

# Table of Contents

<b>Part I Overview</b>	<b>8</b>
1 Contents of help file .....	8
2 Using this help file .....	10
<b>Part II Quick start and concepts</b>	<b>10</b>
1 Quickstart .....	10
2 Basic programming terms and elements .....	18
3 DMX addresses and links .....	21
4 Cross fixture-type compatible effects .....	22
5 Scene and fade times .....	22
<b>Part III Hardware configuration and setup</b>	<b>22</b>
1 Hardware setup .....	22
2 Detecting and configuring DMX hardware .....	23
Detecting DMX hardware .....	23
Installing the Universal USB/DMX interface .....	24
Updating the driver for the Universal USB/DMX interface .....	26
The USB/DMX interface .....	27
Installing and using the USB DMX interface .....	27
USB/DMX interface warnings and errors .....	29
USB interface update information .....	30
Installing the PCI DMX transmitter card .....	31
Installing the ISA/DMX card .....	33
Installing the PCMCIA DMX interface .....	36
Installing the ADP (Parallel Port) DMX interface .....	36
Configuring DMX hardware options .....	37
XLR cable connections .....	38
3 Audio .....	39
Audio setup .....	39
Audio CD control .....	40
Audio CD-ROM trouble shooting .....	42
4 MIDI .....	42
5 External control devices .....	43
<b>Part IV The LightJockey desktop</b>	<b>44</b>
1 Main desktop window .....	44
2 Configuring the desktop .....	45
3 Desktop main menu .....	47
Main system menu .....	47
Deleting multiple data files .....	48
Using the data restore option .....	48

Main setup menu .....	50
System preferences .....	50
Startup options .....	52
Default DMX output .....	53
Main view menu .....	54
The unassigned fixtures list .....	54
<b>4 Tool- and status-bars .....</b>	<b>55</b>
Sequence/cue tool bar .....	55
Cue list tool bar .....	56
LightJockey Offline Visualizer tool bar .....	57
Fixture tool bar .....	57
Status bar .....	58
<b>5 Fixture icon popup .....</b>	<b>59</b>
<b>6 DMX output monitor .....</b>	<b>60</b>
<b>Part V User libraries .....</b>	<b>62</b>
1 User libraries .....	62
2 Backup & restore .....	64
<b>Part VI Fixture configuration .....</b>	<b>66</b>
1 Fixture configuration .....	66
2 Configuration warnings .....	71
3 Copy from fixture .....	72
4 Clear fixture data .....	73
5 Applying default DMX to new fixtures .....	74
6 Controlling older Martin fixtures via Martin/DMX interface .....	74
7 Customizing built-in fixture profiles .....	76
The select bitmap dialog .....	79
<b>Part VII Controlling and programming fixtures .....</b>	<b>80</b>
1 Selecting fixtures for control and programming .....	80
Selecting fixtures on the desktop .....	80
Next/previous fixture selection .....	81
Fixture groups .....	83
2 Using generic DMX profiles .....	84
Generic DMX profiles .....	84
The generic DMX control .....	86
The RGB pack color control .....	89
3 Fixture controls .....	92
Fade state buttons .....	93
Fixture control elements .....	94
User palettes .....	95
Intensity control .....	96
Intensity controls for built in profiles.....	96
Intensity controls for user defined profiles.....	97
Movement and position control .....	98
Position control.....	98
Position fan out.....	101

Movement macros.....	102
Movement macro engine.....	102
Bézier shapes .....	103
Auto delay control.....	104
Position presets.....	106
Non pan/tilt movement controls .....	107
<b>Color control .....</b>	<b>108</b>
Color controls for built in profiles.....	108
Color controls for user defined profiles .....	110
<b>Gobo control .....</b>	<b>111</b>
Gobo controls for built in profiles.....	111
Gobo controls for user defined profiles.....	113
<b>Beam control .....</b>	<b>114</b>
Beam controls for built in fixtures.....	114
Beam controls for user defined profiles.....	114
<b>Effect control .....</b>	<b>115</b>
Effect controls for built in profiles.....	115
Effect controls for user defined profiles.....	116
<b>Extended controls .....</b>	<b>117</b>
Extended controls for built in profiles.....	117
Extended controls for user defined profiles.....	118
<b>Lamp controls .....</b>	<b>119</b>
Lamp controls for built in fixtures.....	119
Lamp controls for user defined profiles.....	120
<b>Reset control .....</b>	<b>120</b>
Resetting fixtures, built in profiles.....	120
Resetting fixtures, user defined profiles.....	121

## **Part VIII Smoke machines and hazers 121**

1 Controlling DMX smoke machines and hazers .....	121
2 The smoke control .....	122

## **Part IX The sequence control 124**

1 The sequence control .....	124
2 Save sequence dialog .....	125
3 List of sequences .....	127
4 Inserting scenes .....	128
5 Deleting scenes .....	129
6 Sequence blind mode .....	129
7 Snapshot and recording from DMX output .....	130
8 Sequence fades .....	132

## **Part X The cue control 132**

1 The cue control .....	132
2 Save cue dialog .....	136
3 List of cues .....	137
Cue pages .....	140
4 Cue control columns and slot colors .....	142

5	Modifying sequence slot labels .....	143
6	Triggering sequences in the cue .....	144
7	Sequence slot loop options .....	145
8	Cue time control .....	147
9	Cue macro control .....	148
10	Transparent cues .....	149
11	Sequence intensities .....	150
12	The cue builder .....	150
<b>Part XI The generic DMX macro</b>		<b>153</b>
1	Generic DMX macros .....	153
2	The Generic DMX macro editor .....	156
3	The macro shapes lists .....	158
4	Macro visualization and tracking panel .....	159
5	The fixture channel list .....	161
6	Generic macro parameters .....	161
7	Generic macro delays .....	163
8	Save macro dialog .....	165
9	Select macro list .....	166
<b>Part XII The background cue</b>		<b>167</b>
1	Using the background cue .....	167
2	List of background cues .....	169
<b>Part XIII The cue list control</b>		<b>169</b>
1	The cue list control .....	169
2	Save cue list dialog .....	176
3	List of cue lists .....	176
4	Cue list commands .....	177
5	Using time code in cue lists .....	179
6	MIDI/SMPTE time code .....	182
7	Launching external programs from the cue list .....	183
8	Using the LightJockey MediaPlayer .....	183
9	Playing multiple, simultaneous media files from the cue list .....	185
10	Using Winamp for digital audio playback .....	186
11	Winamp time code issues .....	187
<b>Part XIV The statics control</b>		<b>189</b>
1	Static merge and replace modes .....	191
<b>Part XV Using audio input</b>		<b>192</b>

<b>Part XVI Global functions</b>	<b>195</b>
1 Global intensity control .....	195
Blackout/restore .....	195
Master intensity control .....	195
2 Freeze output .....	198
3 Offline / Online switch .....	198
4 Follow spot function .....	198
5 Fixture solo function .....	200
6 Global patching .....	201
Global patch dialog .....	201
HTP groups.....	203
<b>Part XVII Hotkeys</b>	<b>203</b>
1 Using hotkeys .....	203
2 Hotkey functions .....	205
<b>Part XVIII External control</b>	<b>210</b>
1 Fingers for LightJockey .....	210
Introduction to Fingers .....	210
Fingers setup .....	211
Fingers controls overview .....	213
Fingers status panel .....	216
Configuring and using the function buttons .....	217
Configuring and using the scroll buttons .....	218
Configuring and using the cue slot button functions .....	219
Configuring and using fader and bump functions .....	220
Configuring and using jog-wheel functions .....	223
Fingers multi select mode .....	224
Virtual Fingers .....	224
2 Using the 2532 direct access controller .....	225
2532 direct access .....	225
The 2532 layout .....	225
Configuring the 2532 controller .....	226
Printing the 2532 configuration .....	231
Emulating the 2532 .....	231
3 Using DMX in .....	231
DMX in translation .....	236
Editing translation tables.....	238
4 Using MIDI in .....	239
5 Using the 2518 controller via RS-232 .....	242
2518 controller via RS-232 .....	242
2518 controller via RS-232, mode 2 .....	242
2518 controller via RS-232, mode 1 .....	243
6 MC-X remote control .....	244
7 RS-232 remote control .....	245

<b>Part XIX</b>	<b>User definable fixture profiles</b>	<b>247</b>
1	The user definable fixtures profiles .....	247
2	Scanner 1 profile .....	247
	Configuring the Scanner 1 profile .....	247
	Defining the Scanner 1 profile .....	248
	Defining Scanner 1 intensity control .....	249
	Defining Scanner 1 pan & tilt control .....	250
	Defining Scanner 1 color control .....	251
	Defining Scanner 1 gobo control .....	252
	Defining Scanner 1 level control .....	253
3	Color Scroller 1 .....	254
	User Definable Fixtures - Color Scroller 1 .....	254
	Defining the Color Scroller Profile .....	254
4	Generic fixture type 2 profile .....	255
	Defining the generic fixture 2 profile .....	255
	Applying profile data to multiple fixtures .....	257
	User definable dynamic functions .....	258
	User definable static functions .....	259
	User definable palettes .....	259
	The fixture info tab .....	262
	The intensity & lamp tab .....	264
	The pan & tilt tab .....	266
	The fixed color tab .....	269
	The CMY & RGB tab .....	269
	The gobo tab .....	271
	The beam tab .....	272
	The effects tab .....	273
	The special tab .....	273
	The levels tab .....	276
	The Offline Visualizer tab .....	277
	Creating custom bitmaps for palette controls .....	278
	Creating custom bitmaps for fixture icons .....	278
5	Importing and exporting profiles .....	279
	Importing user defined fixture profiles .....	279
	Exporting user defined fixture profiles .....	280
6	External application/device profile plug in .....	281
<b>Part XX</b>	<b>Real time visualizing</b>	<b>283</b>
1	The Offline Visualizer .....	283
2	Interfacing with Capture .....	285
<b>Part XXI</b>	<b>LJ Manager</b>	<b>287</b>
1	LJ Manager plugin .....	287
<b>Part XXII</b>	<b>The 2510 playback controller</b>	<b>289</b>
1	Using the 2510 playback controller with LightJockey .....	289
2	Creating a sequence list for the 2510 controller .....	290

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3	Generating the 2510 download file .....	293
4	Downloading the 2510 download file .....	294
5	Using the 2510 for playback .....	294
6	2510 memory test .....	296
7	Binary 2510 files .....	296
<b>Part XXIII Creating download files for the 2518 controller</b>		<b>297</b>
<b>Part XXIV Release notes</b>		<b>298</b>
1	Version 2.9 .....	299
2	Version 2.8 .....	299
3	Version 2.7 .....	300
4	Version 2.6 .....	301
5	Version 2.5 .....	307
6	Version 2.3 .....	310
7	Version 2.2 .....	311
8	Version 2.1 .....	312
9	Version 2.0 .....	315
10	Version 1.08 .....	316
11	Version 1.07 .....	319
12	Version 1.06 .....	324
13	Version 1.05 .....	329
14	Version 1.04 .....	330
15	Version 1.03 .....	331
16	Version 1.01 .....	332

# 1 Overview

## 1.1 Contents of help file



See [Release notes](#) <sup>[298]</sup>

See [Using this help file](#) <sup>[10]</sup>

### **Contents - overview**

[Basic programming terms and elements](#) <sup>[18]</sup>

[Programming quick start](#) <sup>[10]</sup>

[Hardware setup](#) <sup>[22]</sup>

[Fixture configuration](#) <sup>[66]</sup>

[User definable fixtures and creating new profiles](#) <sup>[247]</sup>

[DMX smoke machines and hazers](#) <sup>[127]</sup>

[DMX addresses and links](#) <sup>[27]</sup>

[Main desktop window](#) <sup>[44]</sup>

[Configuring the desktop](#) <sup>[45]</sup>

[Desktop main menu](#) <sup>[47]</sup>

[Selecting fixtures](#) <sup>[80]</sup>

[Tool and status bars](#) <sup>[55]</sup>

[Fixture controls](#) <sup>[92]</sup>

[The generic DMX control](#) <sup>[86]</sup>

[The sequence control](#) <sup>[124]</sup>

[The cue control](#) <sup>[132]</sup>

[The cue list control](#) <sup>[169]</sup>

[The background cue](#) <sup>[167]</sup>

[The statics control](#) <sup>[189]</sup>

[Generic DMX macros](#) <sup>[153]</sup>

[Follow spot functions](#) <sup>[198]</sup>

[Global patch](#) <sup>[207]</sup>

[Default DMX output](#) <sup>[53]</sup>

[HTP groups](#) <sup>[203]</sup>

[Startup options](#) <sup>[52]</sup>



[Using audio-in](#) <sup>[192]</sup>

[Using time code in cue lists](#) <sup>[179]</sup>

[Using the LightJockey MediaPlayer](#) <sup>[183]</sup>

[Backup and restore](#) <sup>[64]</sup>

[Using the data restore option](#) <sup>[48]</sup>

[Hotkeys](#) <sup>[203]</sup>



[Fingers for LightJockey](#) <sup>[210]</sup>

[2532 direct access](#) <sup>[225]</sup>

[DMX In remote control](#) <sup>[231]</sup>

[MIDI In remote control](#) <sup>[239]</sup>

[Martin MC-X remote control](#) <sup>[244]</sup>

[Martin 2518 Controller via RS-232](#) <sup>[242]</sup>

[Using the 2510 playback controller](#) <sup>[289]</sup>

[RS232 remote control](#) <sup>[245]</sup>

[External devices and applications](#) <sup>[281]</sup>

[Controlling older Martin fixtures via Martin/DMX interface](#) <sup>[74]</sup>

[Controlling RGB fixtures](#) <sup>[89]</sup>



[The Offline Visualizer](#) <sup>[283]</sup>



[LJ manager \(plug-in\)](#) <sup>[287]</sup>



[Interfacing with Capture](#) <sup>[285]</sup>

LightJockey and this help file may be updated by downloading the latest version from the Martin Website: [www.martin.com/service/software/logs/LightJockey\\_sw.htm](http://www.martin.com/service/software/logs/LightJockey_sw.htm)

The current list of user-defined fixture profiles can be found at:

<http://www.martin.com/service/Software/controller/LJ/list.asp>

Finally, an end-user discussion forum dedicated to the LightJockey is hosted on the Martin professional website : <http://www.martin.com/forum/>

## 1.2 Using this help file

### Changing the help file

the LightJockey help file may be available in different languages. To select between different help files use **Select Help file** from the *main help menu*.

Please note that any non-English help-files may not document the latest changes and updates (see [Release Notes](#) <sup>[298]</sup> for the helpfile in question).

While an updated version of the English help file is always shipped with LightJockey it may be necessary to update the non-English help files when they become available.

The latest releases are available from the Martin Website at

[www.martin.com/service/software/logs/lightjockey\\_sw.htm](http://www.martin.com/service/software/logs/lightjockey_sw.htm) and the latest beta release usually via the LightJockey end-user forum at [www.martin.com/forum/](http://www.martin.com/forum/)

Die deutsche Hilfe könnte sich kurzzeitig auf eine ältere Software version beziehen - bitte beachten Sie den

Versionshinweis im Inhalt der online-Hilfe und besuchen Sie die Seite

[www.martin.com/service/software/logs/lightjockey\\_sw.htm](http://www.martin.com/service/software/logs/lightjockey_sw.htm)

### Topic help from within LightJockey

Most windows and controls in LightJockey has a **Help** entry in the local menu. If present, clicking **Help** opens the help file on a help topic that relates to the function(s) of the window/control itself.

### The help file as PDF

The help file is also supplied in PDF format on the CD. The latest PDF version may be downloaded via the LightJockey end-user forum at [www.martin.com/forum/](http://www.martin.com/forum/).

Adobe Acrobat reader or another PDF reader application is required to read PDF documents - at the time of writing this a free version of the Acrobat reader can be downloaded from [www.Adobe.com](http://www.Adobe.com).

A print out of the entire help file should be made via the PDF file.

## 2 Quick start and concepts

### 2.1 Quickstart

#### Programming LightJockey

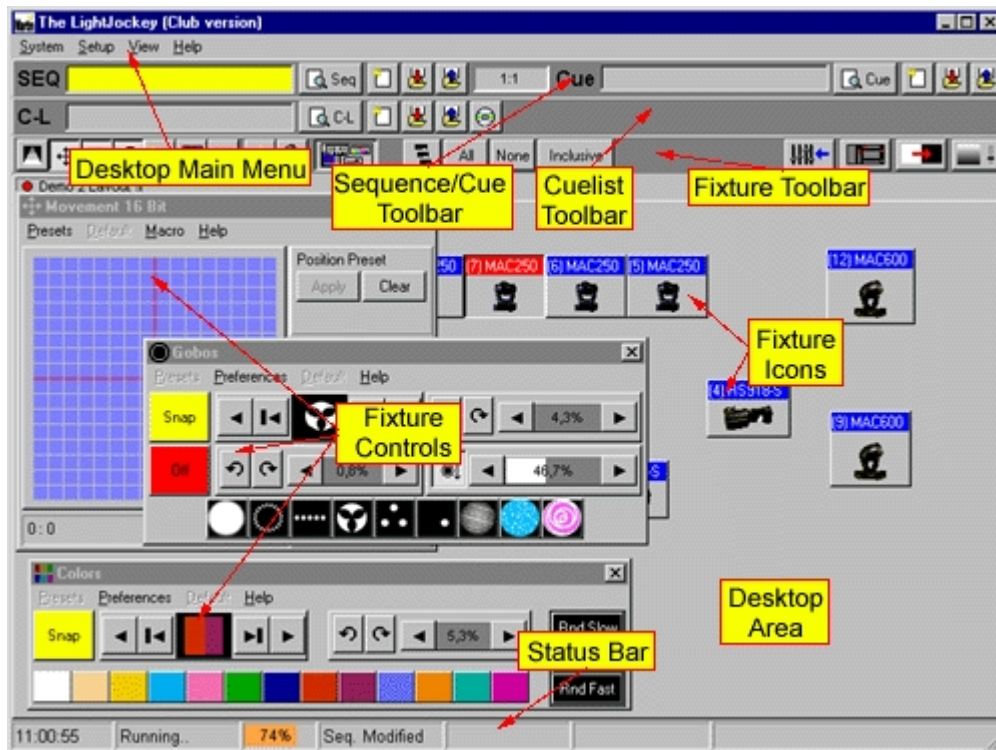
##### Introduction to programming

This short introduction will help you get started using the Martin LightJockey quickly. It assumes that you have some basic experience programming moving lights and are familiar with Windows. Additional information is [available](#) <sup>[81]</sup> in this on-line "Help" documentation.

[If you are a Martin 3032 programmer](#)

Programming with the LightJockey is similar in many ways to programming with the 3032 Controller. Fade times and the Off/Snap/Fade control, however, will be new features to 3032 programmers.

The best way to learn your way around the LightJockey is to experiment. As you try the controls, be aware that clicking with the left and right mouse buttons often do different things. Note: depending on software version, screens and button names may differ from those shown here.

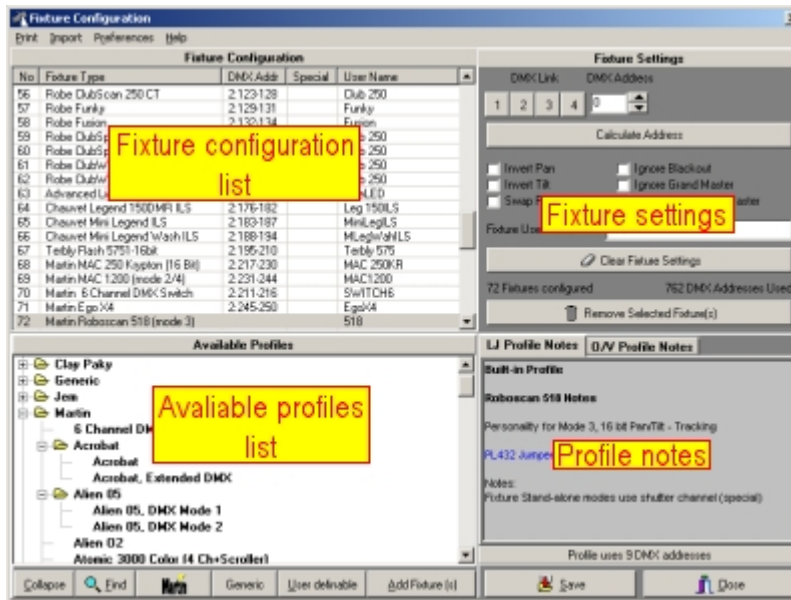


LightJockey Desktop

### Configuring fixtures

The first step after configuring the hardware is to select and address your lighting fixtures in the Fixture Configuration window. In the following example, the LightJockey is set up to control 2 MAC 600s.

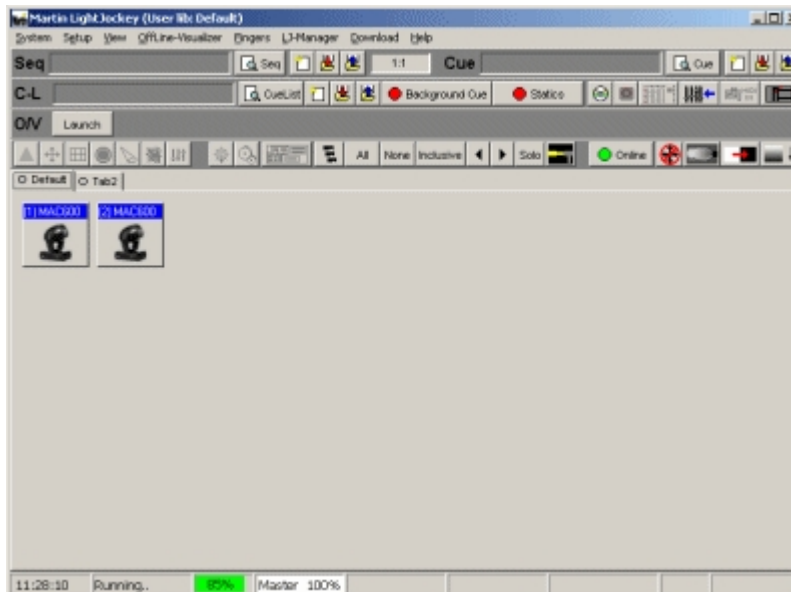
1. Choose Setup > Fixture Configuration from the main menu.
2. Select "MAC 600 (mode 2/4)" from the list of Available Fixture Types (found under the Martin Manufacturer heading). Drag and drop it on line 1. Add another MAC 600 to line 2. (Multiple fixtures can also be added using the Add (fixture name) button.)
3. If the addresses are already set on the fixtures, click the fixture, select the DMX link it's on, and enter its address in the DMX Address field.
4. If you want the controller to automatically assign addresses, click Auto Address. Click Find Addresses and then click Ok. Remember to set the addresses on the fixtures to match the LightJockey's fixture configuration.
5. Click the first MAC 600. Type "Left" in the Fixture Username field.
6. Click the second MAC 600 and name it "Right."
7. Save the configuration and close the window.



### Configuring the desktop

Lighting fixtures are represented by icons on the desktop. To create and place icons you drag fixtures from the Unassigned Fixtures list to the desktop. Icons can be organized any way you like on multiple pages or "tabs."

1. The list of unassigned fixtures is displayed on the desktop automatically. It can also be opened by selecting View > Unassigned Fixtures from the main menu.
2. Drag the MAC 600s to the desktop.
3. Right-click on the desktop. Select Icons > Auto Arrange. Click OK. Additional menus pop up when you right-click on the icons but we are not concerned with these now.



### Key LightJockey concepts

Understanding these concepts is critical for successful programming with the Light-Jockey. Don't worry if they are new to you, the programming example that follows is designed to illustrate them and they will make more sense once you have been through it.

### Cues, sequences, and scenes

A light show is typically divided into cues that you program and then play back from the list of available cues. The LightJockey also supports cue playback several external units such as the Martin 2532 Direct Access Controller.

A cue 'points' to up to 12 sequences that run together in parallel. In addition to these pointers, cues have some additional sequence timing and loop options.

A sequence is a set of scenes that run one after the other. A sequence can have from 1 to 999 scenes.

A scene is a set of instructions for selected fixtures. These instructions are made up of a static command, a fade time, and a scene time. A static command is one or more instructions such as "insert the red filter" or "rotate the triangle gobo counterclockwise." Fade time is the time it takes, for example, for the color to change from blue to red. Scene time is simply how long the scene lasts before the next scene in the sequence is executed. If scene time is greater than fade time, the fixture fades to the position and stops.

### Current cues and current sequences

To program cues and sequences you either create new ones or load existing ones using standard Windows techniques such as dragging and dropping. Once loaded or created from new they become the current cue or current sequence.

The current cue is displayed differently from the current sequence. The action of the current cue is shown by changes in the relevant control windows. The pan/tilt cursor in the movement window, for instance, slides back and forth to show a pan movement. This feature lets you see the program without actual fixtures.

The controls for effects programmed in the current sequence, however, stand still so you don't have to catch a moving target as you work. The pan/tilt cursor, to take the previous example, stops moving when you load the movement sequence onto the desktop. To see the sequence run again you have to clear it from the desktop by loading another sequence or clicking New/Clear Sequence on the Sequence toolbar.

### Bottom to top execution

Understanding the order of execution in the cue is vital for successful programming. The Light-Jockey executes the current sequence first and then executes the current cue from bottom (sequence 12) to top (sequence 1). When two sequences contain instructions for the same effect, the sequence closest to the bottom has priority; instructions in the sequence closest to the top are not executed.

### Off/Snap/Fade control

Most effect controls have an Off/Snap/Fade (O/S/F) button. In the default setting, the button is red and displays "Off." Clicking the red Off button once turns it into a yellow "Snap" button. Clicking again turns it into a green "Fade" button. Some controls, such as the Lamp Control, have Off and Snap only.

When an effect's O/S/F button is Off, the control sends no instructions. This allows a lower-priority sequence to control that effect. It does not turn off the effect itself. The dimmer O/S/F button must be Off in sequence 10, for example, if you want to program a dimmer command in sequence 9 or below.

When you set an effect's O/S/F button to Snap, the effect moves at maximum speed.

When you set an effect's O/S/F button to Fade, the effect's speed is determined by the fade time. To program a scene with a 10-second pan movement, you would first define the movement with the cursor, then set the Pan O/S/F button to Fade, and finally set the scene and fade times to 10 seconds. Setting an effect's O/S/F button to Snap or Fade overrides all programming for that effect in higher sequences in the cue. Leave the button on Off (the default) unless you are programming a command.

### Striking lamps

Most Martin fixtures with discharge lamps, also known as arc lamps, must be struck (turned on) from the controller. There are three ways to do this:

- Use the LightJockey's automatic lamp-strike feature. This is recommended and is described in the following example.
- Program a "lamp on" cue. This is not recommended because Martin fixtures use the same DMX

channel for lamp and shutter control. Therefore, the lamp-on command will be overridden by any higher-priority sequence with a shutter command. If you choose to program a "lamp on" cue, turn on the lamps one at a time with 3 - 5 second intervals to avoid excessive voltage drop and current draw.

- Strike a lamp manually by selecting it, clicking the Lamp button on the fixture tool-bar, and clicking Power On in the Lamp Control dialog. Depending on the fixture, the Lamp Control may also allow you to turn off the lamp.

#### Example: Programming a cue

The following example, in which you program a simple cue for 2 MAC 600s, demonstrates the basic steps and concepts involved in programming. To keep you focus on the screen, it is suggested that you program the first cue without fixtures attached.

The screens shots show how your screen will look if you follow the steps correctly.

#### Step I: Strike lamps

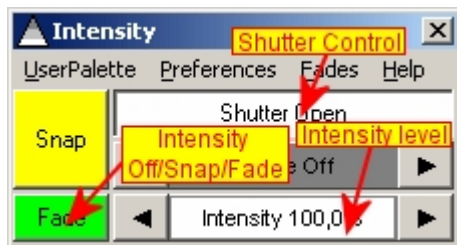
This step only applies if you have actual fixtures connected to the controller.

1. Configure 2 MAC 600s and place them on the desktop.
2. Turn on the MAC 600s, set them to mode 4, and set their addresses to match the LightJockey fixture configuration.
3. Choose System > Auto Strike Lamps from the main menu. Click Stop when the lamps have struck.

#### Step II: Program shutter/dimmer sequence

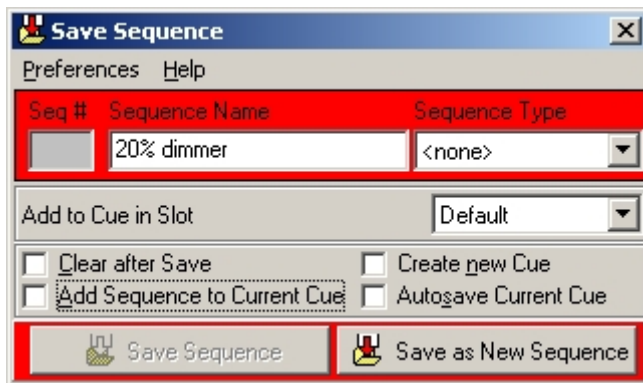
In this step you program a sequence to open the shutters and set the dimmers to 20%.

1. Configure 2 MAC 600s and place them on the desktop if you have not done so.
2. Click New/Clear Sequence on the Sequence toolbar. The new (blank) sequence is indicated by a gray Sequence name field.
3. Click both MAC 600s to select them. The fixture icon caption is blue when the fixture is not selected and red when it is selected.
4. Click Show Fixture Controls on the Fixture toolbar (see page 1). Arrange the control windows any way like by dragging them on the desktop. Since you will not be using the Beam control in this example, you can close it to make more room on the desktop. Individual controls can be opened and closed as needed by clicking buttons on the Fixture toolbar.
5. Find the Intensity dialog (see below). Click the shutter control. Three things happen: "Shutter Closed" changes to "Shutter Open," the shutter O/S/F button automatically changes to Snap, and the Sequence Name field in the Sequence toolbar changes from gray to yellow, indicating that the new (blank) sequence has been changed.
6. Drag the dimmer level to 20%. Click the dimmer O/S/F button twice to Snap.



7. Verify that your Intensity control looks like the one above and that the O/S/F buttons in all other controls are off.

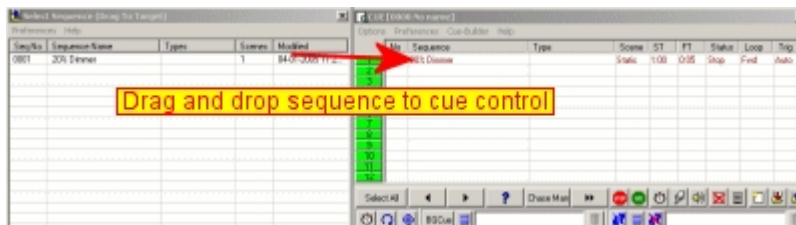
8. Click Save Sequence in the Sequence toolbar. Type "20% dimmer" in the dialog's Sequence Name field. Click Save as New Sequence or press Enter.



### Step III: Add sequence to Cue

Checking "Add Sequence to Current Cue" in the Save Sequence dialog would have automatically added the sequence to the current cue when saving. Windows techniques such as drag and drop can also be used to add, delete, and rearrange items in lists.

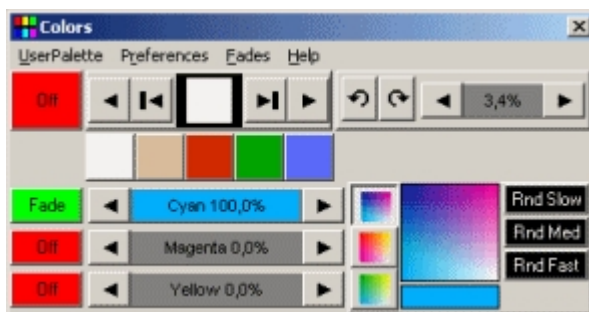
1. Click List of Sequences on the Sequence toolbar.
2. Click View Cue Control on the Cue toolbar.
3. Drag the "20% dimmer" sequence to position 1 in the cue. (If drag mode is not enabled, choose Preferences > Drag mode from the Select Sequence dialog menu.)



### Step IV: Program CMY sequence

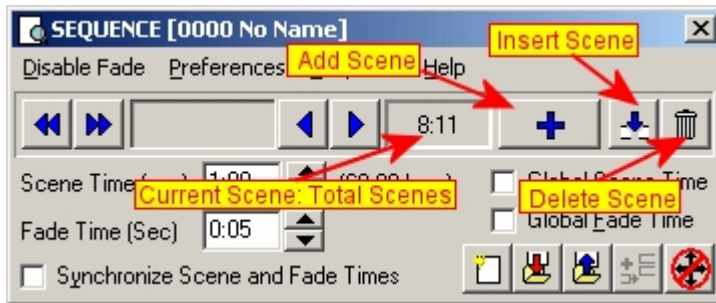
The next sequence is a CMY (cyan, magenta, yellow) color chase with 3 scenes. In the first scene, cyan fades in and yellow, which comes in scene 3, fades out. In the second scene, cyan fades out and magenta fades in. Finally, magenta fades out and yellow fades in. The scene and fade times for each scene is set to three seconds for a smooth continuous effect.

1. Close the cue editing and sequence list windows.
2. Click New/Clear Sequence on the Sequence toolbar.
3. Make sure both MAC 600s are selected: a fixture is selected when the icon caption is red. Drag and drop sequences to cues.
4. Place the cursor over the cyan fader and drag it to 100%. The O/S/F button automatically changes to Fade.

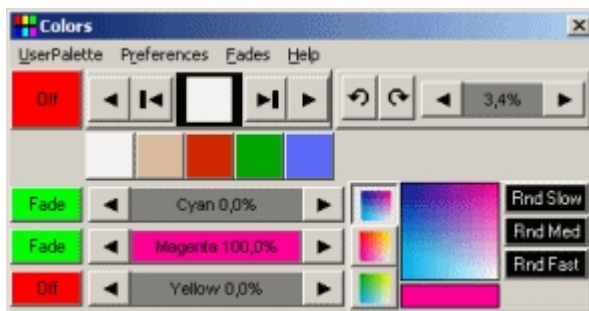


5. Click View Sequence Control in the Sequence toolbar.
6. Click the "Synchronize Scene and Fade Times" box. Set the scene (and fade) time to 3 seconds.

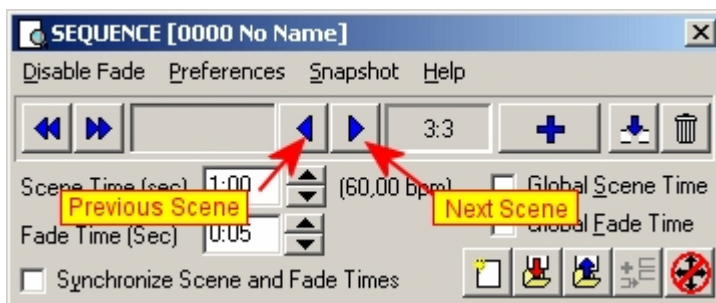
7. Click Add Scene in the Sequence dialog.



8. Drag the Cyan fader to 0%. Drag the Magenta fader to 100%.



9. Click Add Scene in the Sequence dialog.  
 10. Drag the Magenta fader to 0% and the Yellow fader to 100%.  
 11. Now you need to change scene 1 to fade out yellow. Scroll to scene 1 of 3 by clicking Next Scene (not Add Scene) in the dialog.



12. Yellow is already at 0% so you only need to click its O/S/F button to Fade.  
 13. Click Save Sequence in the Sequence dialog or toolbar.  
 14. Click the "Clear after Save" and "Add Sequence to Current Cue" boxes in the Save Sequence dialog.  
 15. Type "CMY chase" in the name field.  
 16. Click Save as New Sequence or press Enter. Notice how the CMY faders move once the sequence has been saved, cleared, and added to the current cue.

#### Step V: Program movement sequence

The LightJockey features a sophisticated engine for generating pan/tilt movements. The effects engine is not described here but detailed information is available in the on-line help. In the first two sequences, both fixtures were programmed together to do the same thing. In this sequence you program each



fixture individually to move in opposite directions.

