect the scene.

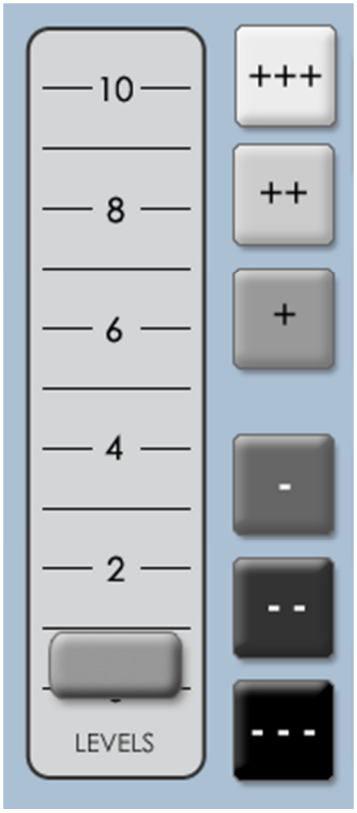


Figure 21: Incremental Levels

4.6 Groups

Any set of selected channels can be saved as a group. This provides a shortcut for using the same channels again later for Cue or Submaster recording, (See Figure 22). Channels can be selected and de-selected from the group screen as well.

1. In any Run or Record screen, press the **Group** key located on the front panel, or click on the word **Group** located at the bottom of the screen.
2. Once channels are selected, touch **Save As…** to create the new group.
3. Give the group a convenient name, and it can be re-used for future recording.

If there are channels selected when the Group button is pressed, that selection will be carried into the Group creation screen.

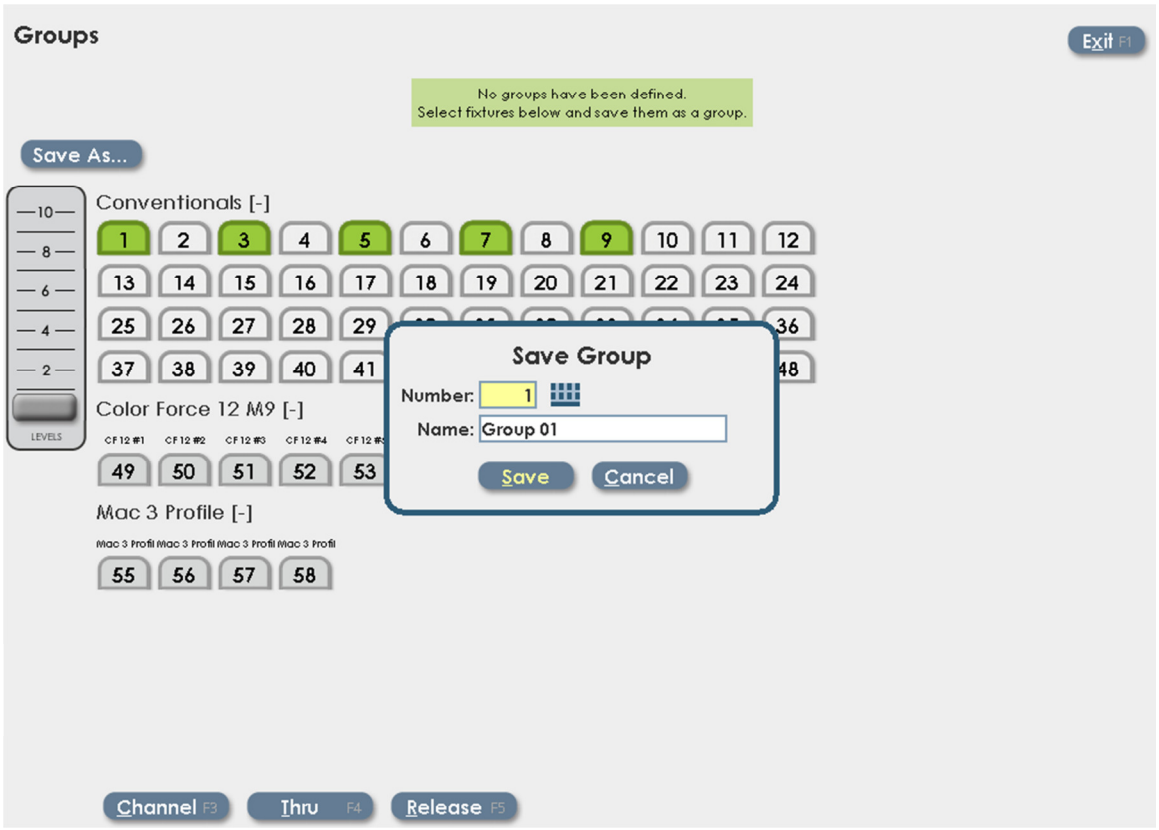


Figure 22: Group Screen

5 Submasters

5.1 Submaster Properties

The Submaster record screen is used to record channel levels, as well as all other properties.

- **Page** - selects the current Submaster page. The current page can also be set at any time using the front panel **Page** key.
- **Sub** - this control selects the Submaster to be recorded.
- **Title** - a name can be set for the Submaster. This title will be shown in the Submaster Run screen.
- **Upfade** and **Downfade** - sets up and down fade time for a Submaster. Fade times only apply to bump toggle mode.
- **Linked Chase** - each Submaster can have a chase linked to it. Bringing up a Submaster will then start the selected chase.
- **Chase Rate** - sets the speed of the linked chase.

5.2 Moving about the screen

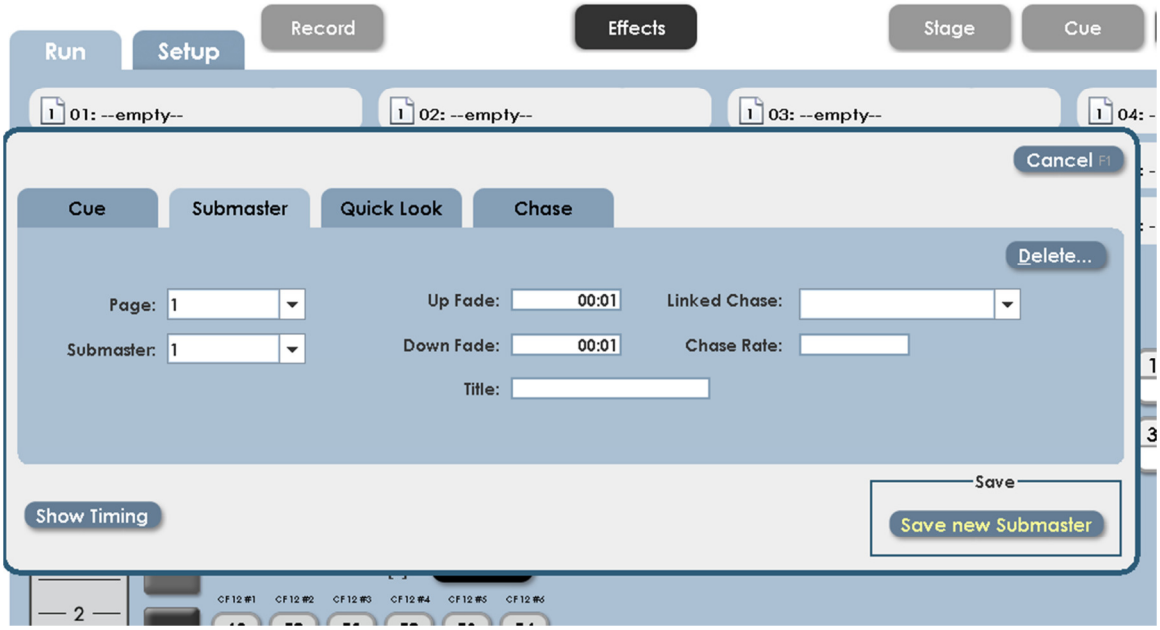
Left and right arrow keys are used to 'tab' from field to field.
Adjust the levels within a field with up and down arrows, or use the keypad to enter a new value.

5.3 Recording Submasters

Select the **Submaster** tab.
The screen shows Submaster properties at the top of the screen, and channel levels at the bottom (See Figure 23).
Channel levels shown are the actual LPC output, so previously recorded Submasters can be used to build new looks.

5.4 Saving Submasters

1. Set channel levels for Submasters using manual faders, video interface, or channel selection keys.
2. The stage output will show levels set for Submaster recording. Use the incremental levels to fine tune the look.
3. Click the **Record** button at the top of the screen. The Record dialog will pop open on screen:



4. Click 'Save new Submaster' button in the Record dialog.

The record dialog has choices for storing the new Submaster, such as linked chases and titles.

- The Submaster number will automatically advance so that a sequence of subs can be recorded.
- If a Submaster already contains data, LPC offers the options of replacing the current data, inserting a new Submaster, or canceling the operation.
- Inserting a new Submaster will shuffle all higher numbered Submasters up to make room for the inserted cue. If there is data on

Submaster 24, that scene will be lost.

Predefined groups can be used also to select channels for recording. Press the **Group** key on the front panel to show previously created groups, (see Groups in section 4.6). Click or touch on the group name to select, then click or touch 'OK' to return to the record screen.

5.5 Submaster Playback

The Submaster Run screen shows the status of all LPC Submasters. The display at the top includes Submaster name, current level, and page status.

- Stage view channel levels are shown below the Submaster status display. **Next** and **Previous** scroll controls allow viewing the complete set of 24 Submasters.
- The active Submaster page can be changed from the Run screen.
- Submaster Run screen allows access to manual channels as well.
- Use the bottom bank of faders on the LPC to control the corresponding Submaster playbacks.

Figure 27: Submaster Run Screen

5.6 Submaster Preview

LPC uses a Preview function to check and change subs that have already been recorded. The background color changes to show that the channel display no longer shows Stage view.

Preview also allows blind changes to Submasters. Previewing and changing an active Submaster will show the changes in the board output. Changing a Submaster that is down will be done blind, with no changes seen on the stage.

From the Submaster Run screen, click or touch the **Preview** control in the lower corner of the screen.

- The background changes color, and the channel levels shown are the values of the Submaster, not stage levels.
- In Preview mode, all the channel selection methods (faders, touch screen, channel dialog) can be used to change Submaster channel levels.
- Change the channels individually or use the incremental level buttons.
- Clicking **Save** will update the Submaster channel values.
- Another Submaster can be previewed, or click **Exit** to return to Submaster Run screen.

Figure 28: Submaster Preview Screen

5.7 Quick Looks

Six special scenes, called **Quick Looks**, give fast access to specific scenes. Quick Looks are special Submasters, with no page location (See Figure 24). Quick Looks are always available and are ideal for giving playback control of specific scenes to untrained operators.

To record Quick Looks:

1. In the Submaster Record screen, click the **Page** drop down menu. Above Page 1 are Quick Looks.
2. Select desired Quick Look location: (1- 6)
3. Set channel data and fade times.
4. Select **Save**

To playback a Quick Look simply press one of the pre-recorded buttons.

Pressing it again will turn it off.

Figure 24: Quick Looks Buttons

Quick Look channels ARE NOT included when subs, cues or chases are recorded. Also, Quick Looks are independent of the Master level, but are controlled by the Blackout switch.

5.8 Copy Scene

Copy Scene is a way to move a recorded scene to a different location. The LPC can change the order of a list or move a recorded scene to a different operation mode such as Cue, Submaster, or Chase. The scene can be copied in Preview mode. The user can copy the scene with its fade time intact, or copy a scene with only the light levels; this will set the fade times to default. Copy Scene Icon can be found at the top right of the Record and **Preview** screens, (See Figure 25).

1. In the Preview screen select **Copy.**
2. A window will open and a question will ask, “Where do you want to paste this scene” (See figure 26).
3. Select the lower window to open the menu; Cue, Submaster/ Quicklook, or Chase.

4. If Cue is selected.
   - Enter the desired **Cue Number** in the window.
   - **Save Copy**.
5. If Submaster/Quicklook is selected.
   - Enter the desired number in the **Page** and **Submaster** window.
   - **Save Copy**.

To copy Scene to a **Quicklook.**

- Click the **Quick Look** radio button
- Save Copy

If **Chase** is selected.

- Enter the desired number in the **Pattern** window; enter desired number in the **Step** window.
- **Save Copy**.

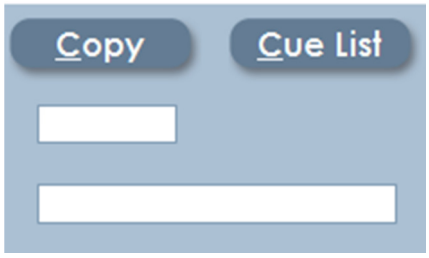


Figure 25: Copy Scene

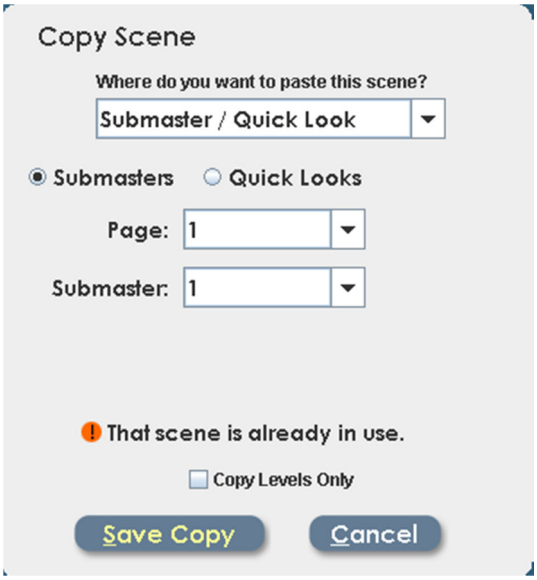


Figure 26: Copy Scene Menu

6 Cues

6.1 Cue Properties

In the Cue Record screen, properties for the cues to be recorded are shown at the top of the screen. Stage view below shows channel status, which is the data for cue recording.

Each cue has these timing properties:

- **Wait time** - Time that can be set to delay the start of the fade after pressing 'GO'
- **Follow time** - Setting Hold Time will start a cue automatically after the previous cue without another 'Go' press.
- **Up Fade** - Time for the new cue to reach 100%
- **Down Fade** - Time needed for the previous cue to completely fade out.

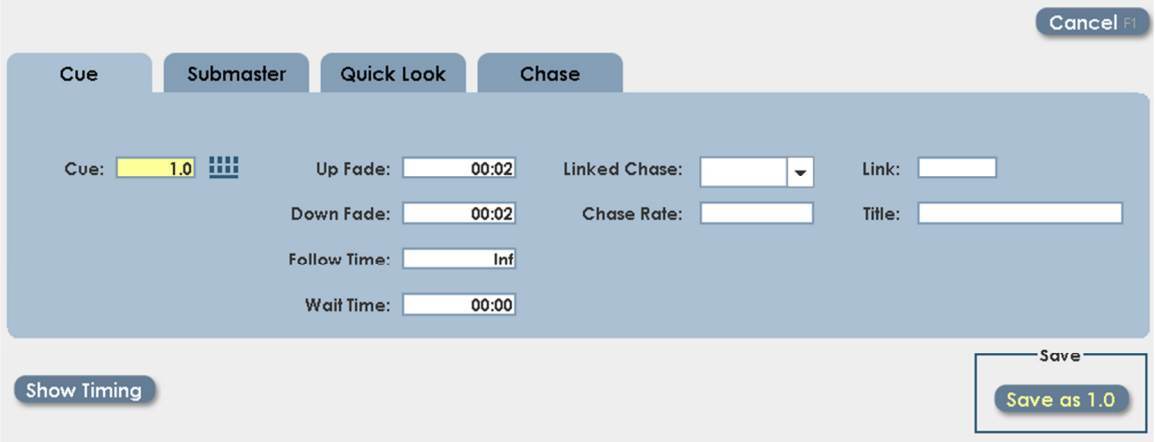
In addition, each cue can have a **Chase** associated, with a specific rate.
When the cue starts to fade in, the chase will also start.
Cues can be named using the **Title** field, and this name will appear in the Cue Run screen. The **Link** field can be used to set out of sequence playback.

6.2 6.2. Recording cues

LPC can save and playback up to 999 cues. Point Cues can be inserted in-between two Cues. This is good for editing a show after the Cue stack has been recorded. Example: Cue# 3, [3.5], 4. Each cue has independent up and down fade times. If desired, each cue can have associated delay and follow times. The entire Cue Stack can be turned off if LPC is used only for manual and Submaster control.

When recording new cues, it's best to turn OFF the Cue stack. Otherwise any existing cue data will be present in the board output, and re-recorded into cues.

1. Press the **Stack On** key.
2. Set channel levels for a cue using manual faders, video interface, or channel selection keys. The stage output will show levels set for the cue.
3. The up and down arrows can be used to increment and decrement time values within the fields.
4. The left and right arrow keys can be used to move from field to field on the record screen, similar to the 'tab' function on a computer.
5. Click the Record button at the top of the screen. This will pop up the Record dialog:



Fade times and other data can be set while the dialog is open. When done, click the '**Save as** ' button to finish recording.

6.3 Cue List

From the Cue Record screen, clicking or touching the **Cue List** control will open the Cue List screen.

This screen shows a summary of current cue timing parameters, and the cue order. The graphic at the bottom of the screen represents scene timing values. Future releases will enable timing to be changed by dragging the timelines.

Cue Order can be changed by selecting a cue. Using the up and down arrows on the left side of the screen will move a cue up or down the list, (See figure 30).

Any of the displayed timing values for cues can be changed in the Cue List as well.

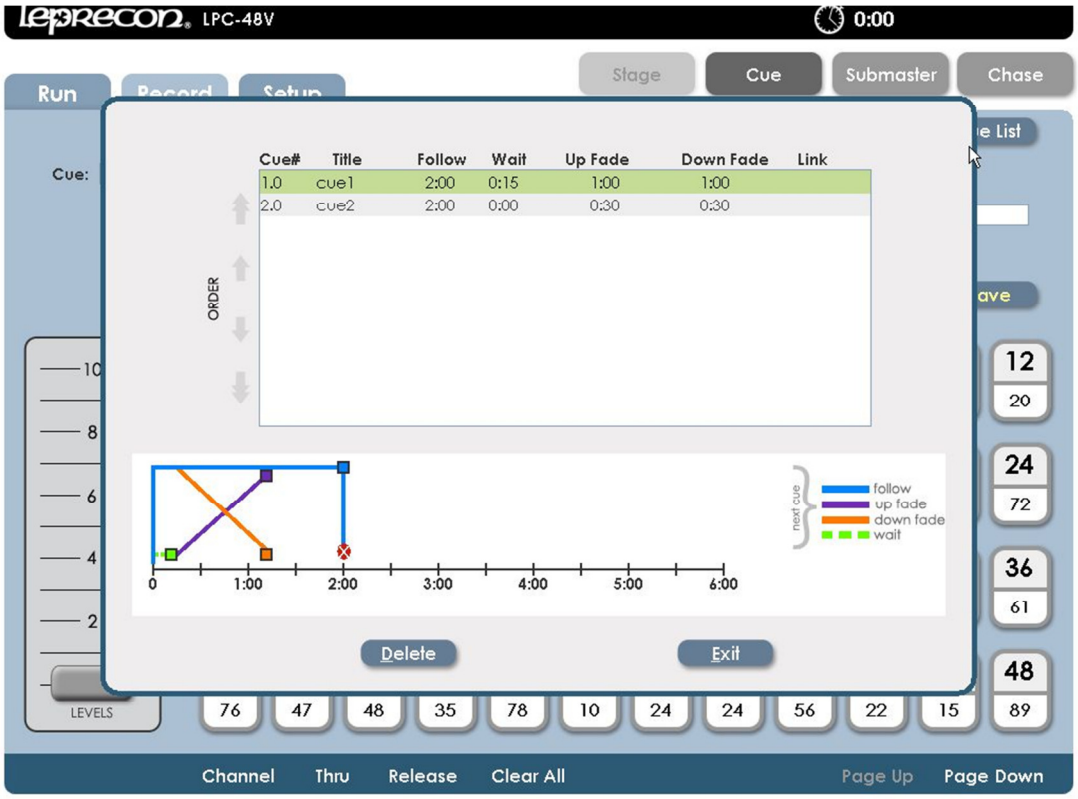


Figure 30: Cue List Screen

6.4 Cue Playback

Opening the **Cue Run** screen shows Cue status, with graphic displays for active fades. The top part of the screen shows current Cue information and the bottom

of the screen shows Stage levels. The two vertical bar graphs show the fade progress of an active fade, (See Figure 31). If there are wait times or follow times that are elapsing, that are also shown with a progress bar.
Information about the next cue in the list is shown to the right of the fade display. The cue number and name is show, as well as the fade times.