1. To program "Left" MAC 600, select it and deselect the "Right" MAC 600.
2. If the pan/tilt control window, shown below, is not open, click Movement on the Fixture toolbar.
3. Drag the movement cursor to the middle of the top-right quadrant. Click the Pan and the Tilt O/S/F buttons twice to Snap.
4. Click the "Left" MAC 600 to deselect it; select the "Right" MAC 600.
5. Drag the movement cursor to the middle of the top-right quadrant.
6. Click the Pan O/S/F button and the Tilt O/S/F button to Snap.
7. Open the Sequence Control if it is closed by clicking View Sequence Control. Set the scene time to 2 seconds.
8. Click Add Scene in the Sequence dialog. Click Synchronize Scene and Fade Times. Set the scene (and fade) time to 15 seconds.
9. Drag the movement cursor to the middle of the top-right quadrant. Click the Pan O/S/F button to Fade.
10. Click the "Right" MAC 600 to deselect. Select the "Left" one.
11. Drag the movement cursor to the top-left quadrant and click the Pan O/S/F button to Fade.
12. Click Save Sequence on the Sequence toolbar. Type "Pan" in the Sequence Name field. Click the "Clear after Save" and "Add Sequence to Current Cue" boxes. Click Save as New Sequence or press Enter.

If you programmed the sequence as described, the movement cursor will move slowly from left to right if when you select the "Left" MAC 600 and from right to left when you select the "Right" one.

#### Step VI: Edit movement sequence

This step demonstrates how to edit a programmed sequence. Here you edit the pan sequence to black out both fixtures in the first scene.

1. Click List of Sequences on the Sequence toolbar.
2. Drag the "Pan" sequence to the desktop. Close the sequence list. Notice that the cursor in the Movement control stopped moving.
3. Open the Sequence Control if it is closed. Click Next Scene to advance to scene 1 of 2.
4. Select both MAC 600s.
5. Click the shutter control in the Intensity dialog. It changes from "Shutter Open" to "Shutter Closed." Click, if necessary, to set the shutter O/S/F button to Snap.
6. Click Save Sequence on the Sequence toolbar or in the Sequence dialog. To save the changes to the sequence, click Save Sequence or press Enter. Click OK to confirm.

#### Step VI: Save the cue

Cues are handled much like sequences.

1. Click Save Cue on the Cue toolbar.
2. Type "M600 CMY pan" in the Cue Name field.
3. Click Save New or press Enter.

#### Step VII: Edit the cue

This step demonstrates how sequence order affects cue playback. Look at the Intensity control: the shutter closes for 2 seconds because of the command in the pan sequence. This sequence has the highest priority because it is closest to the bottom. When you put the 20% dimmer sequence underneath the pan sequence, the 20% dimmer sequence takes priority and keeps the shutter open all the time. With a little planning, you can create different looks using the same sequences just by changing their order.

1. Click New/Clear Cue on the Cue toolbar to clear the cue from the desktop. (This is not required; it just helps demonstrate how to load cues.)
2. Click List of Cues on the Cue toolbar.
3. Drag the "M600 CMY pan" cue to the desktop. Its name appears in the Cue name field and the cue begins to run. Close the list of cues to make room on the desktop.
4. Click View Cue Control on the Cue toolbar.
5. Drag the "20% dimmer" sequence from position 1 to position 4. Select Move Sequence from the popup dialog.

6. Click Save Cue in the Edit Cue window or on the Cue toolbar.
7. Click Save. Click OK in the confirmation dialog.
8. Look at the Intensity control: the shutter now stays open all the time.

#### Additional cue operations

When editing cues, remember that the current sequence has highest priority. Normal cue execution resumes when the current sequence is cleared. Note too that to synchronize the sequences in the current cue, you must clear the cue and reload it onto the desktop.

- To create a new cue and/or clear the current one, click New/Clear Cue.
- To load a cue, click List of Cues and drag it from the List of Cues to the desktop. Click View Cue Control to open the Edit Cue window. Here, sequences can be added, removed, rearranged, loaded, etc.
- To adjust cue timing, open the Cue Edit window and click Cue Times at the bottom. The cue master fader adjusts times (as a percent) for all sequences set to "CUE" time. Setting a sequence fader to another value overrides the master cue fader.

## 2.2 Basic programming terms and elements

### Fixtures

This term is used throughout the LightJockey to describe the 'equipment' that the LightJockey can control. The term may not only be confined to lighting fixtures, but everything that might be controlled from LightJockey via DMX protocol, such as smoke machines or motor control.

### Fixture profiles and protocols

Controlling fixtures via DMX is actually not a very 'intelligent' method of control. There are (for various reasons, some of them good reasons) no industry standards for commands like "go to red" or "move to home position". This means that each type of fixture has it's own set of command values - the fixture DMX protocol. On generics DMX consoles, usually equipped with faders to set values, it is necessary for the programmer to know the correct command values to send and also which channel or address to send these value to. Most modern control systems implement more or less sophisticated fixture 'personalities' to hide the protocols from the end-user. LightJockey implements graphical 'personalities' or profiles for most DMX capable fixtures, this means that the user does not need to know anything about DMX values or addresses to program fixtures. While not essential, a good understanding of how the DMX protocol works is definitely an advantage when trying to get the most out of LightJockey programming.

See also [DMX addresses and links](#)<sup>[27]</sup>, [Generic DMX fixtures](#)<sup>[84]</sup>, [User definable fixture profiles](#)<sup>[247]</sup>, [Controlling older Martin Fixtures via Martin/DMX interface](#)<sup>[74]</sup>

### Scene

A scene is the most basic programming element in LightJockey. In other types of consoles and controllers this is also known as a memory. Unlike most other consoles, LightJockey does not refer to individual memories, scenes only exists as part of sequences (see later).

Each scene in LightJockey contains information for all fixtures and all their effects.

Usually, only a small number of the fixtures/effects will be programmed in a scene as LightJockey offers methods to combine and layer several 'scenes' to create a final output (e.g. in a cue). So most of the time an effect will probably be "unused" or "off" in a given scene (see [off/snap/fade](#)<sup>[93]</sup>).

A good analogy to a scene in LightJockey is a single picture frame on a roll of film. As the picture frame, a scene only contains static information, so a scene cannot contain both red and blue color commands for the same color wheel on the same fixture. Like the film, the 'animation' or changes happen when the film progresses through the individual picture frames to form a movie. This is what happens when one scene is replaced by another scene, as in a sequence or when replacing one cue with another cue.

As mentioned, the scene only contains static commands, note however that not all static commands to fixtures result in a static 'expression'.

For example a command to a fixture to strobe or rotate it's color wheel will result in a 'dynamic' expression - in this case the static command specifies a strobe-frequency or rotation speed but the fixture performs the actual dynamic.

Another notable exception which is dynamic in expression are the [movement macros](#)<sup>[102]</sup> that moves the light around in geometric patterns. Although the information to move the light in a circle has a dynamic expression (the movement in a circle) - the parameters that determine the 'dynamics' are still static within the scene.

## Sequence

A sequence is the cornerstone of programming in LightJockey. A sequence consists of one or more scenes chained together in a sequential order. If the sequence contains more than one scene, the sequence can 'animate' the fixtures by executing scenes with different contents, like the film strip with different picture frames. The default behavior for a sequence when it reaches the last scene, is to loop back to the first scene to get a continuous execution of the sequence.

A very simplified example is a sequence containing 3 scenes:

Scene 1 instructs a fixture equipped with a color wheel to go to red, scene 2 instructs the fixture to go to yellow and in scene 3 the fixture is instructed to go to green. When this sequence is played back in the default loop mode, the sequence will 'animate' the color of the fixture through the 3 colors, and after scene 3 it will loop back and start with scene 1 and the red color again.

## Scene and Fade times

The **sequence** also contains parameters that dictate how the animation is supposed to take place.

First of all there is the **scene time**. In the previous example, a scene time of 1 second for all scenes would have LightJockey advancing through the sequence, with each scene being replaced by the next scene after 1 second of 'on time'. Scene times can be set individually for each scene in the sequence with the sequence control, e.g. scene 1 may have a scene time of 1 second, while scenes 2 and 3 may have a scene time of 0.5 and 2 seconds respectively.

The sequence also contains a **fade time** for each scene. The fade time dictates how long time the physical transition will take from the position (e.g. color wheel position) programmed in the previous scene, to the position programmed in the current scene.

Here the film analogy might be used again. A film shot showing a person walking from one side of the scene to the other side requires 'a lot' of individual pictures in between the two positions to get 'smooth' movement. The way to make making slow, smooth movements like this with LightJockey is to program the two end points (colors in the example) in two scenes, and then let LightJockey calculate all the positions (pictures in the analogy) in between the two end points. This is exactly what using fade time and fading an effects does.

With the previous color example, setting a fade time of 3 second for each scene, would mean that each color change takes 3 seconds. The way this works is that LightJockey calculates all the possible positions between the two colors, and outputs these values at a calculated rate so that the fixture moves the color wheel from one position to the next in one smooth movement taking exactly 3 seconds (note, some fixtures will not allow slow transitions between colors or other types of effects - this is a restriction of the fixture's DMX protocol, not LightJockey).

Note that in order for an effect to fade from one position to the next, the fade state of that effect must be set to fade. See [off/snap/fade](#)<sup>[93]</sup>

A sequence does not have to contain more than one scene - in this case, the sequence is called static sequence. While the scene time no longer is relevant since there will be no progression in the sequence, the fade time still controls the transition time from the previous effect position (whatever that was) to the one programmed into the scene.

See also [Scene and fade times](#)<sup>[22]</sup>, [Sequence control](#)<sup>[124]</sup>

## Cues

A cue is a construction that contains up to 12 sequences to be executed run in parallel. Although LightJockey allows playback of single sequences, the cue offers much more flexibility in terms of dynamic and combination options.

It is important to understand that the cue only contains references to the sequence, not the actual sequences themselves. This means that if a sequence is edited to a new contents, this change will take effect in **ALL** cues that contains a reference to this sequence. It also means that it is not necessary to re-save cues just because the sequence has been changed, the changes will implement automatically.

It is normally not desirable to program every fixture and effect into the same scene, even to obtain the 'complete look'. The reason for this, is that by combining a number of sequences each with elements that together forms the complete look, it is much easier to re-use some of these elements to obtain other looks. It is also the only way of obtaining simultaneous different fade times on different effects in the same fixture, as the sequence only allows one fade time pr scene, e.g when combining a slow color change with a fast speed intensity chase.

An example is a very simple cue consisting of 3 sequences:

- Sequence 1 contains instructions to all fixtures output light with full intensity (static sequence)
- Sequence 2 contains information to all fixtures to fade between red, green and blue colors (non-static sequence)
- Sequence 3 contains information that moves the fixtures beams around in a pattern (non-static sequence)

The combined result has the fixtures moving around in the complex pattern, all changing between the colors and all with full intensity.

By replacing sequence 1 with another static sequence that orders the fixtures to strobe on full intensity, a different expression has been created. Still the same colors changes, still the same movements, but now the fixtures are strobing rather than having full intensity. To obtain the same result in a single sequence, all scenes would have to be edited so that they contain a strobe command and not full intensity for all fixtures.

Another example would be to have the original cue running, but two of the fixtures should point to a specific location in open white at 50% intensity, while all the other fixtures still moves the beam around in the pattern and changing colors.

Without the cue construction, the only way to do this would be to edit the two fixtures in every scene of the sequence, creating a new sequence with this look particular look.

However, by using the cue and its rules of priority (see below), it is possible to write just a single static sequence instructing just these two fixtures to go to the position in open white with the right amount of intensity. This static sequence is then added at a priority position within the cue and takes control over only the programmed fixtures - the rest still runs the original cue since they are not at all affected by the new sequence.

The way the priority works within the cue is not related to fixtures, rater to individual fixtures/effects (DMX control channels to be precise). How to program the sequences and use the cue is very much up to individual tastes, and most likely also fixture types and fixture count.

Some programmers programs complete fixtures, or groups of fixtures into sequences including all desired effects for these fixtures. They then use the cue to combine different groups of fixtures, each group of fixtures contained in it's 'own' sequence. Other programmers swear to modularity and only programs single effects into sequences. E.g. color information in one sequence, gobo information in another, movement information in a third sequence and so on. By combining these sequences in the cue they create complete looks.

Most programmers however, tends to use some from both methods. There are no rules governing how to use the cue - in the end it is up to personal preferences.

See [cue control](#)<sup>[132]</sup> for more details.

### Cue list

The cue list offers a way to playback cues in a pre-determined order. The cue list may be synchronized to internal PC clock for elapsed time between cues or to time code from a CD-ROM drive or Windows Media files. It can also be executed manually using a 'go-button', if for example used in a theatrical type of show where everything is planned and pre-programmed.

See [cue list control](#)<sup>[169]</sup> for more details

### The current sequence

It is important to understand that the LightJockey **always** contains a 'current sequence'. Think of the current sequence as a 'holder' for sequences when editing a sequence. When saving a sequence, it is always the current sequence that is being saved, and when loading an already saved sequence, the sequence is being loaded 'into' the current sequence for editing.

In principle the current sequence always contributes to the final DMX output of the LightJockey - however if the current sequence does not contain any 'instructions' (for example after a *New Sequence* command has been executed) there will be no visible effect of the current sequences contribution to the overall output.

### The current cue

In the same way as the current sequence the LightJockey always have a current cue. The current cue acts as a 'holder' for cues when editing, and when playing back cues, it is always done by loading cues into the current cue. As with the current sequence, the current cue always contributes to the final DMX output, but if the current cue contains no 'instructions' (no sequences or other elements) - there will be no visible effect.

## 2.3 DMX addresses and links

### DMX Addresses

To enable communication between the LightJockey and the fixtures, an address must be assigned to each fixture. This address must also be set on the fixture itself - Martin fixtures has DIP-switches or LED display panels for address settings.

When assigning DMX addresses keep in mind that fixtures usually uses several continuous addresses, for example the Roboscan 918 uses 16 addresses. The first address is usually referred to as the *start-address*. This is important to remember since it is not possible to 'share' addresses between individual fixtures, so if the Roboscan 918 was given the start-address of 1, the next available address would be 17 (1+16).

The DMX protocol defines a maximum of 512 addresses (or channels) so all fixtures must fit within this address space.

There are two ways to assign an address to a fixture in LightJockey.

#### Set the address manually.

Use the address field in the upper right hand corner of the [fixture configuration dialog](#)<sup>[66]</sup>. Use this method to match addresses on fixtures that has already been given an address (on the fixture).

#### Use the "Auto Address" function.

This will prompt LightJockey to calculate addresses based on the fixtures selected and fixtures that has already been assigned an address. Use this approach when fixtures have not yet been addressed (on the fixture). There are a few exceptions where the auto address will not work - see details in the [Fixture Configuration](#)<sup>[66]</sup> help topic.

### Link

Link is a term that describes the physical connection from the controller to the fixtures (and between the fixtures). Since the DMX protocol allows only 512 channels on one link, the only way to add more channels to a system is to increase the number of links (physical connections). Depending on what

DMX transmitter hardware is in use in the installation, one or more links may be available for connecting fixtures. Links are numbered 1-4 and when addressing the fixtures, make sure to specify which link the fixture is connected to.

## 2.4 Cross fixture-type compatible effects

Some fixture effects are cross-fixture type compatible. This means that changes to a cross type compatible effect on the [master](#)<sup>[80]</sup> fixture will also change the effects on the selected slave fixtures, even if they are not of the same type as the master fixture but still support the same type of effect. For example, applying 50% intensity to the master fixture will also set 50% intensity on the slave fixtures.

The following effects are usually cross-fixture type compatible although exceptions may exist: Intensity, strobe, shutter (intensity), pan and tilt positions and movement macros, CMY and RGB, iris, focus, (variable) zoom, lamp on/off commands, fixture reset, levels ([for generic DMX fixture profiles](#)<sup>[84]</sup>)

Other effects such as gobo or fixed colors are not cross fixture-type compatible.

## 2.5 Scene and fade times

Each scene in a sequence has its own scene time and fade time, both can be set in the [Sequence control](#)<sup>[124]</sup>. The scene time defines how long each scene is active before the sequence advances to the next scene within the sequence. If the sequence contains only one scene, the scene time doesn't have any real effect since the sequence never advances to a new scene. The scene time defaults to a value of 1.00 seconds.

Fade time dictates the way a scene changes effects from its previous position (DMX value) to the position(DMX value) stored within the scene.

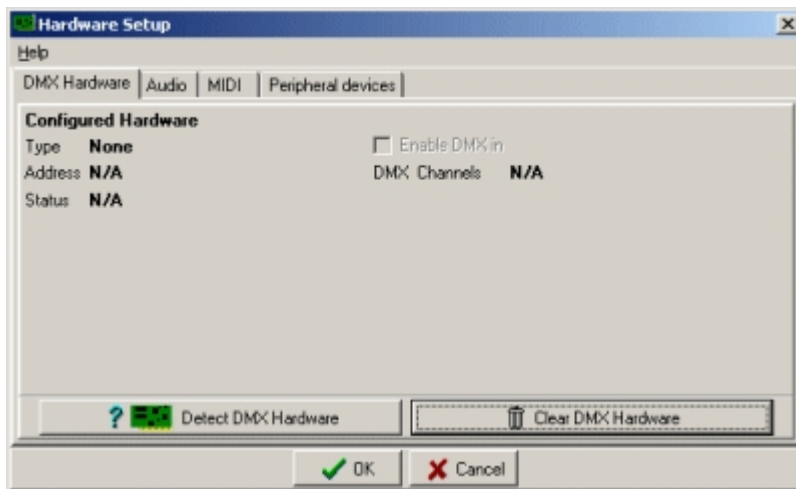
In order for an effect transition to be controlled by the fade time, the effect must be programmed with the fade state set to [fade](#)<sup>[93]</sup>. If the effect is programmed with the fade state to snap, the effect will simply snap to the new position regardless of the fade time set in the scene. The fade time defaults to a value of 0.05 seconds.

It is possible to set a fade time that is higher than the scene time. In this case the transition to the new value in the scene is never finished.

# 3 Hardware configuration and setup

## 3.1 Hardware setup

In order for LightJockey to recognize PC or external hardware such as transmitter interfaces or direct access controllers, they must first be configured using the hardware setup dialog. The dialog is accessed through the main Setup menu (Setup/Hardware Setup).



The hardware setup dialog

The dialog locates different types of hardware and associated settings on different tabs:

[DMX Hardware](#) - configure and setup DMX transmitter and receiver hardware - see

[Detecting DMX hardware](#)<sup>[23]</sup>

[XLR Cable connections](#) - connecting the serial links to the interfaces. Converting 3 pin XLR to 5 pin XLR and phase reversing XLR cables - see [XLR cable connections](#)<sup>[38]</sup>

[Audio](#) - configure and setup Audio related hardware and software - see [Audio setup](#)<sup>[39]</sup>

[MIDI](#) - configure and setup MIDI related hardware and software - see [MIDI](#)<sup>[42]</sup>

[External control devices](#) - configure and setup peripheral hardware that connects via RS-232 or DMX-in - see [External control devices](#)<sup>[43]</sup>

## 3.2 Detecting and configuring DMX hardware

### 3.2.1 Detecting DMX hardware

DMX transmitter hardware is configured using the DMX hardware tab in the [hardware setup dialog](#)<sup>[22]</sup>.

LightJockey supports the following types of DMX transmitter/receiver hardware:

- LightJockey PCI 512 card, 512 DMX channels out and 512 DMX channels in.
- LightJockey PCI 2048 card, 2048 DMX channels out or 1536 DMX channels out + 512 DMX channels in.
- Martin 4064 ISA Card - club version, 2048 DMX channels out or 1536 DMX channels out + 512 DMX channels in.
- Martin 4064 ISA Card - DJ version, 512 DMX channels out and 512 DMX channels in.
- Martin DMXADP Parallel port adapter, 512 DMX channels out (not supported in Windows 2000/XP)
- Martin LightJockey PCMCIA interface, single card, 1024 channels out or 512 DMX channels out + 512 DMX channels in.
- Martin LightJockey PCMCIA interface, two cards, 2048 DMX channels out or 1536 DMX channels out + 512 DMX channels in.
- Martin LightJockey USB interface, 512 DMX channels out - up to 4 interfaces may be connected.
- Martin LightJockey Universal USB/DMX interface, 1024 DMX channels out or 512 DMX channels out + 512 DMX channels in. Up to 3 interfaces may be connected.

Each interface ship with a printed installation guide, this help file only contains short installation notes.

The latest version of the installation guide can be downloaded from the support section of the Martin Website: [www.martin.com](http://www.martin.com) - support section.

[Installing the PCI DMX transmitter card \(PCI 512, PCI 2048\)](#)<sup>[37]</sup>

[Installing the ISA DMX transmitter card \(DJ, CLUB\)](#) <sup>[33]</sup>

[Installing the ADP \(Parallel Port\) DMX interface](#) <sup>[36]</sup>

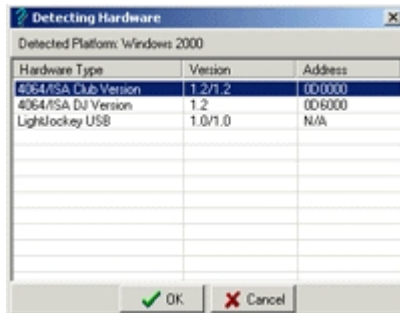
[Installing the PCMCIA DMX interface](#) <sup>[36]</sup>

[Installing the USB DMX interface](#) <sup>[27]</sup>

[Installing the Universal USB/DMX interface](#) <sup>[24]</sup>

### Detecting DMX Hardware

Once the hardware (and a Windows driver if required, see notes for individual interfaces) has been installed, start LightJockey and enter the hardware setup dialog via the main **Setup** menu. Click **Detect DMX Hardware** to detect and list the installed hardware.



*Detected hardware list (most installations will only see one type of hardware installed)*

Select the required interface option from the list and click Ok.

Different hardware interfaces may have different setup options for adjusting DMX refresh rate or enabling DMX in - see [Configuring DMX hardware options](#) <sup>[37]</sup>.

Note that if an already configured hardware type or one of the options are changed LightJockey will may to restart in order to re-initialize the hardware.

See also [XLR cable connections](#) <sup>[38]</sup>, [Configuring DMX hardware options](#) <sup>[37]</sup>.

## 3.2.2 Installing the Universal USB/DMX interface

### The Universal USB/DMX Interfaces

Universal DMX/USB interfaces are supported in Windows 2000 and XP.

The Universal USB/DMX interface can be configured to transmit 2 \* 512 DMX channels (2 universes) or 512 DMX out channels and 512 DMX in channels. From LightJockey version 2.6, a maximum of 3 Universal USB/DMX interfaces can be connected for a total of 2048 DMX out channels and 512 DMX in channels.

Note that description Universal USB/DMX interface refers to the twin DMX port interfaces and these should not be confused with the older single DMX port [USB/DMX Interfaces](#) <sup>[27]</sup>.

### Driver installation and locations - Important notes

Install the driver before you plug in the interface. The driver for the Universal USB/DMX interface is located in the \HardwareDrivers\Universal USBDMX folder.

Run the "Martin Universal USB-DMX driversetup.exe" application and the driver will be installed on to the PC.

You can now plug the interfaces one at a time into an individual USB port and follow Windows Hardware Wizard to install the driver for each individual interface.

### Multi USB interface installation - Important notes

Windows system level support for USB devices means that it is not possible for LightJockey to distinguish between physical USB interfaces of the same type. To be sure that LightJockey routes the intended DMX data to the same physical USB interface each time, make sure that all USB interfaces



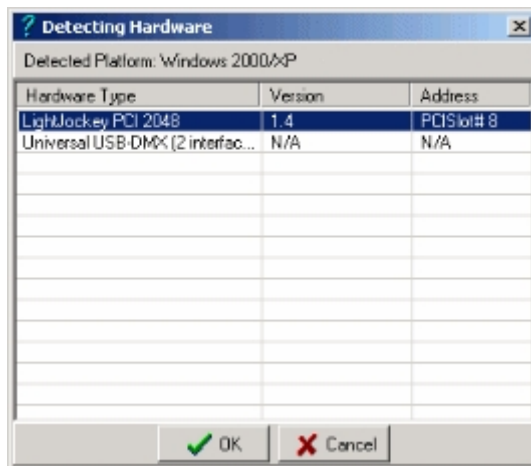
are connected to the same connector as it was when configured. Also, once drivers have been properly installed (see above), interfaces should be connected to the USB ports before Windows starts up. See notes on using multiple USB Interfaces below for more details.

Please be aware that it is not possible to mix Universal USB/DMX interfaces with the older [USB DMX-Out interface types](#) in the same installation.

### Configuring USB interfaces

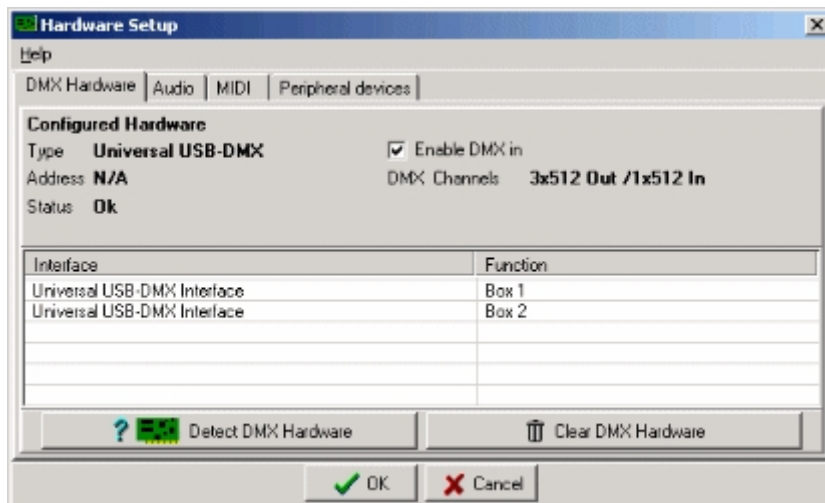
Once installation of Windows USB driver(s) is completed and the interface(s) is plugged in, start up LightJockey and go to the hardware setup Main Menu ->Setup

Click [Detect DMX Hardware](#) to detect installed DMX hardware (note: performing a hardware detection will disconnect already configured and connected USB interfaces - to reconnect the interfaces, LightJockey must be restarted).



*Detecting DMX hardware - multiple Universal USB/DMX interfaces found*

Wait for the hardware detection to finish, then select LightJockey Universal USB/DMX (<x> interfaces) from the list and click Ok.



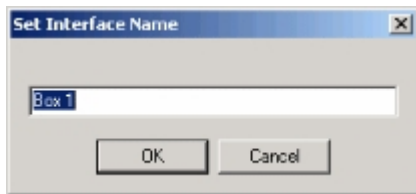
*Configured hardware list*

The hardware setup dialog will now show the configured Universal USB/DMX interface(s) - the DMX output is automatically routed to the DMX out interfaces in the order they are detected.

### Identifying and naming the Universal USB/DMX interfaces

If you click on an interface in the list, the interface will respond by blinking green/orange on the right LED.

If you want to name the interfaces in the interface list, you can double-click the interface line and enter a name for this interface.



*Naming the interface*

### Notes on using multiple Universal USB/DMX interfaces

When LightJockey connects to a USB interface it makes the connection via a logical port determined by Windows USB subsystem. Windows determines the logical port when the USB device is detected and the logical port has no relation to the physical connection or physical interface. The only time that Windows is guaranteed to assign the same logical port to an interface connected to a given physical connector is when detecting attached interfaces during Windows startup, so in order to ensure that LightJockey routes the DMX data to the same physical USB interface the interfaces should be connected to the same physical USB connector each time at Windows startup.

**Hint:** If the USB interfaces are frequently disconnected from the PC, it is a good idea to label individual interfaces with note telling which connector the interface should be connected to.

### Interface checking at startup

When configuring USB hardware LightJockey will automatically register which type of interface is connected to which logical port.

See also [XLR cable connections](#) <sup>38</sup>

#### 3.2.2.1 Updating the driver for the Universal USB/DMX interface

When updating the driver for the Universal USB/DMX interface as prompted by an in-program notification or release notes please follow the following procedure:

1. Shut down LightJockey.
2. Unplug all Universal USB/DMX interfaces.
3. To update the driver after an in-program prompt run the driver installation program (**Martin Universal USB-DMX driversetup.exe**) located in the **<LightJockey Installation Path>\HardwareDrivers\Universal USBDMX\** and follow any onscreen prompts. If updating from a downloaded driver update, please follow the instructions given for the download.
4. Once the driver setup application has finished, attach each individual Universal USB/DMX interface one at a time wait for 10 seconds and allow Windows Found New Hardware Wizard to complete for each interface if required (the wizard may not appear in all circumstances).
5. Restart LightJockey and check that the interfaces are recognized by selecting **Setup/Hardware Setup** from the main menu.

Please note that updating drivers will most likely require a user account with administrator access (depending on Windows version)

### 3.2.3 The USB/DMX interface

#### 3.2.3.1 Installing and using the USB DMX interface

##### The LightJockey USB/DMX Interfaces

DMX/USB interfaces are supported in Windows 98, ME, 2000 and XP. The USB DMX interface transmits 512 DMX channels. From LightJockey version 2.5, a maximum of 4 USB DMX-out interfaces can be connected for a total of 2048 DMX out channels. Note that the interfaces referred to here are the older single DMX port interfaces and should not be confused with the newer [Universal USB/DMX interfaces](#)<sup>[24]</sup>.

##### Driver locations - Important notes

If you are installing/updating the USB driver from a LightJockey release downloaded from the Internet, it may be necessary to run LightJockey once to decompress and update new files - the USB driver folder may not be available until the installation is properly updated. If you are installing USB drivers from a version of LightJockey that has been updated with a newer version, you may see folders with names such as *HardwareDrivers\USB\W9X* or *HardwareDrivers\USB\W2K* - these are older versions of the driver from a previous installation or update, do NOT install a driver from these folders.

##### Multi USB interface installation - Important notes

Windows system level support for USB devices means that it is not possible for LightJockey to distinguish between physical USB interfaces of the same type. To be sure that LightJockey routes the intended DMX data to the same physical USB interface each time, make sure that all USB interfaces are connected to the same connector as it was when configured. Also, interfaces should be connected to the USB ports before Windows starts up. See notes on using multiple USB Interfaces below for more details

##### USB Interface Models

There are 2 different models of the LightJockey USB/DMX interface:

##### The original, 'square' DMX-Out model.

- In LightJockey, this model will be referred to as **USB/DMX Interface**

##### The newer, 'triangular' DMX-Out model.

- In LightJockey, this model will be referred to as **USB/DMX Interface II - DMX-out**

The two types are essentially identical in performance and may be freely mixed in any multi-interface installation. It is however, not possible to mix DMX out interfaces with the [Universal USB/DMX interface](#)<sup>[24]</sup>.

##### Installing USB interface drivers

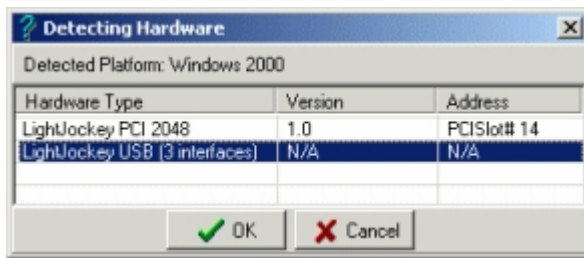
Drivers are required to operate the interface in any Windows version. The USB interface features Windows plug and play functionality so to install the required driver, connect the interface(s) and then start up Windows.

During startup Windows will report that it has found new hardware and that a driver is required. To install the drivers, follow the guidance in the Windows New Hardware Wizard. The driver for the interface is located in <LightJockey>\HardwareDrivers\USB2\. If multiple USB interfaces are connected, the driver must be installed for each interface. For a detailed walk through of the driver installation please refer to the hardware installation guide that came with LightJockey - or download an installation updated guide from the support area of [www.martin.com](http://www.martin.com)

##### Configuring USB interfaces

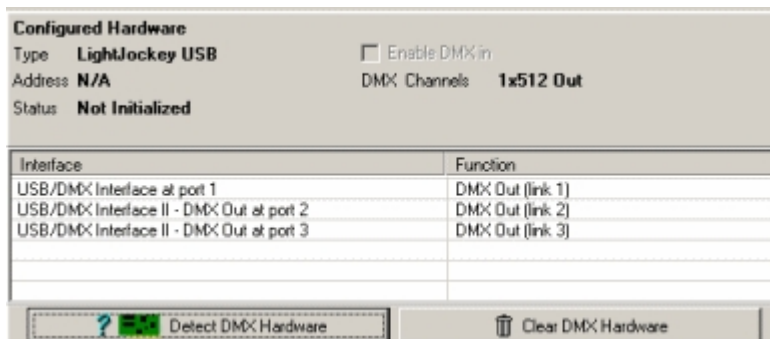
Once installation of Windows USB driver(s) is completed, start up LightJockey and go to the hardware setup Main Menu ->Setup

Click **Detect DMX Hardware**<sup>[23]</sup> to detect installed DMX hardware (note: performing a hardware detection will disconnect already configured and connected USB interfaces - to reconnect the interfaces, LightJockey must be restarted).



*Detecting DMX hardware - multiple USB/DMX interfaces found*

Wait for the hardware detection to finish, then select LightJockey USB (<x> interfaces) from the list and click Ok.



*Configured hardware list*

The hardware setup dialog will now show the configured USB interface(s) - the DMX output is automatically routed to the DMX out interfaces in the order they are detected.

### Notes on using multiple USB interfaces

When LightJockey connects to a USB interface it makes the connection via a logical port determined by Windows USB subsystem. Windows determines the logical port when the USB device is detected and the logical port has no relation to the physical connection or physical interface. The only time that Windows is guaranteed to assign the same logical port to an interface connected to a given physical connector is when detecting attached interfaces during Windows startup.

This has the implication that in order to ensure that LightJockey routes the DMX data to the same physical USB interface the interfaces should be connected to the same physical USB connector each time. Please follow the guidelines below to ensure that DMX data is routed correctly.

1. Install and run LightJockey once to unpack new and updated driver files.
2. Shut down the PC.
3. Connect all USB interfaces.
4. Power up the PC and let Windows start up.
5. If Windows detects new USB devices, install drivers as required by the 'New Hardware Wizard' (new drivers are located in <LightJockeyInstallationFolder>\hardwaredrivers\USB2\
6. Start LightJockey - If an USB configuration warning appears upon starting LightJockey, select 'Continue with current configuration' (the warning will appear if LightJockey detects a different configuration of USB interfaces).
7. Enter the hardware setup dialog (Setup/Hardware) and click **Detect DMX Hardware**. Select USB interface(s) and click Ok

**Hint:** if the USB interfaces are frequently disconnected from the PC, it is a good idea to label individual interfaces with note telling which connector the interface should be connected to.

### Interface checking at startup

When configuring USB hardware LightJockey will automatically register which type of interface is connected to which logical port. LightJockey distinguishes between 2 types of DMX-out interfaces ('old' DMX out interface, and newer type II interface).

If there are changes in the way the USB interfaces are connected (e.g. one or more interfaces not found) when LightJockey starts up - a warning will appear listing the currently found interfaces - [see USB warnings and errors](#)<sup>[29]</sup>.

### Interface checking at runtime

During 'runtime', LightJockey monitors the USB interface states. If one or more interfaces suddenly disconnects, LightJockey will show an error dialog - [see USB warnings and errors](#)<sup>[29]</sup>.

**Note:** DMX out interfaces status is only checked when there are changes in the DMX output data. Disconnecting a DMX out interface will not provoke an error unless there are changes in DMX data on the relevant DMX link.

See also [XLR cable connections](#)<sup>[38]</sup>, [USB warnings and errors](#)<sup>[29]</sup>

### 3.2.3.2 USB/DMX interface warnings and errors

#### USB Configuration warning (startup)



*USB configuration warning*

When configuring USB hardware LightJockey will automatically register which type of interface is connected to which logical port. LightJockey distinguishes between 2 types of DMX-out interfaces (the 'old' DMX interface, and the newer type II interface) .

If there are changes in the way the USB interfaces are connected (e.g. one or more interfaces not found) when LightJockey starts up - a warning will appear listing the currently found interfaces.

This dialog will also appear the first time a LightJockey configured to use the USB interface is started after updating from below version 2.5 to version 2.5 or higher - for more details see

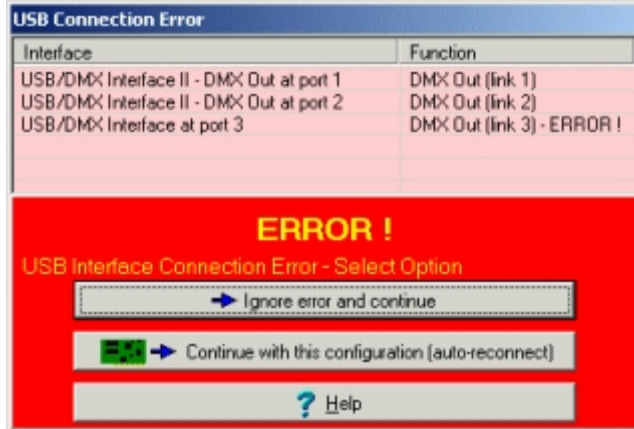
[USB interface update information](#)<sup>[30]</sup>

**Re-detect connected USB interfaces** - attempt to detect interfaces again.

**Continue with current configuration** - continue with the currently detected interfaces. LightJockey will revert to the original USB configuration when starting up the next time.

**Save and continue with current configuration** - continue with the currently detected interfaces, and save as default USB configuration.

## USB Connection Error (runtime)



*USB connection error*

During 'runtime', LightJockey monitors the USB interface states. If one or more interfaces suddenly disconnects, LightJockey will show the error dialog. By leaving the error dialog open and re-inserting the interface it is usually possible to automatically re-connect to the interface again. When attempting to reconnect a disconnected interface - it is very important to reconnect the interface to the same physical USB port as it was disconnected from.

**Note:** DMX out interfaces status is only checked when there are changes in the DMX output data. Disconnecting a DMX out interface will not provoke an error unless there are changes in DMX data on the relevant DMX link.

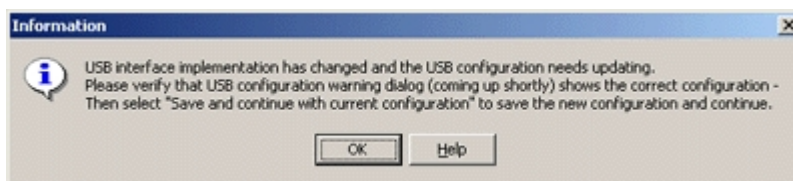
**Ignore error and continue** - ignore the error and continue. No attempt will be made to reconnect the interface.

**Continue with this configuration (auto reconnect)** - close the error dialog and continue with currently connected interfaces. LightJockey will automatically attempt to reconnect the USB interface if it becomes available.

See also [installing and using the USB interface](#) <sup>[27]</sup>

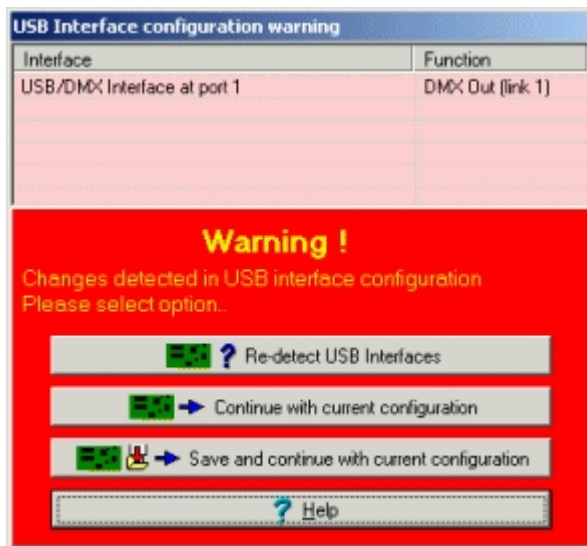
### 3.2.3.3 USB interface update information

After updating LightJockey configured with the DMX/USB interface from below version 2.5 to version 2.5 or higher the following notification will appear.



*Update Information*

Version 2.5 introduces a new implementation of the USB/DMX interface which changes the way that the USB interface is detected and configured. Once the information dialog is closed (click Ok) the next dialog appears.



USB Configuration Warning

If the USB interface is connected, it should appear on the list as shown above. Click **Save and continue with current configuration** to register the USB interface and proceed as normally. Note, clicking **Continue with current configuration** will cause LightJockey not to save the information and to re-launch the information and warning dialogs on next startup.

If the USB interface is not appearing on the list it is probably not connected - click **Continue with current configuration** to re-launch the dialog the next time LightJockey is started - or use the hardware setup dialog to configure LightJockey to use the USB interface ([setup -> hardware setup -> DMX hardware](#) <sup>[22]</sup>).

See also [installing and using the USB/DMX interface](#) <sup>[27]</sup>

### 3.2.4 Installing the PCI DMX transmitter card

The PCI interface card exists in two versions, the PCI 512 and the PCI 2048.

- The PCI 512 supports one full link of DMX out (512 channels) and one full link of DMX in (512 channels).
- The PCI 2048 supports 4 full links of DMX (2048 channels) and may be configured to drive 4 output links or 3 output links and 1 input link.

The PCI card is supported when operating under Windows 95, 98, ME, 2000 and XP.

Complete instructions for installing the PCI Card are shipped with the card and may also be downloaded from [www.martin.com](http://www.martin.com) - support section.

In order for LightJockey to use card the follow the 3 steps outlined below:

1. Install the Windows PCI driver
2. Install the LightJockey PCI/ISA driver
3. Configure LightJockey to use the card as DMX transmitter.

#### Installing the Windows PCI driver

Before the card can be used a Windows PCI driver must be installed - the installation process is identical for both PCI512 and PCI2048. After installing the Windows driver, a second driver (LightJockey PCI/ISA driver) needs to be installed before LightJockey can communicate with the card (see below) Note that on windows 2000 and XP the login account used must have administrator rights - otherwise the drivers will not install.

- Power off the PC, remove the mains connector, and then install the card in a free PCI slot taking all necessary precautions against static electricity discharges. Switch the PC back on.
- After startup, Windows detects the presence of new card and starts the 'Found new hardware wizard'.
- Use the wizard to locate the **4064PCI.inf** file located in the \HardwareDrivers\PCI\_ISA\ folder. Select the 4064PCI.Inf file and finish the Wizard (If during the installation the Wizard requests a diskette with wdpnp.sys, just click Ok to continue)
- Once the Windows driver has been installed (and Windows possibly restarted), open the device manager to verify that the card has been detected correctly. The card will appear in the device list as **Martin PCI4064: DMX PCI Card**.

### Installing the LightJockey Driver

The LightJockey driver used for the PCI card is identical to the driver used for the ISA card a Windows 2000 or XP PC - if the driver is already installed, the following steps can be skipped.

Also as the driver used for the ISA card is a generic Windows driver it may already be installed on the PC to drive other types of (non LightJockey related) hardware. The installer checks to see if the driver is already installed and displays a message accordingly. If the driver is already installed on the PC, it is not necessary to install the driver again.

The installation program for the driver is located in the <LightJockey>\HardwareDrivers\ISA\_PCI folder.

**In order for the install program to be able to install the driver, the user must be logged in to Windows 2000/XP with administrator rights.**

Use Windows explorer to open the folder, then select and double click to run the Installer (Installer.exe) program to install the driver for the PCI card.

If the driver is installed on a Windows 95,98 or ME computer, Windows needs to restart in order for the driver to load - under Windows 2000/XP a restart is not necessary.

Once the driver has been installed (and Windows restarted if needed), click *Locate Card(s)* to verify that all drivers has installed correctly and the card(s) can be found. The list will show all PCI4064 cards (Including versions of the card used by other Martin applications such as Martin Show Designer) as well as any [LightJockey ISA](#)<sup>[33]</sup> cards installed.



*LightJockey driver Installation program - listing detected cards*

On the LightJockey CD the \HardwareDrivers\ folder is placed in the root folder. This folder is also copied to the hard disk when LightJockey is installed or updated - it can be found in the folder where LightJockey was installed to.

### Configuring LightJockey



Once both drivers have been installed and verified, start LightJockey and use the [Detect DMX hardware function](#)<sup>[23]</sup> to configure LightJockey to use the new card as DMX transmitter. See [Configuring DMX hardware options](#)<sup>[37]</sup> for notes on setup options and [XLR Cable Connections](#)<sup>[38]</sup> for information on how to connect the card to the DMX link.

#### Removing and re-installing the LightJockey PCI/ISA driver

**IMPORTANT NOTE: The 4064 PCI/ISA driver is a generic windows driver that may be used to drive other types of hardware installed the PC. Removing the driver may cause other hardware to stop working. Do not remove the driver unless you are absolutely sure that it is not needed for other types of hardware.**

To remove the driver, start the installer program and click *Remove Current Driver*.

Re-installing the driver is done in two steps. First use the installer to remove the driver. Then close the installer and restart it to install the driver again.

On Windows 95/98/Me it will be necessary to restart between removing and re-installing the driver.

Note that in case the driver is used by active applications it will not be removed completely until Windows is restarted. If the driver will not install after being removed (indicated by an error message when trying to install) - restart Windows to remove the driver completely before installing the driver again.

See also [XLR cable connections](#)<sup>[38]</sup>, [Configuring DMX hardware options](#)<sup>[37]</sup>

### 3.2.5 Installing the ISA/DMX card

The 4064 ISA card exists in two versions, Club and DJ, and is supported in Windows 95,98,ME, 2000 and XP installations.

Complete instructions for installing the 4064 ISA Card are shipped with the card and may also be downloaded from [www.martin.com](http://www.martin.com) - support section.

#### Windows 95,98 and ME installation.

No special drivers are required - just install the card and start LightJockey. Then proceed to [DMX hardware detection](#)<sup>[23]</sup>.

#### Windows 2000/XP Installation

In order for LightJockey to recognize the card in Windows 2000/XP, a driver must be installed using the ISA/PCI driver installation program. The program is located in the <LightJockey>\HardwareDrivers\ISA\_PCI folder.

**In order for the install program to be able to install the driver, the user must be logged in to Windows 2000/XP with administrator rights.**

Use Windows explorer to open the folder, then select and double click to run the Installer (Installer.exe) program to install the driver for the ISA card.

As the driver used for the ISA card is a generic Windows 2000/XP driver it may already be installed on the PC to drive other types of (non LightJockey related) hardware. The installer checks to see if the driver is already installed and displays a message accordingly. If the driver is already installed on the PC, it is not necessary to install the driver again.



ISA/PCI driver installation program - listing detected cards

Click **Install Driver** to install the driver. Once the driver has been installed (only takes a few seconds) - click **Locate Card(s)** to locate any LightJockey 4064 ISA or LightJockey PCI cards installed in the PC.

#### Configuring LightJockey

Once the driver has been installed and verified (if necessary), start LightJockey and use the Detect DMX hardware function to configure LightJockey to use the new card as DMX transmitter. See [Configuring DMX hardware options](#)<sup>[37]</sup> for notes on setup options and [XLR Cable Connections](#)<sup>[38]</sup> for instructions on how to connect the card to the serial link.

#### Removing and re-installing the PCI/ISA driver

**IMPORTANT NOTE : The PCI/ISA driver is a generic windows driver that may be used to drive other types of hardware in the PC. Removing the driver may cause other types of hardware to stop working. Do not remove the driver unless you are absolutely sure that it is not needed for other types of hardware.**

To remove the driver, start the installer program and click *Remove Current Driver*.

Re-installing the driver is done in two steps. First use the installer to remove the driver. Then close the installer and restart it to install the driver again.

On Windows 95/98/Me it will be necessary to restart between removing and re-installing the driver.

Note that in case the driver is used by active applications it will not be removed completely until Windows is restarted. If the driver will not install after being removed (indicated by an error message when trying to install) - restart Windows to remove the driver completely before installing the driver again.

#### If LightJockey cannot find the 4064 ISA/DMX card during auto detect

If LightJockey is unable to locate the 4064 card it might be because the address set on the card collides with another piece of hardware installed in the PC, or because Windows already reserves the memory area for other purposes.

Switch off the computer and remove the card. Check with the Windows device manager that other resources do not use the relevant memory block. Change the card's DIP switch settings to another address if necessary (refer to table below or the LightJockey installation instructions).

For Windows 9X installations, be aware that drives such as EMM386.EXE that may be loaded in the config.sys file may use the memory area without showing up in the device manager list. EMM386 is normally not needed for Windows applications so the line may be removed (remember to backup the config.sys file first!).

Block	Address Range	Pins On	Block	Address Range	Pins On		
C SEGMENT	C0	000C0000 000C0FFF	None	D SEGMENT	D0	000D0000 000D0FFF	5
	C1	000C1000 000C1FFF	1		D1	000D1000 000D1FFF	1, 5
	C2	000C2000 000C2FFF	2		D2	000D2000 000D2FFF	2, 5
	C3	000C3000 000C3FFF	1, 2		D3	000D3000 000D3FFF	1, 2, 5
	C4	000C4000 000C4FFF	3		D4	000D4000 000D4FFF	3, 5
	C5	000C5000 000C5FFF	1, 3		D5	000D5000 000D5FFF	1, 3, 5
	C6	000C6000 000C6FFF	2, 3		D6	000D6000 000D6FFF	2, 3, 5
	C7	000C7000 000C7FFF	1, 2, 3		D7	000D7000 000D7FFF	1, 2, 3, 5
	C8	000C8000 000C8FFF	4		D8	000D8000 000D8FFF	4, 5
	C9	000C9000 000C9FFF	1, 4		D9	000D9000 000D9FFF	1, 4, 5
	CA	000CA000 000CAFFF	2, 4		DA	000DA000 000DAFFF	2, 4, 5
	CB	000CB000 000CBFFF	1, 2, 4		DB	000DB000 000DBFFF	1, 2, 4, 5
	CC	000CC000 000CCFFF	3, 4		DC	000DC000 000DCFFF	3, 4, 5
	CD	000CD000 000CDFFF	1, 3, 4		DD	000DD000 000DDFFF	1, 3, 4, 5
	CE	000CE000 000CEFFF	2, 3, 4		DE	000DE000 000DEFFF	2, 3, 4, 5
	CF	000CF000 000CFFFF	1, 2, 3, 4		DF	000DF000 000DFFFF	1, 2, 3, 4, 5

4064 DIP Switch settings

### Hardware failures

A number of reasons may cause LightJockey to report errors on the 4064 card on startup, even if the card was found during the auto detection.

If the card does not pass the initial tests a message will be shown with one or more diagnostics messages:

Diagnostics messages:

**CPU X Located Ok** - CPU and memory map was located at the configured memory location.

**CPU X Not found** - CPU and memory map was not located at the configured memory location.

The most likely reason is that the DIP switch setting on the card has been changed or that newly configured hardware or other drivers are using the same memory location as the 4064 card. Try another auto detect, if the card is still not found, remove the card and check that the memory location is vacant. Alternatively try another memory area for the 4064 card by changing the DIP switch settings.

**Read/Write Test Ok** - Read/Write test passed.

**Read/Write Test Failed** - The read/write test to the card's memory failed. A likely reason is that another piece of hardware or a driver is using the same memory space as the 4064 card. Check that the memory area is vacant, or try to re-locate the 4064 card (see above). Another reason may be that the BIOS setting for shadow memory is enabled for the memory area that the 4064 card is using. Memory shadowing will allow the 4064 card to be detected - but the card will not work properly. Make sure to disable memory shadowing in the area that the 4064 card is using. The actual process of disabling shadow memory may vary from PC to PC.

**Reset Test Ok** - Internal reset test passed.

**Reset Test Failed** - Internal reset test failed - the card is most likely defect.

**CPU X Test Ok** - Internal test passed.

[CPU X Failed Test](#) - Internal test failed - the card is most likely defect.

See also [XLR cable connections](#)<sup>[38]</sup>, See also [Configuring DMX hardware options](#)<sup>[37]</sup>

### 3.2.6 Installing the PCMCIA DMX interface

#### The PCMCIA interface

The PCMCIA interface is supported in all Windows 9X (including Windows ME) and 2000/XP versions. The card supports 2 DMX links (universes) and may be configured as 2 links with DMX out or one link with DMX out and one with DMX in. A complete installation guide is shipped with the card, and may also be downloaded from [www.martin.com](http://www.martin.com) - support section.

Drivers are required to operate the interface in both Windows 9X and Windows 2000/XP. The interface has Windows plug and play functionality so to install the required driver, simply start up Windows and insert the card. After a few seconds Windows will report that it has found new hardware and that a driver is required. To install the drivers, follow the steps in the Windows New Hardware Wizard. Note that the interface requires different drivers in the Windows 9X and Windows 2000/XP installations. The Windows 9X drivers are located in the <LightJockey>\HardwareDrivers\PCMCIAW9X\ folder while the driver for Windows 2000 and XP is located in the <LightJockey>\HardwareDrivers\PCMCIAW2K\ folder. Make sure to select the right driver. Once installation of the driver has been completed start up LightJockey and select the interface from the [detect hardware list](#)<sup>[23]</sup>.

#### Using two PCMCIA interfaces

By using two PCMCIA interfaces the DMX capability may can be increased to a total of 4 links. To use a second PCMCIA card it must be a special 'card #2' revision (marked link III-IV) - it is not possible to combine two #1 cards (link I-II).

#### PCMCIA (one card) setup options

Check **Enable DMX in** to enable [DMX in](#)<sup>[23]</sup> on the second link. When DMX in is enabled it is possible to select DMX refresh rate (44 Hz or 22 Hz). With DMX in disabled it is not possible to change refresh rate.

#### PCMCIA (two cards) setup options

Check **Enable DMX in** to enable [DMX in](#)<sup>[23]</sup> on link 4 (marked link 2 on the break out box). When DMX in is enabled it is possible to select DMX refresh rate (44 Hz or 22 Hz) for the 3'rd link (3'rd link only). With DMX in disabled it is not possible to change refresh rate.

#### IMPORTANT

Although the PCMCIA interfaces are 'hot-plug' interfaces (can be removed and inserted while Windows is running) - do not remove the interfaces while LightJockey is running. If removed and re-inserted while LightJockey is running, interfaces will not be re-initialized correctly. To re-initialize the interfaces, LightJockey must be restarted.

See also [XLR cable connections](#)<sup>[38]</sup>, [Configuring DMX hardware options](#)<sup>[37]</sup>

### 3.2.7 Installing the ADP (Parallel Port) DMX interface

#### The DMXADP Interface

The DMXADP interface connects the PC parallel port (printer port). It also requires external power (using the keyboard connector on the PC and special adapter cables). The interface transmits 512 DMX channels and is not capable of receiving DMX. The DMXADP interface is **not** supported on Windows 2000/XP PCs.

No special drivers are required to use the interface. Connect the interface, start to PC and start LightJockey. If found, the interface will show up on the [detect hardware list](#)<sup>[23]</sup>. Select the interface and restart LightJockey to activate the interface. The DMX refresh rate from the interface cannot be changed.

#### Notes for laptop users.

Laptops often use different power saving schemes to try to save as much battery power as possible. Disabling or reducing power for the parallel port or the external keyboard connector will cause the DMXADP interface to malfunction. To avoid this it is highly recommended to disable all power saving settings on the laptop.

#### If LightJockey cannot find the parallel port adapter during auto detect

To save battery power, most laptops come with an option to save as much power as possible during normal operation. The ADP needs both the external keyboard connector and the parallel port enabled on the PC. By default these are often disabled on laptops.

There is no standard way of telling if the external keyboard and the Parallel port are enabled, since most manufacturers implement their own ways of configuring the PC power-saving options. Checking and changing status may both involve settings in the PC BIOS and in Windows or maybe even a third type of application.

- Make sure that the external keyboard is enabled.
- Make sure that the parallel port is enabled.

#### If LightJockey found the parallel port adapter during auto detect, but there is no signal reaching the fixtures.

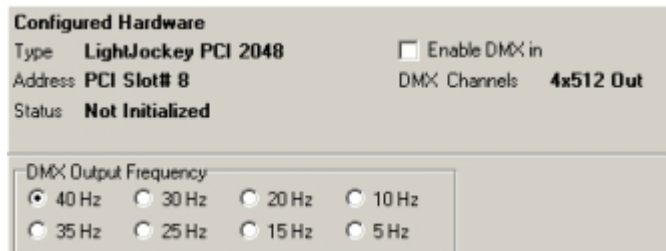
Again the most likely culprit is the power saving settings on the PC. Make sure that both the parallel port and the external keyboard are enabled. As a last resort try disabling all power saving features on the PC, including all possible settings in the BIOS and Windows.

See also [XLR cable connections](#)<sup>[38]</sup>, [Configuring DMX hardware options](#)<sup>[37]</sup>

## 3.2.8 Configuring DMX hardware options

### Interface Setup Options

After selecting the appropriate interface from the detect hardware list, different settings such as DMX-in or variable DMX refresh rate becomes available if supported by the hardware type.



Options for PCI2048 card

### Changing DMX refresh rate

Normally, the highest possible DMX refresh rate should be selected - it is well within DMX specifications. But in order to drive some (mainly older) DMX equipment that is not capable of receiving DMX with a high refresh rate, some interfaces options implement an option to lower the DMX refresh rate. Note that lowering the refresh rate may cause some fixtures to respond with less smooth movements when using high fade times.

### 4064 ISA DJ Setup options

Check **Enable DMX in** to enable [DMX in](#)<sup>[23]</sup> on the second link.

Select between different DMX hardware refresh rates (40,22,12 Hz). Normally 40 Hz should be selected.

### 4064 ISA CLUB Setup options

The Club card may be configured to transmit 4 links (universes) of DMX or use 3 links for transmission and one link for DMX reception.

Check **Enable DMX in** to enable [DMX in](#)<sup>[231]</sup>. On the actual card the top SUB-D connector is for links 1 and 2 while the lower SUB-D connector is for links 3 and 4 (or link 3 and DMX in). When configured for DMX in, use the SUB-D to male+female XLR in the lower SUB-D connector.

With DMX in enabled it is possible to set the DMX refresh rate on the 3'rd (and 3'rd link only) link (40 Hz, 22 Hz and 12 Hz) With DMX in disabled, the refresh rate cannot be changed.

#### PCI 512 Setup options

Check **Enable DMX in** to enable [DMX in](#)<sup>[231]</sup> on the second link.

Select between different DMX hardware refresh rates (40,35,30,25,20,15,10,5 Hz). Normally 40 Hz should be selected.

#### PCI 2048 Setup options

The PCI 2048 card may be configured to transmit 4 links (universes) of DMX or use 3 links for DMX transmission and one link for DMX reception.

Check **Enable DMX in** to enable [DMX in](#)<sup>[231]</sup>. On the actual card the top SUB-D connector is for links 1 and 2 while the lower SUB-D connector is for links 3 and 4 (or link 3 and DMX in). When configured for DMX in, use the SUB-D to male+female XLR in the lower SUB-D connector.

Select between different DMX hardware refresh rates (40,35,30,25,20,15,10,5 Hz). Normally 40 Hz should be selected.

#### PCMCIA Interface (one card)

Check **Enable DMX in** to enable [DMX in](#)<sup>[231]</sup> on link 2.

Select between different DMX hardware refresh rates (40 and 22 Hz). Normally 40 Hz should be selected.

#### PCMCIA Interface (two cards)

Check **Enable DMX in** to enable [DMX in](#)<sup>[231]</sup> on link 4.

With DMX in enabled it is possible to set the DMX refresh rate on the 3'rd (and 3'rd link only) link (40 and 22 Hz) - normally 40 Hz should be selected. With DMX in disabled, the refresh rate cannot be changed.

#### ADP (Parallel Port) Setup options

The ADP interface does not support DMX in and it is not possible to change DMX refresh rate.

#### USB DMX-out Setup options

The USB interface does not support DMX in and it is not possible to change DMX refresh rate.

#### Universal USB/DMX interface

Check **Enable DMX in** to enable DMX in reception on the second (leftmost) port of the first interface (the port that will normally output link 2 data when DMX in is disabled). When a port is configured to DMX-in the indicating LED will turn green.

It is not possible to change the DMX refresh rate used by the Universal USB/DMX interface.

### 3.2.9 XLR cable connections

#### Connecting the DMX link(s)

All LightJockey DMX transmitter hardware is configured as pin 1 to shield, pin 2 to cold and pin 3 to hot. See below for notes on 3 to 5 pin XLR converters and phase-reversing cables (used with older Martin fixtures and possibly fixtures from other manufacturers).

**Always remember to terminate the end of the DMX links with a 120-ohm terminating plug.**

#### 3 Pin to 5 pin XLR converters and phase reversing cables.

5-pin to 3-pin Adaptor		3-pin to 5-pin Adaptor		3-pin to 3-pin Phase-Reversing Adaptor	
Male	Female	Male	Female	Male	Female
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4			4		
5			5		
P/N 309160		Construct		P/N 309158	

#### [The 4064 ISA DJ card](#)

The DJ card ships with a SUB-D to XLR cable. Connect to the female XLR for DMX out, and the male XLR for DMX in.

#### [The 4064 ISA Club card](#)

The Club card ships with 3 SUB-D to XLR cables. The D-SUB to 2 x female XLR should be used in the top SUB-D connector for 2 x DMX out(link 1 and 2). Use the second 2 x female XLR in the lower SUB-D socket if the card is configured with 4 x DMX out(link 3 and 4). Use male+female XLR cable if the card is configured to receive DMX in(link 3 and DMX in).

#### [The PCI 512 card](#)

The PCI 512 card ships with a SUB-D to XLR cable. Connect to the female XLR for DMX out, and the male XLR for DMX in.

#### [The PCI 2048 card](#)

The PCI 2048 card ships with 3 SUB-D to XLR cables. The D-SUB to 2 x female XLR should be used in the top SUB-D connector for 2 x DMX out (link 1 and 2). Use the second 2 x female XLR in the lower SUB-D socket if the card is configured with 4 x DMX out (link 3 and 4). Use the male+female XLR cable if the card is configured to receive DMX in (link 3 and DMX in).

#### [To the DMXADP Interface](#)

Connect a 3 pin XLR to the female XLR output of the interface.

#### [To the PCMCIA interface](#)

When using 1 PCMCIA interface, DMX outputs and DMX input are located as displayed on the breakout box. When using DMX in, connect the incoming DMX to link 2. When using two PCMCIA interfaces, outputs for link 3 & 4 are located on the breakout box connected to the second PCMCIA card.

#### [To the USB Interface](#)

Connect the link to the 3 pin XLR on the USB interface.

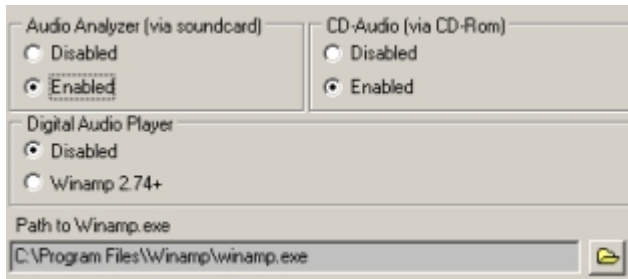
#### [To the Universal USB/DMX Interface](#)

Connect the link to one of the two 5 pin XLR ports on the USB interface.

## 3.3 Audio

### 3.3.1 Audio setup

Use the Audio tab to configure and select audio options for LightJockey.



### Audio options


#### The Audio Analyzer

The Audio analyzer program enables LightJockey to use audio input via a sound card to trig sequences in the cue. See [using audio in](#)<sup>[192]</sup> and [triggering sequences in the cue](#)<sup>[144]</sup> for more information.

#### CD-Audio

Enabling CD-Audio allows LightJockey to control a CD-ROM drive for audio CD play back. It also allows LightJockey to take time code from the audio CD to synchronize the cue list to audio CD time code. See [Audio CD Control](#)<sup>[40]</sup> and [Using time code in cue lists](#)<sup>[179]</sup> for more information. Note that in newer Windows versions application control of CD-ROM drives has become... errhhh.. troublesome. If possible, copy the CD tracks to hard disk (use any 'CD ripping' application - for example Windows Media Player to copy the track to hard disk) and use the [LightJockey MediaPlayer](#)<sup>[183]</sup> to playback the digital audio file rather than using the CD directly.

#### Digital Audio Playback


While not strictly a piece of hardware, LightJockey is able to connect to Winamp for playback of digital audio (MP3, Wav, etc..). The time code from the digital audio may be used to synchronize sound and light in the cue list. Note that LightJockey connects with Winamp 2 (version 2.74) only. See [using Winamp for digital audio](#)<sup>[186]</sup> and [using time code in cue lists](#)<sup>[179]</sup> for more information. In order for LightJockey to automatically start Winamp when required (through in the cue list), the complete path to the Winamp executable must be entered in the 'Path to Winamp' field. Click  and navigate to the Winamp.exe file.

#### LightJockey MediaPlayer

The LightJockey MediaPlayer is a separate module distributed with LightJockey that encapsulates core functions of Windows Media Player. LJ MediaPlayer may be used to playback different media file formats, including digital audio and video files. The MediaPlayer requires Windows Media Player version 6.0+ installed on the PC. The LJ MediaPlayer is exclusively used in [cue list](#)<sup>[169]</sup> context and requires no initial configuration. For more details see [LightJockey MediaPlayer](#)<sup>[183]</sup>

### 3.3.2 Audio CD control

In order to get access to the audio functions from the CD-ROM drive, the drive must be configured in the [hardware setup](#)<sup>[22]</sup> dialog.

After configuration and a restart of LightJockey, the CD audio control is available via  on the [cue list tool bar](#)<sup>[56]</sup>





Audio CD control

The CD control functions like any domestic CD player, play, forward, next track etc. The drag bars may also be used to set the playing position. When the CD time-code is used to drive a [cue list](#)<sup>[169]</sup> elapsed disc time is always used.

### Analogue vs. digital playback in Windows 2000 and XP

Windows 2000 and XP offer the option to playback CD audio mode - which may be a great option if there is no analogue connection from the CD/DVD drive to the sound card. The response time from the digital mode driver seems to be much faster than the analogue driver.

However, experience shows that in digital mode the 'true' time code update rate may actually be much slower than in analogue mode - the digital audio driver simply just returns the same time code for sequential time code requests.

The best way to check for the 'real' time code update rate is to open an empty cue list. Then open the time code log panel in CD time code mode, and hold down the [Ctrl] key for about 2-3 seconds to continuously log time codes from the CD drive (\*). Then add the time codes to the cue list and check the time between individual time codes.

(\*) It may be necessary to set keyboard repetition rate to max to log as many time codes as possible.

### Preferences menu

[View Track Info](#) - Expand the control to show individual track time information.

[CD Device Settings, Status Timer Interval](#) - Set a rate between 50ms to 1000 ms or select minimum (fastest) - default value is 100 ms.

Minimum depends on system, but is usually around 5 to 7 ms. The lower the value the more often the time code is read from the CD-ROM, allowing for a more precise time code triggering of the cue list. However some Windows versions/CD-ROM drive combinations take a very long time (25-100+ ms) to return time code for the CD-ROM. Setting a low value on a 'slow' system may slow down the PC a lot, even to the point of choking the PC. The caption of the CD control continuously displays the time taken for the last status polling - setting a time polling time at about or lower than the average polling time will cause the system to slow down a lot.

Tests have shown that the way Windows 2000 and XP drives the CD-ROM drive seems much more effective than Windows 9X (although this may not apply to all systems) - if CD audio is a crucial element of a Windows 9X system and response time from the drive is high (50ms+), it may be a good idea to upgrade the PC to Windows 2000 or XP.

### Commands

Even though Microsoft has published a command interface for use of CD-ROM, not all Windows versions/drive combinations seem to work according to the command set - if the drive doesn't work as expected try set or clear the following options (by default all options are on).

[Use Stop as Pause Command](#) - The control issues a stop rather than a pause command (some drives does not seem to recognize the pause command).

[Pause before cuing position](#) - Some drives ignores a position command if they are already playing. Check this option to issue a pause command before re-positioning.

[Invalidate Timecode when stopped](#) - some drives return invalid or wrong time code when stopped (which may cause the cue list to behave strangely). Check this option to automatically invalidate time

(set to 0) code when the drive is stopped or paused.

See also [audio CD-ROM trouble-shooting](#)<sup>[42]</sup>

### 3.3.3 Audio CD-ROM trouble shooting

#### No Disc or Drive Not Ready

No disc is inserted into the CD-ROM Drive or system is still initializing

#### Cannot open drive tray

Some CD-ROM drives will return a tray-open status even when the tray is closed if there is no CD present in the drive. On "Eject" LightJockey will try to "Close the tray that is already closed. Shift click on the eject button to force the tray open if necessary.

#### Message: CDRom drive already in use. The drive cannot be shared between applications

Another application is already using the CD-ROM drive. Most likely it is used by the Windows CD - Player (check in the Windows taskbar). Often this will happen when "CD insert notification" is enabled on the CD-ROM drive, auto-starting the Windows CD Player application whenever a new Audio CD is inserted.

There are two ways of fixing this problem. The first fix is to disable the auto insert notification. This may be done by right-clicking on the "my computer" icon on the desktop. Select "properties" and "device manager". Select "properties" for the particular CD-ROM Drive, and disable "auto insert notification" on the "settings" tab. Please note that this will disable the auto-start feature for any CD-ROM.

The second is to remove the file-type association of the audio CD. The exact method may depend somewhat on what version of windows is installed, and what type of desktop manager is used. In general, open any folder and select the "File type" tab. Find the "AudioCD" entries in the "registered file types" and remove the entry.

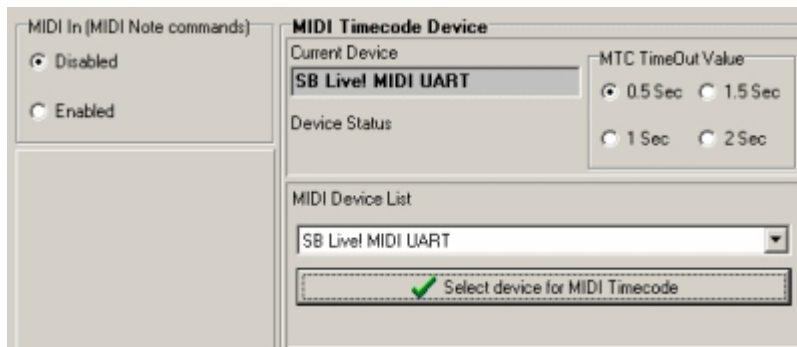
#### Message CD-ROM drive not found

LightJockey cannot detect the presence of a CD-ROM drive - please check Windows installation.

See also [audio CD control](#)<sup>[40]</sup>

## 3.4 MIDI

Select MIDI options from the MIDI tab.



MIDI tab

#### MIDI Note Commands

A number of functions including latching cues or flashing sequences may be remotely controlled via a MIDI interface. To enable MIDI remote control of LightJockey via MIDI, enable the MIDI In function on the MIDI In tab. For more details on the MIDI note implementation see [MIDI In](#)<sup>[239]</sup>.

### MIDI Timecode

MIDI time code (MTC) may be used as a time source for [cue lists](#)<sup>[169]</sup>. To enable a MIDI time code interface, select it from the MIDI device list via the lower right-hand corner (Select from list then click **Select Device**). Note that in order for LightJockey to recognize the MIDI device it must be installed with working Windows drivers.

The **MTC Timeout Value** determines the time it takes before an MTC driven cuelist times out after MTC transmission has stopped. Normally, the default value of 0.5 sec is fine, but special circumstances may make it necessary to increase the timeout value.

## 3.5 External control devices

### 2532 Direct Access keyboard

Before the [2532 Direct Access](#)<sup>[225]</sup> keyboard may be used with LightJockey it needs to be configured. Enable the 2532 Direct Access and then select the appropriate serial port (COM1-COM4). It is not necessary (or recommended) to enable the 2532 and select a serial port in order to use the 2532 control in virtual mode (using the control without a 2532 physically connected).

**NOTE:** The 2532 must have at least version 3.0 software in order to work with LightJockey.

### Martin 2518 (via RS-232)

Connects the [Martin 2518 controller via RS-232](#)<sup>[242]</sup>. Since the connection is via RS-232 it is possible to connect the 2518 without additional hardware (except an available RS-232 port and suitable cable).

### MC-X Controller

As the MC-X controller uses DMX to communicate with LightJockey, it is only useable with an appropriate hardware interface that supports DMX in.

Note that if the MC-X interface is enabled, normal [DMX in](#)<sup>[231]</sup> functionality is suspended.

See [MC-X Remote Controller](#)<sup>[244]</sup> for details on setup and use.