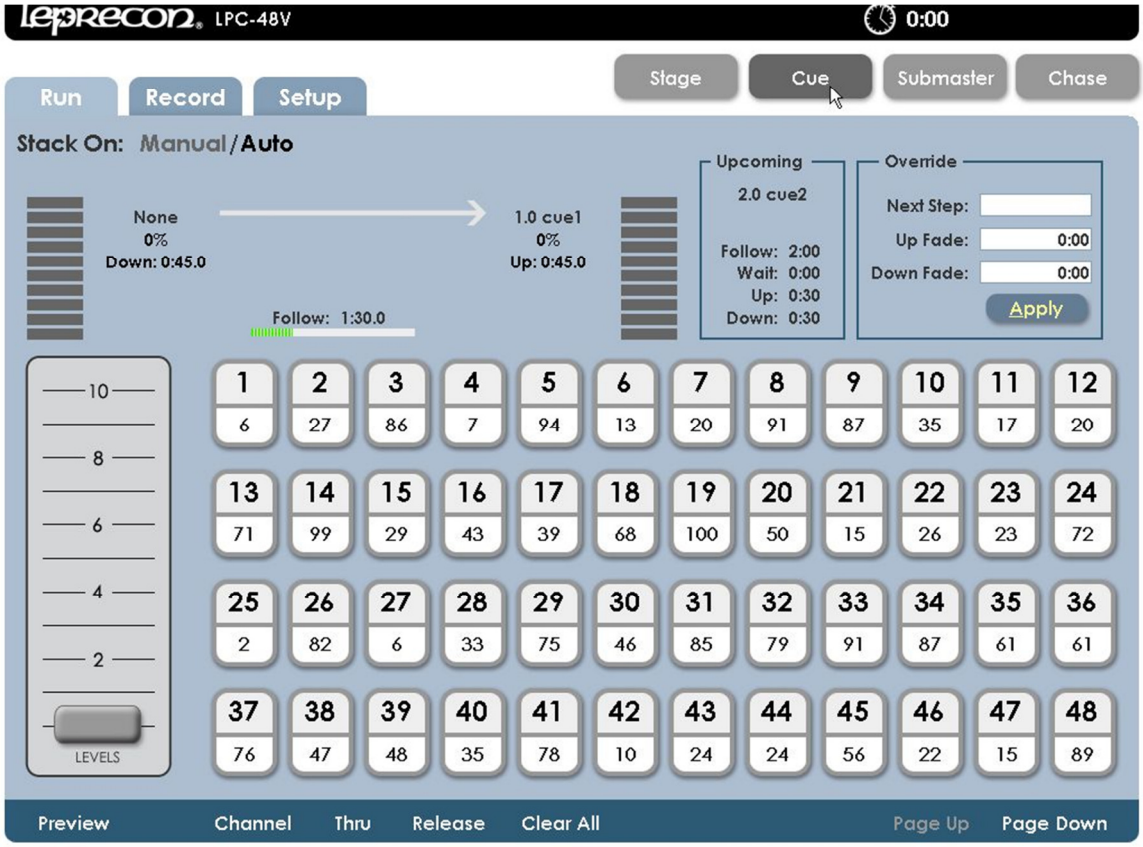


Figure 31: Cue Run Screen

6.5 Manual Crossfade

When the Cue Stack is first turned on, the Cue list will be in a blackout state. Moving the manual crossfader will transition from blackout to the first cue. The fade status will be shown on the bar graph displays at the top of the screen. When the cue is complete moving the manual fader back to its original position will crossfade between the next two cues. An image of the LPC's Cue control section is figure 32.

6.6 Cue Properties

Cue fades are handled with three front panel buttons:

- **Go** - Starts the fade to the next cue
- **Hold** - Stops the fade. Press 'Go' to resume.
- **Back** - Reverses a fade that is in progress

For automatically timed cross fades, press the **Go** button. The cues will fade up and down according to the fade times associated with the cue.

6.7 Taking Control with the Manual Crossfader

After cues have been played back with the **Go** button, the manual fader can be used to advance the cue stack. This requires pressing the **Hold** key to stop further timed fades.

1. Press **Hold**. An indicator will appear on screen that cue playback is on Hold.
2. Move the **Manual Crossfader** to the bottom position, then to the top to match the level of the completed fade. The Hold indicator will turn off, and the word '**Manual'** at the top of the Cue Run screen will change to a bold font.
3. Move the **Manual Crossfader** from the top position to the bottom position to change to the next cue.

If the **Hold** button is pressed in the middle of a timed fade, the manual crossfader can be used to resume the fade. The procedure is similar:

1. Move the **Manual Crossfader** to the bottom position.
2. Move the **Manual Crossfader** up from the bottom position until it matches the current fade position. The Hold indicator will turn off, and the word 'Manual' at the top of the Cue Run screen will change to a bold font.
3. Once the level is matched, the manual fader will have control. Move the **Manual Crossfader** to the top position to complete the fade.

Figure 32: Cue Control Section

6.8 Cue Override

To jump out of sequence to a different cue, use the **Override** controls, (See Figure 33).

1. Press the front panel **Cue** button this will move the cursor to the Next Step field.
2. Enter a new cue number, and set timing if it is to be different than the saved time.
3. Pressing **Apply** or **Enter** loads this new cue as the next cue to be played back when the **Go** button is pressed.
4. Verify the selected cue is in the **Upcoming** box.

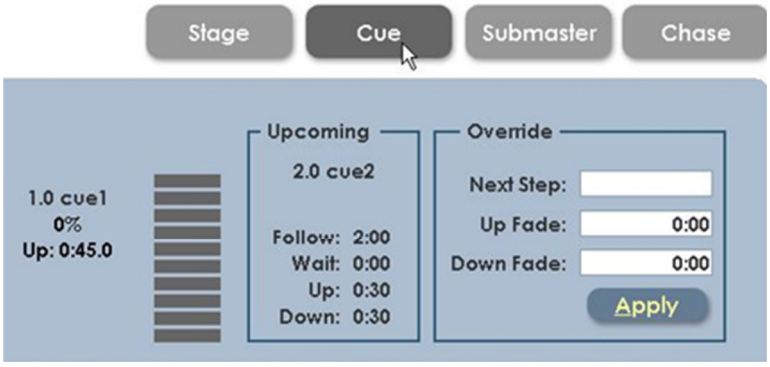


Figure 33: Cue Override Screen

6.9 Cue Preview

LPC uses a Preview function to check and change Cues that have already been recorded. When entering Preview, the background color will change to show that the channel display no longer shows Stage view.

Preview also allows blind changes to Cues. Previewing and changing an active Cue will show the changes in the board output. Changing a Cue that is down will be done blind, with no changes seen on the stage.

1. From Cue Run, click or touch the **Preview** control at the bottom of the

screen.

2. All properties of the selected cue will be shown.
3. Channel levels can be adjusted using the same techniques that are used to create the Cues; faders, channel controls, or touching a channel, (See Figure 34).
4. Selecting **Save** will update the cue. **Previous** and **Next** can be used to preview other cues in the show.

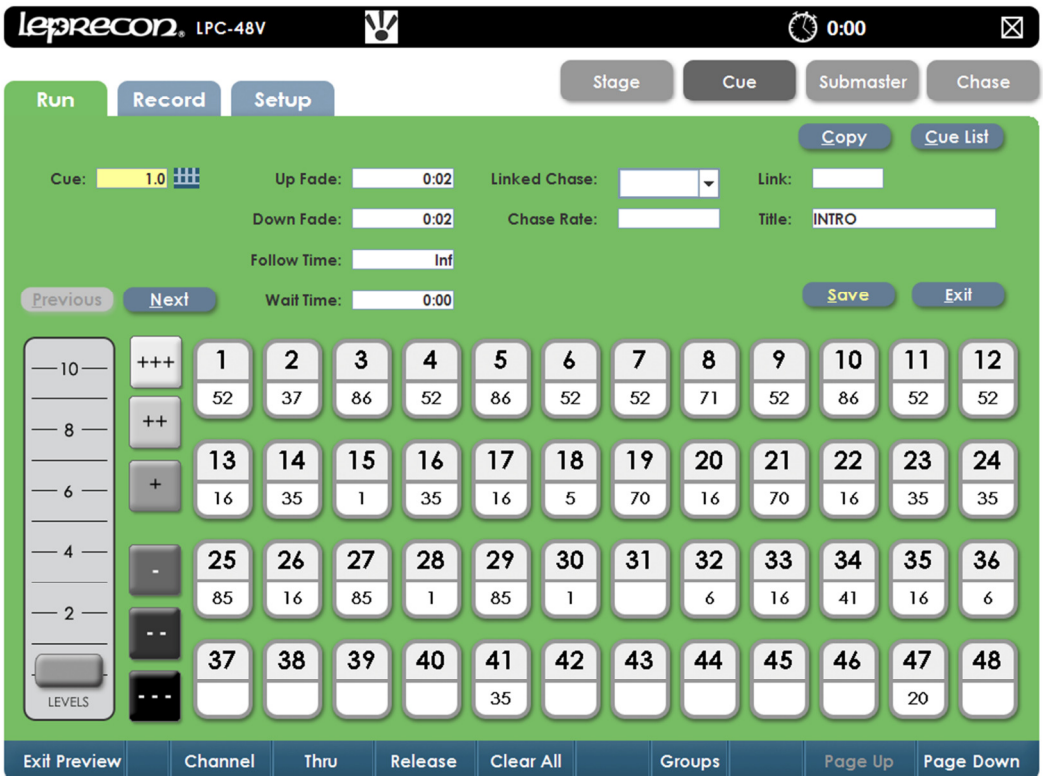


Figure 34: Cue Preview Screen

7 Chase

LPC uses Chase patterns to run sequences. Chases can be linked to Cues or Submasters, or selected and controlled from a front panel fader.
The first four chases are permanent system chases, and cannot be altered.
There are a total of sixteen programmable chase patterns available.

7.1 Chase properties

Each LPC chase has the following properties:

- **Pattern** - specified which chase is being recorded.
- **Step** - shows the last step saved
- **Rate** - the speed of the chase, shown in Beats Per Minute (BPM)
- **Loop Count** – Setting a value for Loop Count will stop the chase after a specific number of cycles.
- **Blend** - Chases can be set to snap from step to step, or fade from one step to the next. Setting blend to zero sets the chase to snap, and a blend value of 100% will produce a fluid chase that is constantly fading from one step to the next.
- **Title** – A name given to a specific Chase pattern.

7.2 Recording Chases

Select Record Chase to see the options for building a new chase. Data relating to the specific chase is shown at the top of the screen, and channel data is shown below, (See Figure 35).

Patterns 1 - 4 are permanent and the steps cannot be changed.

1. In Record mode select the **Pattern** number from the menu.
2. Select the **Step**; the dialog box should state “New Step”.
   Set desired channel **Level, Rate**, and **Blend.**

3. Add a **Title** using the on screen keyboard if desired.
5. Select **Save**, the message, "*Chase Step saved. Pattern: # and Step: # will display for 5 seconds.*

The **Delete…** control is used to remove steps from a chase pattern.

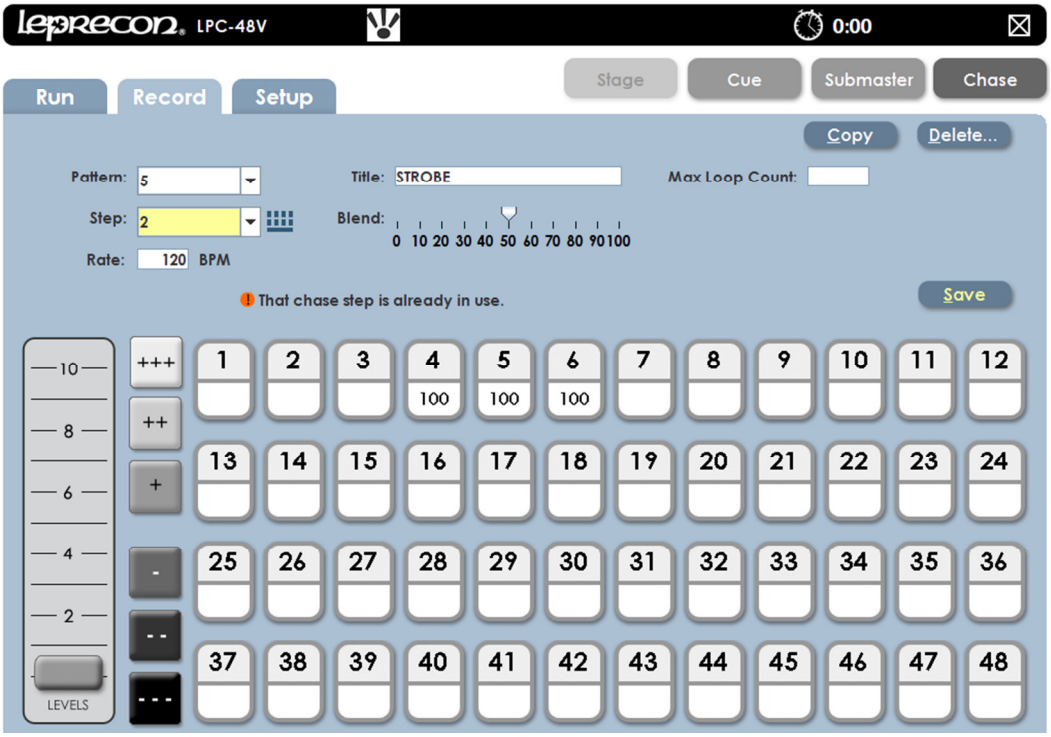


Figure 35: Chase Record Screen

7.3 Chase Playback

If chases are associated with a Cue or Submaster, they will automatically start when the cue or Submaster is used. Fading out the cue, or bringing down the Submaster fader will stop the chase.

Chases can also be run from the front panel. The Chase fader, tap button, and pattern button are used to control any of the chase patterns.

- Pressing **Pattern** will bring up a screen for picking a specific chase.

- Bringing up the **Chase fader** will fade up that selected chase.
- The **Tap** button is used to set the rate for an active chase.

7.4 Chase Override

The Chase Rate can be changed while in Run Mode. Select **Set Chase** and the Chase Pattern's rate can be edited (See Figure 36).

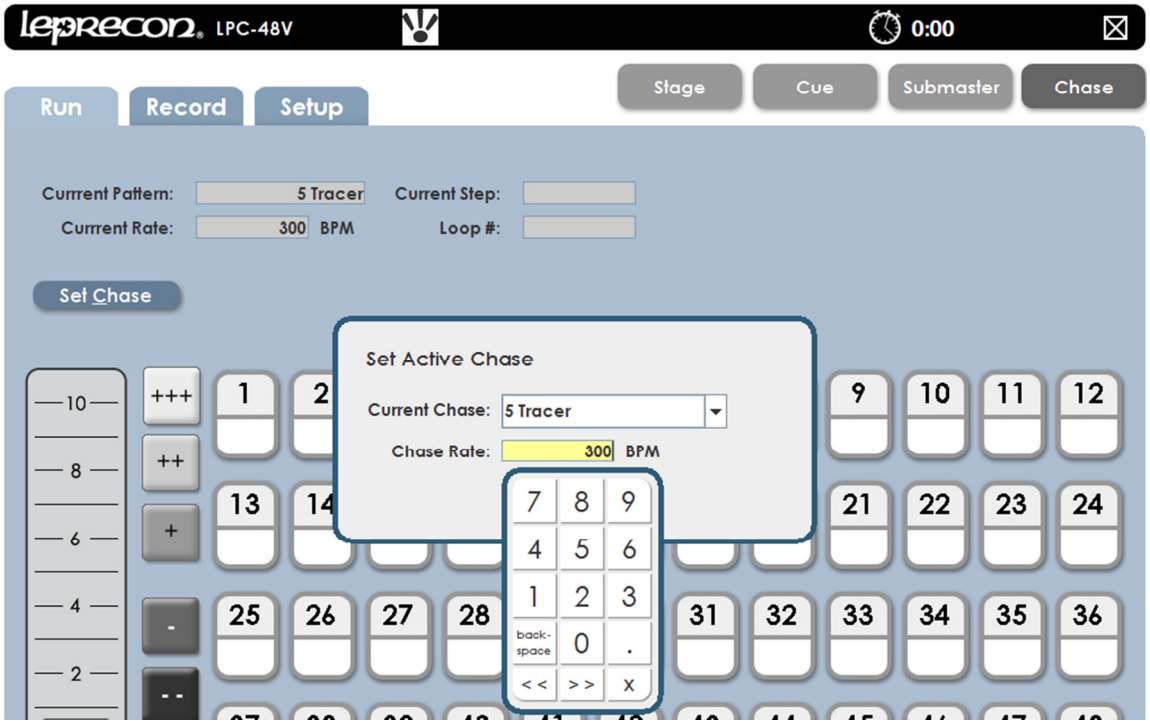


Figure 36: Chase Rate Override Screen

7.5 Chase Preview

In Preview a recorded chase pattern can be checked, and each step edited. The screen's background color changes to show that the channel display no longer shows Stage view, (See Figure 37.).

1. From the Chase Run screen, click or touch the **Preview** control in the lower corner of the screen.
2. In Preview mode, all the channel selection methods (faders, touch screen, channel dialog) can be used to change step channel levels.
3. The **Blend** of a chase can be changed and will affect the current output.
4. Clicking **Save** will update the pattern step values.

6. **Previous** and **Next** controls will allow more steps to be previewed.

7. Click or touch **Exit** to leave the preview mode and return to Chase Run.

Figure 37: Chase Preview Screen

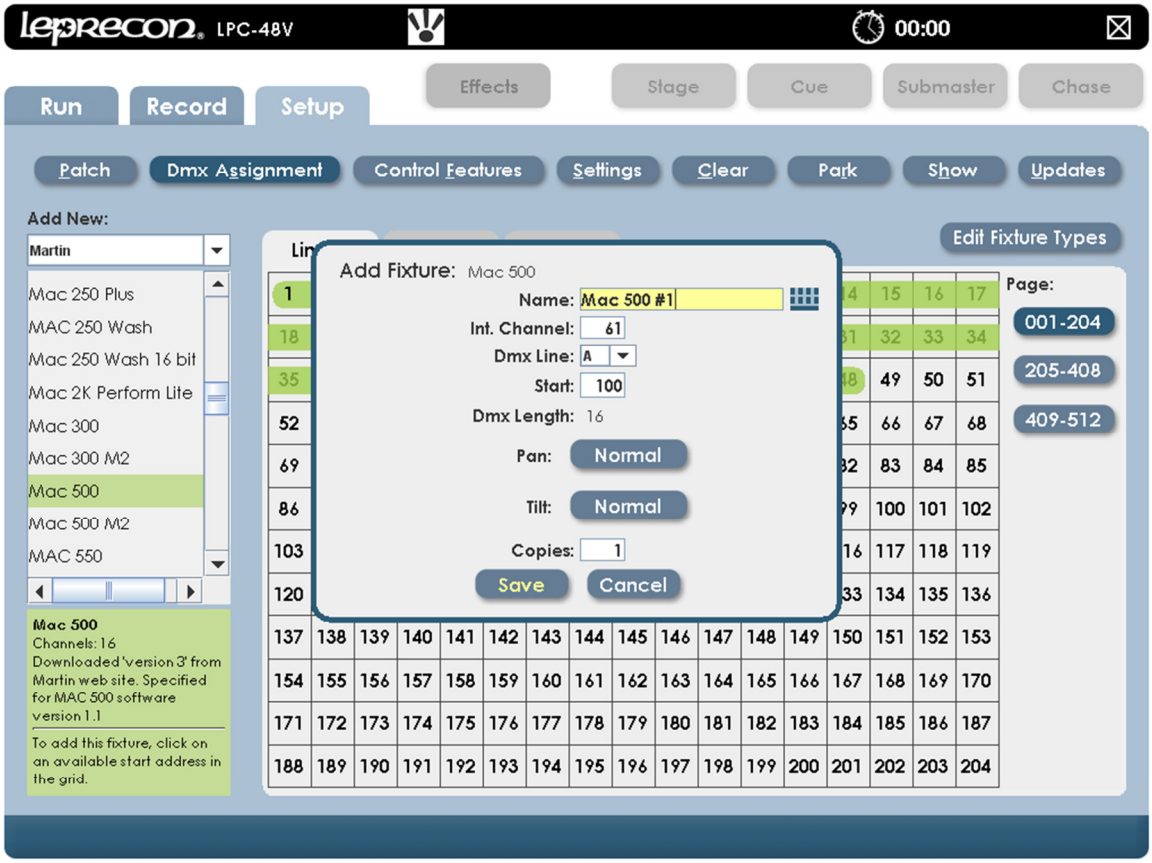
8 Intelligent Fixture Programming

LPC can be used with conventional dimmers, and also with almost any DMX controlled LED fixture or intelligent fixture. Programming, editing and playing back cues with intelligent fixtures is more complex than conventional programming, but the techniques used in LPC are very similar.