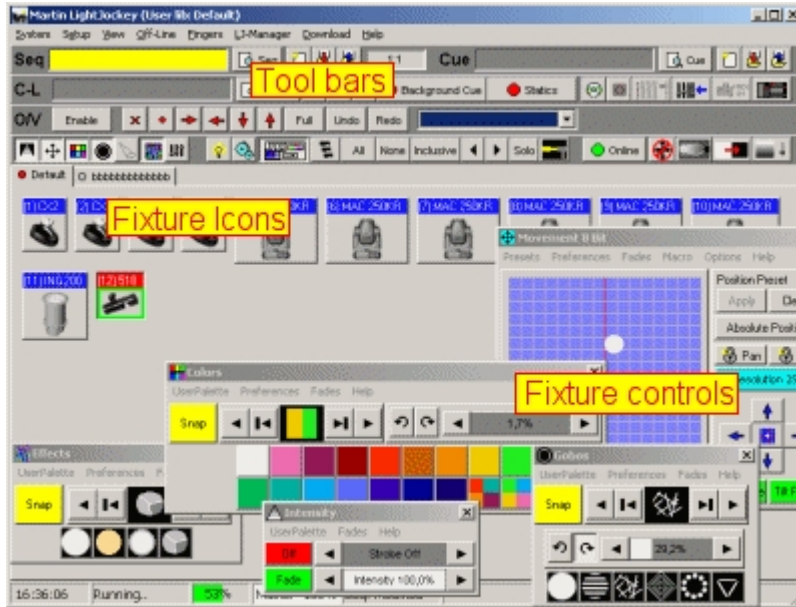
### Fingers for LightJockey

[Fingers](#)<sup>[210]</sup> connection is enabled and configured from the main menu (Fingers)

See also [RS-232 remote interface](#)<sup>[245]</sup> for controlling LightJockey through a RS-232 connection.

## 4 The LightJockey desktop

### 4.1 Main desktop window



*The LightJockey desktop*

The LightJockey Desktop is divided into 3 separate areas. At the top (below the main desktop menu) is a tool bar area, in the middle is the fixture area where configured fixtures are illustrated by icons, and at the bottom is the status bar.

The desktop window itself is an ordinary Windows-style window that may be minimized, maximized or resized at will. On multiple monitor systems the Desktop window can reside on any monitor. Besides the desktop window LightJockey has a number of different dialogs, lists and other types of controls. All these are launched in separate, independent windows (as the fixture controls in the screenshot above) - these windows may be moved freely on the whole Windows desktop, even outside the regular LightJockey desktop, and LightJockey remembers the position where the window was placed the last time and uses this position when the window is opened again (it is possible to set a [restriction](#)<sup>[50]</sup> on where the windows are located when re-opened).

On multi-monitor systems, use the extra desktop space to keep the LightJockey desktop on one monitor, or even a part of one monitor, while using some or the rest of the Windows desktop area for the individual control windows.

#### Desktop tabs

Fixtures are represented on the desktop by icons that may be placed anywhere on multiple pages or "tabs". This allows fixtures to be organized according to personal preferences. To create or edit tabs, select **tabs** from the popup menu. Create a new tab by clicking add. Edit or delete the tab by selecting the tab from the list, and then click the appropriate button.

#### Placing fixture icons on the desktop

When a new fixture has been [configured](#)<sup>[66]</sup> its icon is not yet assigned to any tab on the desktop. A fixture is not programmable until it has been placed on the desktop - to place the fixture, drag it from the [unassigned fixtures list](#)<sup>[54]</sup> that opens automatically when new fixtures are configured, and drop it on a suitable place on the desktop. Alternatively click **place all** in the menu to place all unassigned fixtures on the current tab.

### Moving fixture icons

Select **Icons** -> **Move all** from the desktop popup menu. This will switch all icons into move mode. It is now possible to move the icons around on the current tab by dragging the icon to the new position. Icons in move mode cannot be selected for programming, so once the icons are placed deselect **move all** again on the desktop menu.

### To place a fixture icon on a specific tab

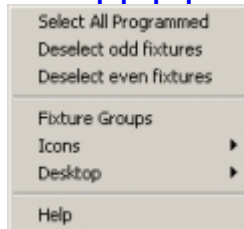
If the fixture is still in the [unassigned fixtures list](#)<sup>[54]</sup>, activate the tab, and drag the fixture onto the desktop. To move a fixture from one tab to the other, right-click the fixture icon to unassign the icon. The unassigned window will automatically open up. Activate the relevant tab and drag the fixture to the desktop.

See also [configuring the desktop](#)<sup>[45]</sup>, [desktop main menu](#)<sup>[47]</sup>, [selecting fixtures](#)<sup>[80]</sup>, [tool and status bars](#)<sup>[55]</sup>, [fixture icon popup](#)<sup>[59]</sup>

## 4.2 Configuring the desktop

Right-click on an empty spot the desktop to access the desktop popup menu.

### Desktop popup menu



*Desktop popup menu*

**Select All Programmed** - selects all fixtures programmed in the current sequence/scene. Requires **Show programmed fixtures** option enabled (see below).

**Deselect Odd Fixtures** - deselects all fixtures with odd fixture number

**Deselect Even Fixtures** - deselects all fixtures with even fixture number

**Fixture Groups** - opens the [fixture groups](#)<sup>[83]</sup> dialog.

See also [selecting fixtures](#)<sup>[80]</sup>

### Icons Menu



*Icons menu*

**Style** - this option selects between two different styles of fixture icons:

**Fixed Size** : All Icons have the same base size.

**Image Size** : Icons are sized according to the size of the image assigned to the fixture icon and icon caption (fixture user name).

**Move all** - toggles all fixture icons between move mode (gray caption) and normal mode. For arranging the icons on the desktop, see below. When in move mode the icons cannot be used for fixture selection.

**Auto-arrange Icons**- this will auto arrange all the fixture icons on the current tab, according to fixture type or fixture number.

**Show Programmed Fixtures** - with this option enabled each fixture icon will show a colored rectangle when the fixture is programmed (scene/sequence contains data) in the current sequence. Green if the

fixture is programmed in the current scene, and cyan if the fixture has been programmed in any other scene in the current sequence. The function is off by default. Note that checking the sequence for programmed status runs in a separate low priority process, so especially for larger sequences or very busy systems, the status may take a few seconds to update.



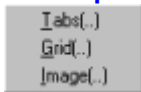
*Fixture programmed in current scene*



*Fixture programmed in current sequence*

**Unassign Icons** - unassign all icons on the current tab, or just the [selected](#) icons.

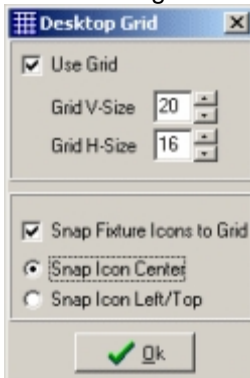
### Desktop



*Desktop menu*

**Tabs** - use this dialog to create, rename or delete [desktop tabs](#).

**Grid** - use a grid to assist in positioning fixture icons on the desktop.



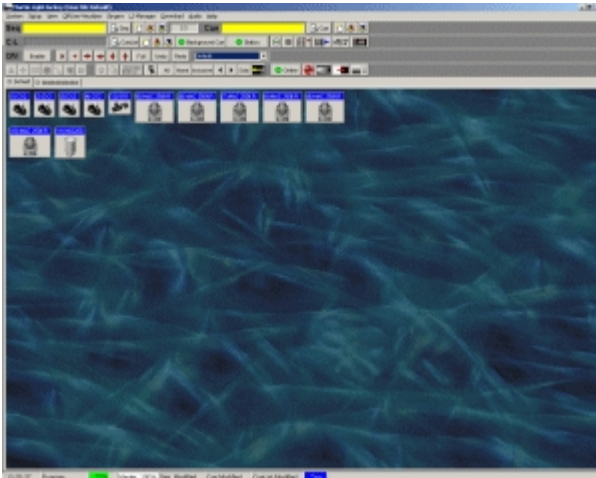
*Desktop grid dialog*

**Image** - It is possible to use bitmaps (pictures) as wallpaper on the desktop. Click **Image**, locate the required bitmap then click Ok. Note that only standard Windows bitmap files (.bmp files) may be used. Also note that large images may require a lot of CPU time when re-drawing and may slow down the GUI of LightJockey considerably. Use the image dialog to clear an earlier assigned image and to set the following image options:

**Stretch Image** - sizes the image so that it fills up the desktop.

**Center Image** - centers the image on the desktop. Does not resize image.

**Note: It is not possible to show wallpaper image and the grid at the same time.**



Custom wallpaper image

See also [fixture icon popup](#)<sup>[59]</sup>

### 4.3 Desktop main menu

[System menu](#) - see [system menu](#)<sup>[47]</sup>

[Setup menu](#) - see [setup menu](#)<sup>[50]</sup>

[View menu](#) - see [view menu](#)<sup>[54]</sup>

[Offline-Visualizer menu](#) - see [Offline Visualizer](#)<sup>[283]</sup>

[Capture](#) - settings for [Capture](#)<sup>[285]</sup> link - only visible when a Capture link is configured.

[Fingers](#) - configuration and settings for [Fingers](#)<sup>[210]</sup>

[Generics](#) - provides access to the [generic DMX control](#)<sup>[86]</sup> - only visible if at least one Generic fixture has been configured

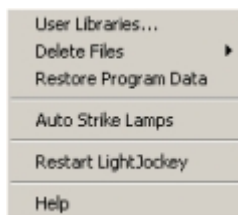
[LJ-Manager](#) - access configuration for the [LJ Manager](#)<sup>[287]</sup> plug in.

[Download](#) - create program data for [2510](#)<sup>[289]</sup> and [2518](#)<sup>[297]</sup> controllers

[Audio](#) - use to launch Audio Analyzer or Digital Audio playback program. Only visible if either function have been configured in the [hardware setup](#)<sup>[22]</sup> dialog.

#### 4.3.1 Main system menu

The System menu is located on the desktop main menu.



Main system menu

[User Libraries](#) - used to create and select userlibraries. See [user libraries](#)<sup>[62]</sup>

[Delete Files](#)- used to delete multiple data files. See [deleting multiple data files](#)<sup>[48]</sup>

[Restore Program Data](#) - see [using the data restore option](#)<sup>[48]</sup>. Note that this option is only available if a restore data set has previously been created.

[Auto Strike Lamps](#) - start auto-strike lamp cycle - see [startup options](#)<sup>[52]</sup>

[Restart LightJockey](#) - closes down LightJockey and restarts a new session.

#### 4.3.1.1 Deleting multiple data files

From the main desktop menu select **System -> delete files**. The following file types may be deleted (select from menu):

- Sequence Files
- Cue Files
- cue list Files
- Background cue files
- Generic DMX Macros

#### Selecting and deleting files



*Delete sequence files dialog*

Select one or more files to delete by highlighting the files in the list. Use **Select All** or **Clear All** to select all files or clear all selections.

Once the files are marked, delete the files by clicking **Delete**.

#### Checking Sequences

The Delete Sequences dialog contains an option to check if the sequence files are used in any cues. To check through sequences, click **Check Used Sequences**. Used sequences are marked with a 'Yes' in the rightmost column and unused sequences are marked with a 'No'. When the sequences have been checked (may take a little time), click **Mark Unused Sequences** to highlight unused sequences only.

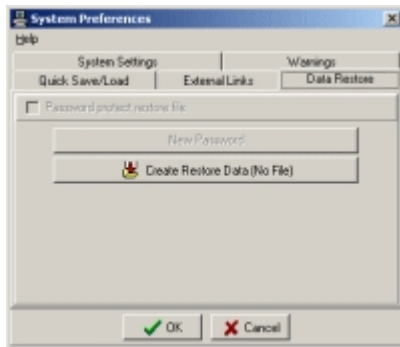
#### 4.3.1.2 Using the data restore option

LightJockey has the capability of backing up the contents of a single users library and on demand restore the backed up users library to the exact same contents as when the backup was created. The backup data may be password protected so that the backup data can only be created by authorized personnel. The backup data is stored locally on the PC hard disk.

This backup function is not intended as a general method to backup and restore data from LightJockey, but rather targeted towards installation types such as fixed installations in clubs where inexperienced users have access to various settings and programming. The option offers a quick method for the inexperienced user to restore LightJockey to the exact point at where the backup was created without having to locate individual backup files.

#### Creating the backup data



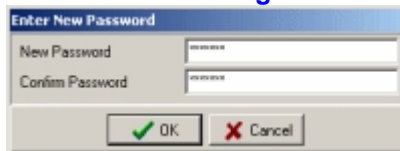


Create restore data dialog

To create the backup data set, open the system preferences dialog, **setup -> preferences -> system** and select the **Data Restore** tab. Then click **Create Restore Data**. A complete snapshot of the current settings and user library contents is now created and stored for later retrieval.

Once a restore data set has been created, access to the dialog may be password protected, see below.

### Password Protecting the Backup Data



Password dialog

When a backup data set has been created, the create data dialog may be password protected so that only authorized personnel has access to modify the backup data. To set or change a password click **New Password**. Make sure to enter the exact same password twice, and then click **Ok**. Back in the Create Restore Data dialog check the **Password Protect Restore File** option. The access to the Create Restore Data dialog is now password protected. A new restore data set cannot be created without entering the password.

### Restoring the backup data

In order restore a previously created data set, select **System -> Restore Program Data**. Note that the option is only available in the menu if a data set has been created. Accept the LightJockey restart prompt. Upon restarting LightJockey restores the user library data from the restore data set.

### WARNING

**Any data existing in the user library to be restored is deleted before the restore is performed.**

### File Error during data restore

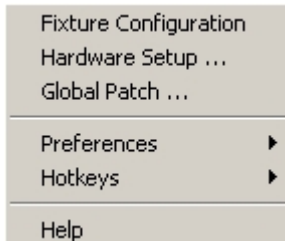


After restart LightJockey will attempt to restore the data found in the restore data file. If the data restore file is found to be corrupt this error dialog will appear, offering an option to abort the restore operation. Note that aborting the operation will delete the restore data file.

See also [backup & restore](#)<sup>[64]</sup>

### 4.3.2 Main setup menu

The main setup menu has a number of sub-menus that facilitates settings of various options and settings. The menu is located in the [LightJockey desktop main menu](#)<sup>[47]</sup>.



*Main setup menu*

[Fixture Configuration](#) - dialog for setting up the fixtures to be controlled by LightJockey. See [fixture configuration](#)<sup>[66]</sup>

[Hardware Setup](#) - dialog for selecting and configuring hardware options. See [hardware setup](#)<sup>[22]</sup>

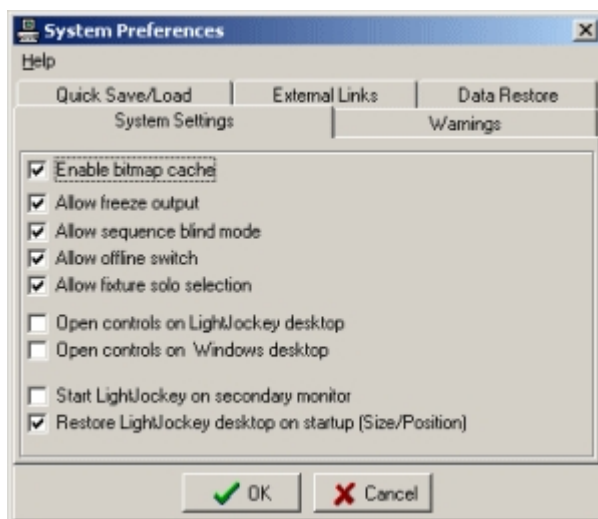
[Global Patch](#) - dialog for modifying the default source of DMX output data. See [global patch](#)<sup>[20]</sup>

[Preferences](#) - dialog for setting system preferences. See [preferences -> system](#)<sup>[50]</sup>, [preferences -> start up](#)<sup>[52]</sup> and [preferences -> default DMX output](#)<sup>[53]</sup>

[Hotkeys](#) - dialog for modifying hotkey setup and global enable/disable of hotkeys. See [hotkeys](#)<sup>[203]</sup>

#### 4.3.2.1 System preferences

The system preferences dialog allow settings of various [user library](#)<sup>[62]</sup> or system wide options. The access is through the main menu, select **Setup -> Preferences -> System**.



*System Preferences dialog*

#### System Settings tab

[Enable bitmap cache](#) - enabling this function will give an increased performance when drawing controls, but it also uses Windows system resources which may be limited on some systems; especially Windows 9X or ME. If only one instance of the LightJockey application is running, this will not be a problem, but if Windows throws up a warning that system resources are getting low, make sure to deselect this option.

**Allow freeze output** - enables or disables the users access to the [freeze output](#)<sup>[198]</sup> function.

**Allow sequence blind mode** - enables or disables the [sequence blind mode](#)<sup>[129]</sup>

**Allow offline switch** - enables or disables the [On/Offline switch](#)<sup>[198]</sup>

**Allow fixture solo selection** - enables or disables the [fixture solo](#)<sup>[200]</sup> selection function

**Open controls on Windows desktop** - normally most controls retain their last position when re-opened. When this option is enabled, all controls are forced to open within the boundaries of the Windows desktop. Checking this option ensures that if controls have been placed outside the visible area of the Windows desktop (e.g. when lowering the video resolution) they will become visible when re-opening.

**Note for multi-monitor systems:** Windows desktop is defined as the upper left corner of the primary display to the lower right corner of the last display. However, if monitors are driven in different screen resolutions, the desktop height (or width if displays are vertically configured) is defined as the height (or width) of the primary display. This may cause problems if secondary displays are driven at a resolution different from the primary displays - in this case it is probably the best to disable the option.

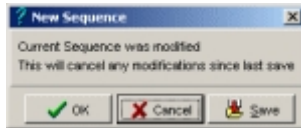
**Open controls on LightJockey desktop** - when this option is enabled, all controls open within the boundaries of the [LightJockey desktop](#)<sup>[44]</sup>. Use this option if controls have been placed outside the visible area of the Windows desktop (e.g. when lowering the video resolution).

**Start LightJockey on Secondary Monitor** - check this option to force LightJockey to start up on the secondary monitor in a multi monitor system. Setting is ignored if only one monitor is detected.

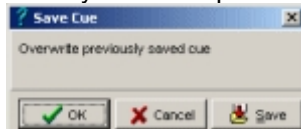
**Restore LightJockey desktop on startup (Size/Position)** - when checked, the [LightJockey desktop](#)<sup>[44]</sup> will default to the same size and position and size it had when LightJockey was previously closed down. If not enabled LJ will maximize on the designated monitor.

## Warnings tab

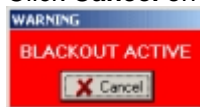
**Sequence/Cue Modified** - enable to prompt a confirmation box every time before a modified sequence or cue is overwritten by a clear or load command. Note that the cue modified warning will not be shown if the cue was loaded as a [transparent cue](#)<sup>[149]</sup>.



**Overwrite Sequence/Cue** - enable to prompt a confirmation box each time before a saving on top of an already saved sequence or cue.



**Show Blackout Warning** - enable this to show a warning when blackout or fade-in or fade-out is active. Click **Cancel** on the warning dialog to restore from blackout or fade modes.



**Show Freeze Warning** - when enabled, a warning is shown when [DMX output is frozen](#)<sup>[198]</sup>.





**Show Offline Warning** - when enabled, a warning is shown when [DMX output is offline](#)<sup>[198]</sup>.



**Confirm Close Program** - enable this to show a confirmation dialog when LightJockey is closed.

**Quick Save/Load tab** - enable sequence/cue/cue list quick save/load.

When quick save/load is enabled, right-clicking  will re-save the current sequence, cue or cuelist without using the save dialog (it requires that the sequence, cue or cuelist has previously been saved - if not, the case the save dialog will appear as usual).

Likewise right-clicking on any  will re-load the current sequence, cue or cuelist (only if a previously saved sequence or cue or cuelist is currently loaded)

### External Links tab

**External links** - external links allows LightJockey to talk to other Martin Windows applications. Normally, if not instructed otherwise, leave these options off.

The external links will only be enabled if transmitter hardware is detected.

**Enable Offline Visualizer** - enables communication to [Offline Visualizer](#)<sup>[283]</sup> - there is normally no reason to disable this setting other than for trouble shooting purposes. If the option is grayed out it means that LightJockey cannot locate the Offline Visualizer installation.

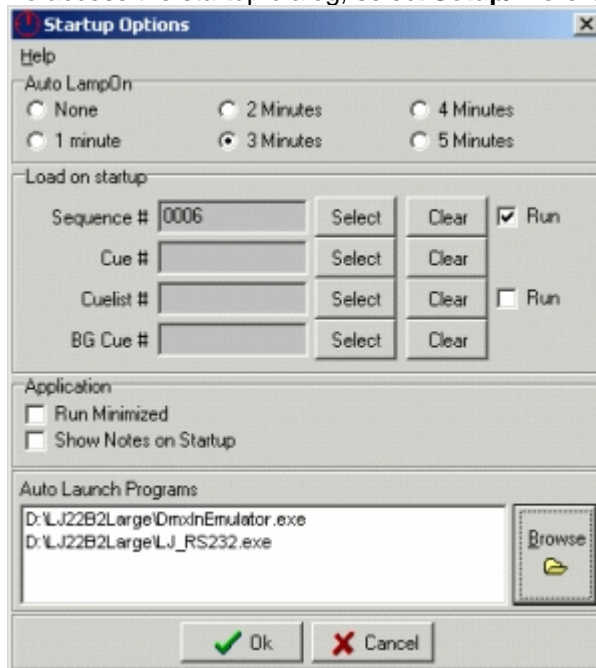
**Enable link to Sandnet** - enables routing of DMX data through Sandnet (tm). Note that this option requires that LightJockey DMX hardware is installed and configured as well as appropriate Sandnet hardware and/or software. More information about Sandnet can (at the time of writing this) be found at <http://www.sandsys.com>

**Enable link to Capture** - enables communication with the Capture Visualization application running on the same or another networked PC - see [interfacing with Capture](#)<sup>[285]</sup> for more information

**Data Restore tab** - see [using the data restore option](#)<sup>[48]</sup>

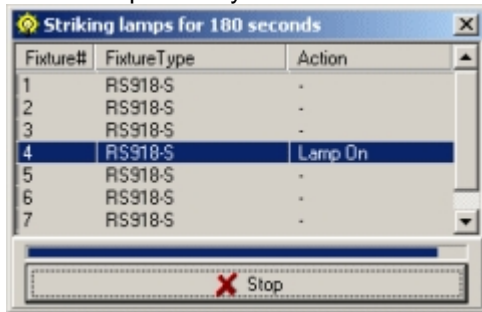
### 4.3.2.2 Startup options

To access the startup dialog, select **Setup/Preferences/Startup** from the [desktop main menu](#)<sup>[47]</sup>.



Startup options dialog

**Auto Lamp-On** - enabling this option will configure LightJockey to startup with a lamp-on cycle, sending lamp-on commands to all fixtures that support a lamp-on command. Lamp-on commands are sent to one fixture at a time with a delay of approx. 1 second to avoid a surge on the power line. Set the duration of the power-on cycle to 1 to 5 minutes. If none of the configured fixtures support lamp-on, the cycle will be aborted. The power-on cycle will run before any auto-start programs are executed. During the lamp on cycle a window will appear on the desktop, displaying the lamp-on cycle progress. The cycle may be aborted at any point by clicking **Stop**. The auto-lamp on command is also available under the desktop main system menu. When started from here cycle will continue until canceled.



*Auto lamp-on cycle*

**Load On Startup (programs auto-start)** - these options enables LightJockey to automatically launch a specific sequence, cue, cue list or background cue (BG cue) on startup. Click the relevant **Select** button to select the sequence, cue, cue list or background cue to auto-start. Sequences and cue lists requires a check mark in the **Run** check box to execute after load, else they will remain static.

**Run Minimized** - check to automatically to minimize LightJockey after start up as soon as all initializations are done. This setting is useful if LightJockey has to run silently in the background with other applications.

**Show notes on startup** - when enabled the built-in note pad will (**Main Menu -> View -> Notes**) automatically be displayed when LightJockey starts up.

**Auto Launch Programs** - use this option to automatically launch external support programs as LightJockey starts up. Click **Browse** to specify which programs to be launched. An example of a support program that must be launched this way is the [RS-232 remote](#)<sup>[245]</sup> program.

To clear a program from the list, highlight it, right click and **select delete** entry from the popup menu. During startup LightJockey will make no attempt to check if the program is already running, neither will the program automatically be shut down when LightJockey shuts down. If the file launched is not an executable, eg. \*.exe - it is up to the user to make sure that the data file is properly associated with an executable. For example to launch an MP3 file, the .MP3 extension must be properly associated with a program to playback MP3 files. If, for some reason, an automatically launched program causes LightJockey to crash or lockup before the entry can be removed from the list, the program entries may be manually removed from the startup.ini file located in the LightJockey installation folder.

#### 4.3.2.3 Default DMX output

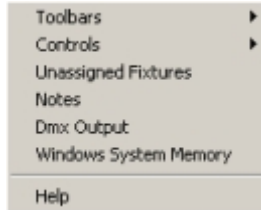
By default LightJockey defaults to a value of 0 for all DMX output channels when they are not programmed - some fixture profiles may cause other default values to be used. By customizing the default values, it is often easier to create a good basis for programming. The new defaults may contain values causes a fixtures to home (center) on pan and tilt, or opens the shutter on fixtures equipped with separate shutter and dimmer, so it won't be necessary both to open shutters and set intensity values when programming. It may also be used to set a pre-heat value for fixtures running via dimmer packs.

**Use Current Scene** - this option will record the output from the current scene. If values have already been recorded for default output they will be included in the new default output, unless overwritten by the contents of scene. This makes it possible to modify the default output just by programming the modifications into the scene and then select 'use current scene'. Note : The default output cannot contain presets or pan/tilt macros, if presets are present an error message will be displayed and the new values will not be recorded.

[Clear Default Output](#) - this will reset the default output to all 0 values.

### 4.3.3 Main view menu

The menu is located under the [desktop main menu](#)<sup>[47]</sup>.



*Main view menu*

**Toolbars** - use this submenu to toggle visibility of the various tool bars and the status bar.

**Controls** - use this submenu to display specific controls if the corresponding tool bar is not visible.

**Unassigned Fixtures** - use this to show the [list of unassigned fixtures](#)<sup>[54]</sup> if the list was previously closed (unassigned fixtures are fixtures which icons have not yet been placed on the desktop)

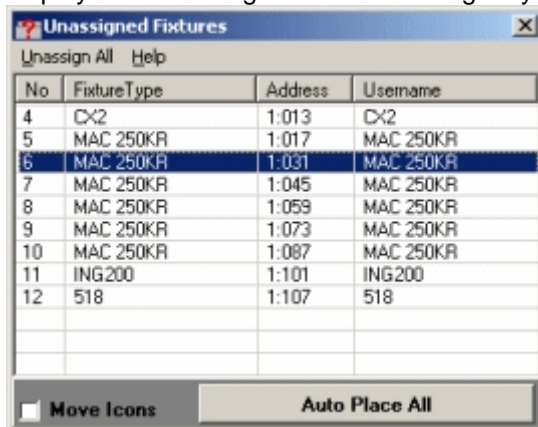
**Notes** - this will show a handy little notepad - the notes are saved in the current user library and can be recalled at any time by selecting this menu item or by [hotkey](#)<sup>[205]</sup>.

**DMX Output** - See [DMX output monitor](#)<sup>[60]</sup>

**Windows System Memory** - displays information regarding Windows system memory. Used for trouble shooting.

#### 4.3.3.1 The unassigned fixtures list

When new fixtures have been configured using the fixture configuration dialog, a fixture icon representing the individual fixture must be placed on the [LightJockey desktop](#)<sup>[44]</sup>. Until the icon has been placed, the fixture cannot be accessed from the desktop. When closing the fixture configuration dialog, new fixtures are placed in a unassigned fixtures list. A dialog containing the list is automatically displayed after configuration. The dialog may also be opened via **View -> Unassigned Fixtures**.

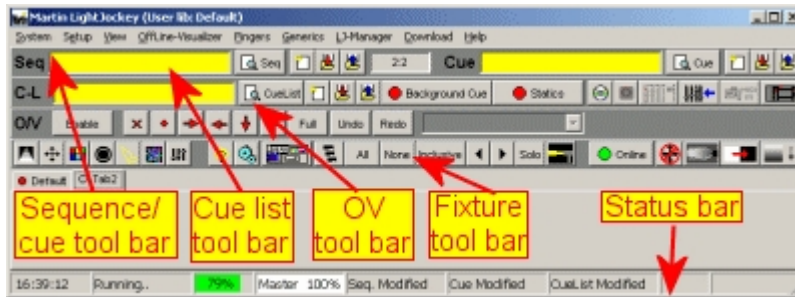


*Unassigned fixtures list*

To place individual fixture icons on the desktop, drag the fixture from the list and drop it on the desktop.

**Move Icons** will automatically switch fixture icons in and out of [icon move mode](#)<sup>[44]</sup>. Click **Unassign All** to move remove all fixture icons from the desktop to unassigned list. **Click Autoplace All** to place all icons on the current desktop tab ordered either by fixture type or fixture number.

## 4.4 Tool- and status-bars



The LightJockey desktop contains up to 4 tool bars with buttons for quick access to various functions. There is also a statusbar with status information.

The [sequence/cue tool bar](#)<sup>[55]</sup> has functions relating to the [current sequence and the current cue](#)<sup>[18]</sup>.

The [cue list tool bar](#)<sup>[56]</sup> has functions relating to the cue list, background cue and external control options such as [DMX in](#)<sup>[231]</sup>, [MIDI](#)<sup>[239]</sup>, [Audio CD](#)<sup>[40]</sup> and the [2532 Direct Access](#)<sup>[225]</sup> controller.

The [Offline Visualizer tool bar](#)<sup>[57]</sup> contains functions related to the [Offline Visualizer](#)<sup>[57]</sup>.

The [fixture tool bar](#)<sup>[57]</sup> contains functions related to individual fixtures or groups of fixtures.

Finally the [status bar](#)<sup>[58]</sup> contains various status information.

Any of the tool bars and status bar may be hidden to save desktop space, see [main view menu](#)<sup>[54]</sup>


### 4.4.1 Sequence/cue tool bar


The left part of the tool bar contains buttons and information related to the current sequence, while the right half contains buttons and information relating to the current cue.

#### Sequence tool bar



*Current sequence* displays the name of the current sequence (if any). The background turns yellow if the sequence is 'active' (contains data). If the current sequence is empty, the background color is gray.

Click  to view the [sequence control](#)<sup>[124]</sup>.

Click  to clear the current sequence (see [sequence control](#)<sup>[124]</sup>).

Click  to bring up the [save sequence dialog](#)<sup>[125]</sup>.

Click  to open the [list of sequences](#)<sup>[127]</sup> (to access previously saved sequences)


The tool bar also displays the current scene number in the current sequence, in the form of X:Y, where X is the current scene number and Y the last scene number. If the sequence is empty, the display shows '1:1'.


#### Cue tool bar




*Current cue* displays the name of the current cue (if any). The background turns yellow if the cue is 'active' or modified (contains data). If the current cue is empty, a gray background is used.

Click  to view the [cue control](#)<sup>[132]</sup>.

Click  to clear the current cue.

Click  to bring up the [save cue dialog](#)<sup>[136]</sup>.

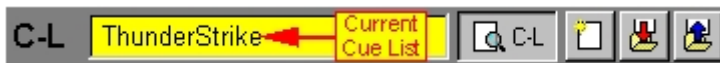
Click  to get the [list of cues](#)<sup>[137]</sup> (to browse existing cues or load a previously saved cue)

See also [tool- and status-bars](#)<sup>[55]</sup>

#### 4.4.2 Cue list tool bar


The left part of the tool bar contains buttons and information related to the current [cue list](#)<sup>[169]</sup> while the right part contains a button for the [background cue](#)<sup>[167]</sup>, the [statics control](#)<sup>[189]</sup>, [audio CD control](#)<sup>[40]</sup> as well as buttons for other, external control options.


##### The cue list tool bar




*Current Cue List* displays the name of the current [cue list](#)<sup>[169]</sup> (if any). The background turns yellow if the cue list is 'active' (executing) - if a gray background color is used.

Click  to view the [cue list control](#)<sup>[169]</sup>.

Click  to clear the *current cue list* (see [cue list control](#)<sup>[169]</sup>).


Click  to bring up the [save cue list dialog](#)<sup>[176]</sup>.

Click  to get the [list of cue lists](#)<sup>[176]</sup>.


##### The bcue button

Click  to open the [background cue control](#)<sup>[167]</sup>. If a background cue is active, the 'LED' is green, if not the 'LED' is red

##### The statics control button


Click  to open the [statics control](#)<sup>[189]</sup>. If one or more static entries are active, the 'LED' is green, if not the LED is red.


##### Audio CD control

Click  to access the [audio CD control](#)<sup>[40]</sup>. The button is not enabled (grayed out) unless the LightJockey has been [configured](#)<sup>[39]</sup> to use a CD-ROM Drive.

##### The external control buttons

Click  to access the [MC-X setup dialog](#)<sup>[244]</sup>

Click  to access the [2518/RS232 control](#)<sup>[242]</sup> (note, the 2518 must have been [configured](#)<sup>[43]</sup> first)

Click  to access the [DMX in setup](#)<sup>[231]</sup>

Click  to view the [MIDI in control](#)<sup>[239]</sup> (must be [configured](#)<sup>[42]</sup> first)

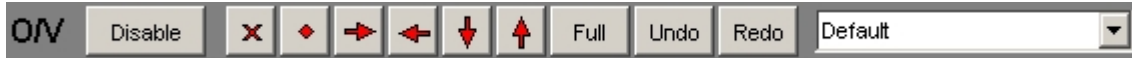
Click  to view the [2532 direct access control](#)<sup>[226]</sup>

See also [tool- and status-bars](#)<sup>[55]</sup>




### 4.4.3 LightJockey Offline Visualizer tool bar

The Offline Visualizer tool bar contains a button to launch/enable/disable the [Offline Visualizer](#)<sup>[283]</sup> as well as buttons to control various Offline Visualizer camera functions directly from LightJockey.



*LightJockey Offline Visualizer tool bar*

The first button changes between **Launch** (start Offline Visualizer), **Disable** (hide) and **Enable** (show if hidden).

-  default camera front view
-  default camera back view
-  default camera left view
-  default camera right view
-  default camera top view
-  default camera bottom view
-  camera full view
-  undo camera view
-  redo camera view

The last box contains the Offline Visualizer user camera list with cameras previously saved in the Offline Visualizer scene. Views may be selected via this list or via [hotkeys](#)<sup>[205]</sup>.

### 4.4.4 Fixture tool bar

The fixture tool bar contains buttons to access fixture controls, buttons for fixture selection and selection modes as well as buttons for special controls such as smoke control or the global master intensity control.




#### Fixture control selection




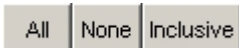
Click icons to access the individual [fixture controls](#)<sup>[92]</sup>. Note that none of these buttons will be enabled until at least one fixture is [selected](#)<sup>[80]</sup>.


Right-click a button to open the corresponding control and close the other fixture controls automatically (useful on a smaller desktop setup).

Click  as a shortcut to show or hide all fixture controls (except extended controls) with one click.

#### Fixture selection buttons

 Displays the [fixture group](#)<sup>[83]</sup> selection window.

 These buttons effects the desktop [fixture selection](#)<sup>[80]</sup>.

 Selects previous or next fixture respectively - see [next/previous fixture](#)<sup>[81]</sup>

 Selects [fixture solo](#)<sup>[200]</sup> Mode

#### Follow spot button

 toggles [follow spot settings](#)<sup>[198]</sup>

#### Special controls buttons

 see [OffLine/OnLine switch](#)<sup>[198]</sup>

 see [freeze output](#)<sup>[198]</sup>

 see [smoke control](#)<sup>[122]</sup>

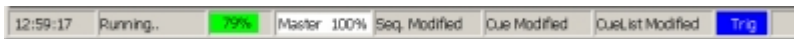
 see [blackout](#)<sup>[195]</sup>

 see [master intensity](#)<sup>[195]</sup>

See also [tool- and status-bars](#)<sup>[55]</sup>

### 4.4.5 Status bar

The status bar is located below the main desktop. It displays the current time, system and system memory status and the current level of the [master intensity control](#)<sup>[195]</sup>. The bar also shows if the current sequence, cue or cue list have been modified. Finally the trig information from the [Audio Analyzer](#)<sup>[192]</sup> is duplicated on the status bar.