In the following sections, it's assumed that the user has a basic understanding of how to use the LPC for programming conventional dimmers and fixtures.

8.1 DMX Line Assignment

The first step in controlling an intelligent fixture is to add it to the DMX Assignment. This is very similar to the process used to add dimmers to the DMX Assignment covered in section 3.7

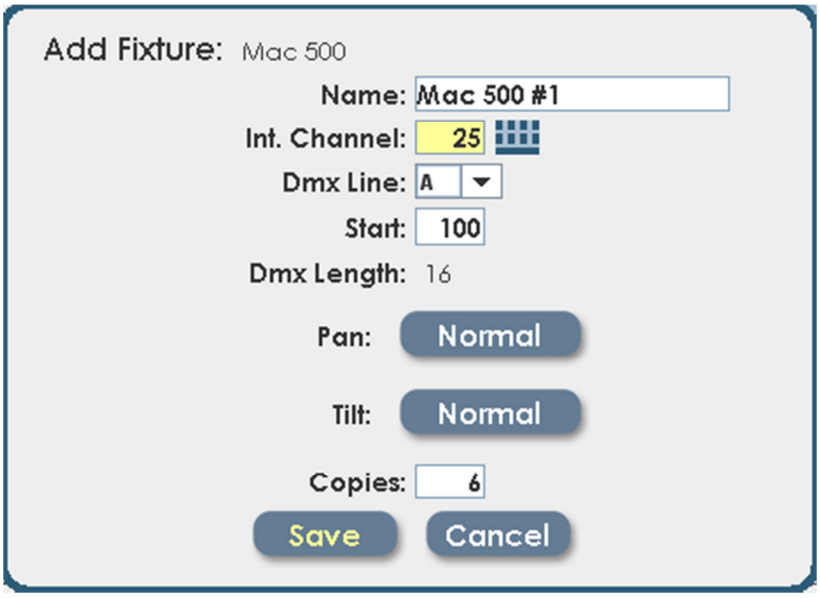


From the Setup Menu, choose DMX Assignment. Click the drop down box to show the list of available manufacturers, and pick the specific fixture from the manufacturer list.

Note that some fixtures have more than one DMX personality. It's important that the DMX mode set in the fixture match the DMX personality selected from the fixture library.

LPC has a unique feature that allows the Intensity channel for an intelligent fixture or LED fixture to be patched automatically to a board control channel.

This lets the user bring up LED and intelligent fixtures using the front panel faders and channel keys. This may be the easiest way for new users to get quick results with LPC.

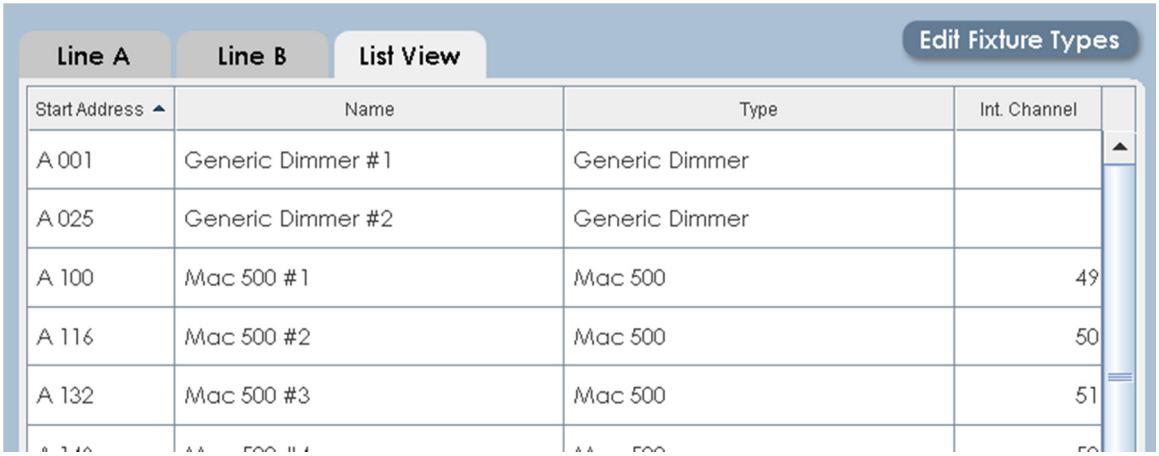


In the case above, the MAC 500 intensity channels would be assigned starting at board channel 25. This in no way affects the DMX start address of the fixture, which will be DMX address 100.

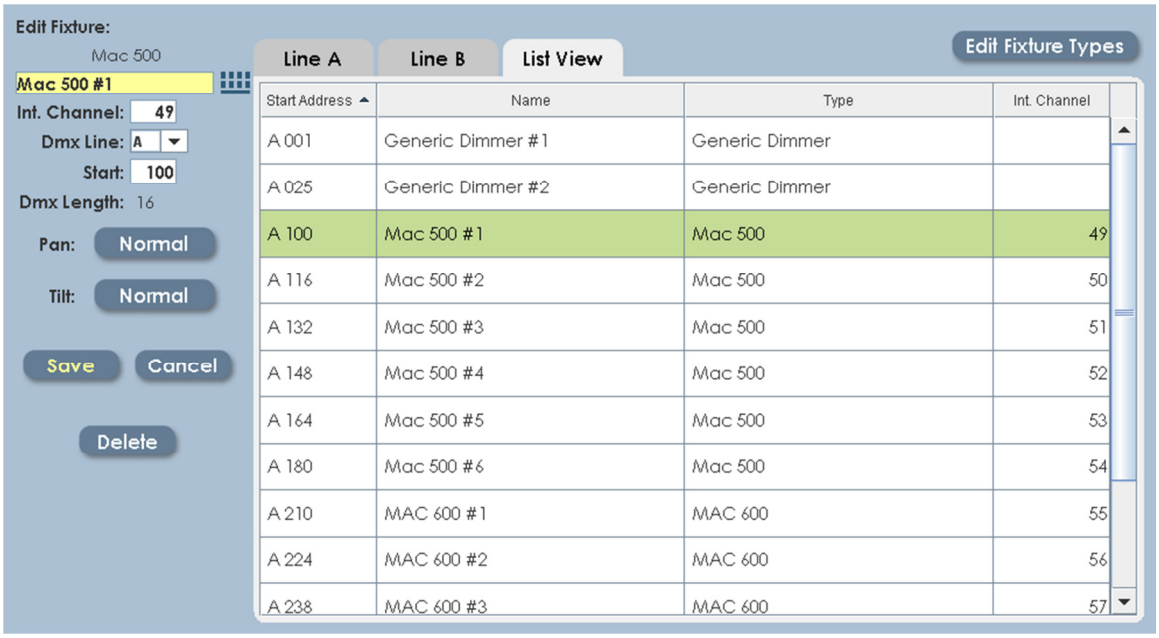
Control buttons on this dialog allow the user to invert pan and tilt for each fixture. The number of fixtures to be added is shown in the box labeled ‘copies’.

8.1.1 List View

The DMX assignment screen has tabs for each DMX universe. A third tab shows a list of all fixtures in the system. Clicking on the List View tab shows something like the following:



The scroll bar is used to move the list up or down in the display window. Selecting an item in the List View gives the user the option of changing properties for the selected fixture:

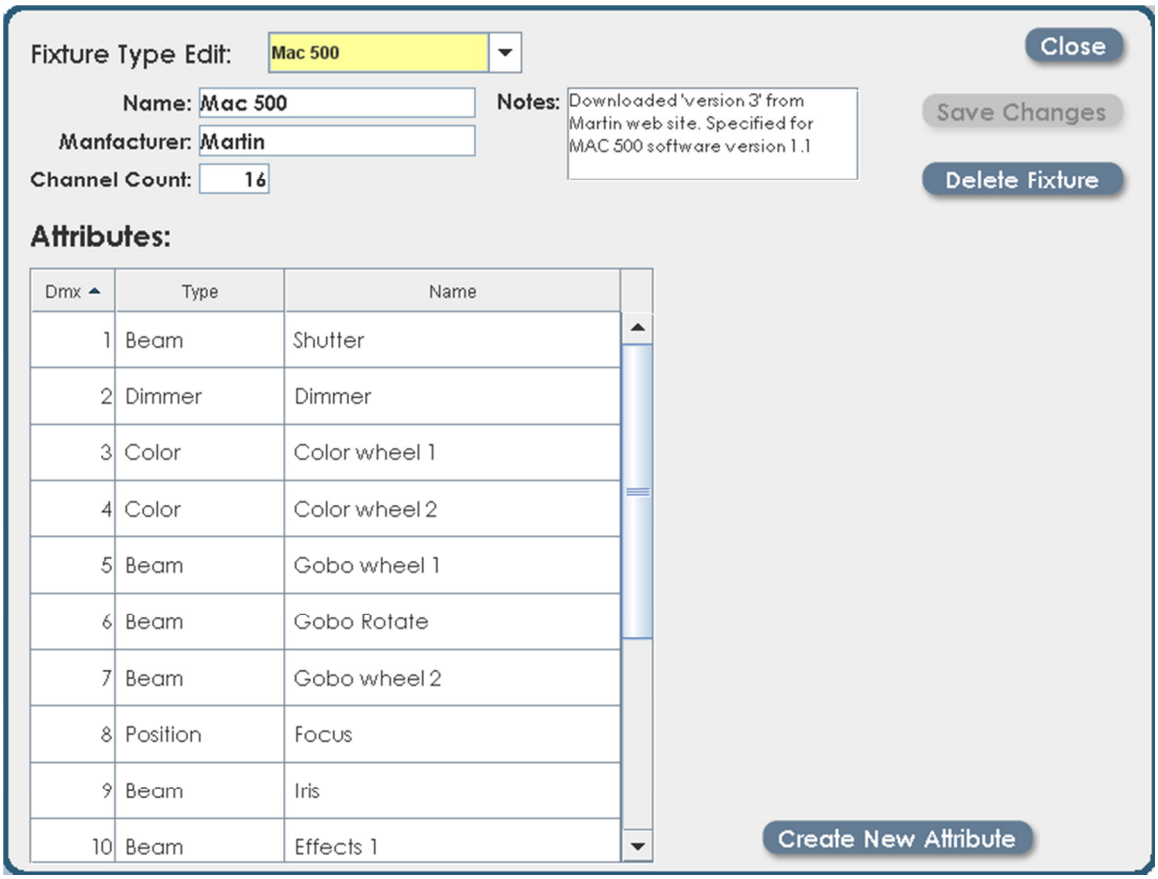


Just as when the fixture was first placed in the DMX assignment, options are shown for start address, fixture name and other attributes.

8.1.2 Editing Fixture Types

Changes can be made to the fixtures that are currently in the show. This can be used to fix errors in the factory library, or create a new type of fixture that is not supported in the current library.

Clicking Edit Fixture Type brings up the following dialog:



Any changes made to a fixture definition will apply only to fixtures in the current show. If a new show is created, and the fixture loaded from the library, it will revert to the original definition.

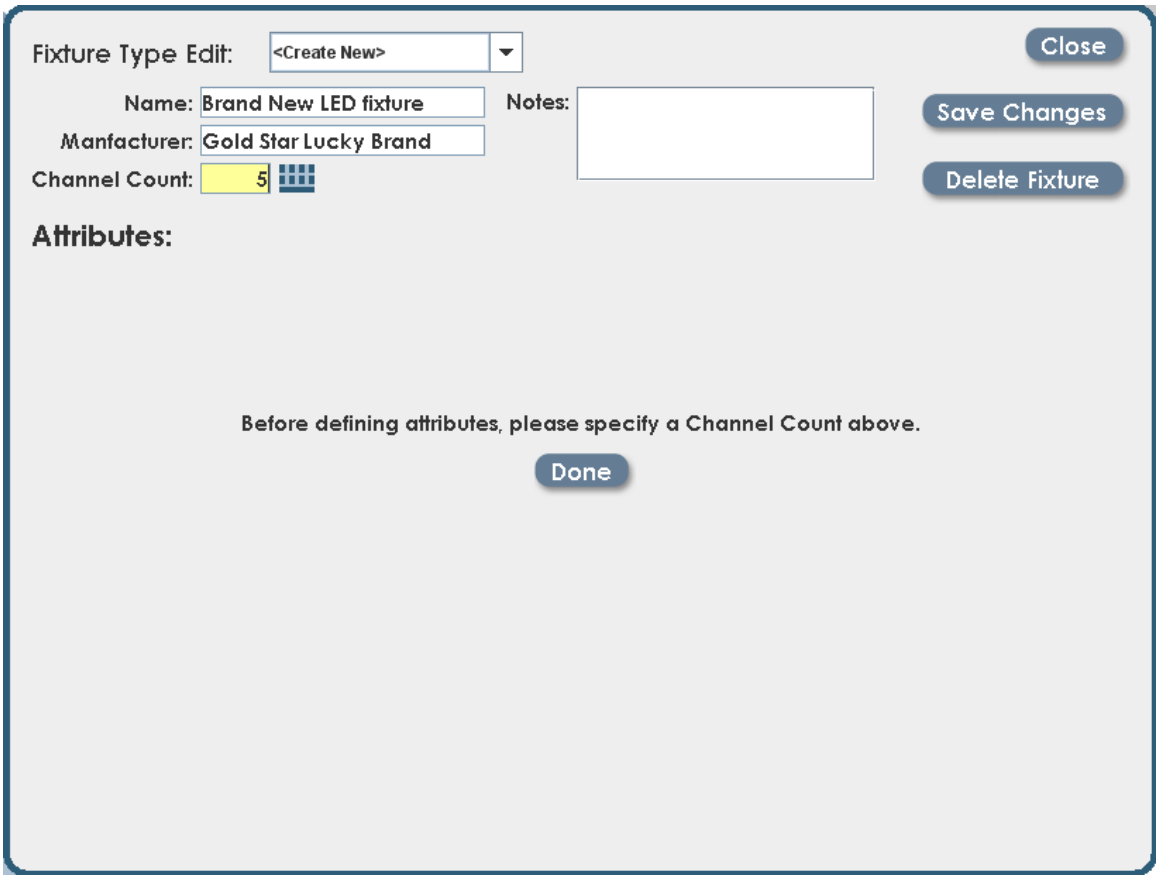
All elements of the fixture definition can be modified; such as name, channel count and individual attributes.

Deleting the fixture from this screen will not delete it from the library, but will delete the fixture and all associated data from the show.

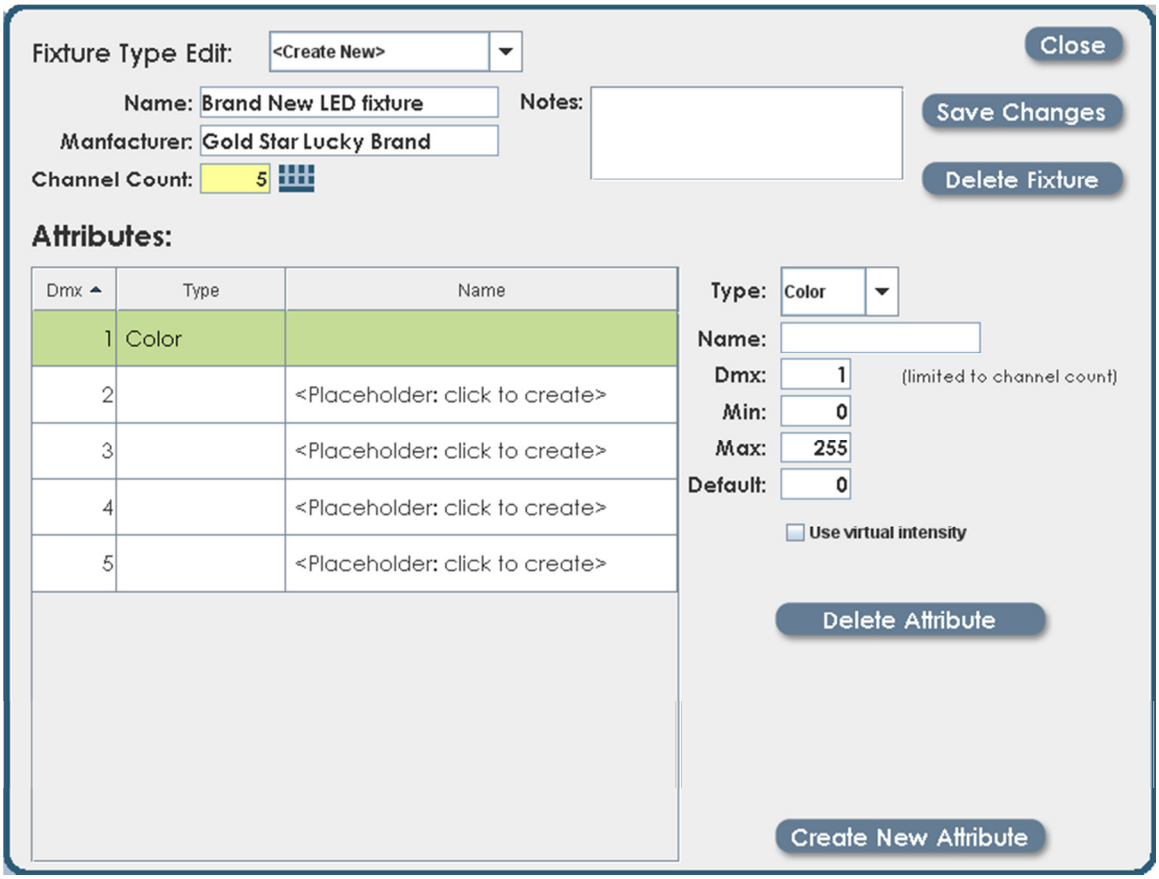
8.1.3 Creating New Fixture types

New fixture types can be created on the LPC. New fixtures are can only be used in the current show, are not added to the fixture library. To properly define a new fixture it's necessary to have complete DMX data taken from the fixture manual.

To define a new fixture, click on Setup, then Dmx Assignment, Edit Fixture. Click the Fixture Type drop down box, and select <create new>. This dialog will be shown:



The Name and Manufacturer fields are text labels that will be used when you add the fixture to DMX line assigment. Channel count is important, that is the total number of DMX channels required for the new fixture. Once the Channel Count field is filled in, the software will generate a blank profile for the fixture.



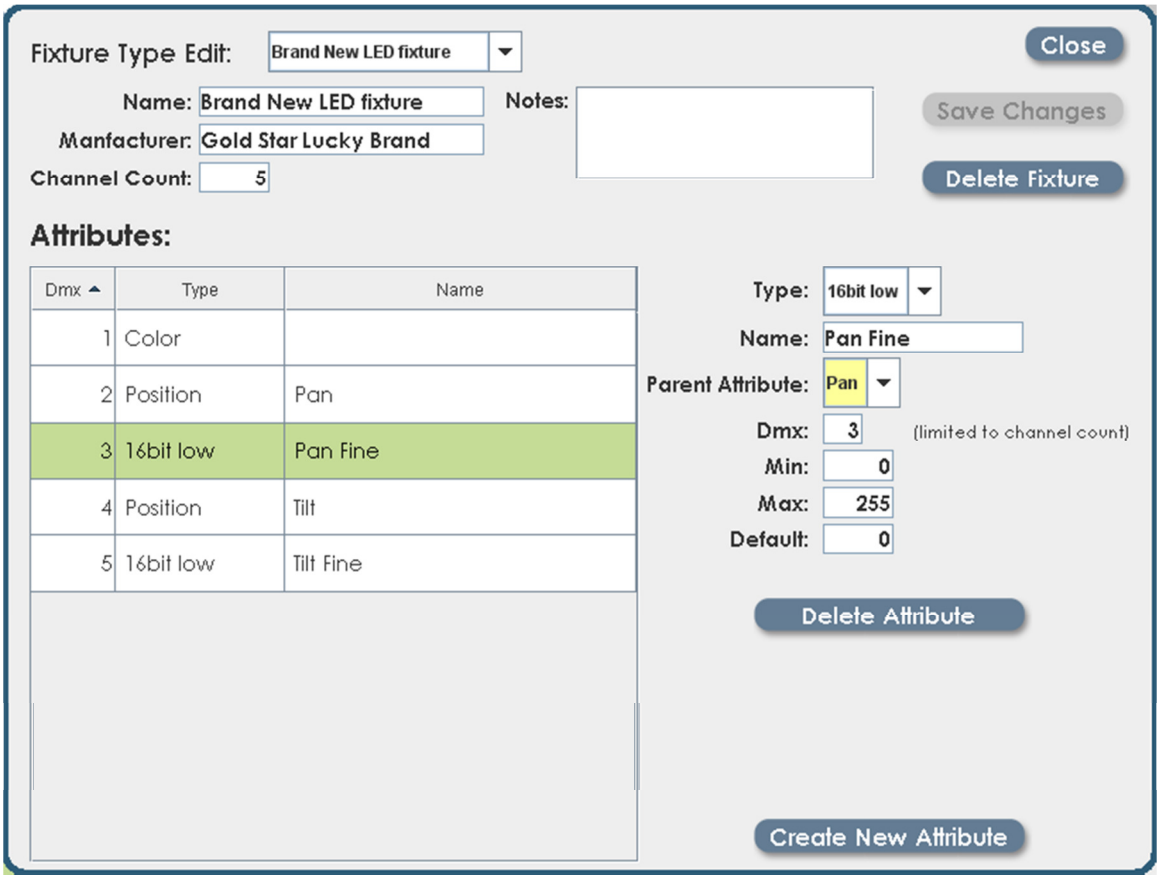
Each attribute is defined in DMX channel order. The controls at the right side of the screen are used to set the properties for the highlighted attribute.

Common choices for 'Type' are Color, Beam, Position and Intensity. The 'edge' type is used for the focus attribute on fixtures that support an adjustable edge focus. If the attribute is set to the 'edge' type, it can be adjusted while programming from both the position and beam control tabs.

The 'Default' value for each attribute is important. This is the DMX value that is sent to the fixture when it is first selected for programming. Values should be chosen that will produce white for the Color property, open for the Beam property (shutter open, iris open, gobo open) and Position set for mid-range (128).

The ’16 bit low’ type is used to build two channel attributes, such as Pan and Tilt. Fixtures that support two byte control for movement or other attributes will use full 16 bit processing for timed fades or fixture moves.

To create a 16 bit attribute, first create all of the ‘high’ byte attributes. In the case of position, create ‘Pan’ and ‘Tilt’ before creating ‘Pan Fine’ and ‘Tilt Fine’



To create the lower resolution attributes, such as Pan Fine, select ’16 bit low’ from the Type list. The software will prompt you to choose the ‘Parent’ attribute from the list of existing attributes. Once the Parent is selected, LPC will treat the pair of channels as a single 16 bit attribute during cue playback.

16 bit attributes can be used for all functions including Intensity.

9 Controlling LED and Intelligent fixtures

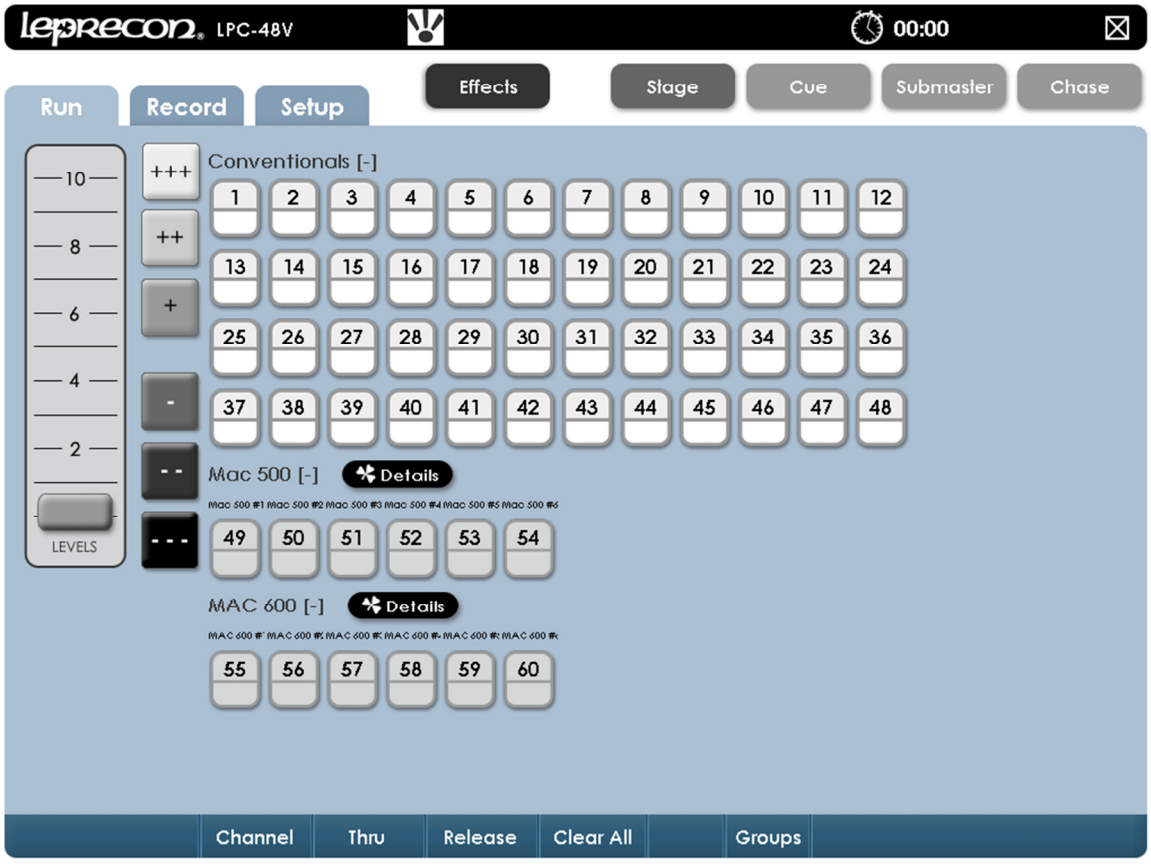
Once the LPC is set up with fixtures in the DMX Assignment screen those fixtures are available for use. Fixtures can be controlled in Run mode without saving cues, or in Record mode if submaster or stack cues will be saved.

The way the fixtures operate in run and Record modes is quite different.

- When selected in Run mode, fixtures remain in their current settings, so that small changes can be made 'live' with a minimum of disruption.

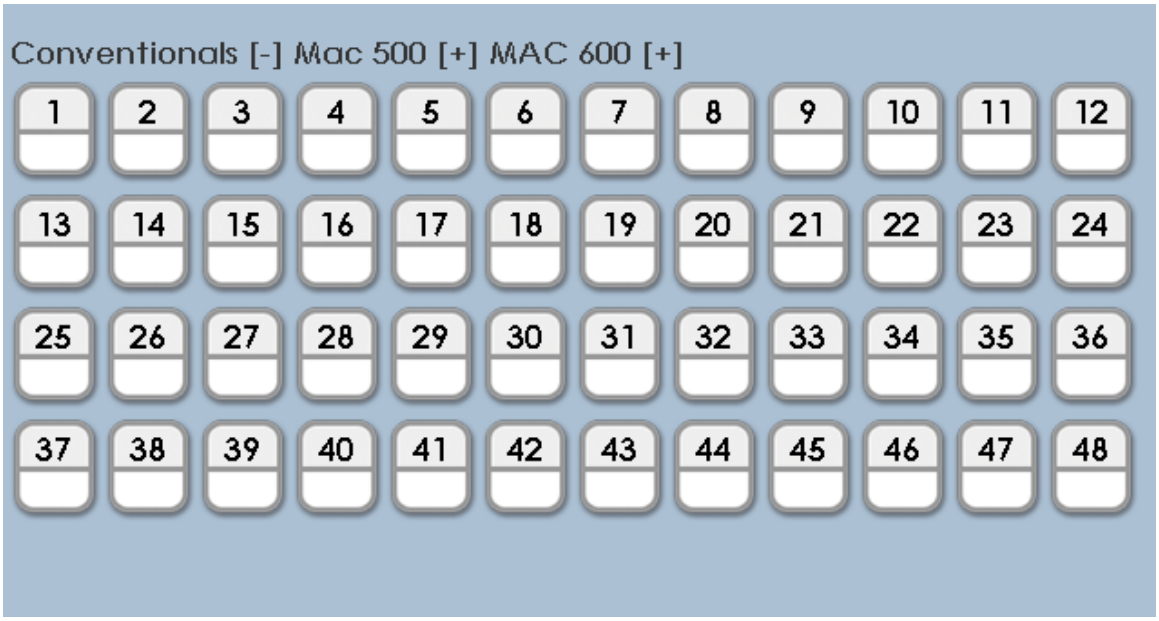
- In Record mode, selected fixture will have their 'default' values for Color, Beam and Position properties loaded.

After adding fixtures, the LPC Stage view looks like this:



In the display above, the 48 conventional channels are shown, and two types of intelligent fixtures. The LPC display is dynamic; fixture types can be minimized if they are not being used by clicking on the minus [-] sign next to the fixture type name.

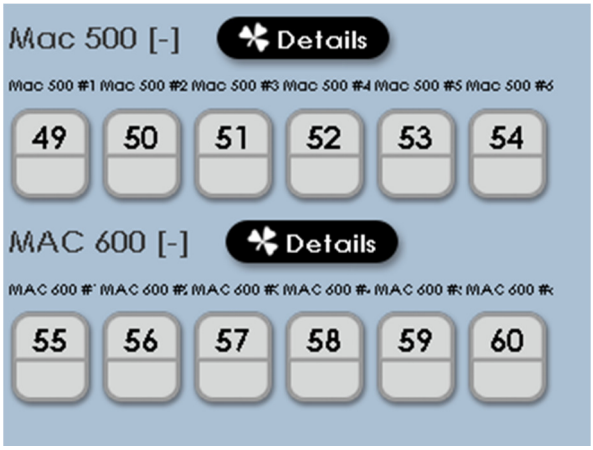
When the fixture types are minimized, they are displayed at the top of the screen as a minimized fixture. The illustration below shows the Stage view with both fixture types minimized:



Clicking on the [+] sign will restore the fixture list to the display screen.

9.1 Setting Intensity for Intelligent fixtures

If intelligent fixtures have Intensity assigned to board channels, you can use faders, or the Channel key to select and set level for them. See section 8.1 – DMX Assignment for more information about this option.

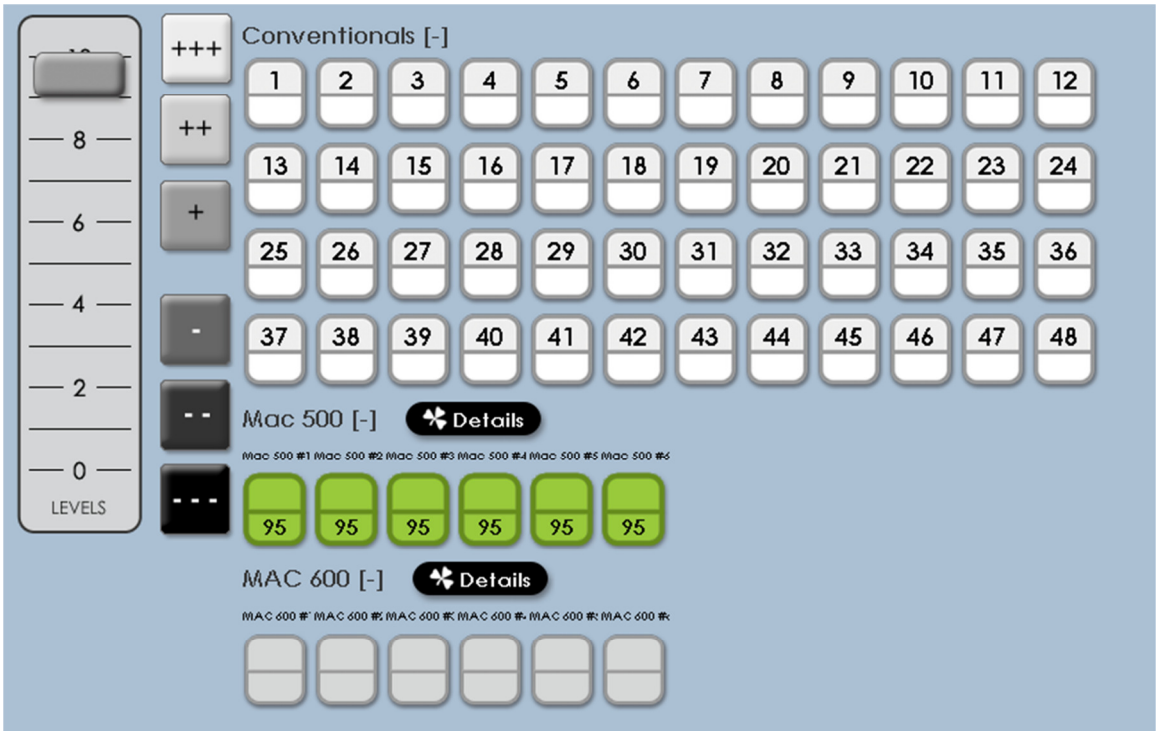


The fixtures in the illustration above were assigned with Intensity channels mapped to board channels. In the case shown, board channels 49 through 60 are used to control the intensity of the intelligent fixtures.

If board channels were NOT assigned to the fixture intensity control, the Stage screen will look like this:

Notice that the fixtures are still shown on screen, but have no channel numbers associated with them.

In either case, clicking on the fixture will select it, shown by the fixture display turning green.



Clicking on the on-screen level controls, or using the 'level' key will adjust the intensity level of the intelligent fixture or LED. All other fixture parameters, such as color, position and beam will be unchanged from their current position.

9.1.1 Setting intensity - step by step

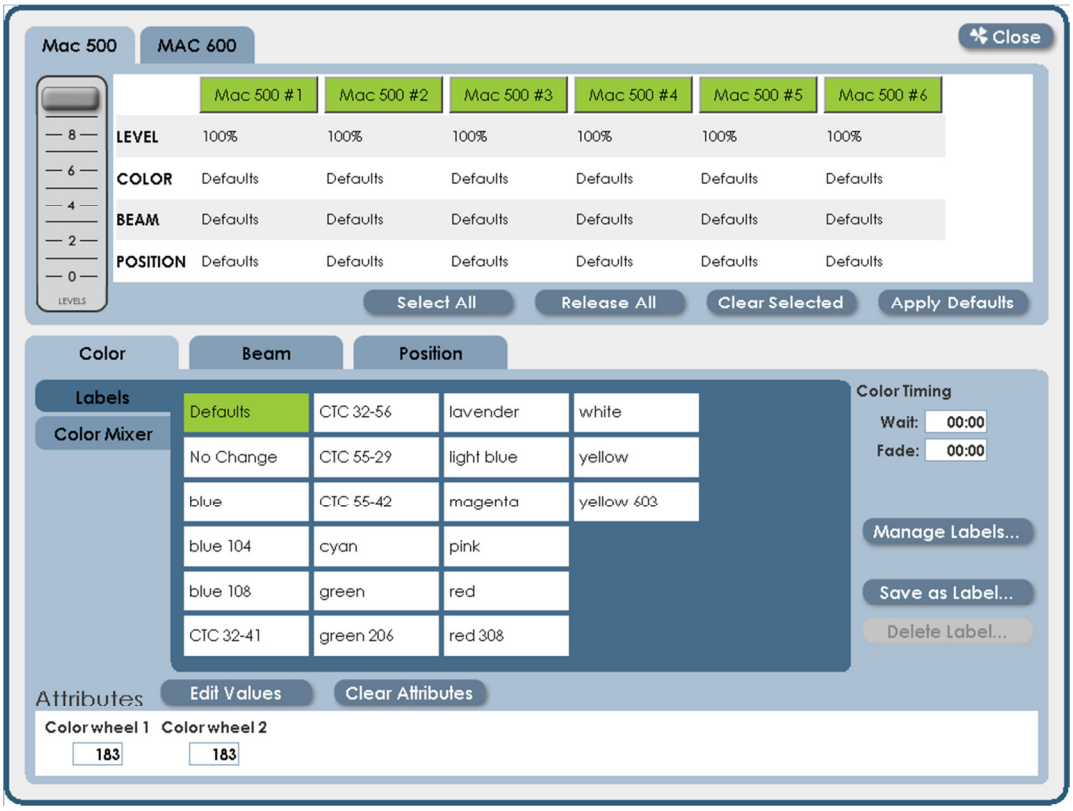
1) Make sure Master and Manual faders are up
2) Click on fixture selection on screen, which will highlight it in green
3) Use the on-screen fader to set level.

9.2 Setting properties for Intelligent fixtures

With the intensity on, more properties of the fixtures can be set. From the main screen, click on the 'Details' button.

The small shamrock in the button indicates that the 'shamrock' key on the LPC front panel can be used for the same function. The 'shamrock' key is a quick way to toggle between the main display or record screen and the 'details' window.

The ‘details’ screen will open, showing the programming interface for all other properties of the fixtures in the system.



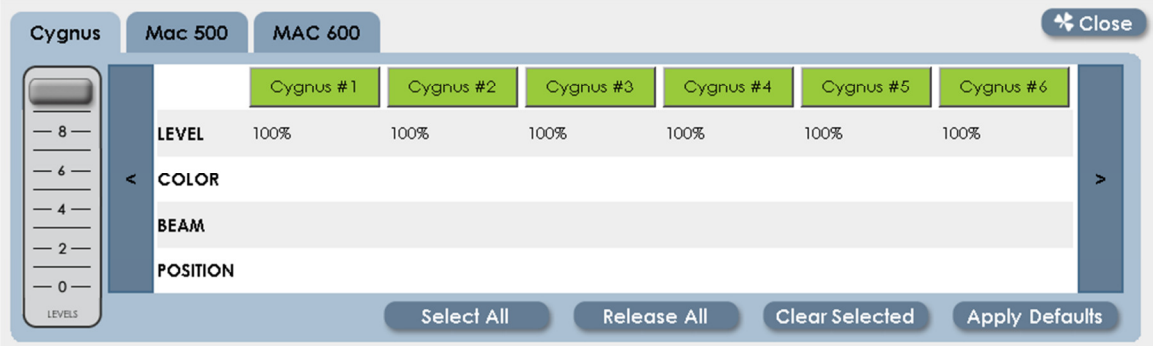
To close the Details screen and return to the main display screen, click on the ‘Close’ button in the upper right corner, or press the ‘shamrock’ key again.

The ‘close’ button also has a shamrock icon as a reminder that you can use the front panel key.

9.2.1 More about the Details screen

Lots of information about the intelligent fixtures in the system is displayed in the Details screen. The LPC software uses tabs to organize the features of the system.

Fixture Tabs:



There is a tab at the top of the 'Details' screen for each type of fixture in the system. Clicking on one of the tabs will show the fixtures of that type.

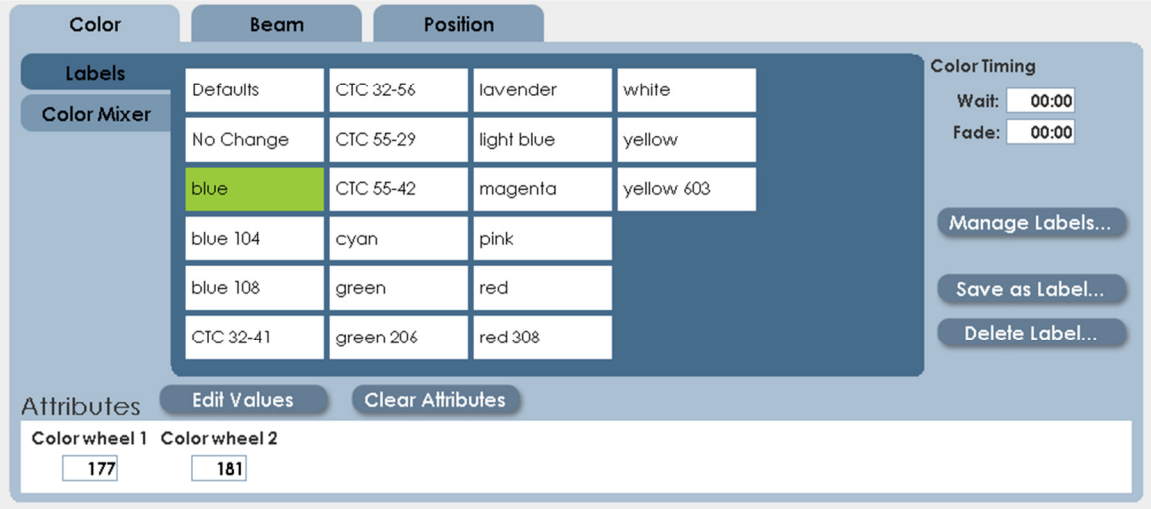
Inside each tab, fixtures can be selected and deselected without returning to the main screen. Intensity can be adjusted for selected fixtures as well.