*Status bar*

#### Memory status

Windows utilizes both physical memory (RAM) and virtual memory (hard disk). Accessing information in the physical memory is magnitudes faster than accessing information

The indicator shows the percentage of used memory out of the total physical and virtual memory available as reported back from Windows.

The % indication is not an absolute indicator; as more memory is needed Windows will automatically reduce memory allocation for other functions or applications, typically by reducing the disk cache size.

The color of the memory 'bar' indicates the amount of free physical memory left.

Green indicates more than 3 Megabytes physical memory free.

Yellow indicates between 2 and 3 Megabytes free physical memory free.

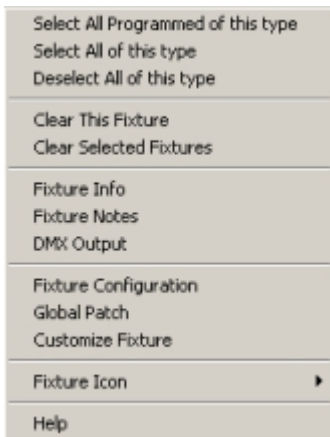
Orange indicates between 1 and 2 Megabytes free physical memory free.

Red indicates less than 1 Megabyte physical memory free.

As long as the indicator stays in green everything is fine. When the indicator goes through yellow and orange, it indicates that there might be a slight loss of performance as there is little physical memory left. A red indicator means very little or no physical memory free, probably causing a pretty poor performance. it is still perfectly possible to run LightJockey even if the bar is red, as long as Windows supplies enough virtual memory (and it usually does) - just expect for slower performance.

## 4.5 Fixture icon popup

To access this menu right-click on any of the fixture icons on the desktop.



*Fixture icon popup*

**Select All programmed of this type** - selects all fixtures of this type that are programmed in the current scene. This function requires that the [Show programmed fixtures](#)<sup>[45]</sup> option is enabled.

**Select All of this Type - Deselect All of this Type** - selects or de-selects all fixtures of the same type as the 'clicked' fixture. The 'clicked' fixture automatically becomes [master fixture](#)<sup>[80]</sup> when this function is used.

**Clear This Fixture - Clear Selected Fixtures** - when clicked all fixture parameters are set to [off](#)<sup>[93]</sup> in the current scene in the [current sequence](#)<sup>[124]</sup>.

Output generated by [default DMX output](#)<sup>[53]</sup>, [statics](#)<sup>[189]</sup>, the [current cue](#)<sup>[132]</sup> or [background cue](#)<sup>[167]</sup> is not affected.

**Fixture Info** - opens the fixture info panel



The info panel shows the fixtures DMX address and [intensity group](#)<sup>[195]</sup>. If the profile contains DIPswitch information the dipswitch shows the settings according to DMX address.

**Fixture Notes** - shows the fixture profile notes (same notes as shown in the [fixture configuration](#)<sup>[66]</sup>)

**DMX Output** - opens the [DMX output monitor](#)<sup>[60]</sup> aligned with the fixtures DMX address.

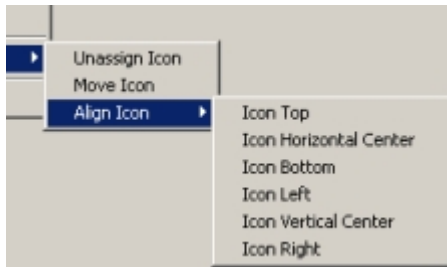
**Fixture Configuration** - opens the [fixture configuration dialog](#)<sup>[66]</sup> with the fixture already selected.

**Global Patch** - opens the [global patch dialog](#)<sup>[201]</sup> aligned on the fixtures DMX address.

**Define Fixture Profile** - opens the fixture profile dialog. This option is only available for [user definable fixtures](#)<sup>[247]</sup>.

**Customize Fixture** - opens the [customize fixture palette](#)<sup>[76]</sup> dialog. This option is only available for selected [built-in fixture profiles](#)<sup>[66]</sup>.

### Fixture Icon Menu



**Unassign Icon** - select to de-assign the icon from the current tab. The fixture will go back into the [unassigned fixtures list](#)<sup>[54]</sup> and can be re-placed on another tab. See [configuring the desktop](#)<sup>[45]</sup>.

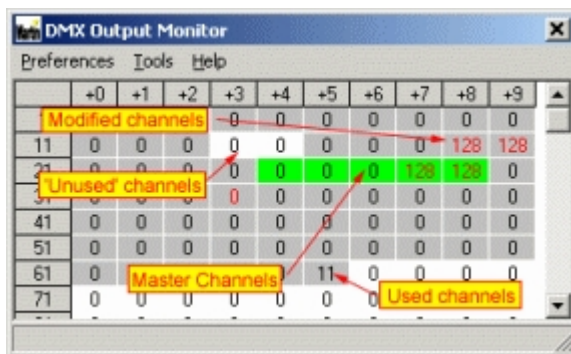
**Move Icon** - toggles the Icons 'movement' mode on and off. See [configuring the desktop](#)<sup>[45]</sup>.

**Align Icon** - select the align command from the sub menu. The command will align the icons of all [selected fixtures](#)<sup>[80]</sup> to the current icon, e.g. selecting **Icon Right** will align the right side of all selected icons to the current icon. Note, alignment will not work on icons that are in 'move' mode.

## 4.6 DMX output monitor

Open the monitor from [desktop main menu -> view -> DMX Output](#)<sup>[47]</sup>

This window shows the actual DMX values output from LightJockey. To align the view with a particular fixture, right click the fixture icon and select "DMX Output" from the popup menu.



DMX output monitor

### Preferences menu

**Highlight value changes** - channels with changing values display values in red

**Highlight used channels** - channels that are in use by at least one fixture shows with gray background

**Highlight selected Master fixture** - channels in use by the master fixture is displayed with a green background

**Autoscroll to master fixture channels** - the DMX monitor automatically scrolls to bring the channels of the master fixture into view

**Enable value overwrite** - see below

### Color scheme (background)

Gray background: DMX channel is used by at least one configured fixture

White background: DMX channel not used by any configured fixture

Green background: DMX channel used by [selected master fixture](#)<sup>[80]</sup>

### Color scheme (text)

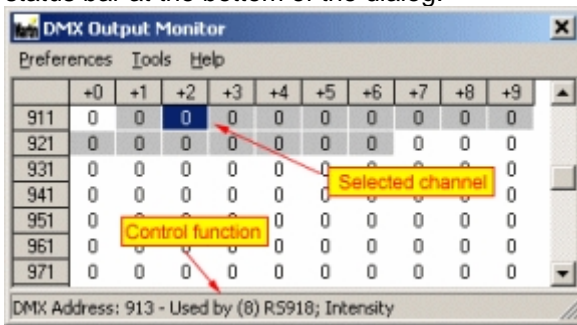
Black text: unchanged DMX value (since the dialog was opened)

Red text: DMX value changed (since the dialog was opened)

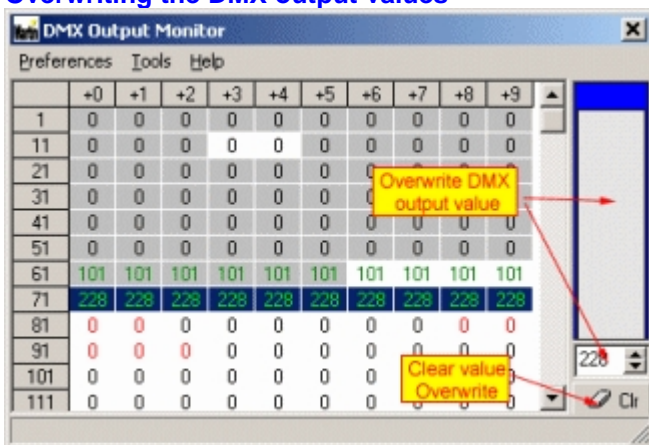
Green text: DMX value overwritten

### Control channel function

Highlight a specific output channel (click it's value) to see it's control function which is displayed in the status bar at the bottom of the dialog.



### Overwriting the DMX output values



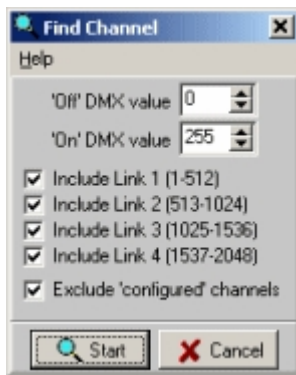
*Value overwrite enabled*

The DMX output monitor allows DMX output values to be overwritten directly, without the need to configure a fixture first. The output value is written directly to the DMX channel without regards to any patches made with the [global patch dialog](#)<sup>[207]</sup>. DMX output value overwriting must be enabled from the *Preferences menu*. To overwrite DMX output values, select (highlight) the relevant DMX channel(s) and use either the virtual fader or value field to enter/modify the DMX value. Click **CLR** to remove value overwrite on the selected channels. DMX output channels that has their value overwritten displays the value in green text.

**Note:** The DMX output can only be overwritten this way as long as the DMX output monitor is open and DMX value overwriting is enabled. As soon as the monitor dialog is closed, the DMX values will revert to non-overwritten values.

### Searching DMX output channels

The DMX output monitor contains a tool that can be used to search for a specific DMX channel by sending specific DMX values to specific channels in a search pattern. The tool is handy when trying to locate DMX equipment that is connected and addressed but not yet configured and the address has not been noted down. The tool uses a binary search algorithm that is capable of locating a specific channel out of 2048 channels in a maximum of 11 'tries'. Click Tools in the menu to open the search channel dialog and setup a channel search pattern.



*Search channel dialog*

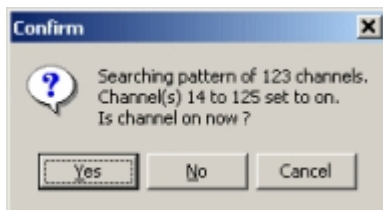
During the search 'DMX on' and 'DMX off' values are sent to the channels in the search pattern. Modify the DMX off and DMX on values if necessary.

### Setting up the search pattern

Un-check include link 1-4 to exclude fixtures on any specific link from the search. Un-check exclude configured channels to include channels that are already in use by configured fixtures. Default options will search on all 4 output links but exclude channels already used by configured channels.

### Click Start to start the search

The search algorithm first applies the on value to all channels in the search pattern to check that the device is included in the pattern at all. Subsequent searches will apply the on value to half the channels in the search pattern and for each search iteration the number of channels in the search pattern is halved according to the answer in the search prompt.



*Search channel prompt*

Click **yes** if the channel is on - **no** if the channel is off.

## 5 User libraries

### 5.1 User libraries

A user library contain all data that may be modified by the user, except for a few installation wide data files such as hardware setup parameters. Using different libraries means that individual setups and programs may be kept totally separate. Changing to a different user library requires a restart of LightJockey.

After start up, LightJockey displays the current user library in the caption of the main window.

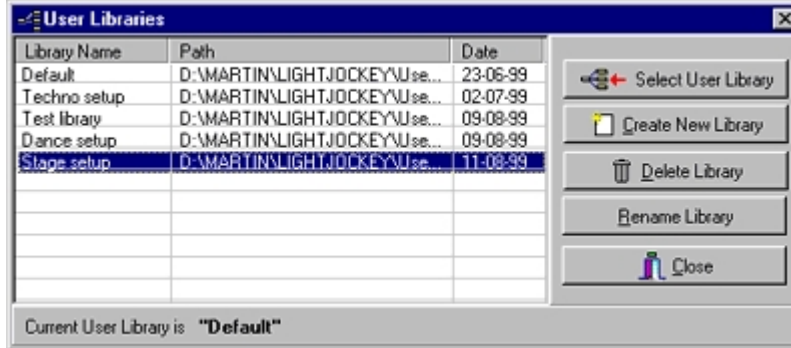


*Main window caption. Current user library is "Default".*

It is not possible to share or import data from different libraries. It is not advisable to manually copy or move files from Windows explorer. The different data structures of LightJockey are often very

dependent on each other, and may not function if copied from different libraries. In any case don't ever copy or move files while LightJockey is running - if, in special cases, it is necessary to copy or move files, make sure that LightJockey is closed down first.

The User Library dialog is accessed from the main system menu (**System -> User libraries..**).



The user library dialog

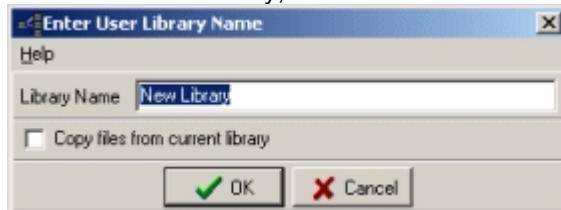
The leftmost column of the list shows the (user-selectable) name of the library. The middle column shows the Windows folder path while the rightmost column shows the creation date of the library.

#### The Default Library

The default user library is a special user library. It cannot be renamed or deleted. If the default library is not present at startup, LightJockey will automatically create a new default library. Upon starting up after initial installation LightJockey will always use the default library - further libraries must be created by the user.

#### Creating a new user library

To create a new library, click **Create New Library** - this will prompt a new dialog.



New user library dialog

Type the new name of the new library. Check **copy files** to automatically copy all data files from the current to the new library, essentially creating a copy of the current library.

#### Switching to a different user library.

Highlight the library in the list and click **Select User Library**. In order to load the information from the newly selected library, LightJockey needs to restart. Answer yes at the prompt to change the library, or no to cancel.

#### Deleting a user library.

To delete a user library, highlight the library in the list and click **Delete Library**. Note that it is not possible to delete the current library.

#### Renaming a library.

Highlight the library in the list and click **Rename Library**.

#### Moving user libraries between PCs

To move an entire library from one PC to another use the built in [backup/restore](#) <sup>64</sup> function.

### Starting LightJockey in a specific user library

LightJockey may be started up in a specific user library by adding a parameter to the startup command (Windows shortcut). The syntax is <LightJockey> <U:[userlib\_name]> where userlib\_name is the name of the folder where the specific user library is located. Use the information displayed in the user library dialog to see the path where the individual user libraries are located.

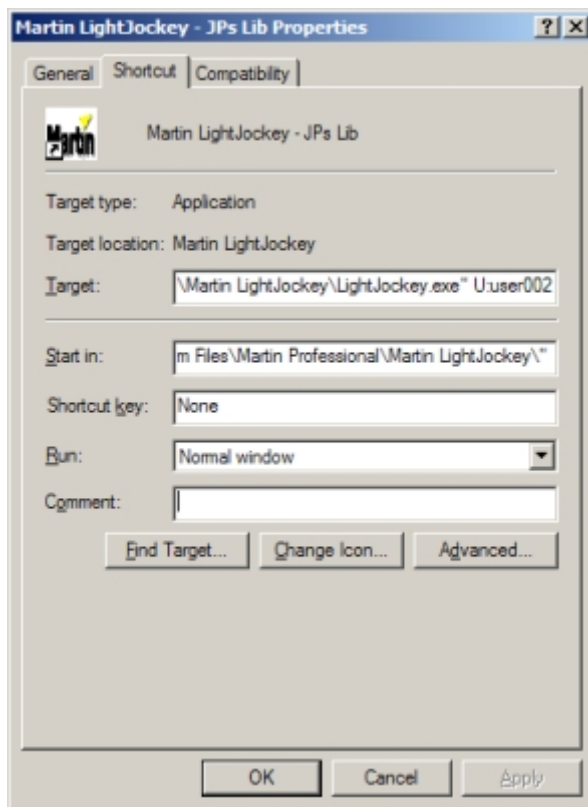
When specifying the name only the 'last folder name' should be used, examples:

**LightJockey U:user0001** - will start LightJockey in the user library located in <LJinstallation>\user\user0001

**LightJockey U:Default** - will start LightJockey in the default user library located in <LJinstallation>\user\default

Note that some Windows versions may require the path and name of the LightJockey executable to be enclosed in quotes, eg:

Target: "C:\Program Files\Martin Professional\Martin LightJockey\LightJockey.exe" U:user002



Modifying a Windows shortcut to LightJockey

See also [backup & restore](#)<sup>[64]</sup>, [using the data restore option](#)<sup>[48]</sup>

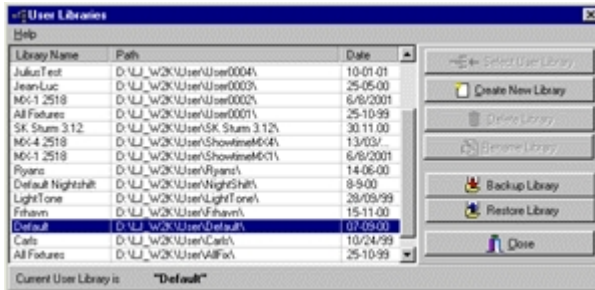
## 5.2 Backup & restore

LightJockey implements a function to backup and restore data from individual [user libraries](#)<sup>[62]</sup> - it does not implement functions to backup or restore the entire installation. To backup a complete installation it is a good idea to use an application such as Winzip [www.winzip.com](http://www.winzip.com) to compress the backup into one file or use the backup/restore function built into some versions of Windows. Note that restoring from a backup **completely replaces** the existing contents of the user library.

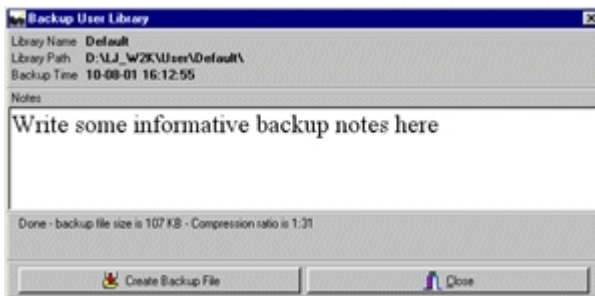
### Creating a backup



Select (highlight) the user library to backup from the list in the [user libraries dialog](#)<sup>621</sup>. When creating a backup of the current library make sure to close all LightJockey dialogs before backup - a number of data files may not be properly updated until the corresponding dialogs are closed. Alternatively close down LightJockey and re-start to make sure all relevant data has been saved.



Selecting a user library for backup (User library dialog)



Backup dialog

The backup dialog includes a small note pad to add notes to the backup file - the notes are embedded into the backup file and can be used as reference when later searching through backup files. Click **Create Backup File** to start creation of the backup file. The backup procedure will collect and compress the entire contents and structure of the selected user library into one backup file. Once the file has been created save it using the standard Windows file dialog.

### Using floppy disks for backup files

The backup file is saved as one large file, and it is the users responsibility that the media to which the backup file is saved has sufficiently space to hold the file. However since the backup file is compressed (often exceeding an 1:30 compression) most backup files will easily fit on a single floppy disk. As floppy diskettes are not really known for their reliability, at least make sure that the diskette is properly formatted before using it. If the backup is important or is to be stored for later, make several identical backups to several diskettes rather than just relying on one diskette backup.

### Restoring to a user library

A backup file can only be restored into an existing user library - to restore a backup to a new user library, create a new, empty library first. **Note:** restoring a backup file to a library, will completely replace the existing contents of the library. To restore from a backup file, select (highlight) the user library to restore to in the user library dialog - then click **Restore Library**.



*Restore user library dialog*

Use drive and folder selectors to navigate to the drive and folder where the backup file is placed. Select the backup file from the backup file list (the list will show all backup files in the selected folder). When a backup file is selected, the embedded notes (if any) are displayed in notes field. Click **Restore Library** to start restoring data to the user library. Note, if data is restored to the current, active user library LightJockey will automatically restart after files have been restored.

#### Using backup files in different installations

Backup files may be used to transfer the contents of user libraries from one LightJockey installation to the other - just make sure that the target installation is of the same or newer version as the one used to generate the backup. Restoring a data file to an older LightJockey version may not work correctly.

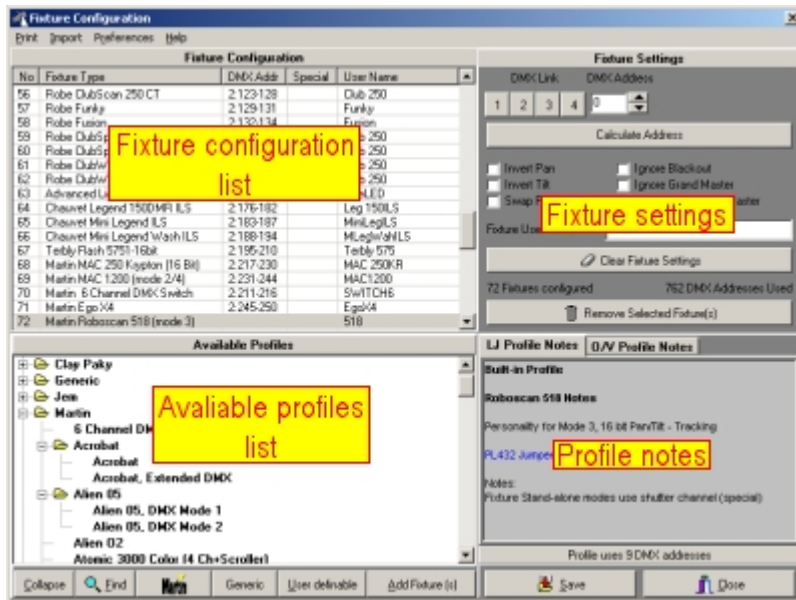
See also [using the data restore option](#)<sup>[48]</sup>, [user libraries](#)<sup>[62]</sup>

## 6 Fixture configuration

### 6.1 Fixture configuration

Before LightJockey can control a DMX fixture, the fixture's [profile](#)<sup>[18]</sup> or 'personality' must be added to LightJockey's fixture configuration. The fixture configuration contains a list of all the fixtures that LightJockey is currently set up to control and contains information about the individual fixtures capabilities, [DMX address](#)<sup>[21]</sup> and other optional settings.

To access the fixture configuration dialog, select **Setup -> Fixture configuration** from the main menu. Alternatively, right click any fixture icon on the desktop and select **Fixture Configuration** from the popup menu.



Fixture configuration dialog

The fixture configuration dialog is divided into 4 different areas:

**Fixture Configuration** - a list containing the current configuration.

**Fixture settings** - individual fixture settings such as **DMX address**<sup>[21]</sup> or pan/tilt options.

**Available profiles** - the list of available fixture profiles. The profiles are arranged according to manufacturer, click the 'cross' symbol to the left of the manufacturer name to expand the list of available fixtures under the manufacturer heading. Available profiles for unlisted manufacturer's fixtures can be found under 'other'.

**Profile notes** - notes included in the profile selected in the available profiles list. Offline Visualizer profile notes are only available if the Offline Visualizer is currently running and the LightJockey profile is linked to an existing Offline Visualizer profile.

#### Built-in vs. user defined fixture profiles

LightJockey implements two different types of fixture profiles - built-in profiles and user defined profiles.

#### Built-in profiles

The built-in profiles are usually used for Martin fixtures but also includes a number of generic profiles (see below). Built-in profiles are hard-coded into the LightJockey program code and cannot be modified by the user, although some built-in profiles allows for some degree of customization (see [customizing palette controls](#)<sup>[76]</sup>). New built-in profiles, or updates to existing built-in profiles requires an update of LightJockey itself.

#### User defined profiles

User defined profiles are based on a profile framework where attributes and capabilities of the fixture are described in external data files. Using the [generic fixture profile editor](#)<sup>[25]</sup>, it is possible for the end-user to modify existing profiles or write custom fixture profiles. The profiles may be exported for use in other LightJockey installations - indeed many of the user defined profiles supplied with LightJockey is created by end-users. Most non-Martin fixture profiles are supplied as user defined profiles. Unlike the built-in profiles, user defined profiles may be updated without updating LightJockey itself. The latest collection of user defined profiles can be found and downloaded from the Internet at

<http://www.martin.com/service/Software/controller/LJ/list.asp>

#### Special Profiles

While most profiles are listed under specific fixture manufacturers, a number of profiles are listed as 'Generic' profiles.

### Generic DMX control profiles

Generic DMX profiles are profiles that do not relate to specific fixture models. Use these profiles to control 'generic' fixtures such as dimmer or switch packs. There are also generic profiles for controlling DMX smoke machines or hazers as well as packs of RGB fixtures (e.g. LED banks). See also [generic DMX profiles](#) <sup>[84]</sup>

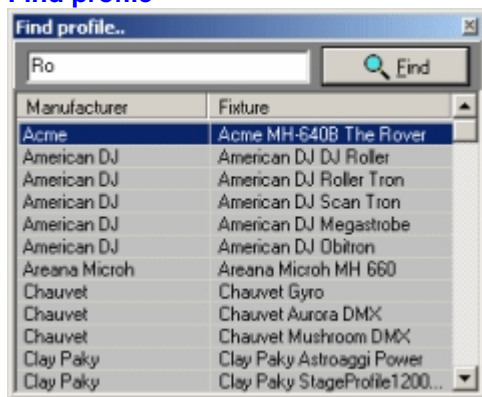
### User defined profiles

The profiles listed under **User Definable** manufacturer are 'empty' profiles that can be used as a starting point for creating a new profile (see [user definable fixtures](#) <sup>[247]</sup>).

### Other Profiles

Profiles with an unlisted manufacturer (or no manufacturer information) or for a specialized purpose are listed under the **Other** heading.

### Find profile



*Find profile dialog*

Use the find profile dialog (click **Find** below the list of available profiles) to search the available profiles for a specific name or part of name. Enter the phrase to search for then click **Find**. The find dialog searches both on manufacturer and fixture name and is not case sensitive.

### No suitable profile found - what to do?

LightJockey does not ship with a profile for every fixture type in the world - there is a chance that there is no matching LightJockey profile for a fixture amongst the available profiles.

- Check if the profile has been added after the release of the LightJockey version running was made - look for profile updates at <http://www.martin.com/service/Software/controller/LJ/list.asp>
- Ask at the LightJockey end-user forum on the Internet ([www.martin.com/forum](http://www.martin.com/forum)) - maybe someone have already made a suitable profile or will help making one. Make sure to post as much information as possible, manufacturer, model, preferred DMX mode, relevant web site information etc.
- In case of a new Martin fixture, odds are that it will first be included in a LightJockey beta release - see LightJockey end-user forum for latest beta release notes.
- Create new profile - see [defining the generic fixture 2 profile](#) <sup>[255]</sup>
- As a last resort, use a Generic DMX profile to control the fixture.

Not: user defined profiles [exported](#) <sup>[280]</sup> from other installations must be imported to the current installation before they can be used. See [importing user defined fixture profiles](#) <sup>[279]</sup> for more details.

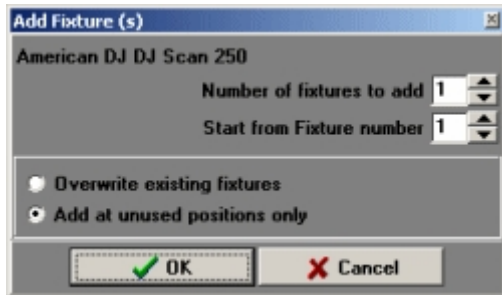
### Adding profiles to the configuration

#### Selecting the right profile

As many new fixtures have several DMX modes available which may be selected on the fixture itself (e.g. 8 or 16 bit pan/tilt modes), make sure to read the individual fixture profile notes (LJ profile notes tab). The profile author has usually included notes that says which mode the profile is designed to

operate with. It may be necessary to change the mode on the fixture itself if a suitable profile is not available but a profile for another mode is.

To add a profile to the configuration, first locate the it in the available profiles list, then drag it to an empty slot in the fixture configuration list (or to an already occupied slot to replace the current profile). To add multiple profiles at once, highlight the profile then click **Add Fixture(s)** and use the add fixtures dialog to add one or more profiles.



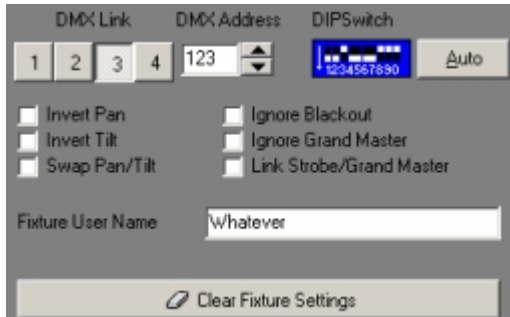
*Add fixtures dialog*

#### Removing fixtures from the configuration

To remove one or more fixtures from the configuration, highlight the profile(s) in the Fixture configuration list and click **Remove Selected Fixture(s)**.

#### Setting individual fixture information

Each of the configured fixtures has a number of individual options. Select one or more fixtures in the configuration list to set the individual options.



*Individual fixture settings*

#### Fixture DMX address

As a minimum the fixture's [DMX start address](#) must be set. The DMX address range of individual fixtures should be unique and not overlapping/overlapped by other fixtures. Depending on DMX transmitter hardware, one or more links may be available for addressing. Make sure to specify which link the fixture is connected to. The DIP switch setting is only shown for fixtures where the associated profile specifies addressing through a DIP switch. Please refer to the fixtures documentation on how to set the DMX start address on the fixture itself.

#### IMPORTANT!

When programming fixtures in LightJockey, the 'programs' and settings such as preset position data are stored in data files according to the fixtures DMX address. If the DMX address is changed for an already programmed fixture it will invalidate the programs - changing the DMX address for a fixture will prompt a warning if the configuration was previously been saved. To change the DMX address for an already configured/programmed fixture use the copy from fixture function (see below).

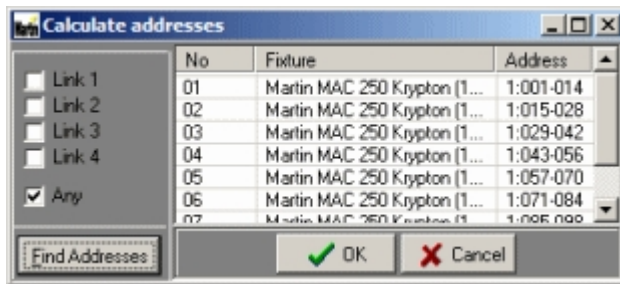
When new fixtures are configured re-using a fixture number previously used by another fixture, by

default, the program 'data space' for the new fixture will be cleared and re-initialized when saving the configuration. To retain data, for example when replacing one fixture with another very similar fixture, make sure to enable **Prompt for clear data for new fixtures** in the preferences menu (see *clear fixture data* below). If not enabled, programmed data will be cleared without warning when the configuration is saved.

### Calculating addresses

Clicking **Calculate address** will open a dialog to calculate possible start addresses for the fixtures selected in the configuration list. The calculation is based on addresses already in use by other fixtures as well as the number of addresses used by the fixture profiles with the following exceptions:

- Patches created with the [global patch tool](#)<sup>[207]</sup> will not be taken into account.
- [user definable colors scrollers](#)<sup>[254]</sup> that needs a separate address for the scroller unit The address for the color scroller is not taken into account, and might be overwritten.
- [Scanner 1 profiles](#)<sup>[247]</sup>. If the actual fixture profile takes up less than the 8 of channels used by the scanner 1 profile, the free channels are not re-used when calculating addressing.



Calculate address dialog

### Pan/Tilt options

Only available for fixtures with pan/tilt control. Check to invert control of pan or tilt or swap pan and tilt. The pan and tilt inverting and swapping is performed by LightJockey just before pan and tilt DMX values are transmitted to the fixture - setting any of these switches does not affect the contents of programmed positions.

### Intensity control options

Not all options are available for all profiles.

**Ignore Blackout** - Fixture ignores [blackout](#)<sup>[195]</sup> commands

**Ignore Grand Master** - Fixture ignores [Grand Master](#)<sup>[195]</sup> settings

**Link Strobe/Grand Master** - Fixture stops strobing when [grand master or group sub master](#)<sup>[195]</sup> is at 0

### Fixture User name

Use for an individual description of the fixture - the user name is used as caption on the fixture icon on the desktop.

### Saving the configuration

Any changes made to the configuration are temporary and will not take effect until the configuration is saved (click save). Upon saving the modified configuration, LightJockey will check the new configuration for potential problems (such as overlapping DMX addresses or a missing DMX start address). If a potential problem is found a [warning list](#)<sup>[71]</sup> will be shown - to save the configuration regardless of warnings click **Save Anyway**.

### Advanced Options

#### DMX address range limit

By default, it is only possible to set a fixtures DMX address within the range supported by the installed and configured DMX transmitter hardware, e.g. a single USB/DMX interface allows fixture addressing on link 1 only. If no hardware is configured all 4 links are available for addressing. In some instances it may be useful to address fixtures outside the address space supported by installed DMX hardware -

the **Preferences** -> **Disable Hardware address range check** will temporarily disable the hardware range check and allow addressing on all 4 links regardless of configured transmitter hardware.

#### Copy from fixture

Use the **copy from fixture** function to copy all programmed data from one fixture to another fixture of identical type (profile). The copy from fixture function only works if the configuration has been saved first and only for identical fixture profiles that has been assigned a valid DMX address. The **copy from fixture function** should also be used to change the DMX address of an already programmed fixture. See [copy from fixture](#)<sup>[72]</sup> for more details

#### Clear fixture data

By default, when a configuration including new fixtures is saved, LightJockey will prompt for "Clear data for new fixtures" before saving. Clearing the data space for newly configured fixtures will ensure that no 'garbage data' is present in data files from the previous configuration. Normally data for a new should be cleared (re-initialized), but in some circumstances, such as when reconfiguring a fixture with a very similar profile using the same DMX address space it may make sense not to clear data for the new fixtures - in this case click cancel when the prompt appears. Data may be cleared for individual fixtures after the configuration has been saved by highlighting the fixture in the configuration list, right-click and then select **Clear Fixture Data** from the popup menu. See [clear fixture data](#)<sup>[73]</sup> for more details.

**The import menu** - see [importing user defined fixture profiles](#)<sup>[279]</sup>

#### The preferences menu

The entries in the preferences/warnings menu can be used to enable or disable different warnings when saving a modified configuration.

**Warnings** - enable or disable warnings

**Prompt for clear new fixtures** - when checked the user will always be prompted to clear data for newly configured fixtures.

**Always apply default DMX values** - when checked, default DMX values for new/modified fixtures will be applied automatically. If unchecked, the user will be prompted to apply default DMX data (see [applying default DMX values to new fixtures](#)<sup>[74]</sup>).

**Disable hardware address range check** - enable to be able to address a fixture on any of the 4 links regardless of DMX hardware. This setting is temporary.

#### The print menu

The configuration may be sent either directly to a printer or exported to a text file for import and beautification in any type of word processing application.

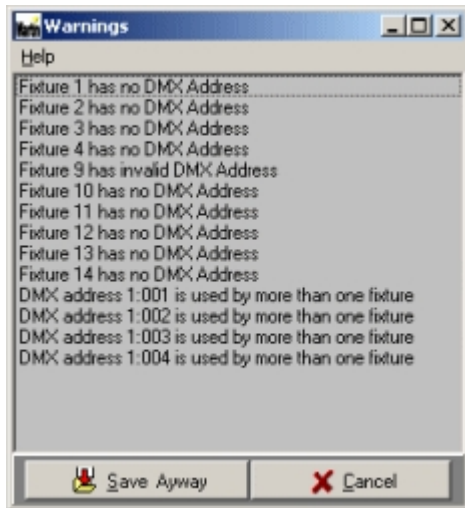
## 6.2 Configuration warnings

Before saving the configuration LightJockey will check for the following potential errors in the configurations:

**Fixtures # XX has no DMX address** - while not a critical error, LightJockey will not attempt to control fixtures without a valid DMX address. Furthermore it is not really possible define [fixture profiles](#)<sup>[247]</sup> unless the configured fixture has a valid DMX address.

**Fixture #XX has invalid DMX address** - the DMX address given to the fixture is invalid. Usually it is because there is not enough DMX addresses left to contain all the fixtures control channels.

**DMX address L:AAA is used by more than one fixture** - two or more fixtures are using the same DMX control channel - while this may be intentional it usually an error. Note that overlapping addresses may lead to errors in internal control channel patching.