Shortcut buttons at the bottom of the fixture tabs can be used to select and deselect all the fixtures at one time, clear all data from selected fixtures, or set selected fixtures to default values for all properties; Color, Beam, and Position.

Properties Tab:

At the bottom of the 'Details' screen are the tabs and controls for setting Color, Beam and Position for intelligent fixtures. Each property has it's own tab and controls.

Not all fixtures will have all properties available, LED fixtures may have only Color properties, and not all fixtures will support color mixing.



Properties and Attributes:

LPC controls intelligent fixtures by setting four basic properties – Color, Beam, Position and Dimmer. Each of these properties consists of one or more Attributes, which are related to the basic functions designed into the fixture.

In the illustration above, the tab for Color is selected, showing the pre-defined colors (labels) available for the fixtures. At the bottom of the screen are the two attributes (color wheel 1 and color wheel 2) that make up the Color property on this fixture.

9.3 Intelligent fixture Programming

The previous sections gave an overview of the LPC control software for intelligent fixtures. Programming submasters or stack cues with LPC uses these controls to build a look on stage, then save the results.

9.3.1 Before starting

There are a few things about controlling a system of intelligent fixtures that makes creating cues very different from creating conventional (intensity) cues.

There is so much to know about programming intelligent fixtures that books have been written on the subject. If one is new to this type of lighting, purchasing a book or researching the subject on-line would be time well spent.

LTP

A basic concept of programming intelligent fixtures is the idea of 'LTP' – Last Takes Precedence. The name sounds confusing, but the basic facts are simple.

Conventional fixtures are on or off. The conventional fixture is dark when it is not used in a cue.

Intelligent fixtures have a larger number of properties, including color, gobo patterns in the beam, and the position of the fixture. The intelligent fixture may be dark, but all of the other properties remain in their last used state.

The intensity of a conventional fixture can respond to two submasters that are up at the same time. The fixture will take its intensity from the highest value of the two submasters. This is called Highest Takes Precedence.

The mechanics of an intelligent fixture can only be in one position at a time. If Submaster 1 calls for Gobo1 and Submaster 2 calls for Gobo 2, the fixture

cannot do both at the same time. The LPC, like any other controller, has to choose between these two contradictory commands. It does so by taking the last scene or submaster activated as the final position. The Last event Takes Precedence over earlier events.

'No Change' cues

LPC controls intelligent fixtures by setting each property; Dimmer, Color, Beam and Position. A cue usually contains a definite setting for each of these properties; a certain color, gobo pattern and position on stage.

However, LPC allows cues to be built that do not set all of the properties. Cues or submasters like this contain a 'No Change' value for some properties. LPC cues can be recorded that will only change the color of a set of fixtures, and the gobo will remain unchanged. Other cues or submasters can affect only the position, and leave color and beam in their last setting.

These cues can be very powerful to use, but the results can be confusing. A cue with No Change properties can look different each time it is used, depending on the state of the fixtures when the cue is played back.

Make sure to use No Change properties properly. If a cue or submaster does not 'look the way it did when it was recorded', probably one or more properties are set to No Change.

Labels

The LPC software contains defined colors and beam properties for each fixture, based on the factory fixture library. LPC uses pre-defined labels to set fixture channels to the correct value.

For example, the standard library for LPC contains the Martin Mac 500. Pre-defined color labels for that fixture are shown below:

The selected Blue 104 label was created from the values for the two color wheels shown in the Attribute section. It's much easier to build cues by choosing Blue 104 than to create the attribute values of 181 for Color wheel 1 and 169 for color wheel 2 each time.

There are two huge advantages to using labels:

- A number of complex attribute values can be set quickly with a single label

- Any number of cues can be updated by editing the labels used to build the cues.

New labels are easy to create, and speed the programming process. It's much more productive to create labels than to program by setting individual attributes.

For more information about using, creating and modifying label, see chapter 10.

10 Building Scenes

The information in Chapter 9 presents some background on the LPC features and control screens. Chapter 10 will describe the procedure more completely.

The basic steps for recording cues are straightforward:

1) Choose Submaster or Cue Record mode.
2) Select fixtures, set intensity levels.
3) Switch to Details screen.
4) Set properties - Color, Beam and Position.
5) Change fixture selection as needed.
6) Save Submaster or Cue.

10.1 Recording Cues or Submasters.

Being familiar with recording conventional fixtures to submasters and cues is the best starting point for recording cues with intelligent fixtures. Refer to Chapters 5 and 6 for more information on saving cues with LPC.

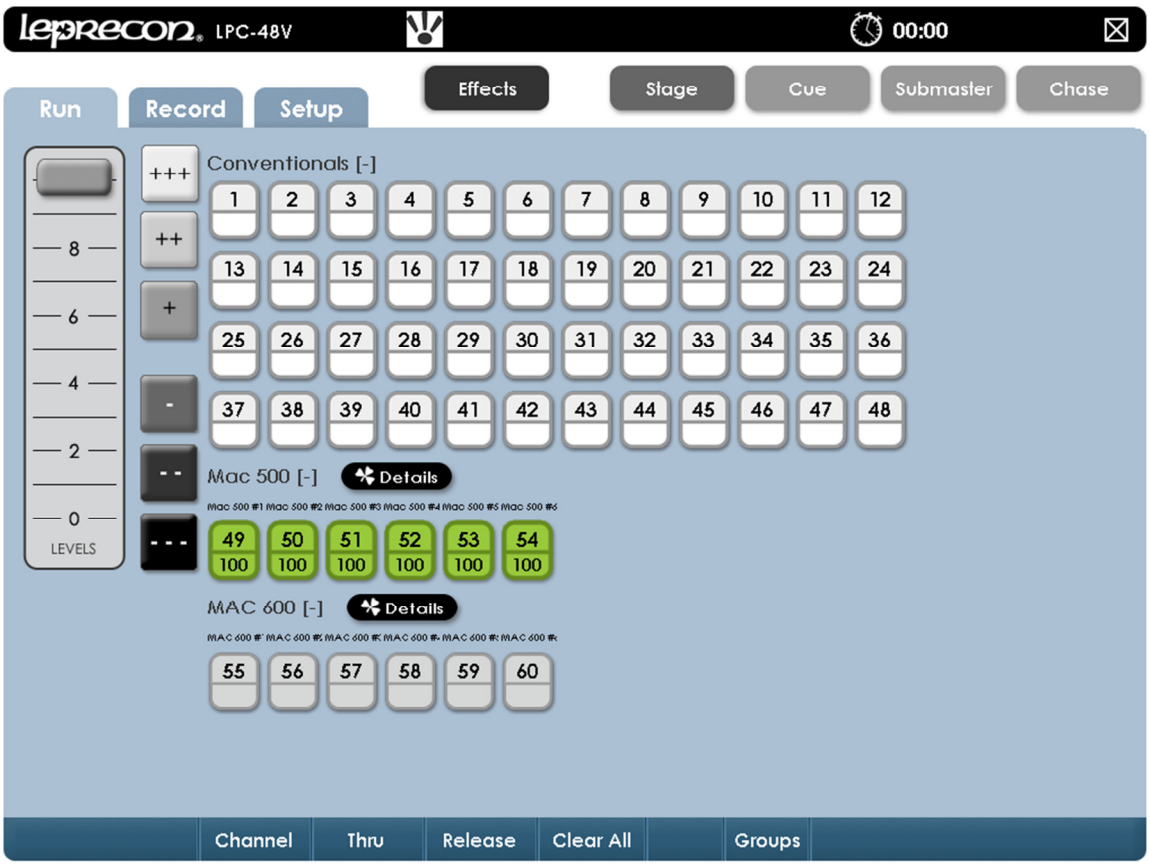
An example of submaster recording will be used to illustrate the steps for intelligent fixture programming.

Recording can be done from the Run screens or Detail screens. The Run Submaster screen is shown as an example.

10.2 Select fixtures, set intensity levels

- Set levels for conventional fixtures using faders, channel keys or on-screen controls. Use the Release feature to change selections, Clear All to wipe out previous levels.

- Select intelligent fixtures, set intensity levels as was done for the conventional fixtures. Minimize and maximize fixture groups if necessary.



10.3 Set Properties

- After selecting fixtures and setting level, click the Details button, or press the Shamrock key to switch into Detail view. All fixtures are still selected, and hightlighted in green. All properties are set to Default values, meaning that the fixtures should be white, open beam and middle position.

10.3.1 Set Color

- Choose the color tab. Labels available for the selected fixtures are shown on screen, click on any label to set the fixtures to that color. If the color labels are sufficient, go on to programming beam attributes.

10.3.2 Creating new labels:

If a label does not exist for the color desired, it's a simple matter to create a new label.

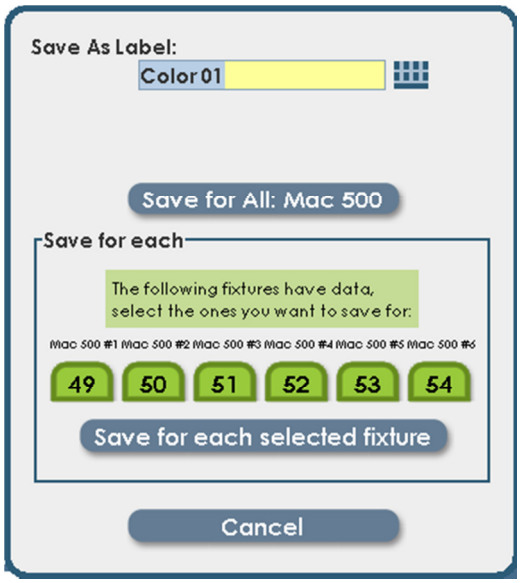
- First click on 'default' to set the color to white, and all attributes to their default values.
- Click on the button labeled 'Edit Values' at the bottom of the screen.

- Use the on-screen sliders to adjust the color attributes to create new color labels.

Clicking or moving the sliders close to the center will increment or decrement the settings by one DMX value. Clicking farther from the middle or moving the slider further will change the value by 2, 5 or 10.

Values can be entered directly into the attribute boxes using the numeric keypad. The Up and Down arrows can be used to 'nudge' the values shown in the boxes.

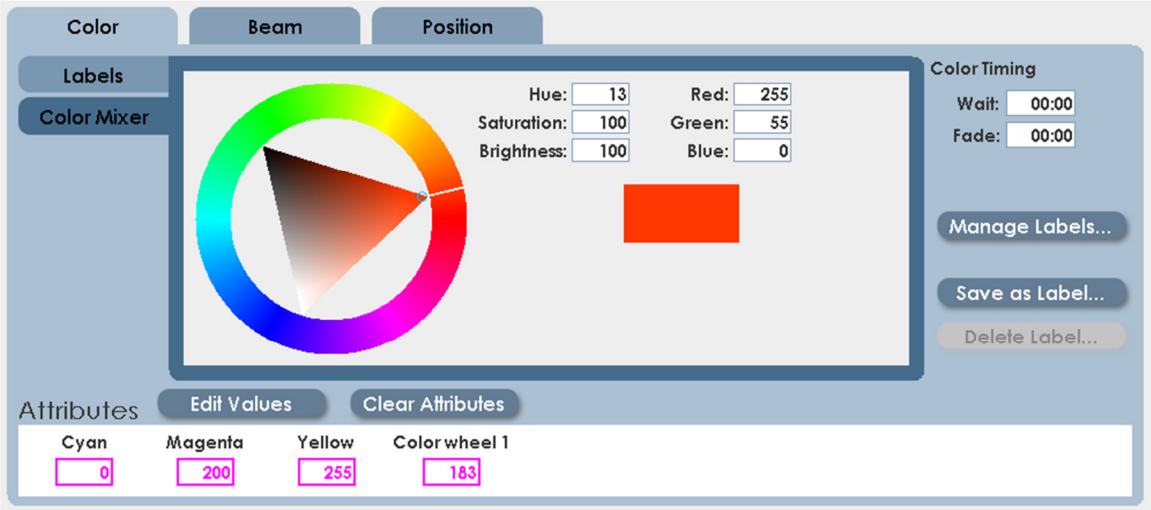
- Click ‘save as label’ to save off the new settings as a named label.



- Choose a new name, and enter it into the highlighted text box. The on-screen keyboard can be turned on by clicking on the icon to the right of the label field.

10.3.3 Using the Color Mixer

Fixtures that use color mixing (CYM filters) or LED fixtures (Red, Green, Blue) can use the LPC color Mixer to create new labels. Click the Color Mixer tab to enable the color control:



The Color mixer allows a range of color, saturation and brightness values for new labels.

- Click on the outer color ring to set the color.
- Click on the internal triangle to set brightness and saturation.
- When finished, click 'Save as Label' to keep the result as a new label.

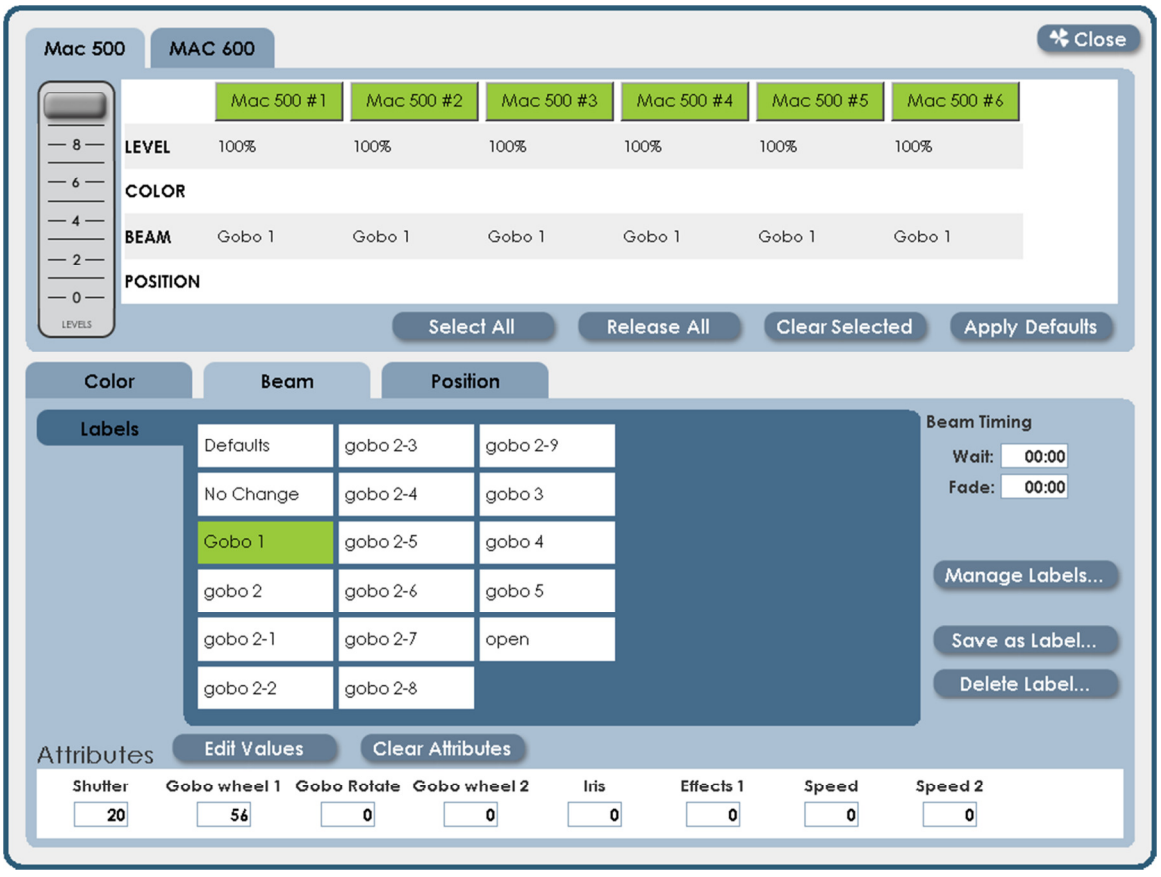
Note: When returning to the Details screen from Color Mixer, a message will be displayed indicating that values have been edited.

10.3.4 Set Beam

The Beam properties include gobos, prisms, shutters and any other fixture attributes that affect the shape or pattern of the light. Gobo rotation and other modifiers are also set in the Beam properties.

Clicking on the Beam tab will display the controls for the selected fixtures. In the illustration, the fixture selection will be the same as used for Color. Fixture selection can be changed at any time.

The Beam details are shown below. Selected fixtures are shown at the top, labels available for the fixtures in the middle, and individual attributes at the bottom.



- Select a label to set all selected fixtures to a new value. If new labels are needed, use available attributes to create a new label. See the section 10.3.2 regarding label creation.

10.3.5 Set Position

Moving mirror and moving head fixtures can be programmed to light specific areas. The Position tab in LPC Details is used to set all attributes related to positioning a fixture.

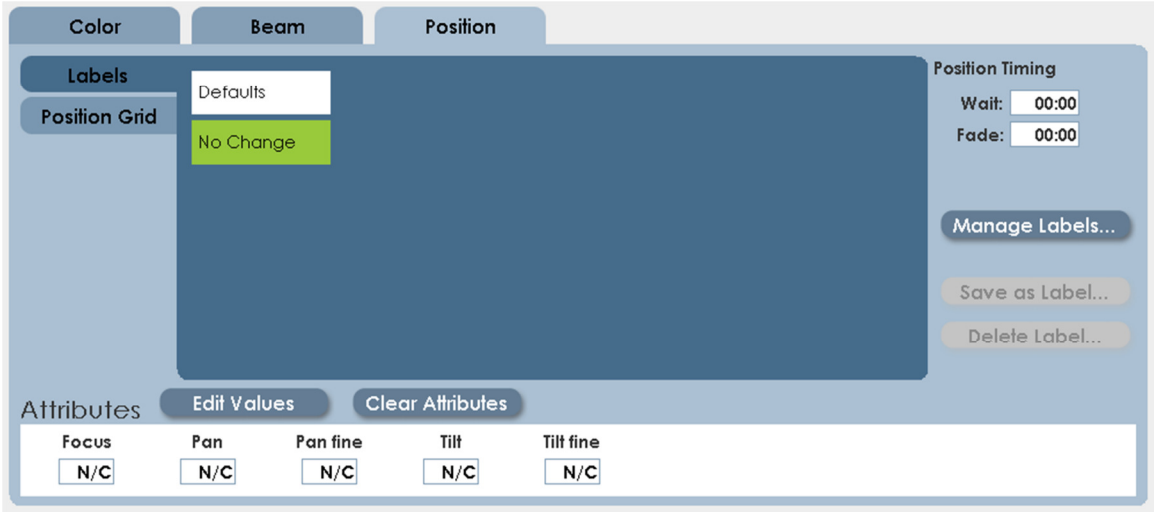
Position labels are different from Color and Beam lables in two important ways:

1) To illuminate the same spot on stage, the Pan and Tilt values are different for each fixture. The user must create focus positions for each fixture before programming.

2) For this reason, there are no pre-defined 'Position' labels in the LPC software.

To create Position Labels:

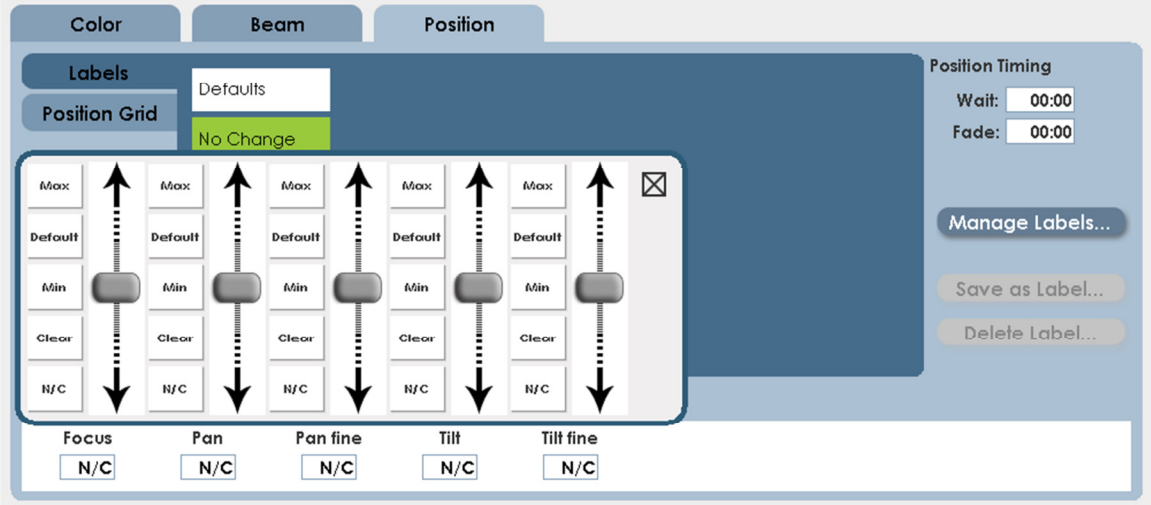
- Click on the Position tab. The screen below will be shown:



In a new show, there are no position labels. The procedure to create them is this:

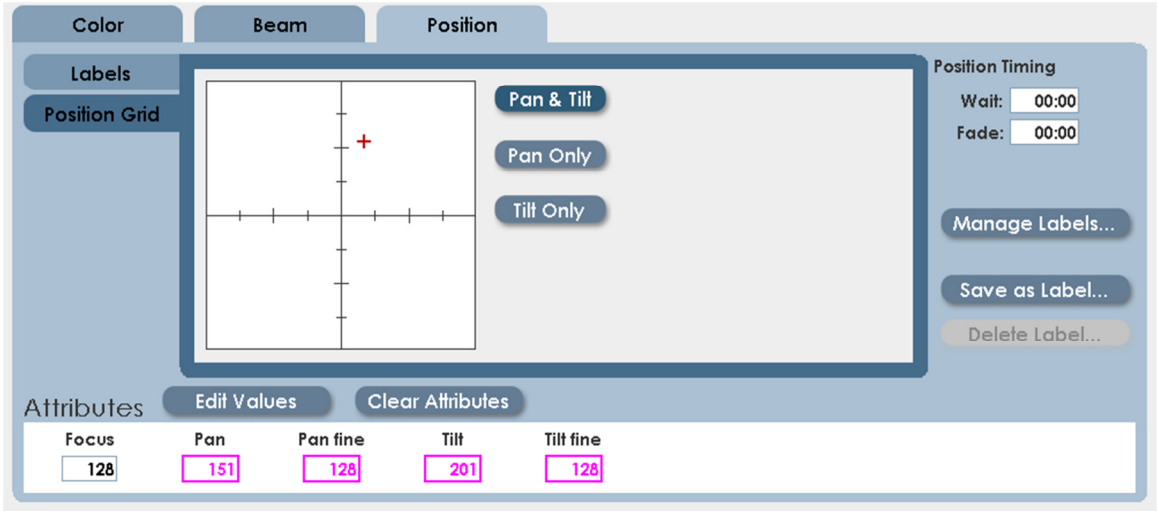
- Deselect all fixtures, then select only one fixture to position.
- Set the first position of the first instrument. There are three methods for this:

1. Click on Edit Values and use the on-screen encoders.



2. Click in the Pan and Tilt data box, and use the numeric keypad and the up and down arrows to enter values.

3. Click on the Position Grid, and click on the target area to set position.

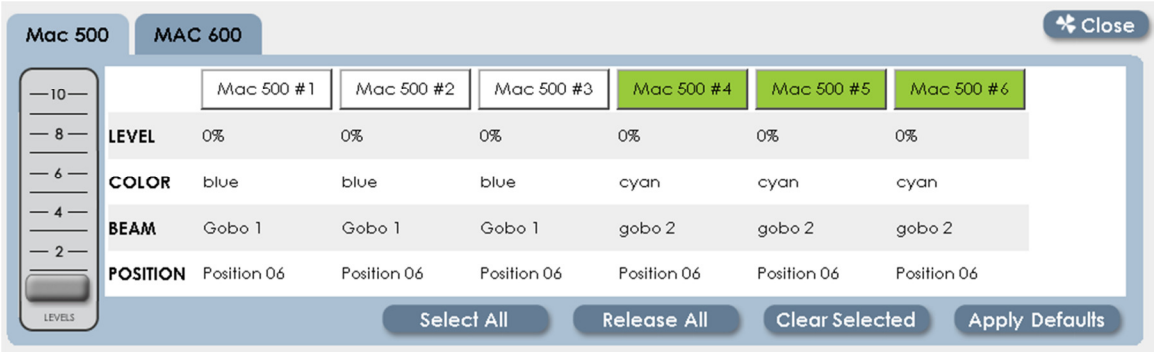


- When finished, deselect the first fixture, and select the next fixture.
- Position the next fixture. Continue to select, position, and deselect fixtures.
- When all fixtures are set to the first position, Save the results as a label.
- When there are enough focus labels created to start programming, choose the fixture and position from the label list.

4. Change fixture selection

At any point during programming, fixture selection can be changed without losing data.

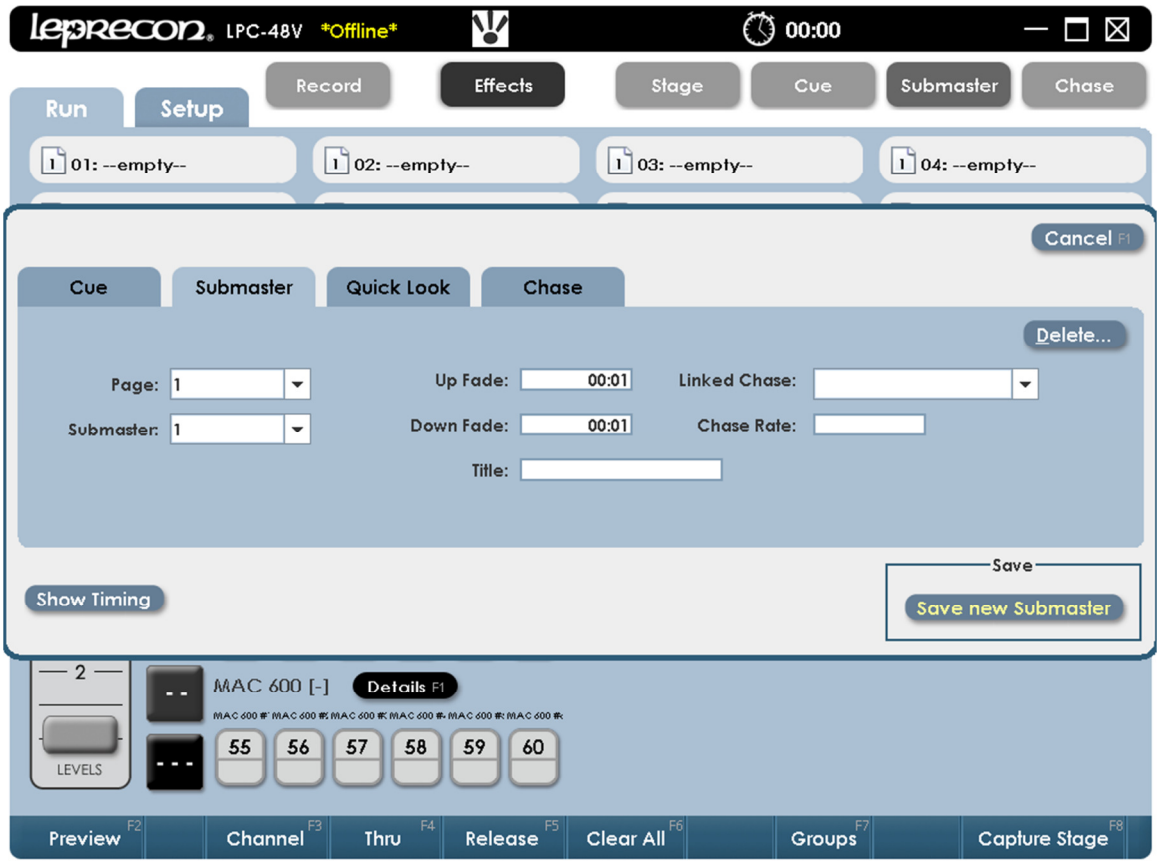
Note the values for Color Beam and Position that have been set in the Details grid, this is the current state of the selected fixtures.



Any area in the grid with No Change data has not been set, and will not be saved.

10.4 Save Submaster or Cue

- Set Color, Beam and Position as previously described.
- Press or click the ‘Record’ button. The Record dialog box will open:

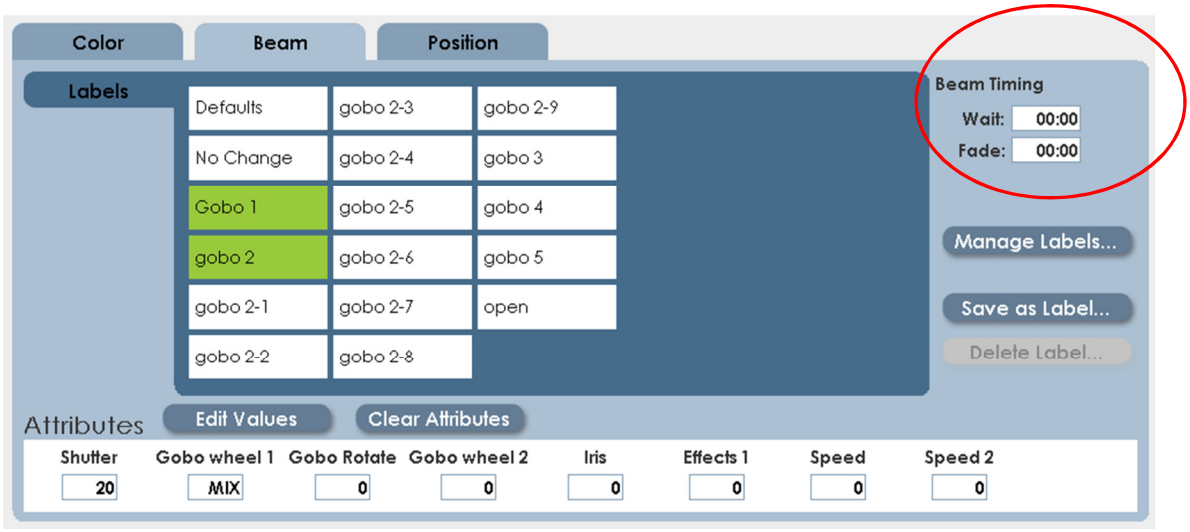


The submaster page and sub to be recorded are displayed in the dialog. The destination can be changed to any valid page or submaster number.

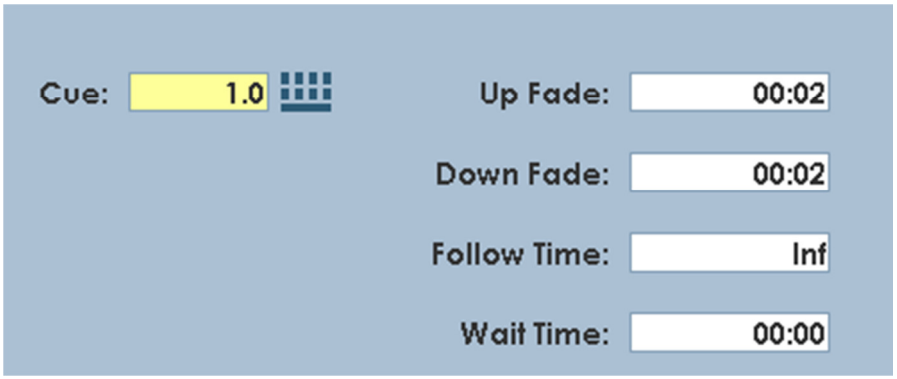
- If the destination is correct, press the ‘Save’ (or enter) key to record the new submaster.

About Cue Timing:

Each property (Color, Beam, Position) can have independent fade times set. The specific property fade times are in the Details screen in the appropriate tab.



The Main record screen has the field for intensity fade times, and times that apply to all properties, such as Wait time.



11 Working with Effects

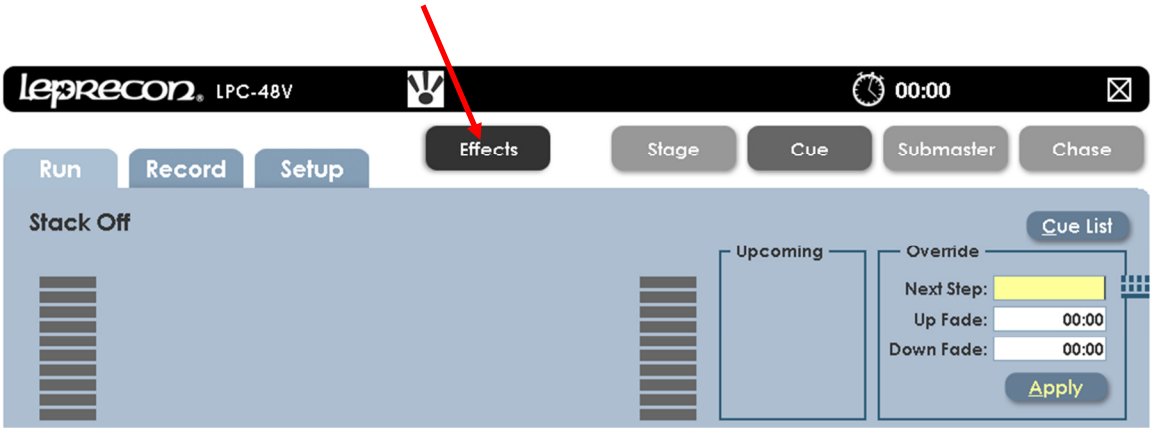
Since intelligent fixture programming can be time consuming, LPC contains pre-programmed 'effects' that create movement and animation without setting each specific step. There are effects available for Color, Beam and Position.

Position effects are the most commonly used. LPC has pre-programmed data for circles, rectangles, random moves (ballyhoo) and other movement sequences.

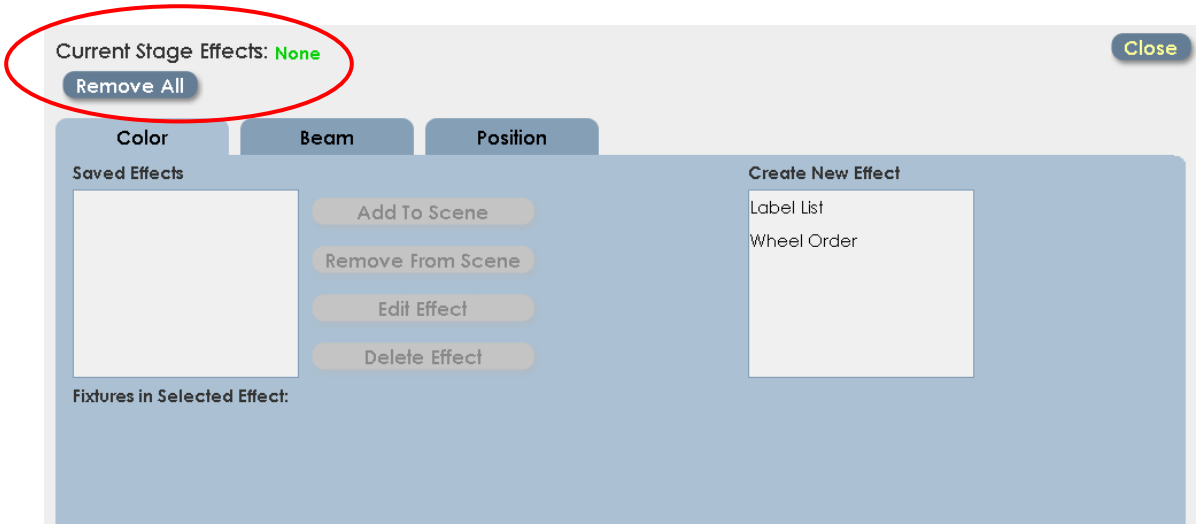
Key Facts about Effects:

1) New Effects are created with specific instruments.
2) The combination of fixtures, movement and timing parameters is saved as a unique effect. It's best to create a descriptive name for the effect.
3) Any saved effect can be used later when building cues. Effects ONLY contain fixture selection and movement information; effects DO NOT automatically set intensity for fixtures. When saving a cue with an effect, the user must set the level of the fixtures as well as adding the effect.

To work with Effects, click the Effects button on the LPC main screen:



The main screen for effects looks like this:

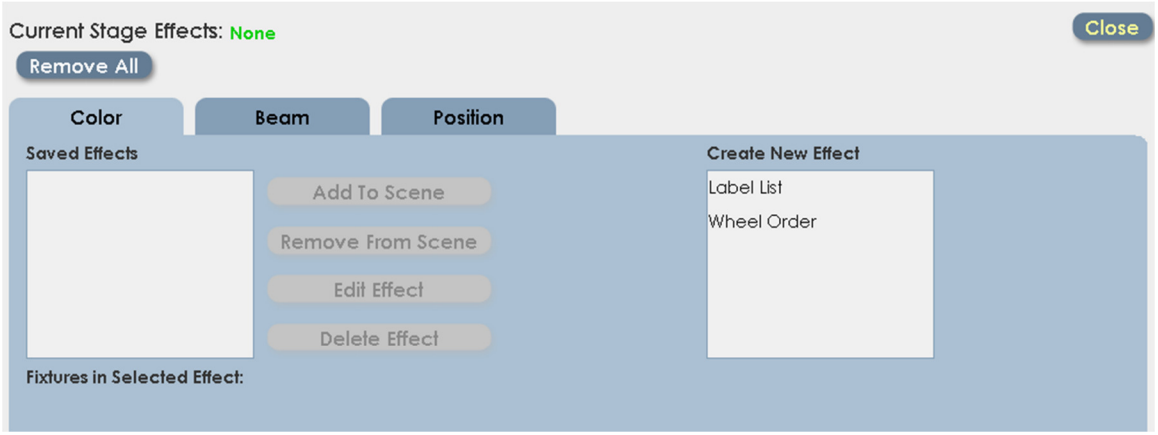


Note the top line of the screen – Current Stage Effects. This shows all currently running effects. If an Effect name is shown here, it will be included in any submaster or cue that is recorded.

To clear effects, click on 'Remove All'. This will stop effects that are running, and scenes saved will not include any effect.

11.1 Color effects

Color chases are easy to create with LPC Effects. From the Effects screen, click



the 'Color' tab:

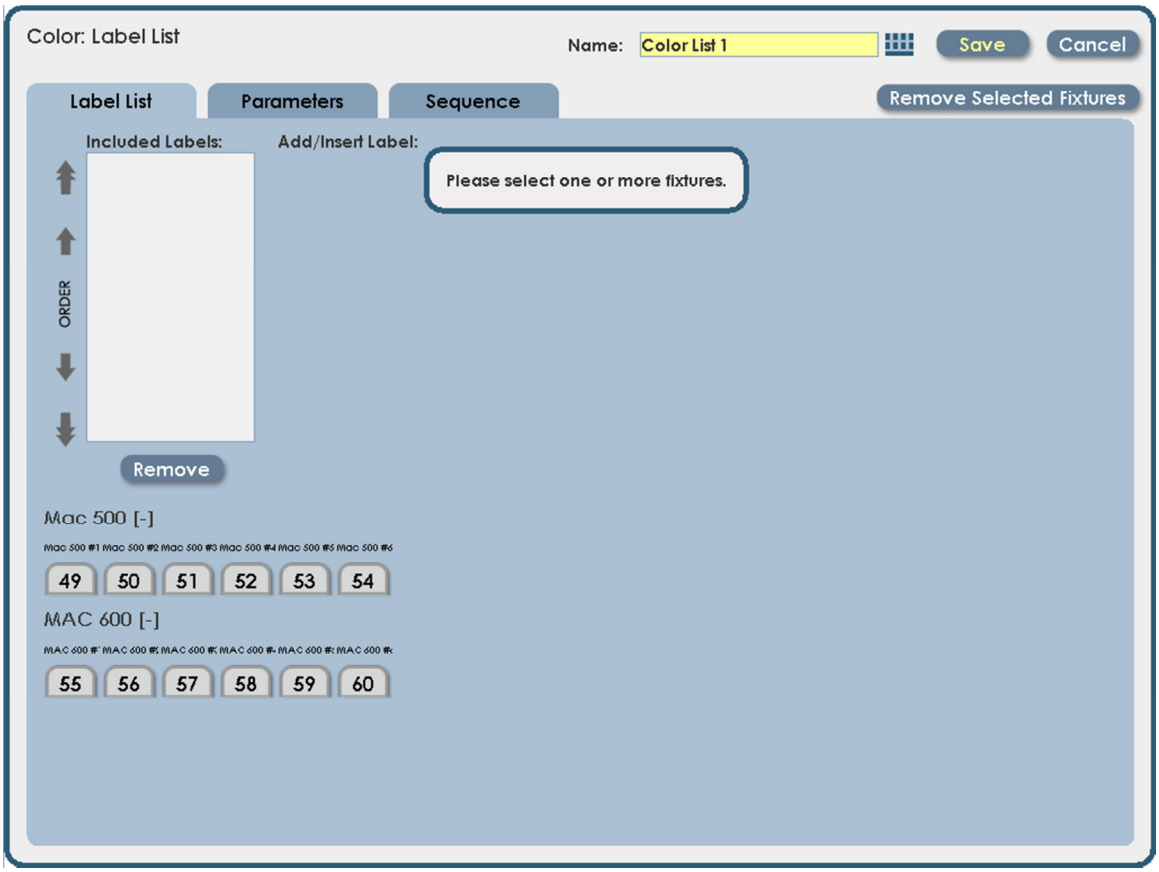
So far, there are no current stage effects, and no saved effects.