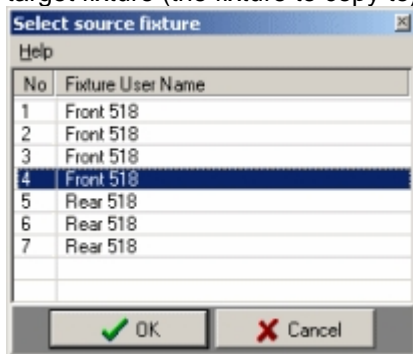


*configuration warnings*

To save the configuration regardless of the warnings click **Save Anyway**

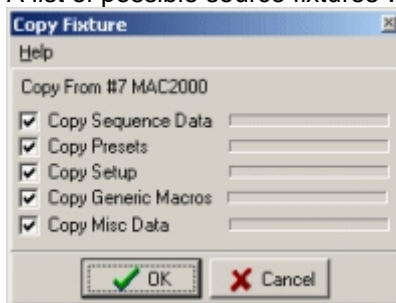
### 6.3 Copy from fixture

From the fixture configuration dialog it is possible to copy the entire programmed contents from another fixture if the two fixtures are of an identical type (profile). The configuration must be saved before a *copy from fixture* can be performed. To copy contents from one fixture to another, select the target fixture (the fixture to copy to), right-click and select **Copy From Fixture** from the popup menu.



*Copy from source fixtures list*

A list of possible source fixtures will be displayed in a list. Select the source fixture and click Ok.



*Copy filter*

Now select what to copy from the source fixture (normally all options should be checked)

**Copy Sequence Data** - copies all data in all sequences from the source fixture.

**Copy Presets** - copies all preset data from the source fixture.



**Copy Setup** - copies all setup specific data (except DMX address) from source fixture.

**Copy Generic Macros** - copies contents of [generic DMX macros](#)<sup>[153]</sup> from source to target fixture.

**Copy Misc Data** - copies what doesn't fit in the previous categories (e.g. default DMX output)

It is not possible to copy to multiple target fixtures in one operation, fixtures must be copied individually.

Also note that for [user definable color scrollers](#)<sup>[254]</sup> only the intensity information will be copied, the color information will not be copied.

### Notes/Hints

#### Changing a fixtures DMX address

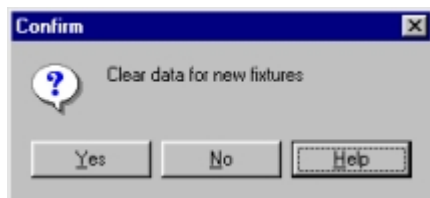
The *copy from fixture* function may also be useful to move an already programmed fixture's DMX address. To move a fixtures DMX address do the following:

Configure a new fixture of identical type and apply an unused DMX address (range) to the new fixture. Save the configuration. Copy the contents from the 'old' fixture to the new fixture. Change the old fixture's DMX address. Copy the contents from the new fixture to the old fixture and then remove the new fixture.

The copy function may also be used to build an entire library of sequences for various fixture configurations. Build a sequence library by programming sequences for one of each (or more) of the relevant fixture types. In the actual installation, copy sequence and preset data to each of the fixtures configured for the rental job. Although all the fixtures will contain the exact same data as their respective source fixture it may give a quicker starting point for the end-users than starting from scratch.

## 6.4 Clear fixture data

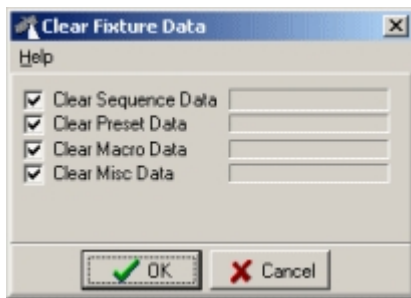
The clear data dialog will be shown automatically to clear data for new configured fixtures (unless it has been disabled in the preferences menu in the [fixture configuration dialog](#)<sup>[66]</sup>)



*Clear data prompt*

When configuring a new fixture and re-using a DMX address range that has been used by a previously configured fixture, sequences and presets and other programming elements will contain data that will most likely appear as garbage for the newly configured fixture. To clear all sequences, presets, and other programmable data so that the new fixture receives default data only, activate **Clear Fixture Data**.

To manually clear one or more fixtures, select the fixture from list of configured fixtures. Right-click the line and select **Clear Fixture Data** from the popup menu. Note that it is not possible to select this option for a newly configured fixture before a valid DMX address has been assigned to the fixture and the configuration has been saved. It is possible to clear data for multiple fixtures by selecting all the relevant fixtures before right-clicking.



*Clear fixture data dialog.*

**Clear Sequence Data** Clears all data in all programmed sequences.

**Clear Presets** Clears all preset data.

**Clear Macro Data** Clears contents of [generic DMX](#)<sup>[153]</sup> macros

**Clear Misc Data** Clears data that does not fit in the 2 previous categories (e.g. default DMX values or contents of static entries)

Note that the clear data operation is irreversible - once cleared it is not possible to restore the cleared data.

Also note that for [user definable color crollers](#)<sup>[254]</sup> only the intensity information will be cleared, the color information will not be affected.

See also [copy from fixture](#)<sup>[72]</sup>

## 6.5 Applying default DMX to new fixtures

Normally LightJockey assumes a default value of 0 for all DMX control channels. However a some fixtures may implement DMX protocols where 0 values may have unwanted side effects, such as switching off discharge lamps, also some profiles includes defaults such as default pan/tilt in 'home' position.

LightJockey will automatically apply default DMX values to new fixtures when saving the configuration, unless disabled in the preferences menu of the [fixture configuration dialog](#)<sup>[66]</sup> - when automatic apply is disabled the following dialog will appear when saving a configuration that contains new fixtures.



*Apply Default DMX prompt*

Click Yes to the "Apply Default DMX values to new/modified fixtures" dialog when saving the new configuration to automatically apply default DMX values to newly configured fixtures.

See also [the user definable fixtures profiles](#)<sup>[247]</sup>, [special tab](#)<sup>[273]</sup>, [default DMX output](#)<sup>[53]</sup>

## 6.6 Controlling older Martin fixtures via Martin/DMX interface

Many of the older Martin fixtures do not support the DMX protocol directly. To control these fixtures from LightJockey it is necessary to use a Martin DMX interface in between LightJockey and the fixtures. The interface translates from the DMX protocol signal sent from LightJockey to the Martin protocol used by the fixtures. More information (documentation) about the interface is available on the Martin Service Web page at [www.martin.com](http://www.martin.com)

There are a couple of issues related to the control of fixtures via the DMX interface. First of all, there is an important difference in how the Martin protocol and the DMX protocol implemented in LightJockey works. In LightJockey, slow movements and transitions are usually done by 'fading' values from start-point to end-point. The fixtures calculate a suitable speed using the in-between points sent by LightJockey. See [basic programming terms and elements](#)<sup>[18]</sup>.

The Martin Protocol is a vector protocol - it works by specifying an 'end-point' and a fixed speed - the point and speed are taken directly by the fixture, and there are no connections between the distance and speed and the time taken to move the effect. This means that moving an effect a long distance takes longer time than moving it a short distance, when using the same fixed speed.

If transitions are programmed as faded transitions, the fixtures running off Martin protocol will not calculate a suitable speed based on the in-between points - they will simply move to the in-between points with the fixed speed, often causing jerky movements. The effect of this is that unlike the fixtures running directly off DMX, it is not possible for LightJockey to control the physical transition time of the effects when the fixtures runs from Martin Protocol in a nice way. Trying to control transitions via fade times will most likely cause jerky movements. This is also the case with the movement macros.

The best way to program the fixtures with slow movements and transitions is to use the speed controls implemented in the profile - note that the speeds implemented often controls two or more effects at a time.

When addressing fixtures, do remember that the DMX interface can only be set at odd start addresses (1,3,5 etc..).

Fixture Type	DIP switch value (6 pin DIP)
RoboColor MSD 200	1
RoboColor (1st version)	2
RoboColor II	3
RoboScan 804/805	5
RoboScan 1004/1005	6
RoboScan 1016	7
RoboScan 1020	10
RoboScan Pro 218	11
RoboScan Pro 1220	12
RoboScan Pro 1220 II	13
RoboScan Pro 1220 IIR	14
RoboZap	15
RoboZap MSR 1200	16
Centrepiece	17

*DMX/Martin interface, product settings (6 pin DIP)*

DIP-Switch Setting				#8	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	
				#7	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1	
				#6	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1	1	1	1	
				#5	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
#1	#2	#3	#4																					
0	0	0	0	1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481					
1	0	0	0	3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483					
0	1	0	0	5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485					
1	1	0	0	7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487					
0	0	1	0	9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489					
1	0	1	0	11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491					
0	1	1	0	13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493					
1	1	1	0	15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495					
0	0	0	1	17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497					
1	0	0	1	19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499					
0	1	0	1	21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501					
1	1	0	1	23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503					
0	0	1	1	25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505					
1	0	1	1	27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507					
0	1	1	1	29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509					
1	1	1	1	31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511					

DMX/Martin interface, address settings (10 pin DIP)

### 10 Pin DIP Switch

Pins 1-8 : Address

Pin 9 : Termination (on = termination on)

Pin10 : DMX Mode (off = reduced DMX mode, on = full DMX mode)

## 6.7 Customizing built-in fixture profiles

### Profile types

LightJockey contains 2 different types of fixture profiles; user defined profiles and built-in profiles. Built-in profiles are mainly used for Martin fixtures. The palettes and functions of user defined profiles are defined through a special configuration dialog (see [user definable fixtures profiles](#)<sup>[247]</sup>). The functions of a built in profile can not be modified, for several profiles however it is possible to customize the palettes (e.g. after replacing gobos in the fixture) as well as the default link to an Offline Visualizer profile (see below).

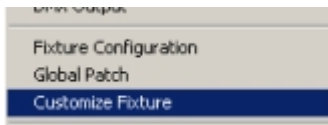
### Customizing palette for built-in profiles

*Note: Any changes to the default fixture palette will NOT be reproduced in the Offline Visualizer. The changes only occurs in the fixture controls in LightJockey. See below for how to link a different Offline Visualizer profile to the built in fixture profile.*

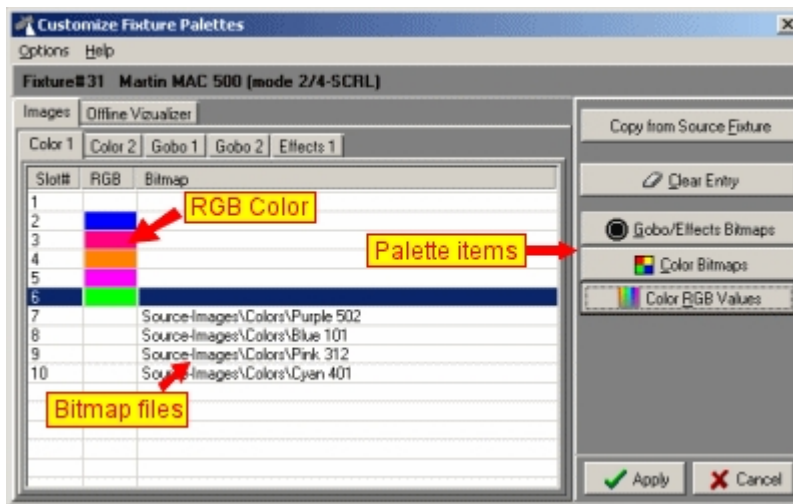
Most of the [built-in fixture profiles](#)<sup>[18]</sup> uses palettes for easy selection of effects like [colors](#)<sup>[108]</sup> or [gobos](#)<sup>[111]</sup>.



MAC 500 color control with default palette



To customize color, gobo and effect palettes for a built-in profile, right click the fixture icon on the desktop and select **Customize Fixture** from the popup menu to open the Palette Configuration dialog. Note that not all built-in profiles support the customize Option.



*Palette configuration dialog*

The palette configuration dialog lists each of the possible fixture palettes on an individual tab, e.g. color (wheel) 1 or gobo (wheel) 2. Each line in the list corresponds to one 'effect', e.g. first color on color wheel 1. Each effect may be represented either by a 'pure color' or by a bitmap but not both. When a color is assigned to an effect the color is shown in the *RGB* column, while a bitmap is shown as a filename in the *Bitmap* column. If a bitmap file is assigned but does exist the filename is displayed in *red* to indicate that the file is missing.

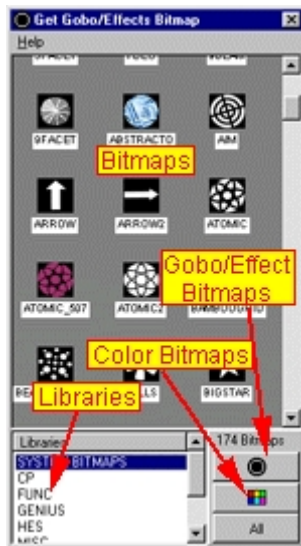
LightJockey already supplies a number of bitmaps for colors, gobos and effects - it is also possible (and fairly simple) to design new bitmaps. See [creating custom palette bitmaps](#)<sup>[278]</sup>.

### Assigning a Color to an effect

To assign a color value to an effect, highlight the effect corresponding line and click **Color RGB Values**. Use the standard Windows color dialog to select a color for the effect.

### Assigning a bitmap to an effect

To assign a bitmap to an effect, click either **Gobo/Effects Bitmaps** or **Color Bitmaps**.



Select Bitmaps dialog

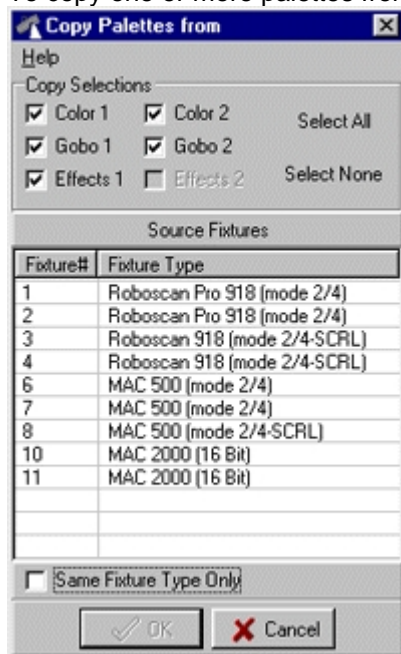
From the [select bitmap dialog](#)<sup>791</sup>, drag the bitmap to the line representing the effect. Alternatively highlight the line corresponding to the effect, then double click the bitmap in the select bitmap dialog.

### Default Palettes

All built-in fixtures have default palettes assigned to them when the fixture is configured. To restore all the palettes to default values select **Default all Palettes** from the options menu. To default single palettes (the one on the 'active' tab) select **Default Palette** from the options menu.

### Copying Palettes from other fixtures

To copy one or more palettes from another fixture, click **Copy from Source Fixture**.



Copy palette dialog

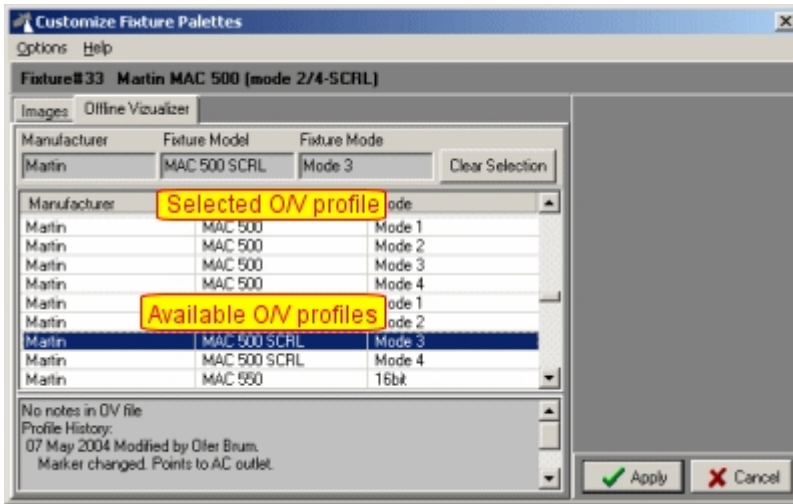
Use the Copy Palette dialog to select the source fixtures and copy one or more palettes from the source fixture. Finally, to assign the new palettes to the fixture click **Apply**.

To define palettes for user defined fixture profiles see [user definable fixture profiles](#)<sup>[247]</sup>

**Modifying the Offline Visualizer profile link**

Note: The Offline Visualizer must be running to

Built in fixture profiles with Offline Visualizer support contains a link to a specific Offline Visualizer fixture profile. Most built in fixtures has the option of modifying the default link. To modify, e.g. to a profile with a different set of gobos, open the customize dialog and select the **Offline Visualizer** tab.

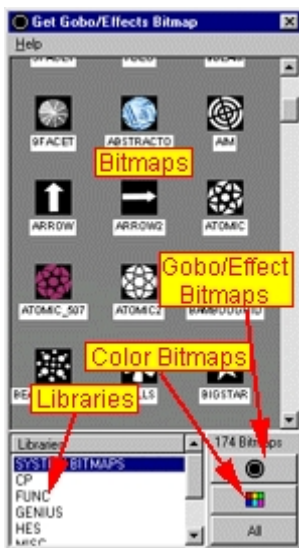


*Modifying the Offline Visualizer link*

Note that the Offline Visualizer itself must be running to extract the list of available profiles. Select the new Offline Visualizer profile to link to from the list of available profiles.

To modify the Offline Visualizer link for user defined fixture profiles see [user definable fixture profiles](#)<sup>[247]</sup>

**6.7.1 The select bitmap dialog**



*The select bitmap dialog*

The select bitmaps dialog is used to assign bitmaps to [palette controls](#)<sup>[94]</sup> when creating fixture palettes for [user defined profiles](#)<sup>[247]</sup>, or [customizing palettes](#)<sup>[76]</sup> for built-in fixture profiles. Bitmaps are organized into two groups, Gobo/Effect bitmaps and Color Bitmaps. Click the corresponding button to change the view between gobo/effect bitmaps and color bitmaps. LightJockey organizes the bitmaps into different libraries. Libraries are listed below the bitmaps. To see bitmaps in a particular library only, click on the library name in the list. To see all available bitmaps click **All**.

To assign a bitmap to a Palette Value, drag the bitmap directly to the line in the list representing the palette value. Alternatively, highlight the line in the list, then double click the bitmap to associate. Note: when assigning a bitmap by double clicking, the list automatically advances to the next item until the last item is reached.

## 7 Controlling and programming fixtures

### 7.1 Selecting fixtures for control and programming

#### 7.1.1 Selecting fixtures on the desktop

Fixtures [configured](#)<sup>[66]</sup> for control are represented on the [LightJockey desktop](#)<sup>[44]</sup> by fixture icons



*Fixture icons on desktop*

#### Fixture selection

There several different ways to select fixtures from desktop in order to activate them for programming. **Select by clicking icons** - click with the left mouse button on the fixture icon on the desktop. This fixture now becomes the "Master fixture". By subsequently clicking on other fixture icons, these will be selected as well.

**Rubber band selection** - another method is "rubber banding" a number of fixtures in one go. Do this by holding the left mouse button down and drag a dotted square to include the fixtures to be selected.

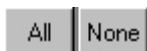
**Fixture de-selection** - to de-select the fixtures either left click on individual icons or "rubber band" an empty piece of desktop to deselect all fixtures.

Fixtures may also be selected through the [fixture groups](#)<sup>[83]</sup> dialog.

#### Selection modes and filters



This button, located on the [fixture tool bar](#)<sup>[57]</sup> and duplicated in the [fixture groups dialog](#)<sup>[83]</sup>, is used to switch between selecting single (solo select) or multiple fixtures. Clicking the button toggles between inclusive and exclusive modes. When in **Inclusive** mode, selecting new fixtures will add the fixture to the current selection. When in **Exclusive** mode, selecting a fixture (or group of fixtures) will deselect all other fixtures. This allows selection of one fixture at a time, just by clicking the fixture icon. This function may also be assigned to a [keyboard hotkey](#)<sup>[203]</sup> function.



These buttons, also located on the [fixture tool bar](#)<sup>[57]</sup>, selects and de-selects all fixtures respectively.

See also [next/previous fixture](#)<sup>[81]</sup>, [fixture solo](#)<sup>[200]</sup>

#### Master and slave fixtures Fixture

A fixture selection may be in one of 3 different states:





Unselected fixture - blue icon caption.



Master fixture (bright red icon caption)

When in master mode all [fixture controls](#)<sup>[92]</sup> will relate to that particular fixture type. The fixture controls displays the functions that are currently relevant for the selected fixture type and the values programmed for the particular fixture. Although it is possible to select different types of fixtures it is not possible to access functions that are not supported by the current master fixture. For example, it is not possible to select the gobo control while a RoboColor II (which has no gobos) is selected as master. Only one fixture can be master fixture at any time.



Slave fixture (dark red icon caption)


Selected fixtures which are not selected as master are slave fixtures. Slave fixture means that it follows the master fixtures values when these are changed on the fixture controls. e.g. when 4 Roboscan 918 fixtures are selected, 1 as master, the other 3 as slaves, setting the master to red on color wheel 1 will automatically set the color to red for all 4 fixtures.

### Programming selected fixtures

Once fixtures are selected, they can be controlled and programmed via their respective [fixture controls](#)<sup>[92]</sup>. Certain programmable effects are [cross-fixture type compatible](#)<sup>[22]</sup>, this means that changes to the master will also change the slave fixtures even if they are not of the same type as the master fixture.

See also [configuring the desktop](#)<sup>[45]</sup>, [fixture icon popup](#)<sup>[59]</sup>

## 7.1.2 Next/previous fixture selection

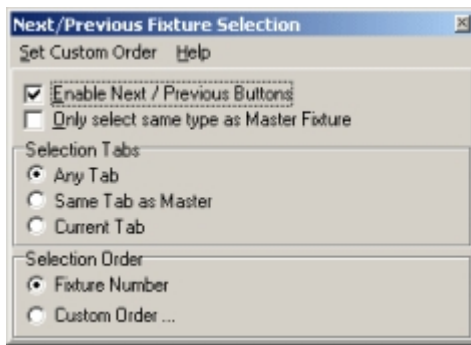
The Next and Previous buttons  on the [fixture tool bar](#)<sup>[57]</sup> may be used to select the previous or next fixture respectively. Selecting fixtures this way is mainly useful during sequence programming where there is a need to adjust fixtures one at a time. The next/previous functions may also be assigned to keyboard [hotkeys](#)<sup>[203]</sup>.

### Default selection

By default the buttons select the previous or next fixture based on the icon's fixture number. The new fixture is selected as master while all other fixtures are de-selected. The new fixture selected will always be next or previous fixture in relation to the current [master](#)<sup>[80]</sup> fixture. If no fixtures are selected, **next fixture** will select the fixture with the lowest fixture number, while **previous fixture** will select the fixture with the highest fixture number.

### Custom order selection

The order of selection may be customized. To open the custom selection dialog, right-click either of the two buttons, or select the dialog via the **Setup -> Preferences -> Previous/Next Fixture Selection**.



*Previous/Next fixture custom selection*

[Enable next/previous buttons](#) - use this switch to show or hide the buttons on the tool bar.  
[Only select same type as Master Fixture](#) - When enabled, only fixtures of the same type as the [Master](#) fixture will be selected as next fixture.

#### Selection Tabs

[Any Tab](#) - selects the fixture from any tab.

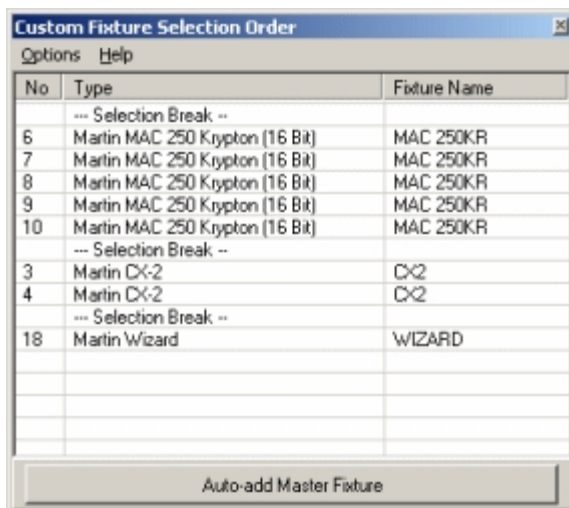
[Same as Master](#) - selects the fixture only if placed on the same tab as the Master fixture.

[Current tab](#) - selects the fixture if it is placed on the current tab only.

#### Selection Order

[Fixture Number](#) - uses the fixtures number as base for selection

[Custom Order](#) - uses a custom selection order (see below)



*Previous/next custom order dialog*

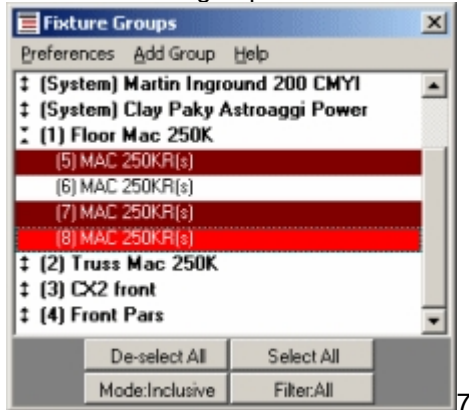
Open the selection order list by selecting **Custom Order**, or by selecting **Set Custom Order** from the menu. The Custom Order allows precise control over the fixture selection order. When selecting Custom order, the *Only select same type as Master Fixture* and any tab restriction will be disabled.

To add fixtures to the order of selection, enable the **Auto-add Master Fixture** button, and select the fixtures to add to the list by clicking the fixture icons one by one. Alternatively, select the required fixture as Master fixture, and right-click the list to insert or add the fixture to the list. Fixtures may be removed from the list by highlighting the line(s) and **selecting remove fixture** or **remove lines** from the right-click popup menu. Use the **Clear All** function in the preferences menu to clear all entries into the list.

Selection breaks may be inserted or added to the list by selecting a line and right-clicking. Inserting or adding a *Selection Break* creates a 'break' in the next/previous selections. In the example above, the break after fixture number 8, means that when fixture 8 is selected as master, clicking **next fixture** the selection will loop back to fixture number 5 since this is the first fixture in the block contained by the two breaks. Likewise when fixture number 5 is selected, clicking **previous fixture** will loop the selection to fixture number 9 as this is the last fixture in the block.

### 7.1.3 Fixture groups

Click the fixture groups  icon on the [fixture tool bar](#)<sup>[57]</sup> to access the fixture group dialog.



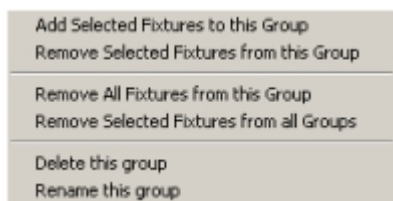
*Fixture group dialog*

Select or de-select a group of fixtures or individual fixtures by clicking on the corresponding line in the group view. LightJockey will automatically build fixture groups by placing all the fixtures of the same type into groups. Disable **Preferences** -> **Show system groups** in the menu to hide system groups

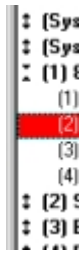
Fixtures in the list may be listed by profile name or user name. By default profile names are used; select **Preferences** -> **Show user names** to switch to user name display. User names for individual fixtures are changed via the [fixture configuration dialog](#)<sup>[66]</sup>.

#### Custom fixture groups

To create custom fixture groups select "Add Group" from the menu. Name the group then click "Ok". The new group will now appear in the group window. To assign fixtures to the group, first [select the fixtures](#)<sup>[80]</sup>, then right-click on the line with the newly created group and select **Add selected fixtures to group** from the popup menu. The maximum number of user defined groups is limited to 99.



*Custom fixture group right-click popup*



The fixture groups can be expanded to show individual fixtures by clicking on the double arrows to the left in the list. Collapse the list by clicking on the arrows again.

**Select All** and **De-select All** selects and de-selects all fixtures respectively.

**Selection Mode: Inclusive/Exclusive** - the lower, leftmost button in the window toggles between inclusive and exclusive selection mode. Inclusive mode means that more than one group or fixture may be selected at a time. In Exclusive mode, fixtures already selected are automatically de selected before the new selection is applied. the function of this button may be assigned to a keyboard [hotkey](#)<sup>[203]</sup>. The selection mode is also available from the [fixture tool bar](#)<sup>[57]</sup>.

**Selection Filter: All/Odd/Even** - use the selection filter (click button to change) to set a filter for fixture selection/de-selection via the group window. **All** selects/deselects all relevant fixtures - **Odd** selects/deselects fixtures with odd fixture number and **Even** selects/deselects fixtures with even fixture number.

#### Fixture group hotkeys

It is possible to assign selection of the first 10 user-defined fixture groups to [keyboard hotkeys](#)<sup>[205]</sup>.

## 7.2 Using generic DMX profiles

### 7.2.1 Generic DMX profiles

The Generic DMX fixture profile allows control and programming of DMX effects that does not have a suitable LightJockey profile. Although a generic profile is not really that usable for programming intelligent fixtures it may be used as a last resort control if no suitable profile is available. The profiles are mainly used for controlling 'channel devices' such as dimmer or switch packs or DMX controllable smoke machines or stroboscopes.

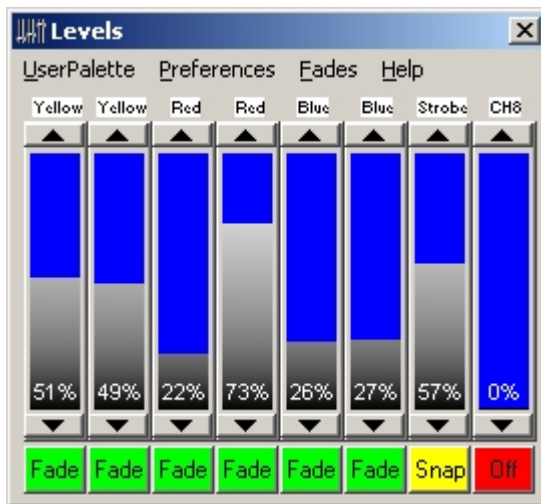
The Generic fixture profile comes in 3 flavors: Level and Switch controls and specialized controls. All generic controls implement 8 bit control channels.

The specialized profiles contains controls for RGB Packs which are profiles for controlling devices consisting of multiple RGB elements (typically LED fixtures); other specialized profiles are for controlling strobes, smoke machines or hazers.

The control is accessed from the levels/extended icon  on the [fixture tool bar](#)<sup>[57]</sup>. RGB Packs are controlled through the [RGB pack color control](#)<sup>[89]</sup>

#### Generic dimmer control

Use the generic dimmer profile to control 'level devices' such as dimmer packs. These profiles can be found under the **Generic** heading in the [fixture configuration dialog](#)<sup>[66]</sup>. A number of profiles with different capacities (from 1 to 32 channels) are supplied - select a profile that matches or has a higher channel count than the device to control. Note that to control devices of more than 32 channels, several profiles may be configured and addressed in continuously in the DMX address space.



Level control (8 channel profile)

To program the control drag click the virtual faders to the desired values. Use the **Preferences** menu to change the value format displayed on the fader between % (0-FF) values or digital values (0-255). To set the value for all channels simultaneously (8+ channel controls only) - right-click any fader and check **All** on the popup menu. Disable **All** to control channels individually. The control may be customized to display a user defined label for each of the control channels (see below). Use the [the generic DMX control](#)<sup>[86]</sup> to control some or all of the channels allocated to level controls without going through individual fixture profiles.

See also [fade state buttons](#)<sup>[93]</sup>

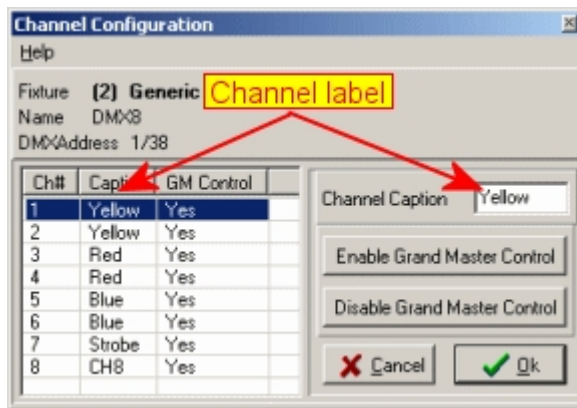
### Generic switch pack control



Switch control (8 channel profile)

The switch is a specialized version of the level control and has only two states: on and off. Click the on/off button to change the state - off is represented with DMX value 0 and on is represented with DMX value 255. Also, the switch control doesn't allow the [fade state](#)<sup>[93]</sup> to be set to fade. Channels controlled by a switch control will not scale under control of the [grand master](#)<sup>[195]</sup> or sub-master - programmed on values will remain unaffected until the Grand Master or relevant sub-master reaches a value of 0 where the output of programmed channels will be modified to off (value = 0).

### Customizing the generic DMX control

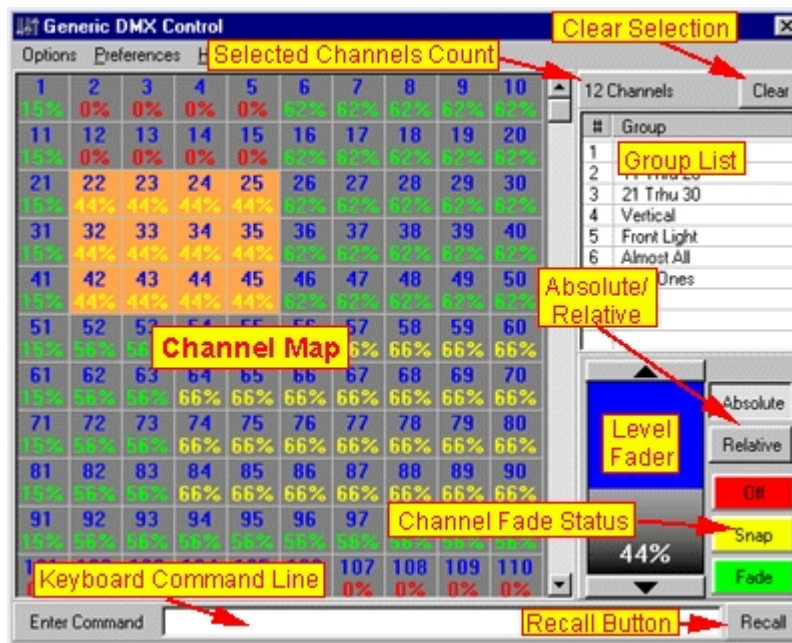


Channel configuration dialog

To customize the channel labels for each of the control channels, right-click the fixture icon on the desktop, then from the popup menu select **Define Fixture Profile**. From the channel configuration dialog it is also possible to disable **Grand Master**<sup>[195]</sup> control for individual channels. By default, all generic DMX channels are affected by the Grand Master. Use the dialog to disable the Grand Master for individual channels.

See also [fade state buttons](#)<sup>[93]</sup>

## 7.2.2 The generic DMX control



The generic DMX control

The Generic DMX Control may be used to program Generic DMX channels across multiple [generic DMX fixture profiles](#)<sup>[84]</sup>. This control is very useful when programming a large number of generic channels where specific values has to be programmed into specific channels. The control contains a map of all DMX channels controlled by generic DMX profiles and also features a keyboard command interface for fast programming of DMX values. The control adds data into the current scene in the [current sequence](#)<sup>[124]</sup> like any other [fixture control](#)<sup>[92]</sup> except that it is not related to a master fixture or other selected fixture icons. To make the Generic DMX control available, at least one generic DMX profile must have been [configured](#)<sup>[66]</sup> first.

When available, the control is accessed from the desktop main menu (**Generics**) or by assigning a [hotkey](#)<sup>[205]</sup> to toggle the control on and off.

### Programming the DMX channels with the mouse

To program channels with the mouse, select (highlight) relevant channels in the map grid and use the level fader and [off/snap/fade buttons](#)<sup>[93]</sup> to program the channels. The level fader will act on all selected channels, and the [fade state](#)<sup>[93]</sup> of each channel will default to fade (unless already programmed as snap). The number of selected channels is displayed in the top right corner above the group list - use the clear button to deselect all channels.

The [fade state](#)<sup>[93]</sup> of each of the channel in the map is shown in the grid in color codes: red for 'off' channels, yellow for 'snap' channels and green for 'fade' channels. Note that these are default colors which may be modified (see later below).

### Absolute vs. relative mode

When in absolute mode, all selected channels are set to the exact value of the level fader. In relative movement the values of the selected channels are increased or decreased with the same amount as the level fader is changed; e.g. if the level fader is increased with 10%, all selected channel have their value increased by 10%. Values for all channels are capped at 0 and 255. Use the *absolute* and *relative* buttons to change the mode.