There are two types of Color effects, Label chases and Wheel order chases.

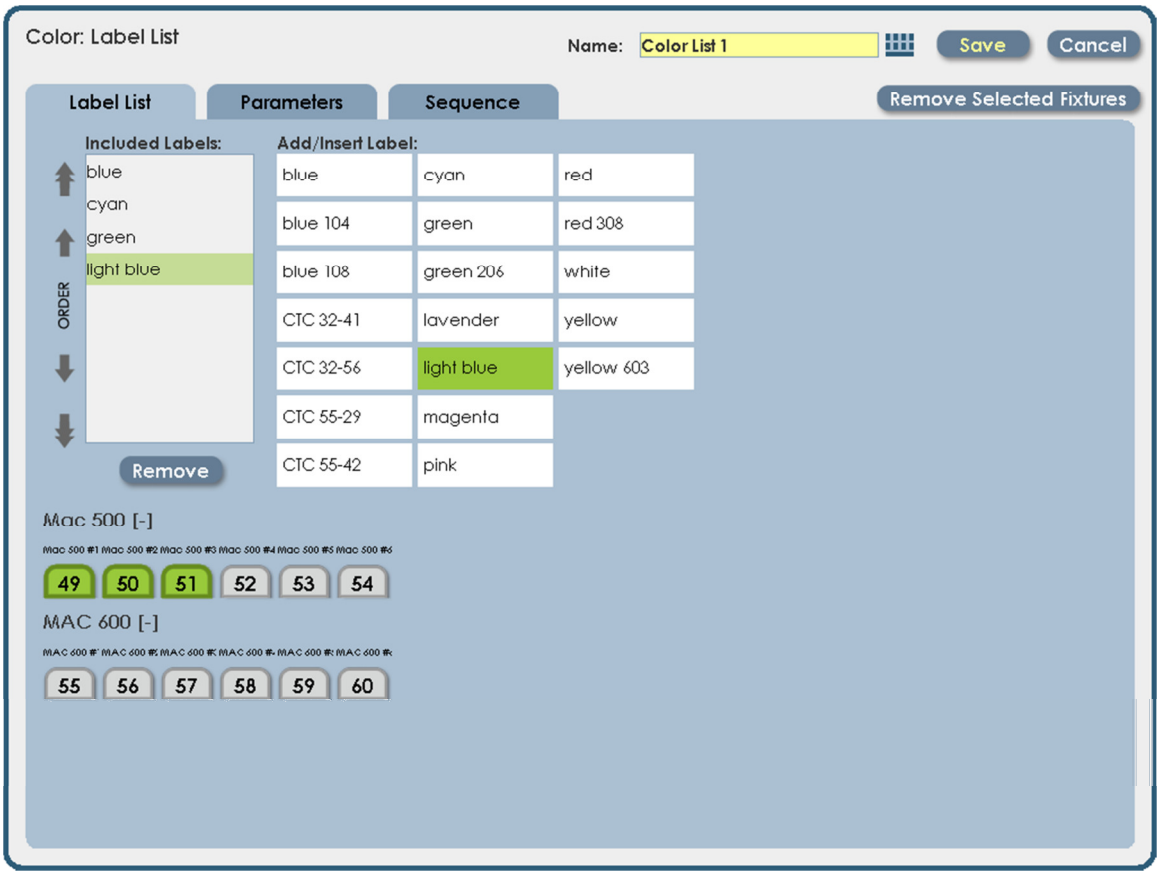
- Label chases are sequences built with pre-defined color labels.
- Wheel order chases are designed for fixtures with one color wheel, and will sequence from one color to the next color on the wheel. This produces a smooth chase without intermediate flashes of color.

11.1.1 To create a new Label Chase:

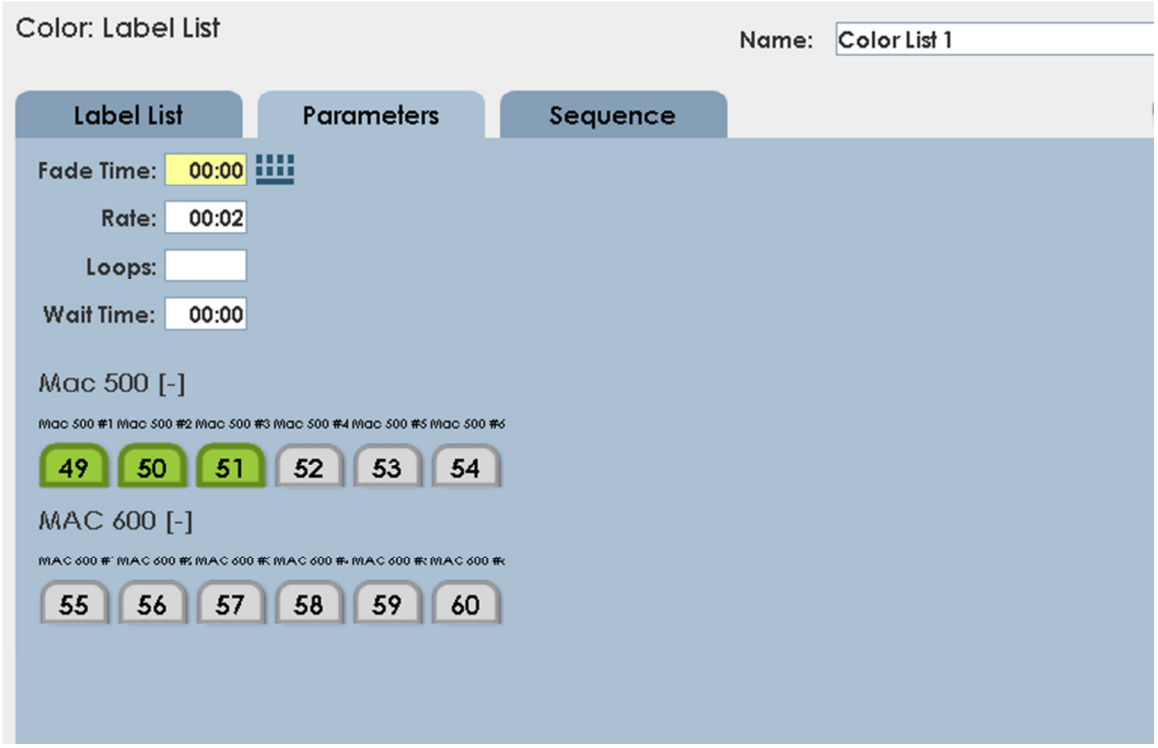
- Pick ‘label list’ from the list of new effects. The screen will change dramatically:



- Select fixtures for the effect. Selecting them will set their intensity to 100%. This can be changed later if needed.



- Pick color labels from the list of available labels. Clicking on them will move them to the 'list' box. Labels can be taken back out of the effect by clicking on 'remove'.
- The effect should now be visible on stage. Add and remove labels as needed.
- Labels can be re-arranged by using the 'up' and 'dn' arrows on the side of the list box. This sets the order of the label in the chase.


Color: Label List
Name:
Color List 1
Label List
Parameters
Sequence
Fade Time:
00:00
Rate:
00:02
Loops:
Wait Time:
00:00
Mac 500 [-]
Mac 500 #1 Mac 500 #2 Mac 500 #3 Mac 500 #4 Mac 500 #5 Mac 500 #6
49
50
51
52
53
54
MAC 600 [-]
MAC 600 #1 MAC 600 #2 MAC 600 #3 MAC 600 #4 MAC 600 #5 MAC 600 #6
55
56
57
58
59
60

11.1.2 To set the chase rate, click on the ‘parameters’ tab.

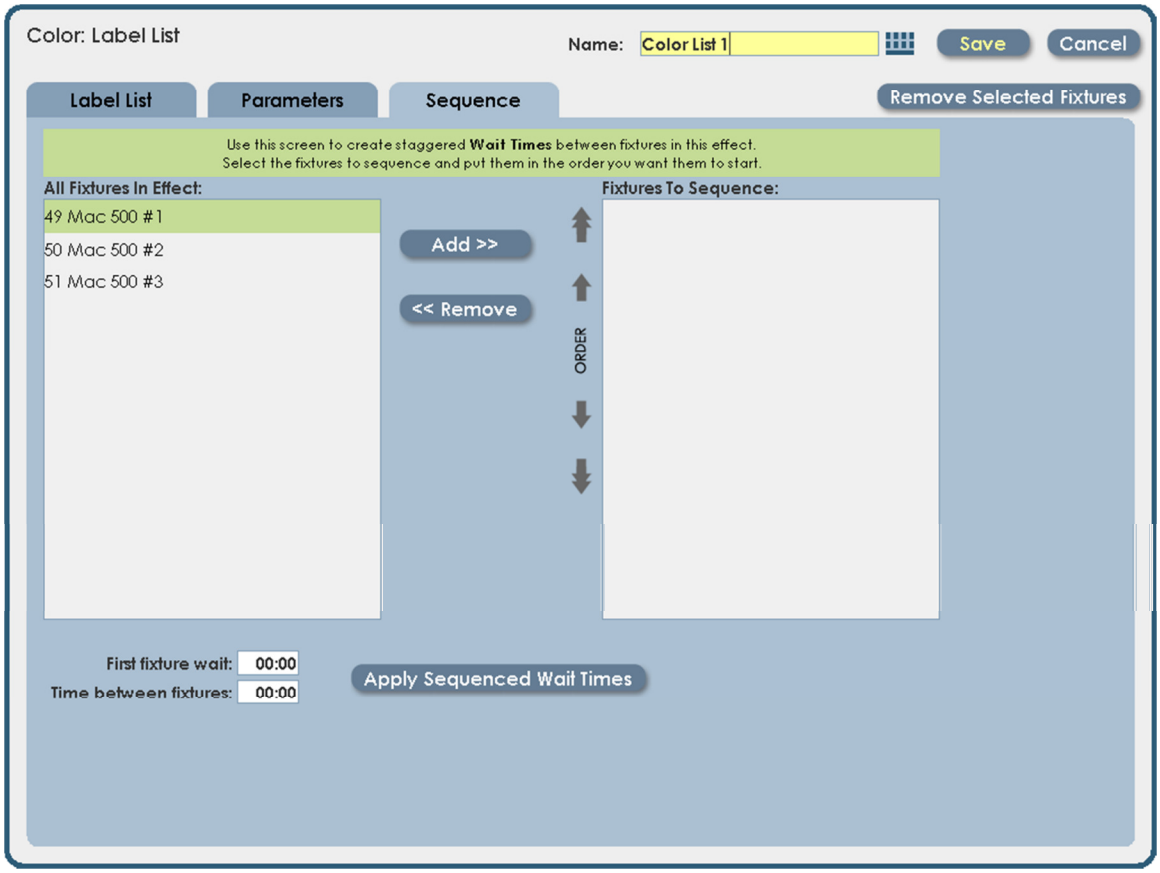
- ‘Fade Time’ controls the transition from one label to another. A fade time of zero will snap from color to color.
- ‘Rate’ refers to the time between steps of the sequence.
- ‘Loops’ sets the number of times the effect will execute. A blank value will repeat until the cue containing the effect is faded out.
- ‘Wait Time’ sets a time before the effect begins.

Each fixture can have independent ‘Wait’ time. This can be used to create a ‘chrous line’, where one fixture will start an effect, then another, then another.

The wait time can be set manually for each fixture, but there is an easier way; using Sequencing.

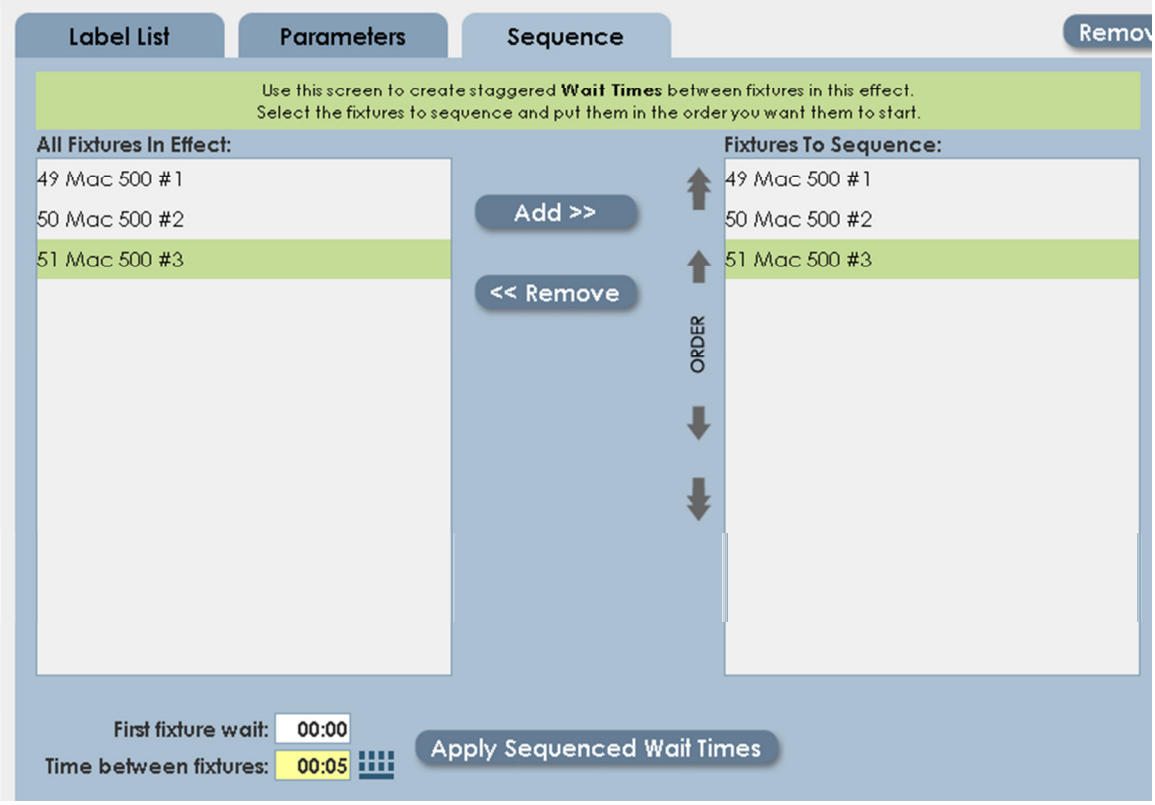
11.1.3 Sequencing

Click on the ‘Sequence’ tab to get access to the sequencing controls:

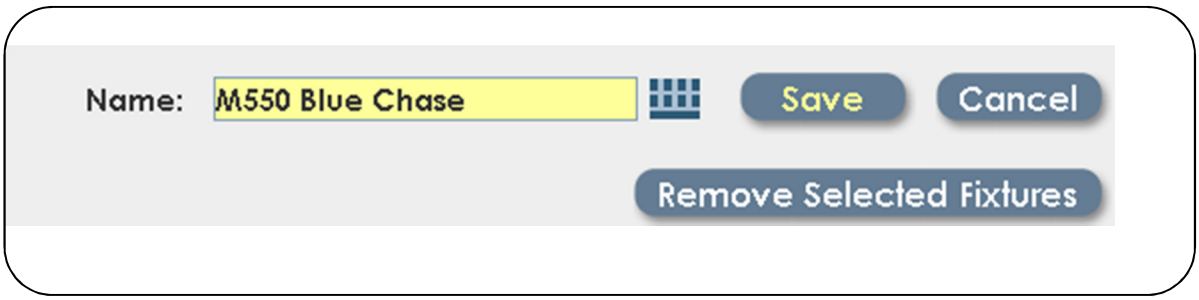


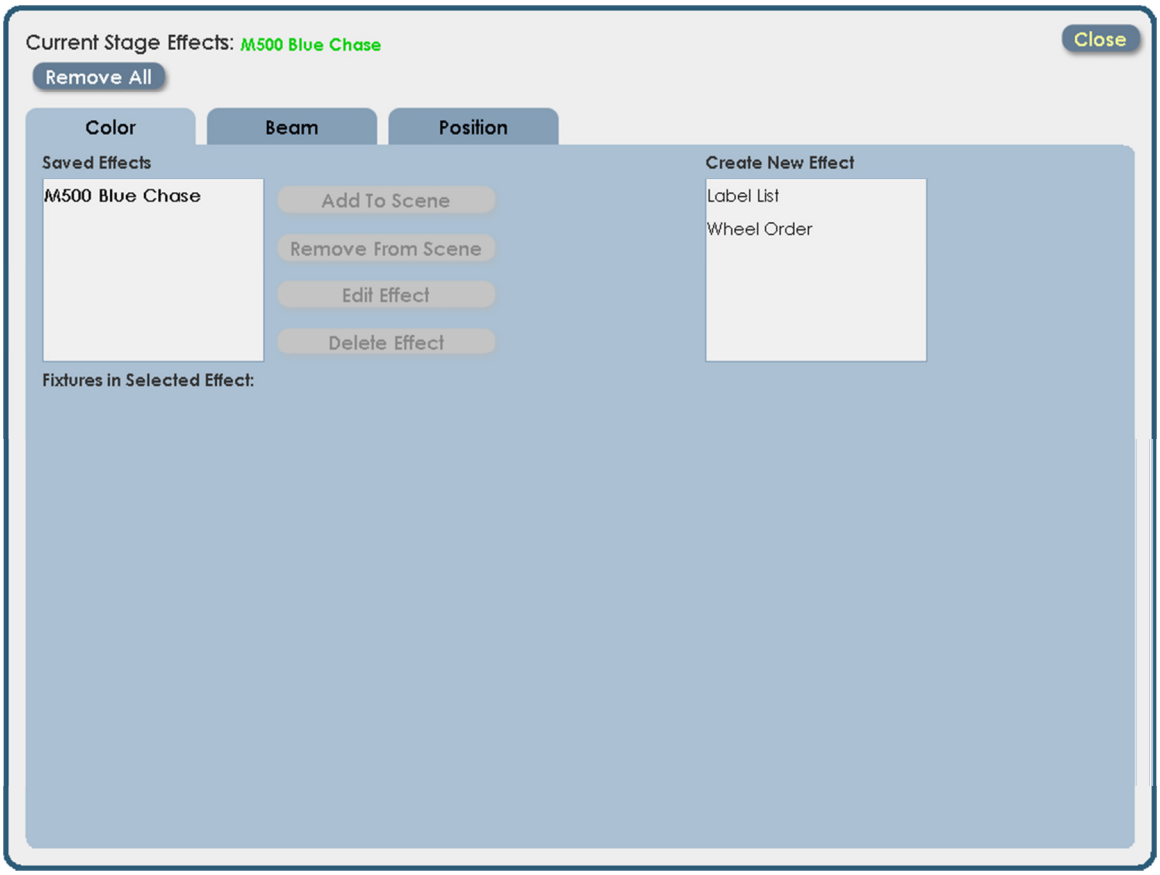
Sequencing fixtures will apply staggered ‘wait’ times to each fixture. To sequence the fixtures:

- Select fixture names from the effect. Click ‘Add’ to create the sequence
- Arrange the correct order using up and down arrows next to the Sequence list.



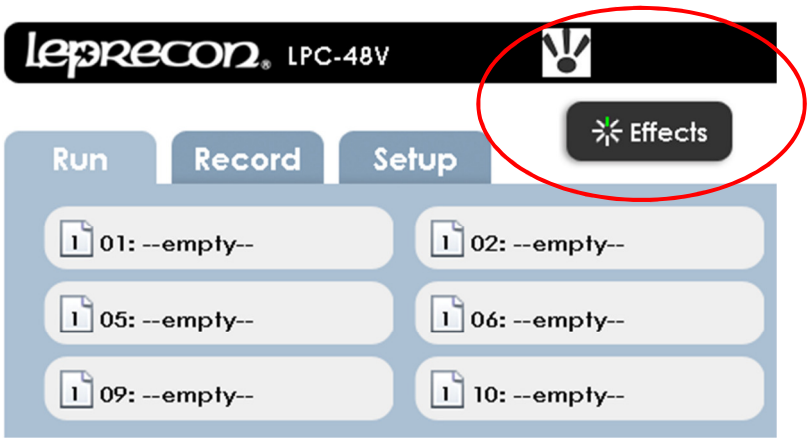
- Enter the Wait time for the first fixture, and the time between fixtures.
- Click on 'Apply Sequenced Wait Times'. When the effect is started , the fixtures will start the effect one at a time, based on the applied 'wait' times.
- When finished, name the effect. Referencing the fixtures in the effect is a good idea; making it easier to choose it later from a list.
- Save the effect.





Now the new effect is in the list of Saved Effects, and is still currently running on stage.

Returning to the Run screen will show an animated icon to remind you that an effect is running:



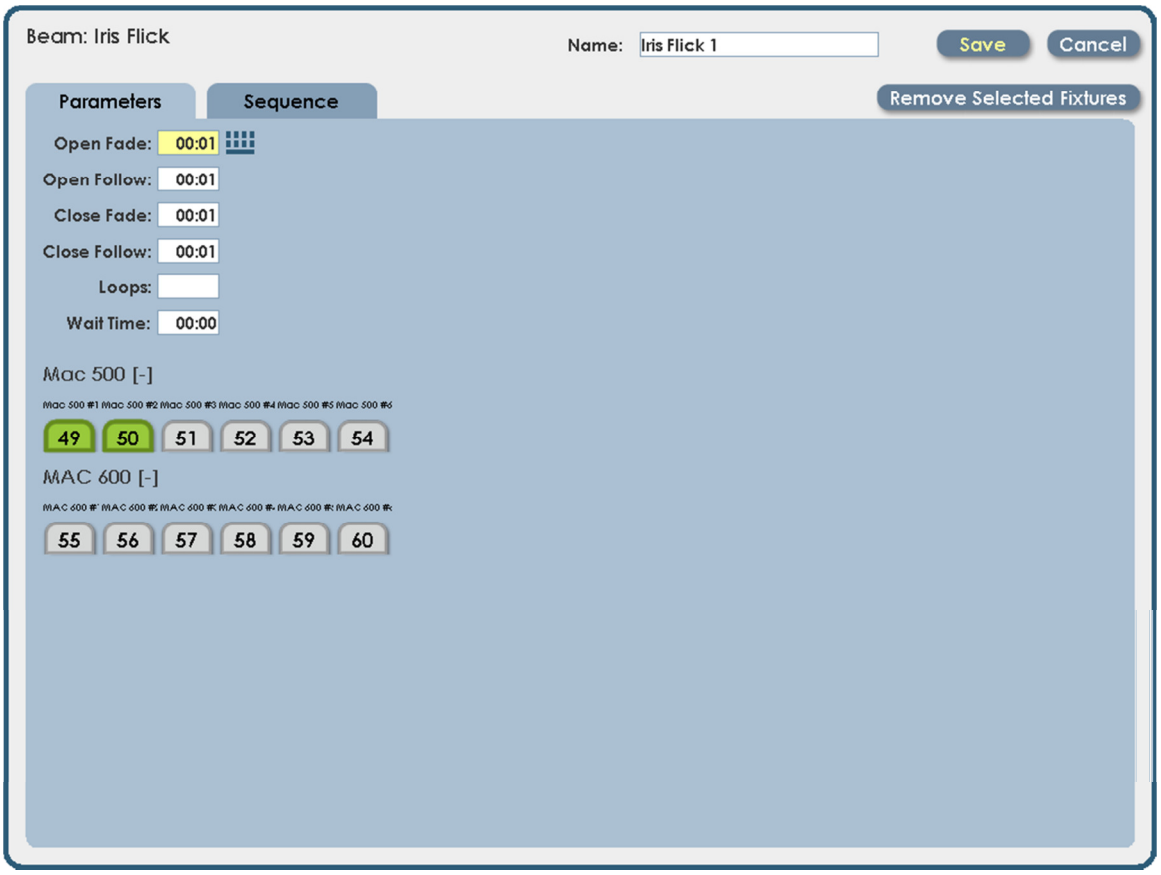
Recording submasters or cues with an Effect running and fixture intensity up will add the effect to the new scene.

11.2 Beam Effects

LPC has two kinds of Beam property effects, Iris Flick and Label Chase.
For information on the Label chase, see the previous section regarding Color label chase. The concepts and procedures are the same.

Iris Flick is an effect that opens and closes the iris of an iris-equipped fixture.

Clicking on Effects, selecting the Beam tab, and then Iris Flick will display the control screen:

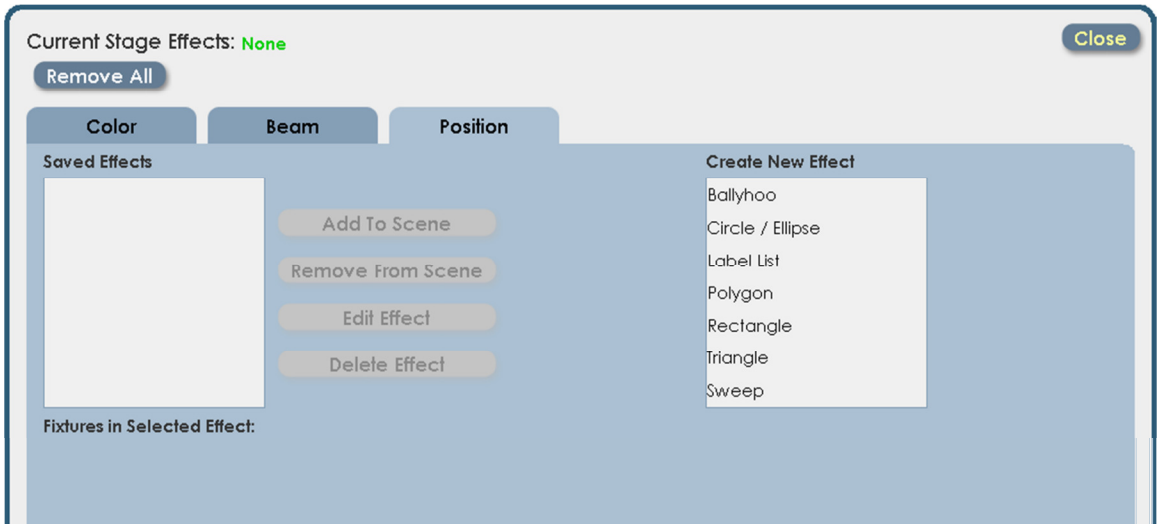


The properties for Iris Flick are simple, related to the time to open and close the iris, and the time between opening and closing the effect.

11.3 Position Effects

Movements such as circles, rectangles and random moves are created with LPC Position effects. Parameter settings control the size, position and speed of these movement effects.

Click on the 'Effects' button on the main screen. Click on the 'Position' tab, and this screen will open:



In a new show, the list of Saved effects will be empty. The choices for new effects are shown on the right, in the 'Create New Effect' list.

- Ballyhoo is a random movement of lights, similar to random followspot movement.

- Circle / Ellipse, Rectangle, Triangle and Polygon are simple geometric shapes.

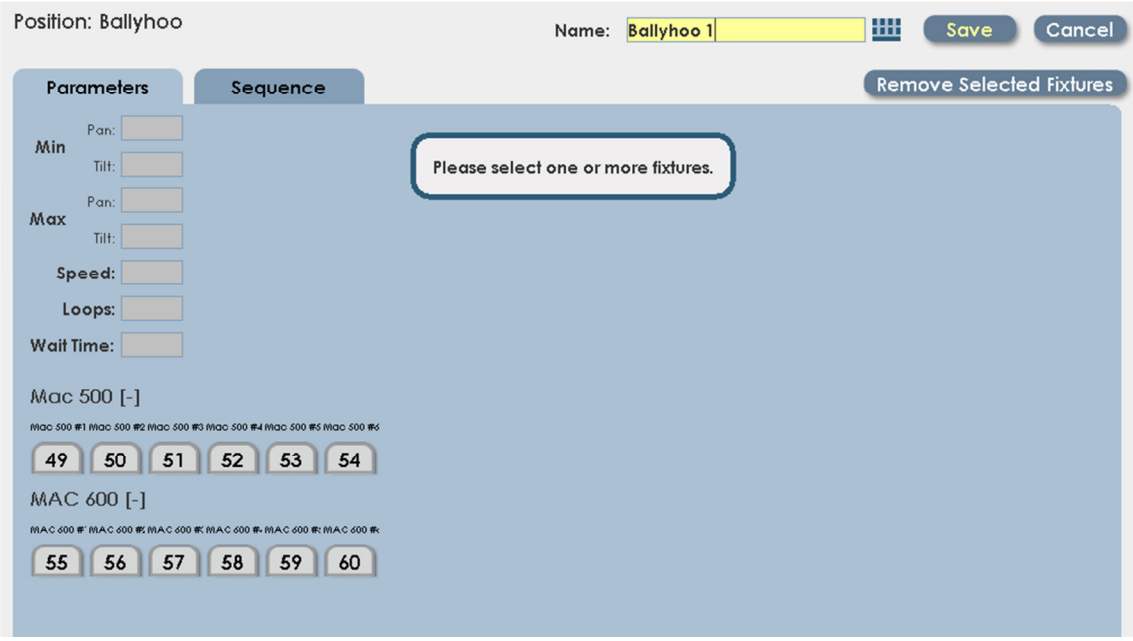
- Sweep is a movement from a start position to an end position, with an option

of repeating back to start.

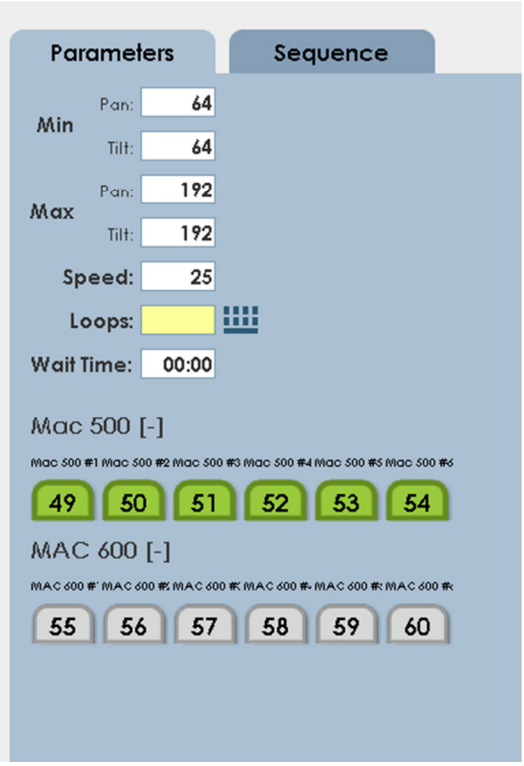
- Label Chase is a position chase using defined position labels. See the section regarding Color Effects to understand how this works.

11.3.1 To create a new Position Effect:

1) Click on the 'Effect' button from any screen.
2) Click on the 'Position' tab.
3) Select the type of effect. This example will use the 'ballyhoo'

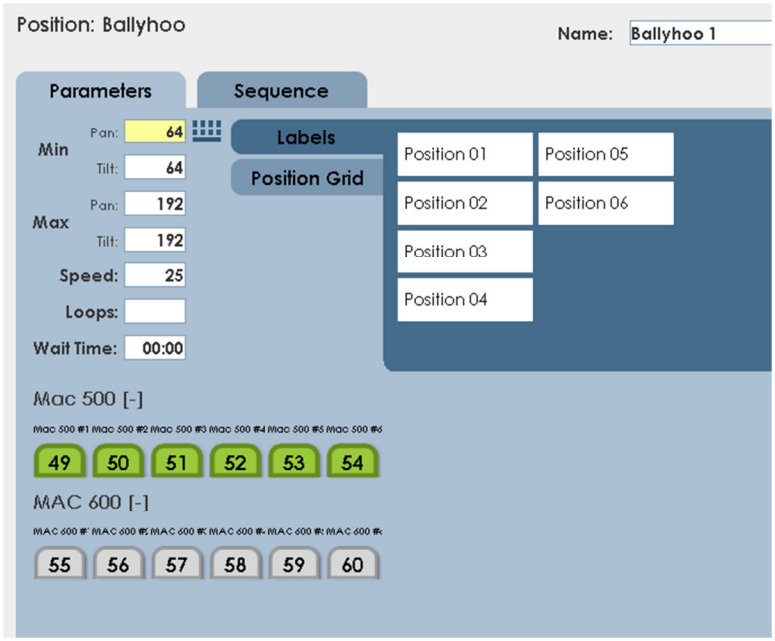


4) Select fixtures to include in the effect. The intensity will set to 100% for these fixtures automatically.



5) The fixtures will now be moving, using the default parameters. The Ballyhoo effect has minimum and maximum values for pan and tilt, which set the area covered by the ballyhoo.

6) A simple way to set min and max values for the ballyhoo is to use focus labels as the boundaries. Clicking on any of the Min and Max data fields will open a window allowing focus labels to be picked:

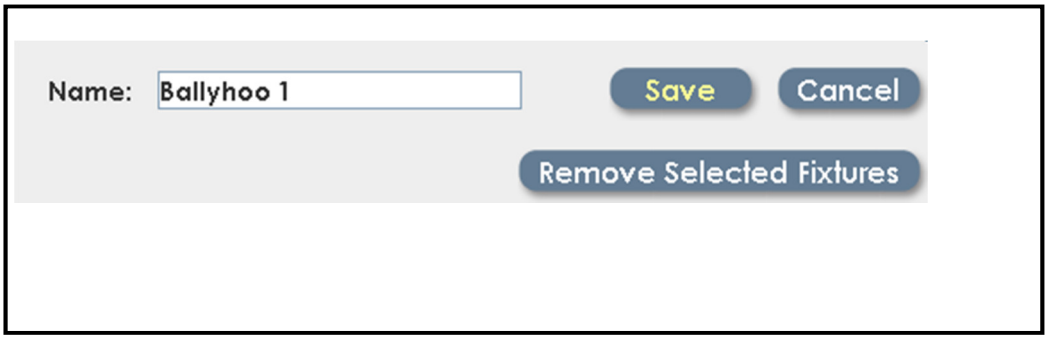


Clicking on a label will transfer the pan and tilt values for the label into the Min or Max data box.

7) Movement speed for the ballyhoo, or other position effects, is set in the Speed data box. Values from 1 to 100 are accepted.

8) Setting a value in 'Loops' data box will stop the effect after a determined number of cycles. A value of zero will run the effect until the associated submaster or stack cue is faded out.

9) Once the effect is running correctly, name and save the effect.



12 Wireless DMX option

12.1 Wireless DMX Properties

LPC models are available with optional wireless DMX capability, using W-DMX compatible format. The LPC supports 2 DMX universes, however, only Universe A will be transmitted via Wireless DMX.

The wireless transmitter has a simple interface with one LED and one momentary function switch, (See Figure 37).

The LED shows the current state of the wireless DMX link:

- ON – Normal DMX link operation
- Fast blink – Linking all available receivers
- Slow blink – Unlinking all receivers
-

To set up a Wireless DMX System:

1. Power on only the receiver units to be used with the LPC DMX universe - ensure that they are not linked with any other transmitter (Receiver LINK indicators should be OFF).

2. On the transmitter unit, press and hold the FUNCTION switch for one second, then release. The transmitter will scan for all unlinked receivers for a period of ten seconds. The LINK indicator will flash rapidly.

If successful, each receiver's LINK indicator will go ON. If any fail, check that the receiver is in range and repeat procedure.

To unlink all receivers from a DMX universe

- On the LPC back panel, press and hold the **Function** button until the **Link** LED begins flashing, (See Figure 38).
- All receivers linked to that DMX universe will be unlinked.

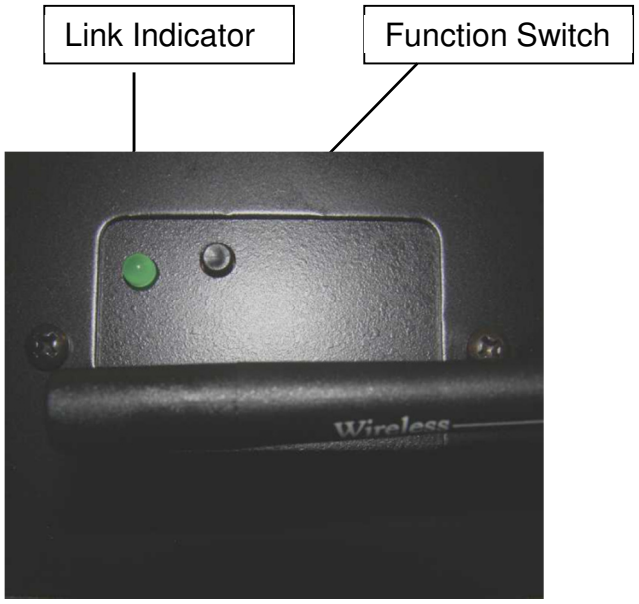


Figure 38: Wireless DMX

13 Support and Contact Information

The latest product information is available from our website:

www.Leprecon.com

We can also be reached at our physical address:

Leprecon, LLC

10087 Industrial Drive

PO Box 218

Hamburg, MI 48139

(810) 852-4300

14 Glossary of Console Related Terms

A.C.
In Alternating Current, it is the flow of electricity that reverses polarity a number of times per second.

Amp
The measurement used to describe the amount of electrical current flowing in a wire or circuit.

Blackout
A switch that, when pressed, will blackout the entire show. It is very useful when the operator wants to show external effects like pyrotechnics, video, or spotlights.

Board Channel
On a console a channel may only be represented by a number which is assigned by the system to control any number of physical dimmers, color scrollers, or other devices. Generally a control channel represents the smallest easily divisible set of controls a designer has over groups of lighting instruments. A soft patch or pin patch is used to assign dimmers or groups of dimmers to individual control channels.

Bump Button
A switch used to quickly bring a board channel to full intensity. Pressing a bump button is an alternative to using a fader. Bump buttons allow rapid manual control over lighting control channels. On some consoles bump buttons can be put into solo mode where all channels except those controlled by the bump button go out.

Chase
A lighting design term referring to a group of lights which are turned on and off in a sequence. A chase can be a complex multi-part cue affecting large groups of lighting instruments, and can be manipulated by rate, intensity, and fadetime.

Crossfade
A lighting term that refers to a cue which one set of lights increases in intensity while another set simultaneously decreases in intensity. A crossfade is one common way in which a change of scene can be indicated in a theatrical production.

Cue
Theatrical way of recording and playback looks. A Section of a lighting desk which allows a list of pre-plotted lighting states to be 'played back' on the push of a button. These lighting states normally have fade times allocated to them.

D.C.
Direct Current; does not change polarity, and is usually associated with batteries.

DMX
DMX 512 is a standard dimmer control protocol implemented by U.S.I.T.T. to provide a means for interfacing dimming and control equipment from different manufacturers. A single DMX control cable carries dimmer intensity information for 512 dimmers serially down 2 wires.

Dimmer
A device which causes connected lamps to decrease in intensity. Most dimmers for entertainment lighting use are some variation of an SCR. Individual dimmers are traditionally arranged in modules of two dimmers with modules combined into dimmer racks. Solid state electronic device used to vary the intensity of the lights. It provides the electrical muscle for the console.

Fader
A potentiometer used to set the level of a board channel.

Group
A group is a convenient way to combine multiple lights and select them at once.

Incandescent Light
Most standard household light bulbs as well as tungsten halogen lamps are incandescent. The color temperature of most incandescent lamps ranges from 1800 to about 3800.Kelvin.

Intensity
The brightness of a light usually and is controlled by a dimmer.

Load
The amount of power required for a lighting element.

Non Dim
A term used to describe a circuit that does not pass through a dimmer, or a load that is not intended to be connected to a dimmer.

Patch
Patching is a component of most computer memory consoles that allows dimmers to be patched electronically to control channels within the system. Generally multiple dimmers can be patched to single control channels, but a dimmer cannot be patched to more than one control channel. The term patching takes place at several key points in a lighting system: at a patch panel, at a pin patch, or in a soft patch.

Phase Control
A dimming method normally used to control the power to the light.

Preset or Submaster
A lighting term for a scene stored in the console's memory that contains levels for each board channel for later use during a performance.

Programming
The process of recording cue values into a console's memory.

Volt
It describes the amount of electrical potential available from the power source to a load.

Watt
The most commonly used term to describe electrical power. It is the product of Voltage multiplied by Current. Volts X Amps = Watts.

15 Index