### Keyboard shortcuts

By default a number of keyboard keys are mapped as shortcuts to the level fader - note that the keys will only work if they are not used as [hotkeys](#)<sup>[203]</sup>.

[Cursor Up]: Increases level by 1 unit (% or 8-bit value)  
[Cursor Dn]: decreases level by 1 unit (% or 8-bit value)  
[Page Up]: Increases level by 10 units (% or 8-bit value)  
[Page Dn]: decreases level by 1 unit (% or 8-bit value)  
[Home]: sets level to full (100% or 255)  
[End]: sets level to 0

### Grouping Channels

#### Creating and modifying groups

It is possible to group channels for faster selection. A maximum of 32 groups may be created and each channel may be assigned to any group.

To create a group, right-click the *Group list* then select **Create New Group** from the popup menu. To rename or delete an already existing group, right click the group name, and select **Rename** or **Delete** as appropriate from the popup menu.

#### Assigning Channels to Groups

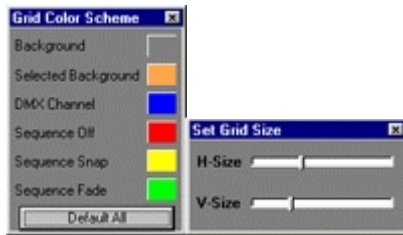
To assign channels to a group, select the channels, then [Shift]-Right click the Group in the group list, and select **Set Group to Selected** or **Add Selected to Group** from the popup menu. To remove channels from a group, select the channels, then select **Remove Selected from Group** from the popup menu.

### Customizing the Generic DMX Control

The control can be resized by dragging any of its corners, the channel grid will automatically resize to fit the available space. Use the preferences menu to show or hide the group list and level fader respectively. If neither is visible, the channel grid resizes itself to fill out the whole control (the keyboard command interface is still available even if the level fader is hidden).

### Customizing the Grid

From the Preferences menu use the **Grid Preferences** menu to customize the grid cell-size, color scheme and the font used in the grid.



*Grid customization dialogs*

### Hiding Channels

By default all Generic DMX fixture channels are mapped in the Generic DMX control. Channels may be removed from the map (hidden) by highlighting the relevant channels and then selecting **Hide Selected Channels** from the options menu to remove the selected channels from the map. The number of hidden channels will be noted in the window caption of the Generic Control. Click **Show All Channels** to make all channels visible again.

### Options Menu

[Delete All Groups](#) - deletes all groups

[Clear All Groups](#) - clears all groups without deleting the groups

[Hide Selected Channels](#) - hide selected channels.

[Show All Channels](#) - show all channels.

### Preferences Menu

[View Group List](#) - toggles visibility of the group list

[View Level Fader](#) - toggles visibility of the level fader

[Use % Values](#) - when enabled all level values are displayed and programmed as % values (0-100%), when disabled all level values are displayed and programmed as 8 bit values (0-255)

### Grid Preferences

[Auto Set Matrix Size](#) - When disabled the channel matrix does not automatically resize when the control is resized

[Mouse Select Rectangles](#) - When enabled the mouse selects cells in the grid in spread-sheet style (rectangles), when disabled the mouse selects by 'painting' cells.

[Auto-Scroll to first selected channel](#) - when selected, the grid will always automatically scroll to first selected channel whenever selections are changed.

[Grid Size, Grid Font, Grid Colors](#) - see Customizing the Grid above.

### Keyboard Preferences

[Show Command Line](#) - toggles the visibility of the command line (see below)

[Lock Cursor keys to grid](#) - locks the keyboard cursor keys to selecting cells in the grid (should not be used together with the command line interface).

[Empty Command Clears Selection](#) - When enabled, an empty command line followed by [Return] clears the channel selection.

### The keyboard command interface

In addition to the mouse programming interface, the generic DMX control also implements a keyboard-oriented command interface. The keyboard interfaces uses the command line below the channel map. The command interface may be enabled or disabled using the **show command-line** option in the preferences -> keyboard preferences menu. The command interface implements a quick way to access and program channels, and to minimize the number of keystrokes it uses different symbols for various functions:

Note that in order to be able to accept keyboard commands the generic control must have the Windows focus (must be the active window) and the keys must not already be assigned as standard [hotkey functions](#)<sup>[203]</sup>. When the [Enter] key is pressed, the command line is automatically cleared. Use the Recall button to recall the last command non-empty command line (if any).



### Selecting or de selecting channels

To select a (highlight) channel simply type in the channel number followed by [Return]. To select multiple channels, use a + between channels, e.g.; 1+3+5 selects channels 1,3 and 5. To add channels to the current selection, precede the first channel with the + operator, e.g.: +1+3+5 adds channels 1,3 and 5 to the current selection. If there is no + operator, the current selection will be cleared before selecting the new channels.

- To deselect channels, precede the channel with a -, e.g.: -1-3-5 will deselect channels 1,3 and 5 from the current selection.
- To select a channel range use / between low and high channel number, e.g. 45/77 selects channels 45 through to 77.
- The select (+), deselect (-) and through (/) operators may be combined, e.g. the command: 1/10-4/6+12 selects channels 1,2,3,7,8,9,10 and 12.

### Selecting groups

To select groups rather than single channels use the #[group no] symbol, e.g.: #1 selects all channels in group 1. The +, -, and / operators may be used the same way as when used with single channels. When using the / operator, do not add a second # to the second group number, e.g.: #1/5 selects groups 1 through 5 while #1/#5 is considered an input error. Note that the '.' or ',' keys present on the numerical keypad of most full-size PC keyboards may be used for the # symbol as well.

### Setting levels

To set the value of the selected channels, use the @ operator. For example, the command @10 sets the value of all selected channels to 10 (% or 8-bit value, see later). Use the + or - operators to set the values relatively, e.g.: @+10 will increase the level value for all selected channels, @-25 will decrease the value for all selected channels with 25. Note that the \* key present on most numerical keypads on full-size PC keyboards may be for the @ symbol as well.

### Setting Fade States

Use o or O to set the state to Off for selected channels. Use f or F to set the state to Fade for selected channels. Use s or S to set the state to Snap for selected channels.

### Special key combinations

## selects all channels. @@ programs all channels to the following value. [Return] on a blank command line deselects all channels (may be disabled, see preferences menu)

### Combining multiple commands

Since the whole command line is not evaluated before the [Enter] key is pressed, multiple commands may be given in the same line, e.g: #1/3F@50-#2@+10 [Enter] selects groups 1 through 3, sets the fade states to Snap, then programs the level to 50, deselects group 2, and finally increases the level of the channels in the remaining groups (1 and 3) by 10.

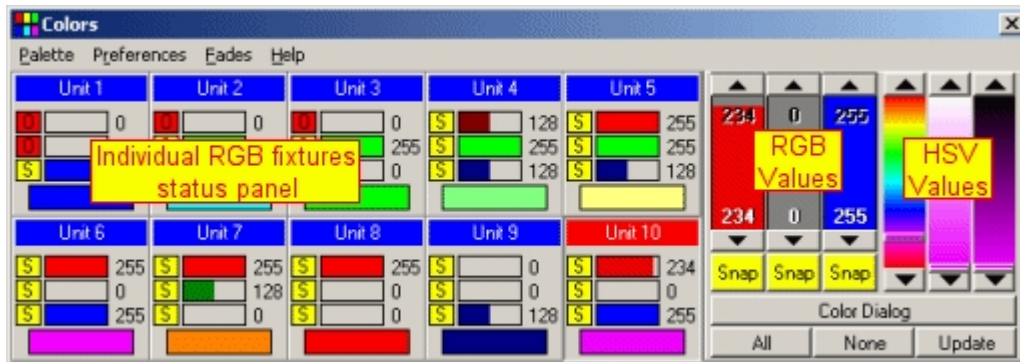
## 7.2.3 The RGB pack color control

The RGB pack profile is designed to control packs of RGB only devices - typically devices that consist of a number of Red, Green and Blue LED modules.

Each of the 'pack' profiles implements a number of individual RGB devices in one profile. The fixture profiles can be found under the Generic manufacturer heading in the [fixture configuration dialog](#)<sup>[66]</sup>. Depending of the number of RGB modules, the profile may use up to 30 contiguous DMX channels and expects device control channels being mapped as Red, Green and Blue intensity controls (in that order) for each RGB module (Red, Green, Blue, Red, Green, Blue, Red...etc - a different control channel layout may be patched via the [global patch dialog](#)<sup>[207]</sup>).

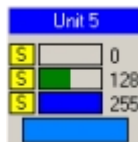


Fixture Icon - RGB Pack x10



*The RGB pack color control*

The color control consists of two parts - status panels for each of the (up to) 10 individual RGB modules and a programming panel to the right.



*RGB fixture status panel*

The RGB module panels displays the current programming status for each of the individual RGB modules. Each panel shows the current DMX values for the red, green and blue control channels both as a graphical bar and as numeric values. The panel also shows the color resulting from mixing the Red, Green and Blue colors - note that the color is a theoretical estimate and the actual color from the device may look different.

### Selecting the RGB fixtures for programming

Enable programming of individual RGB fixtures by enabling one or more status panels - click the individual fixtures status panels to toggle enabled/disabled state, [Ctrl]-click to enable a single fixture only. Enabled fixtures have their caption highlighted in red just as fixture icons on the desktop.

### The programming panel

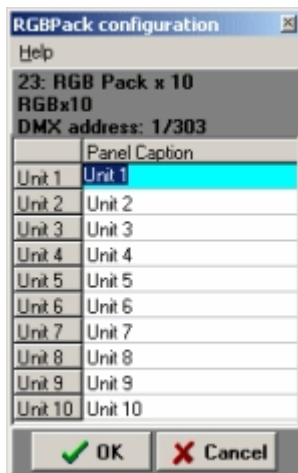
When at least one status panel is enabled, program the RGB fixtures using the programming panel. By default the programming panel remains hidden as long as no panels are enabled (check preferences - > Always show programming panel to keep visible all the time). The programming panel interacts with enabled panels only. The programming panel has controls for individual programming of each of the 3 red green and blue control channels, as well as a controls for hue, saturation and value (HSV) which affects two or more control channels at a time. Hint: to program pure white using the HSV controls, push saturation to full white and use value to set intensity.

When using the control panel to program - ALL fixtures represented by the enabled status panels are programmed. Click **All** to select all status panels - click **None** to deselect all status panels. Right click a on panel and select **Update** to transfer contents of the control panel to the panel ; click the **Update** button to update all selected panels with the values and fade states contained in the programming panel.

Double click a panel (or right click the panel and select **Get color** from the popup menu) to transfer the contents of the panel to the control panel.

Click **Color Dialog** to select a color value using the built-in Windows color picker to select an RGB value directly (there is no feedback from the dialog to the fixtures - the color is not applied before approved by clicking Ok).

### Customizing panel captions



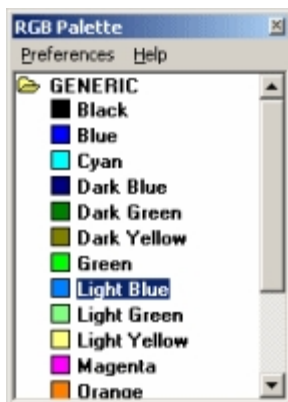
*RGB pack configuration dialog*

The captions of each of the individual fixture panels may be customized for better identification. To do so, right click the fixture icon on the desktop and select **Define Fixture Profile** from the popup menu. Use the RGB pack configuration dialog to set captions of the individual panels.

### RGB Palette

Click **Palette -> RGB Palette** on the RGB control menu to access the built in RGB palette (select **Userpalette** to access the [standard user palette](#)<sup>[95]</sup> for color controls).

Note that RGB palette may not be available for all types of RGB controlled fixtures.



*The RGB palette*

Unlike the standard user palette which contains and assigns color values to the RGB pack control as one unit, the RGB palette is used to assign color values to individual RGB panels. The palette is user definable and may contain different palette types, each type in its own folder. To apply a color entry from the palette, enable one or more panels and double click the color. Alternatively enable **browse** from the preferences menu to apply a color from the palette just by highlighting it.



Adding an entry to the palette











To add an entry to the RGB palette, right click a status panel containing the color and select **Add color to RGB palette** from the popup menu; this will open the RGB palette with an extra panel. Select the palette type from the Type drop down box (or type in a new designation for the type), and type the color name in the name field. To delete an entry right click and select **Delete entry** from the popup menu. Deleting a folder containing multiple entries deletes all entries in that folder.

To if a particular color is already included in the RGB palette, right click the status panel and select **Find color in RGB palette**. Note that the function will find the first entry of a given color only (the same color value may exist with different type and or name).

See also [fade state buttons](#)<sup>[93]</sup>

## 7.3 Fixture controls

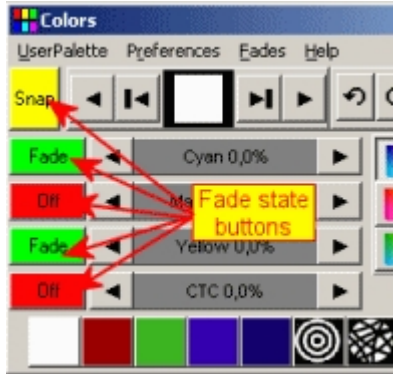
All types of fixture effect control are included in the following control groups:

-  [Intensity controls](#)<sup>[96]</sup>
-  [Movement/position controls](#)<sup>[98]</sup>
-  [Colors controls](#)<sup>[108]</sup>
-  [Gobo controls](#)<sup>[111]</sup>
-  [Beam controls](#)<sup>[114]</sup>
-  [Effects controls](#)<sup>[115]</sup>
-  [Extended Controls](#)<sup>[117]</sup>
-  [Lamp controls](#)<sup>[119]</sup>
-  [Generic DMX level controls](#)<sup>[84]</sup>, [Extended controls for built in profiles](#)<sup>[117]</sup> or [Extended controls for user defined profiles](#)<sup>[118]</sup>
-  [Fixture reset](#)<sup>[120]</sup>


Each fixture control consist of one or more [control elements](#)<sup>[94]</sup>


### 7.3.1 Fade state buttons


The fade state buttons together with [scene and fade times](#)<sup>[22]</sup> to control the dynamic transitions of the programmable effects. Each DMX channel programmable by the control, has an associated fade state button.



Different effects will default to either snap or fade, however the fade state can be changed by clicking on the fade state button; note that left and right-clicking on the button cycles the off, snap and fade states differently. It may not be possible to set the state to fade for certain effects.

**Off**  This effect will not be included in the scene.

**Snap**  The value will snap, effectively move as fast as physically possible from its current position to this programmed position (unless the effect is slowed down by a separate speed control value)

**Fade**  The effect will be moved from its current position to the new position in a timed fade. A timed fade means that DMX values will be calculated in a way moves the effect at a certain speed to reach the target. The time, and thus the speed, is determined by the current [scene and fade time](#)<sup>[22]</sup>. Note that the default scene fade time is 0.05 seconds - this value is interpreted as a snap by the DMX output engine, so in order to have effects fading, the scene fade time must be changed from 0.05 seconds to something higher using the [sequence control](#)<sup>[124]</sup>. Note that all effects programmed to fade in the same scene will use the same scene fade time, the fade time is not individual from effect to effect.

To understand how snap and fade works, it is probably easiest to look at the [DMX output monitor](#)<sup>[60]</sup>. Select a single fixture, and default all values for the fixture (clear the current sequence and cue). Open the DMX output monitor by right-clicking on the fixture icon and select **DMX Output**. Select a simple effect such as intensity or color and write two scenes that moves this effect from one position to another. Try experimenting with snap and fade settings and different scene and fade times.

#### Multiple function buttons



*Mac 500 Gobo Control - multiple functions to one fade state button.*

One fade state button may control more than just one effect - actually, a normally fade state button controls the transition of one DMX channel, for certain multi channel functions it may control the fade

state of more than one channel.

A fixture may also have more than one function on the same DMX control channel. This means that the same fade state button determines the transition for all of the effects on that channel. e.g. the MAC 500-S fixed gobo has 3 functions allocated to the same channel: gobo selection, wheel scroll and gobo shake. Since these are all controlled via the same control channel, It is not possible to program transitions for these effects individually.

#### Multiple fade buttons for the same channel

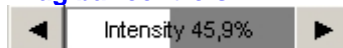


*Roboscan 518 - linked fade buttons*

Sometimes when fixtures contain different types of functions on the same DMX channel, the functions are split on to different fixture controls - however the corresponding fade state buttons on each of the controls are linked (in fact programming the same DMX channel transition). In this case it is not possible to use individual fade state on the different effects. Also, usually the functions themselves are exclusive, for example on the Roboscan 518 it is not possible to program a strobe AND a lamp command into the same scene, as they use the same DMX channel for the commands.

### 7.3.2 Fixture control elements

#### Drag bar controls



*Drag bar control*

The drag control is used to select one out of a range of values (for example to select intensity value). To set a value left-click anywhere on the bar, and hold the mouse button to drag the value left and right in the control. Left-click on either the two arrow buttons to modify the values in small steps, or right-click the buttons to set min or max values respectively. Usually the control is organized so that values that result in lower or slower effect are to the left (low values) and higher or faster values to the right. Note that even though the bar may display the selected the value in percentages, it does not necessarily mean that these values have the same physical effect across fixture types. For example 50% gobo rotation speed on a MAC 500 is **NOT** the same speed as 50% on a Roboscan 1220.

#### Scroll Controls

Scroll controls are used to select effects with an 'image' effects such as colours, gobos and prisms. Scroll controls are often combined with palette controls.



*Gobo scroll control*



These buttons operates much like buttons a CD player, click on this button to shift the effect one complete 'effect' (e.g. one complete gobo).



Clicking these buttons decrements or increments the corresponding DMX control channel by one. For example, when programming a color wheel it will only move a small amount compared to a complete color using the 'complete effect' buttons. Use these buttons to achieve split effects for fixtures that includes this option in the DMX protocol (not all fixtures support split effects).



*Programming split colors*

Scroll controls are only available for built-in fixture profiles.

### Palette controls

Palette controls are used to select effects such as colors, gobos or prisms directly, to select the effect left-click on the icon. Note that palette controls may be hidden via the local control preferences menu to reduce the overall size of the fixture control.



*Color palette*



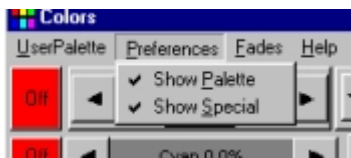
*Effect palette*

### Special controls

Some fixture controls include special function controls. The special functions call up predefined functions that are built into in the fixture. These functions are usually dynamic effects such as pulse effects, or relies on the fixture to call up random values such as a random CMY value. Special controls are only available for built-in fixture profiles.



*Mac 500 intensity control - special controls section*

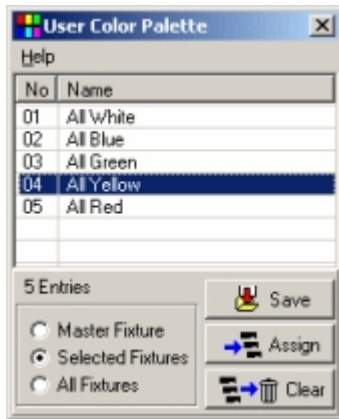


The special control section may be shown or hidden from the local control preferences menu.

See also [fade state buttons](#)<sup>93</sup>

## 7.3.3 User palettes

The user palettes are accessible from the menu of most of the fixture controls (except lamp control, and pan/tilt controls) and offer a quick way of assigning predetermined values to the fixture controls. Note that the user palettes may not be available for fixture types.



User color palette

When using palettes please observe the following:

1. When assigning a user palette entry to a fixture the actual values are assigned, not a reference. This means that if a palette entry is changed - this change will **not** affect scenes and sequences already programmed with the old values.
2. The fade state of each of the effects is saved together with the actual values. When applying the palette values, only entries with a [fade state](#)<sup>[93]</sup> of fade or snap will be applied. This way it is possible to create palettes covering a sub-set of the palette functions, making it possible to create combinations of palette entries of same type; for example separate entries for iris and for focus even though they both are beam controls.
3. Palettes must be manually updated when new fixtures are added or modified in the [fixture configuration](#)<sup>[66]</sup>.

#### Fixture selection filter

Use the fixture selection buttons in the lower left to decide which fixtures to include when creating, modifying or applying palette entries:

**Master fixture** - applies values to the entry for the [master fixture](#)<sup>[80]</sup> only

**Selected fixtures** - applies values for all selected fixtures

**All Fixtures** - applies values for all fixtures

#### Creating and modifying user palette entries

Program the contents of a user palette entry in the current scene and click **Save**. To modify an existing entry, highlight it first before saving. In the save dialog, click **Save as New** to save as a new entry, or **Save** to modify an existing entry.

#### Using palette entries

To apply a palette entry to one or more fixtures, first select the fixtures then either highlight the entry and click **Assign**, or simply double click the entry. Note that the fixture selection filter is also applied when assigning palette entries.

#### Clear

Clicking the **Clear** button will clear values from selected fixtures if the values are identical with the values contained in the palette entry.

## 7.3.4 Intensity control

### 7.3.4.1 Intensity controls for built in profiles

Click the Intensity icon  on the [Fixture tool bar](#)<sup>[57]</sup> to access the fixture intensity control.

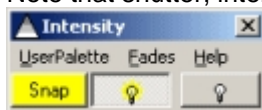




Example MAC500/Roboscan 918 intensity control displaying special functions

An intensity control usually contains a shutter button, a strobe and an intensity drag bar. The shutter button controls the fixture shutter (light on/off), while the intensity bar controls the actual intensity of the light output. Note that not all fixtures have separate shutter and intensity controls, and some fixtures do not have any intensity controls at all (e.g. Roboscan 812 that uses color and gobo wheels to obtain a blackout). However with fixtures implementing both a shutter and an intensity control, the shutter must be opened in addition to the intensity setting to enable any light output (hint: the [default DMX output](#)<sup>[53]</sup> may be modified so the shutter by default is open). The strobe drag bar controls the strobe frequency.

Note that shutter, intensity and strobe controls are compatible across fixture types.




Intensity control with lamp on/off

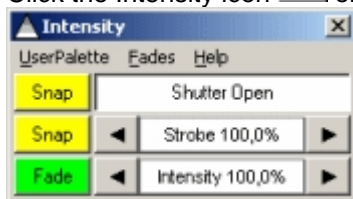
Some intensity controls may implement lamp controls to control power to a fixture equipped with a halogen lamp. Do **NOT** confuse this with the [lamp control](#)<sup>[119]</sup> that is for discharge lamps only.

The [special functions controls](#)<sup>[94]</sup> seen in the above example may be shown or hidden from the local preferences menu.

See also [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup>, [Intensity controls for user defined profiles](#)<sup>[97]</sup>

#### 7.3.4.2 Intensity controls for user defined profiles

Click the Intensity icon  on the [Fixture tool bar](#)<sup>[57]</sup> to open to the fixture Intensity control.



Intensity control

An intensity control may contain a shutter button and drag bars for strobe and intensity drag. The actual controls depends on the [user defined profile](#)<sup>[247]</sup>. Some profiles may not have intensity functions at all, while other fixtures may combine controls on the same channel making it impossible to program effects individually. Use the shutter button to open and close the fixtures shutter (light on / off) - note that some fixtures may not have separate shutter and emulates shutter with the gobo or color wheel. Use the strobe drag bar to program the strobe speed from minimum to maximum frequency - some fixtures may not implement a separate mechanical strobe but use the gobo or color wheel to strobe. Use the intensity drag bar to program the intensity level for the fixture.

See also [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup> and [intensity controls for built in fixtures](#)<sup>[96]</sup>

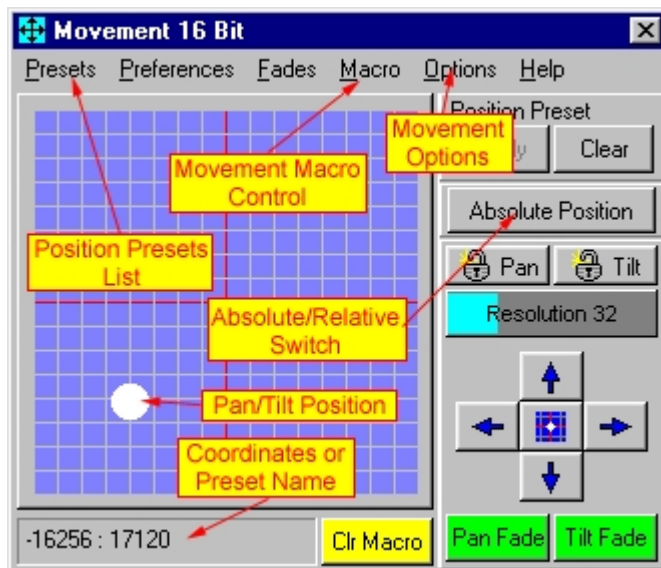
## 7.3.5 Movement and position control

### 7.3.5.1 Position control

#### Pan/tilt control

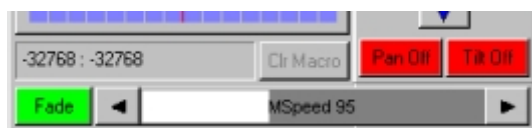
**Important note: Mouse vs. touch devices for position control:** In order to obtain the maximum resolution for fixture pan/tilt positions, the pan/tilt grid implements a special interpretation of normal mouse commands so the virtual size of the grid may be extended to a maximum size of 65536 x 65536 (representing full 16 bit pan/tilt resolution). The special interpretation involves a programmatically reset of the mouse cursor position each time the mouse is moved. This approach does not work very well with touch devices where the cursor position (e.g. the users finger) cannot be reset by LJ.

To make the position grid work with touch devices, select **Preferences -> Left-Click Mode -> Touch** from the position control menu. To switch back to normal mouse mode, select **Preferences -> Left-Click Mode -> Mouse**. Note that touch mode, can also be used with a mouse device - a touch device is not a requirement for using touch mode. For more details on touch control, see below.



*Typical pan/tilt position control*

The picture shows a typical position control with pan/tilt control for fixtures such as scanners with a mirror, or moving yoke fixtures. The primary control is the position grid. The dot represents the absolute pan and tilt position of the mirror or yoke.

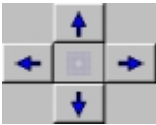


*Mspeed control*

Some fixture profiles implement an extra 'speed' control on the position control. The exact function of the speed parameter depends entirely on the fixture itself, different fixtures may use the parameter in different ways (e.g. slow or fast at low values).

#### Adjusting the position of one or more fixtures

To adjust the position of one or more fixtures, select the fixtures, then in the grid left-click and drag the white dot to the desired position.



It is also possible to move the pan and tilt by using the arrow buttons in the lower right side of the control. Click and hold a button to move the fixture in one direction to a given direction.

Click **home**  to center the fixtures position.



The two buttons marked pan lock and tilt lock will lock the pan and tilt positions respectively. When locked the position can be moved in one plane only.

Resolution 32

Use the "Resolution" drag control to adjust the fineness of the position controls. The less the delta value, the less the position will change when dragging in the position grid, or when clicking the arrow buttons.

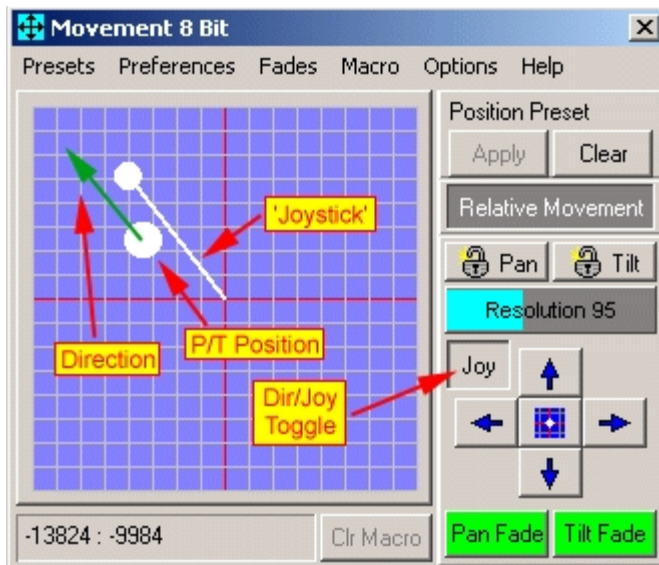
Click **Clr Macro** to clear an active [movement macro](#)<sup>[102]</sup>.

### Left-click options

Use the preferences menu to select one of two left-click modes: **Mouse Mode** (default) - select this mode when using a mouse or trackball type device to control position. **Touch mode** - select this mode when working with a touch type device.

### Touch Mode

When in left-click touch mode, there are two distinct operation modes. Direct mode or 'joystick' mode. The two modes are toggled between by clicking the Dir/Joy button located next to the 'arrow' buttons.



Position grid, joystick mode

### Direct Mode

When in Direct Mode (Dir), the pan/tilt is set according to the position in the grid - resolution factor is ignored.

### Joystick Mode

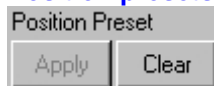
In Joystick mode, the pan/tilt position is continuously modified as long as the device is 'activated' The distance from center is combined with the resolution parameter to define a 'speed' of position change - the direction of change is given by the direction of the 'line'. The direction/speed is illustrated by a 'joystick' superimposed on the pan/tilt grid.

Note: Joystick mode has nothing to do with a physical joystick. The position grid cannot use an attached Joystick to control position.

### Right-click options

Use the preferences menu to select one of two right-click modes. Goto Position (default mode) - the 'dot' jumps to the position where the cursor is located. Note that relative movement (see below) does not work with goto position. Lock Cursor in Grid - the mouse cursor locks to the 'dot' until the next mouse click (handy option when using the [follow spot](#)<sup>[198]</sup> option). Note: that if **Left-click Touch** mode is selected, all right-clicks will be Goto Position regardless of setting.

### Position presets



*Apply or clear presets*

Click **Apply** to the currently selected preset, clear to clear any assigned preset - see [position presets](#)<sup>[106]</sup>

### Absolute positioning vs. Relative movement



Use the absolute/relative button to toggle between 'Absolute Position' and 'Relative Movement' mode. When in absolute position mode all selected fixtures are programmed with the same position information (e.g. pan, tilt = -1234,1234). In relative movement mode all selected fixtures are programmed with the same relative movement distance. This means that if the pan position of the master fixture is moved 50 positions to the left, all selected fixtures are programmed to move the position 50 positions to the left. The relative mode may be used to keep beams together, or held in a specific pattern, when moving multiple fixtures around, although the usefulness depends on the fixtures position and where the pan and tilt is pointed. See also [follow spot function](#)<sup>[198]</sup>. Right-clicking on the position grid or clicking the home button always uses absolute position mode.

### Notes on relative movement

Since fixtures with 8-bit pan/tilt has much less resolution on pan and tilt positions than 16-bit fixtures, moving both 8- and 16-bit fixtures in relative mode in a 16-bit position control (16-bit fixture as master fixture) does not work properly. Small movement values are simply rounded off and possibly ignored when sent to 8-bit fixtures. To move 8- and 16-bit fixtures together in relative mode, make sure an 8-bit fixture is selected as master fixture.

### The Options Menu

#### Position Options



*The position options control*

**Mirror Pan** - the pan position is mirrored over the vertical centerline (pan = 0) on the position grid.

**Mirror Tilt** - the tilt position is mirrored over the horizontal centerline (tilt = 0) on the position grid.

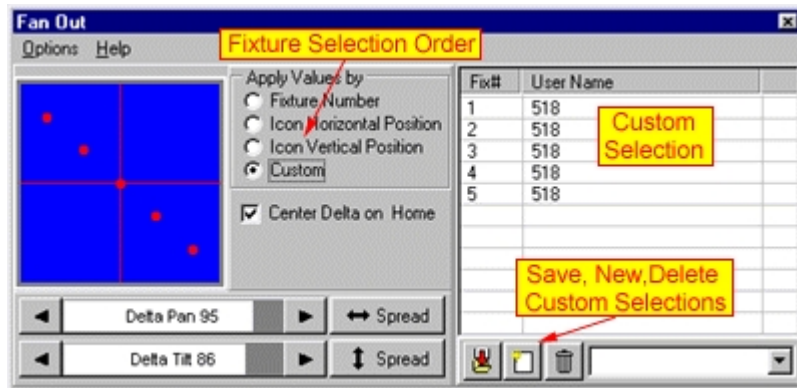
**Swap Pan / Tilt** - the fixture's pan and tilt coordinates are swapped.

**Pan 360** - may be used to program fixtures with more than a 360° pan range (moving yoke fixtures) - clicking the button will, if possible move pan a full 360 degree rotation.

**Fan Out** - see [position fan out](#)<sup>[107]</sup>

See also [movement macro engine](#)<sup>[102]</sup>, [position fan out](#)<sup>[107]</sup> and [non pan/tilt movement controls](#)<sup>[107]</sup>

### 7.3.5.2 Position fan out



Fan out dialog

Select **Options** -> **Fan Out** from the [position control's](#)<sup>[98]</sup> menu to open the fan out dialog.


The fan out dialog is used to set various fan-out patterns quickly in installations where fixtures are hanging symmetrically. The fan out tool works by modifying pan and tilt values on all selected fixtures in the current scene by symmetrical amounts. To create a fan out pattern, select two or more fixtures and drag the delta pan and delta tilt bars to set the range of the fan out. If an odd fixture number is selected, the 'middle' fixture will act as a center for the pan and tilt fan-outs respectively. If an even number of fixtures is selected, the pattern will form around a 'virtual' center fixture.

Enable **Center Delta on Home** to default the middle fixture's pan and tilt to the home position.

The spread functions are used to spread the pan and tilt over a 'physical' range. It works by distributing the pan and tilt delta from the actual position of the first and last fixture in the selection order. The effectiveness of the spread function depends very much on the actual physical locations of the fixtures.

#### Custom order

The order of which the pan and tilt delta values are applied to the fixtures may be changed in the *apply values by* selections. Using the custom options opens up a list where the fixture order may be customized. To add a fixture to the list, select the fixture icon. To remove a fixture from the list, deselect the fixture icon. The selection order may be changed further, by dragging the lines around in the list. Custom selections may be saved for later use.

 click to open the save selection dialog.



Click **save** to re-save an existing selection or **save new** to save the current selection as a new custom

selection. Previously saved selection are available from the selection box in the lower right hand corner of the control.



Click to clear the current selection.

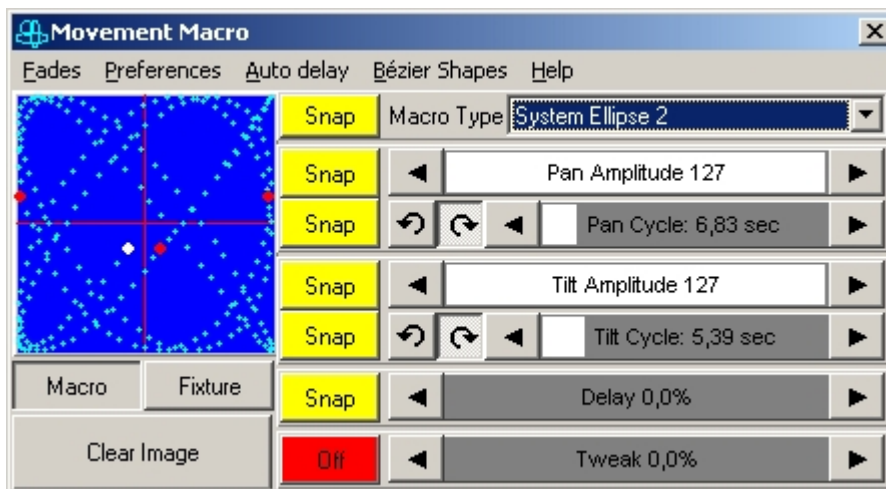


Click to delete the selection.

### 7.3.5.3 Movement macros

#### 7.3.5.3.1 Movement macro engine

LightJockey features a built-in engine for automatic generation of pan and tilt movements. To access the movement macro control, select **Macros** in the [pan/tilt position control](#)<sup>[98]</sup> menu.



*Movement macro control*

The major difference between the movement macros and normal position programming using the [pan and tilt position control](#)<sup>[98]</sup> is that a movement macro is a continuous dynamic movement on pan and tilt contained in one static scene, for example continuous movement in a circle or a figure eight. A movement macro overlays the programmed pan and tilt, so it is possible to move the macro figure around by modifying the regular pan and tilt positions.

To stop a macro from executing in the current scene, set the [fade state](#)<sup>[93]</sup> of the macro type to off, select **No Macro** from the drop down or click **Clr Macro** on the position control to clear the macro settings from the current scene.

#### Macro display window.

The left side of the control displays a real time representation of the progression of the macro by tracing the fixtures pan and tilt coordinates. The display tracks the macro of current master fixture only. To show the position for all selected fixtures, enable **preferences** -> **Show all selected fixtures** - non [master fixtures](#)<sup>[80]</sup> positions are displayed as red dots.

**Macro** - traces the pan/tilt values generated by the macro.

**Fixture** - traces the pan/tilt position of the fixture(s) with the macro overlaying current pan/tilt position

**Clear Image** - Clears and restarts the tracing.

#### Macro Type

This list contains the possible macro types. There are 6 different system macros built into LightJockey. System macros are all based on variations of continuously repeating variations of sine and cosine curves. To create a new, user defined macro shape, select [Bézier Shapes](#)<sup>[103]</sup> from the menu.

### Macro parameters

**Pan Amplitude** - this parameter controls the amount of amplitude applied to the pan parameter. The higher the value, the further the pan will be moved by the macro.

**Pan Cycle (time)** - this parameter controls the 'speed' at which macro executes for pan control. The value displayed is the time taken for one cycles of the macro. Pan and tilt cycle times are combined into one common cycle time control for ellipse and stepped ellipse macros.

**Tilt Amplitude** - this parameter controls the amount of amplitude applied to the tilt parameter. The higher the value, the further the tilt will be moved by the macro.

**Tilt Cycle (time)** - this parameter controls the 'speed' at macro executes for tilt control. The value displayed is the time taken for one cycle of the macro.

**Macro Step size (Stepped Ellipse Macro only)** - the Macro Step size parameter regulates the 'coarseness' of the macro by reducing the number of positions contained in the macro. Altering the macro step size does not change the macro cycle time. The higher the step value the coarser the macro appears - at step size 512 the ellipse only contains 8 pan and tilt positions. Reducing the number of points may cause slower moving fixtures to 'perform better' on faster ellipse macros. The actual 'look' of the macro depends on the fixture used as well as the combination of cycle time, amplitude and step size - some fixtures may not show any improvement at all. Since a high step size combined with a low speed (high cycle time) produces a very pronounced stepped movement, the stepped ellipse macro may also be used to produce 'special effects'.

**Delay** - this will 'delay' the fixtures position in the macro cycle. Assign individual delays to fixtures performing the same macro for a more varied look. See below for a detailed explanation, also see [auto-delay](#)<sup>[104]</sup>.

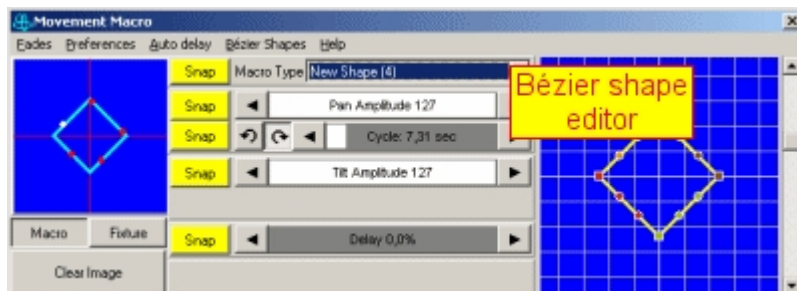
**Tweak** - this will tweak the macro a little (by tweaking the phase of one axis) - the result depends on the actual macro and the other parameter settings.

**Auto Delay** - click the [auto-delay dialog](#)<sup>[104]</sup> (in the menu) to systematically apply delays to several fixtures.

See also [generic DMX macros](#)<sup>[153]</sup>

#### 7.3.5.3.2 Bézier shapes

Select **Bézier Shapes** from the menu on the [movement macro dialog](#)<sup>[102]</sup> to extend the dialog with the Bézier shape editor (the editor will also automatically be displayed if a Bézier shape is selected from the macro types drop down).



*Bézier shape editor*

A Bézier shape macro is a kind of macro where the shape is defined by generating a number of positions from lines between points. Bézier shape macros can be created, modified, saved and retrieved by the user. To create a new shape, click **Bézier Shape** in the menu and select **New Shape** - the movement macro control is now displaying the Bézier shapes editor (on the right) with the default diamond shape in it. The shape has a number of 'points' - the square points are called *nodes*, the round ones are *handles*, there are two handles for each node. It is very easy to re-define the shape simply by dragging the nodes or handles around, manipulating it into another shape. Right-clicking either of the nodes (the square ones) or somewhere on the grid gives several further manipulation methods. It is possible to add or remove nodes, rotate and zoom the shape, etc. It is also possible to straighten elements between nodes by making them into lines, or re-convert them into curves again.

When the Bézier macro is modified the system re-calculates the array values on the fly. Note that the values are calculated with a fixed amount of points between nodes - this means that the time taken for the macro to move between nodes are the same, regardless of the distance involved. This means that a fixture will move slower between nodes that have a short path between them, and faster if the path is longer.

To the macro engine, there is really no difference between the system macros and the Bézier macros, both are still represented as two sets of values, one for pan and one for tilt and the cycle time and amplitude parameters apply to the Bézier shape macros as well as the regular system macros.

### Saving a new shape

Save the current shape by selecting **Save shape** or **Save as new shape** from the **Bézier Shapes** menu.

### Using an existing shape

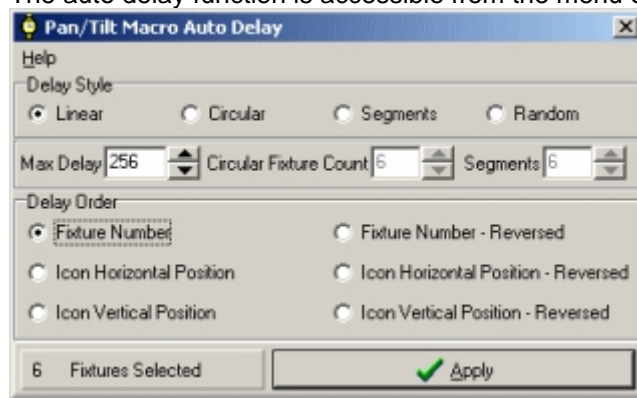
To use an already existing shape simply select it from the Macro type drop down list.

### Deleting shapes

Delete Shapes from the **Bézier Shapes** menu. Select **Delete Shape** to delete the current shape and **Delete Shapes** to delete multiple shapes at once.

#### 7.3.5.3.3 Auto delay control

The auto delay function is accessible from the menu of the [movement macro control](#)<sup>[102]</sup>.



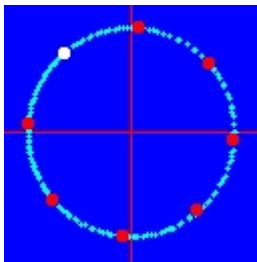
*Auto delay dialog*

The auto delay works by automatically and systematically applying a delay value for the [movement macro](#)<sup>[102]</sup> to each selected fixture. To apply a delay to a range of fixtures, simply [select](#)<sup>[80]</sup> the fixtures on the desktop. While the delays will normally be a part of the same sequence that contains the other macro parameters, they don't have to be - they can part of another sequence in the cue. When applying the delays, use the Macro Control to visualize the result - check **Track All Selected Fixtures** in the preferences menu.

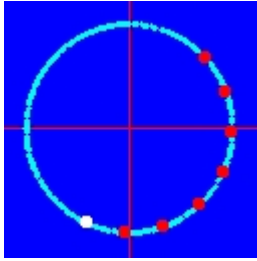
### Max Delay

The delays applied to the fixtures are normally spread over a range of 0% to almost 100% (100% is identical to 0%). Use the Max Delay parameter to limit the maximum delay applied. The Max delay values ranges from 1 to 256, 256 represents the maximum delay, 128 represents a maximum 50% delay, etc. Lower the Max Delay value to generate **Follow the Leader** type of effects.

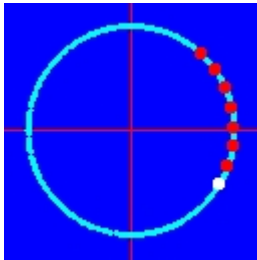




System Ellipse, Max Delay = 256 (100%)



System Ellipse, Max Delay = 128(50%)



System Ellipse, Max Delay = 64(25%)

### Delay Style

**Linear delay** is applied to the fixtures in a linear fashion, ranging from 0% to 100%. For example if a linear delay (max = 255) is applied to 4 fixtures the following delays are applied:

- Fixture 1: delay 0% - of Max Delay.
- Fixture 2: delay 25% - of Max Delay
- Fixture 3: delay 50% - of Max Delay
- Fixture 4: delay 75% - of Max Delay

The linear delay ensures that two fixtures will never get the same delay value.

**Circular delay** means that the fixtures are applied a linear delay in a circular (repeating) pattern. Use the **circular fixture count** value to indicate how many fixtures in the pattern. For example if a circular delay is applied to 6 fixtures with a fixture count of 3 the following delays are applied :

- Fixture 1: delay 0% - of Max Delay
- Fixture 2: delay 33% - of Max Delay
- Fixture 3: delay 66% - of Max Delay
- Fixture 4: delay 0% - of Max Delay (repeating the pattern)
- Fixture 5: delay 33% - of Max Delay
- Fixture 6: delay 66% - of Max Delay

**Segments** applies the delay to the fixtures in segments. This usually means that two more fixtures in the delay order (see later) will get the same delay. The function will divide the fixtures into the number of segments indicated in the **segments** value, so if 6 fixtures are applied a segmented delay with a segment count of 3, the following delays are applied to the fixtures:

- Fixture 1: delay 0% - of Max Delay
- Fixture 2: delay 0% - of Max Delay
- Fixture 3: delay 33% - of Max Delay
- Fixture 4: delay 33% - of Max Delay
- Fixture 5: delay 66% - of Max Delay
- Fixture 6: delay 66% - of Max Delay

**Random** delay is applied to the fixtures randomly (taking the Max Delay value into account).

### Delay Order

Use delay order to in which order the delay values are applied to the fixtures. The order can be either by fixture number or fixture icon horizontal or vertical position.

#### 7.3.5.4 Position presets

##### What is a position preset

Presets, are also known as 'preset focus' (position focus, not optical focus). Scenes containing presets for effects contain references rather than an absolute 'physical' values. The result generated by the sequences depends on the actual contents of the reference, not the absolute contents of the scene. LightJockey implements presets for pan/tilt positions only. The maximum number of position presets that can be created is 99.

##### Example of using presets:

When programming for a band on tour, it is often useful to use presets for beam positions rather than absolute pan/tilt values via the pan/tilt position control. For example, when lighting the drummer, create and use a preset rather than moving the pan and tilt values directly to the drummer position in every relevant scene. Later, when in another venue, or when the drummer position or the fixtures are physically moved, simply change the values that are contained in the preset; now all every scene where the 'drummer' preset is used will automatically use the new physical values. Without presets every fixture in every scene that lights the drummer will have to be modified one by one. Also, since it is possible to name a preset, it is often much faster to apply named positions to fixtures, rather than have to move them one by one to the desired position. It is not necessary to move fixtures to the same physical position in a preset, a preset could easily contain a for example beam fan pattern. It is also possible to use different presets for different fixtures on the same scene, for example 2 fixtures on preset 'drummer', and 2 on preset 'lead vocal'.

##### Using position presets

The position preset dialog is accessed through the **Preset** menu on the [pan/tilt position control](#)<sup>98</sup>.



*Position preset dialog*

##### Creating and editing presets

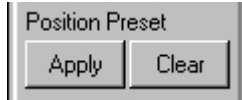
Before any presets can be applied to fixtures, they must be created first. Create a preset by moving the individual fixtures to the desired position and click **Save Preset** (hint : give the preset a good name that identifies that position clearly - this will save time later when editing presets). The saved preset will now be displayed in the list. When saving a new preset, a value will be saved for all fixtures - fixtures excluded by the fixture selection (see below) will save the default top/left pan/tilt position. When editing an existing preset the fixture selection will decide for which fixtures the preset is modified.

Master fixture	This will modify values for the <a href="#">master</a> <sup>[80]</sup> fixture only
Selected Fixtures	This will modify values for all selected fixtures.
All Fixtures	This will modify values for all fixtures.

**Make sure that the correct preset is selected in the preset list before re-saving the preset.**

### Applying presets to fixtures

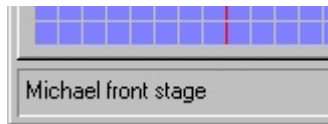
There are two methods to apply existing presets to fixtures.



#### Applying presets from the pan/tilt control

The first method is to open the preset dialog, and highlight a preset in the list, and then use the apply button on the [pan/tilt control](#)<sup>[98]</sup>. This will apply the preset to all [selected](#)<sup>[80]</sup> fixtures. The second method is to select highlight the preset line in the preset list, and then click **Apply**. Or simply double-click the preset line. When using the dialog the local selection filter is used:

Master fixture	This will apply the preset to the master fixture only.
Selected Fixtures	This will apply the preset to the selected fixtures.
All Fixtures	This will apply the preset to all fixtures



Once a preset has been to a fixture applied, the pan/tilt coordinates in the bottom of the position control will be replaced by the preset name.

### Clearing presets

There are several ways to clear an applied preset. The easiest is to select **Clear** on the position control, this will 'dissolve' the preset into the pan and tilt values contained in the preset. Alternatively click **Clear** on the preset list, and set the fixture selection accordingly. Finally, any changes in pan and tilt values in the position control, will clear automatically clear the preset and replace the preset with the physical pan and tilt values.

### Deleting presets

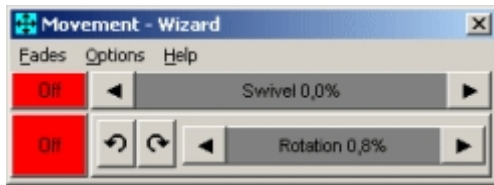
To delete a preset, right-click the preset in the list and select **Delete preset**. Note that it is possible to delete a preset that is all ready in use in sequences.

### Auto Apply Preset

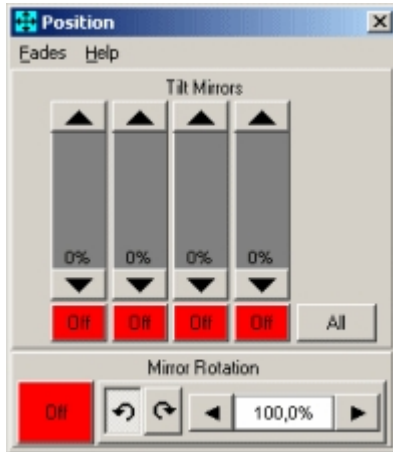
The preferences menu contains an option to automatically apply the preset to the fixtures when saving the preset. Saving with this option enabled is identical to first saving the preset, and then clicking **Apply** on the preset list.

#### 7.3.5.5 Non pan/tilt movement controls

A number of built in fixture profiles implements movement controls that aren't really traditional pan tilt controls. Examples are Martin Wizard, SynchroZap or Centerpiece. Although accessed the same way as the pan/tilt position control, they do not include options such as [position presets](#)<sup>[106]</sup> or [movement macros](#)<sup>[102]</sup>. Often the controls are used to set continuous movement such as rotation of the mirror drum of the Martin Wizard as well as a static position such as the swivel position of the Wizard's mirror drum.



Wizard movement control

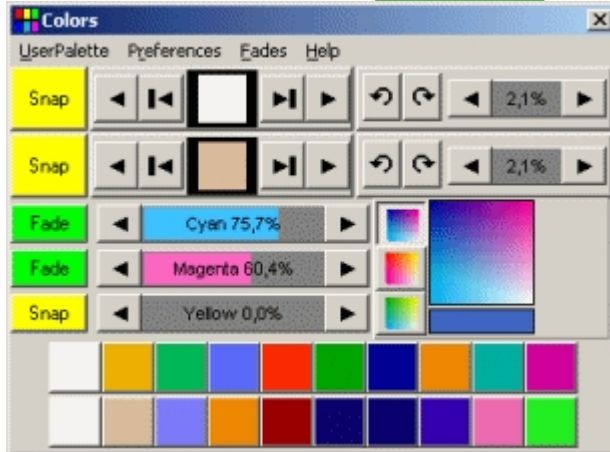


Centerpiece movement control



## 7.3.6 Color control

### 7.3.6.1 Color controls for built in profiles

Click the color icon  on the [fixture tool bar](#)<sup>57</sup> to access the fixture color control.



Color control for Roboscan 1220 CMYR with two color wheels, wheel scroll and CMY color mixing  
The control implements two methods for selecting a color. Use the [scroll control](#)<sup>94</sup> to select a color.

Click  to select next or previous colors on the wheel. Click  to position the color wheel between colors for a split color effect use the split buttons (not all fixtures allow selection of split colors)

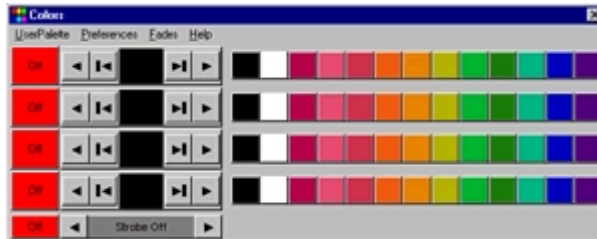
Alternatively, use the [color palette](#)<sup>94</sup> to select colors directly by clicking on the color icons.



Color palette

To make a control take up less desktop space, the color palette may be hidden by de-selecting **Preferences -> Show palette** on the main control.

### Color controls for multi-head fixtures



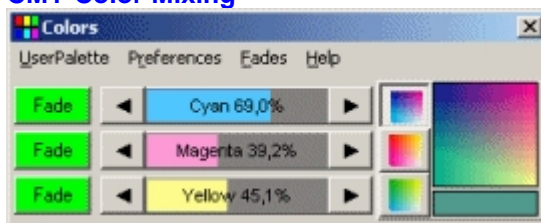
*RoboColor multi-head mode*



*RoboColor single-head mode*

Controls for fixtures with multiple heads such as the Martin RoboColors may be switched between single and multi head mode by setting **Preferences** -> **Show all heads**. When in single head mode only one control/palette appears and all heads are automatically synchronized during programming.

### CMY Color Mixing



*CMY controls*

Use the drag bars to set cyan, magenta, and yellow saturation.

### CMY Mixing Palette

The mixing palette consists of 3 primary mix buttons, a color picker and a resulting mix color indicator. Use the three buttons to right of the CMY drag to select the primary color mix to work in cyan/magenta, yellow/magenta or cyan/yellow. Use the color picker to select a mix by dragging the mouse around the picker while holding down the left mouse button. Example: to select an orange color, select the Yellow/Magenta button and drag the mouse in the color picker to the right hand side of the box until the required orange color is found.

### Other Color Controls

Some profiles implements other color options as well as selecting colors - the options depend on the actual capabilities of the fixture.

### Color wheel scroll



*Continuous rotation of the color wheel (scroll)*

Use the control to set the scroll direction and speed. Not all fixtures may allow the wheel to scroll both ways.

### Special Color Functions



MAC 2000 special color functions

Fixtures may implement special commands such as random color selection or random CMY. When used, LightJockey instructs the fixture to use built in effects. The special commands section may be shown or hidden by checking or un-checking **preferences** -> **Show Special** the menu.

#### Fixture triggered colors

The command sets the fixture to control the color wheel in either auto or sound triggered mode, other control attributes (movement, gobos) are not affected. The actual mode is usually programmed via the [extended controls](#)<sup>[117]</sup>. If neither auto or music trig has been programmed, the button displays a ? indicating an unselected trig mode.

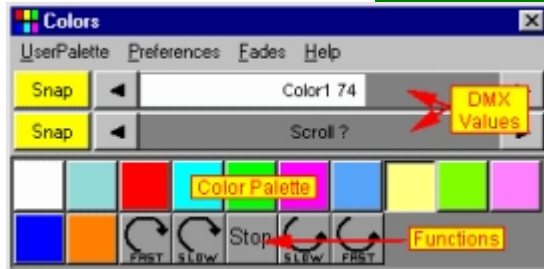


Fixture triggered: auto, sound, unselected

See also [color controls for user defined profiles](#)<sup>[110]</sup>, [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup>, [customizing palettes](#)<sup>[76]</sup>

### 7.3.6.2 Color controls for user defined profiles

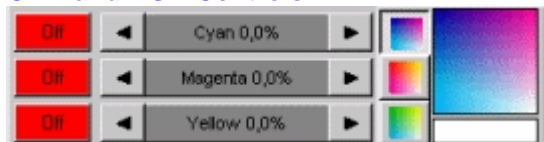
Click the color icon  on the [fixture tool bar](#)<sup>[57]</sup> to access the fixture color control.



Color control for user defined profile

The actual contents of a color control depends on the [user defined profile](#)<sup>[255]</sup>. The control usually implements both drag bars for programming of DMX values directly and palette buttons for direct color selection (see [fixture control elements](#)<sup>[94]</sup>). The drag controls and palette buttons may affect one or more DMX control channels. Some controls may also implement palette buttons for color related functions such as color wheel scroll. ; functions like these may often be tweaked (e.g. the speed of the color wheel scroll) by adjusting the value using the corresponding drag bar. Note that the control may implement control of more than one color wheel.

#### CMY and RGB Controls



CMY control with CMY color picker

Use the drag bars to program cyan/magenta/yellow saturation or red/green/blue saturation

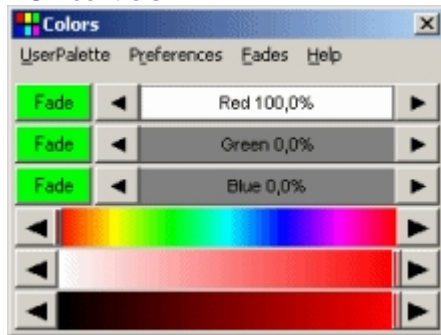
respectively.

### CMY color picker

Profiles for fixtures with CMY color mixing may also implement a CMY mixing palette. The mixing palette consists of 3 primary mix buttons, a color picker and a resulting mix color indicator. Use the three buttons to right of the CMY drag bars to select the primary color mix to work in cyan/magenta, yellow/magenta or cyan/yellow. Use the color picker to select a mix by dragging the mouse around the picker while holding down the left mouse button.

Example: to select an orange color, select the Yellow/Magenta button and drag the mouse in the color picker to the right hand side of the box until the required orange color is obtained.

### HSV controls




RGB control with HSV control bars

Fixtures with RGB control may color selection implement Hue, Saturation and Value control bars (or just the Hue control bar for fixtures with independent intensity control). Note that setting RGB values through HSV controls sets fade state for all 3 RGB channels.

See also [fade state buttons](#)<sup>[93]</sup>, [user definable fixtures](#)<sup>[247]</sup>, [fixture control elements](#)<sup>[94]</sup>, [color controls for built-in fixtures](#)<sup>[108]</sup>

## 7.3.7 Gobo control





### 7.3.7.1 Gobo controls for built in profiles

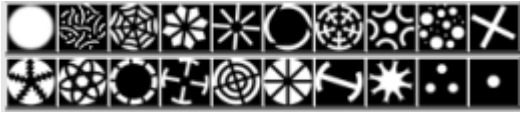
Click  on the [fixture tool bar](#)<sup>[57]</sup> to access the fixture gobo controls.

### Controlling static gobos



MX-4 with one static gobo wheel

The control implements two methods for selecting a Gobo. Using the [scroll control](#)<sup>[94]</sup>: Click   to select a full gobo or   to position the gobo wheel between gobos for a split gobo effect. Note that not all fixtures may allow split gobo positions.



Alternatively, use the [gobo palette](#) <sup>[94]</sup> to select gobos directly by clicking on the individual gobo icons. The gobo palette may be hidden by un-checking **preferences** -> **show palette** in the controls preferences menu - check **show palette** to make the palette visible again.

### Rotating Gobos




MAC500/Roboscan 918 Rotating gobo controls

Select rotating gobos the same way as selecting fixed gobos, using either the scroll control or the gobo palette.

### Gobo Indexing



If the fixture is capable of indexing the gobo use the index drag bar to set the actual gobo index. For profiles with 16-bit gobo index, hold down [Shift] and [Ctrl] keys to increase the changes in index when clicking the  buttons.

### Gobo Rotation



Use the rotation control to set rotation direction using the CW and CCW buttons and speed using the drag bar.

### Rotating gobo mode



Profiles may often use the same control channel for rotation and indexing parameters. In this case it is not possible to program individual rotation and indexing parameters in the same scene (it would also not make much sense) - setting a rotation value effects the index value and changing the index value effects the rotation values. The actual response from the fixture (rotation or index) is determined by the rotation mode setting. Use the rotation mode buttons to select mode - note that it is usually not possible to rotate the first open gobo.

### Other Gobo Controls

Some fixtures offer other gobo options as well as selecting or rotating gobos.

### Gobo Shake



Gobo shake, the fixture 'shakes' the gobo wheel around the selected gobo. Use the "gobo shake" control to enable and adjust the speed of the gobo shake. Note that the fixture may not implement gobo shake on all selectable gobos.

### Gobo Wheel Scroll

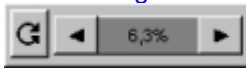


Continuous rotation of the gobo wheel. Use the control to set the scroll direction and speed. Not all



fixtures with gobo wheel scroll may allow the wheel to scroll both ways.

### Gobo Swing



Gobo swing instructs the fixture to 'swing' the selected gobo (rotate the gobo wheel back and forth). Use the control to set the swing speed and amplitude.

### Special Gobo functions

Some fixtures may implement uncommon special functions. Check **Show Special** in the gobo controls preferences menu to see any special functions. Un-check **Show Special** to hide any special functions.



*MiniMac profile random gobo settings*

### Fixture Triggered Gobos


Available on the Martin MX/CX series. The command sets the fixture to control the gobo wheel in either auto or sound triggered mode, other control attributes (movement, colors) are not affected. The actual mode is programmed via [extended controls](#)<sup>[117]</sup>. If neither auto or music trig has been programmed, the button displays a ? indicating an unselected trig mode.

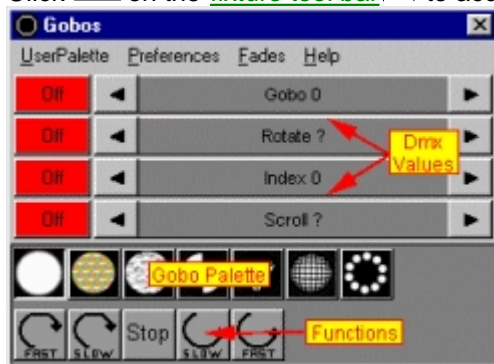


*Fixture triggered: auto, sound, unselected*

See also [gobo controls for user defined profiles](#)<sup>[113]</sup>, [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup>, [customizing palettes](#)<sup>[76]</sup>

## 7.3.7.2 Gobo controls for user defined profiles

Click  on the [fixture tool bar](#)<sup>[57]</sup> to access the fixture gobo control.




The actual contents of the gobo control depends entirely on the [user defined profile](#)<sup>[247]</sup>. The control usually implements both drag bars for programming of DMX values directly and palette buttons for direct gobo selection. The drag controls and palette buttons may affect one or more DMX control channels. Drag controls are also often used to control functions such as gobo rotation or indexing, or gobo wheel scroll. Some controls may also implement palette buttons for gobo related functions such as gobo wheel scroll; functions like these may often be tweaked (e.g. the speed of the gobo wheel scroll) by adjusting the value using the corresponding drag bar. Note that the control may implement

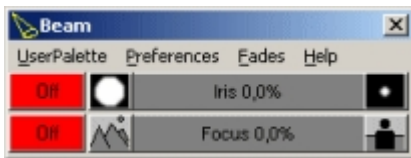
control of more than one gobo wheel.

See also [gobo controls for built in profiles](#)<sup>[111]</sup>, [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup>, [customizing palettes](#)<sup>[76]</sup>

## 7.3.8 Beam control

### 7.3.8.1 Beam controls for built in fixtures

Click  on the [fixture tool bar](#)<sup>[57]</sup> to open the beam control. The beam control is used to control beam-related effects such as focus, zoom, iris, beam shapers and frost effects.



MAC500 beam Control



MAC 2000 beam control with iris pulse control

Use the drag bars to set the effect values. The profile may implement [special functions controls](#)<sup>[94]</sup> to access effects such as automated iris pulse.

See also [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup>, [beam controls for user defined profiles](#)<sup>[114]</sup>

### 7.3.8.2 Beam controls for user defined profiles

Click  on the [fixture tool bar](#)<sup>[57]</sup> to open the beam control.




Beam control

The beam control is used to control beam effects such as focus, zoom, iris, beam shapers and frost effects; The actual contents of the control depends on the [user defined profile](#)<sup>[255]</sup>. Use the drag bars to set values for the individual effects.

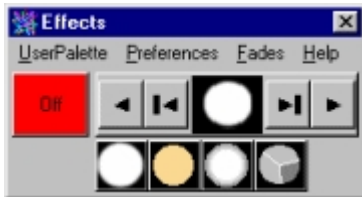
See also [fade state buttons](#)<sup>[93]</sup>, [user definable fixtures](#)<sup>[247]</sup>, [fixture control elements](#)<sup>[94]</sup>, [beam controls for built in profiles](#)<sup>[114]</sup>

## 7.3.9 Effect control



### 7.3.9.1 Effect controls for built in profiles

Click  on the [fixture tool bar](#)<sup>[57]</sup> to access the effects control. Effect controls typically controls effects such as prisms in scanners or moving heads or various rotating effects in intelligent club/DJ effects.

#### Static effects



*Roboscan 518 with one static effect wheel*

Use the [scroll control](#)<sup>[94]</sup> to select an effect: click  to select a full effect, and  to position the effect wheel between effects for a split effect. Not all fixtures may allow split effect positions.



Alternatively, use the [palette](#)<sup>[94]</sup> to select effects directly by clicking on the individual effect icons. The effect palette may be hidden by un-checking **show palette** in the control preferences menu - check **show palette** to make the palette visible.

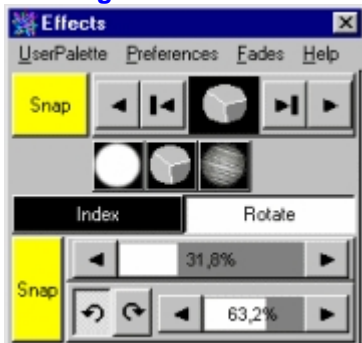
#### Controls for a single effect



*Mac 500 Effect Control (single prism)*

Some fixtures such as the MAC 500 implement a single effect only. In this case click the 'effect button' to enable or disable the effect.

#### Rotating effects




*MAC 2000 rotating effects control*

Select rotating effects the same way as selecting fixed effects, using either the scroll control or the effect palette.

#### Effect indexing



If the fixture is capable of indexing the effect use the index drag bar to set the actual index. On fixtures with 16-bit effect index, hold down [Shift] and [Ctrl] keys to increase the changes in index when clicking the  buttons.

#### Effect rotation



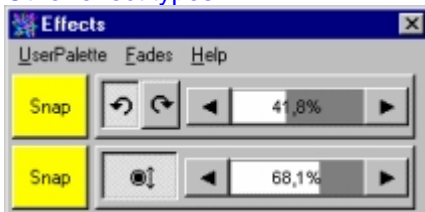
Use the rotation control to set rotation direction using the CW and CCW buttons and speed using the drag bar.

#### Rotation mode



Fixtures may often use the same control channel for rotation and indexing parameters. In this case it is not possible to program individual rotation and indexing parameters in the same scene (it would also not make much sense) - setting a rotation value effects the index value and changing the index value effects the rotation values. The actual response from the fixture (rotation or index) is determined by the rotation mode setting. Use the rotation mode buttons to select mode - note that it is usually not possible to rotate the first open effect.

#### Other effect types



*Punisher effect control*

Some effect controls may control other types of effects as well. In the above example the effect control is used to set the rotation direction and speed, as well as the shaking effect of the Punisher mirror parabola.


#### Special effect functions

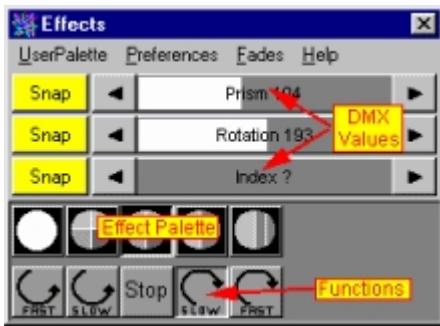


Some fixtures may implement [special controls](#)<sup>[94]</sup>, such as macros or random functions. Check **Show Special** in the effect controls preferences menu to see any special functions. Un-check **Show Special** to hide any special functions.

See also [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup>, [customizing palettes](#)<sup>[76]</sup>, [effect controls for user defined profiles](#)<sup>[116]</sup>

### 7.3.9.2 Effect controls for user defined profiles

Click  on the [fixture tool bar](#)<sup>[57]</sup> to open to the Effects control. Effect controls typically controls effects such as prisms in scanners or moving heads and various rotating effects in intelligent club/DJ effects.




The actual contents of the effect control depends entirely on the [user defined profile](#)<sup>[247]</sup>. The control usually implements both drag bars for programming of DMX values directly and palette buttons for direct effect selection. The drag controls and palette buttons may affect one or more DMX control channels. Drag controls are also often used to control functions such as prism rotation or indexing, or effect wheel scroll. Some controls may also implement palette buttons for effect related functions such as effect wheel scroll. Note that the control may implement control of more than one effect wheel or type of effect.

See also [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup>, [customizing palettes](#)<sup>[76]</sup>, [effect controls for built in profiles](#)<sup>[115]</sup>

## 7.3.10 Extended controls

### 7.3.10.1 Extended controls for built in profiles

Click extended controls  from on [fixture tool bar](#)<sup>[57]</sup> to access extended controls (Note: for [generic DMX fixture profiles](#)<sup>[84]</sup> and [user definable profiles](#)<sup>[247]</sup> this will access the [extended level controls](#)<sup>[115]</sup>).

Besides a programmable fixture reset, the extended controls may include functions that takes influences several types of programmable effects. Not all fixtures implements extended controls.

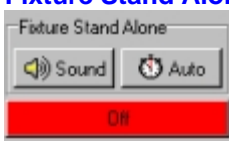
#### Programmable reset



*Programmable reset control*

This function is almost identical to the reset function on the [fixture tool bar](#)<sup>[57]</sup> - however, when used, the reset command becomes part of the current scene. This may be useful when the fixtures are running unattended but within reach of an audience which may be touching mirrors etc. Take care not to program resets into sequences by mistake - use the fixture tool bar icon for regular resets. See also [resetting fixtures, built in profiles](#)<sup>[120]</sup>

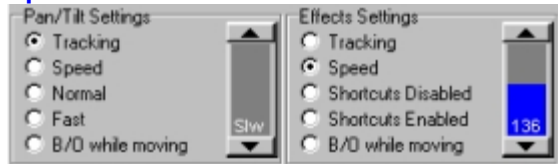
#### Fixture Stand Alone



*Fixture stand alone control*

Some fixtures may support activation of stand-alone mode via DMX. In stand alone mode it is the fixture that performs via internal firmware programming and while in stand alone mode any other commands sent from the controller are ignored. Stand alone mode offers no possibility of synchronization from the controller. Stand alone mode will use the internal microphone of the fixture as source. Note that activating stand-alone commands often overwrite other commands such as lamp and reset commands since the commands may use the same control channel.

### Speed controls



*Roboscan 918-S speed controls*

The extended speed controls are split into two types:

#### Pan/tilt settings

These settings only have an effect on pan and tilt.

**Tracking** - with this setting the fixture will calculate a movement speed according to the DMX signal received from the LightJockey. This means that a 5 second movement fade will move the pan and tilt to the new position in 5 seconds.

**Speed** - this assigns a specific *speed* to the fixture. The fixture will move pan and tilt with that constant speed regardless of the fades rates calculated in LightJockey. Use the fader on the right to assign the speed value.

**Normal mode** - this will override the fast setting in the fixture and force normal mode.

**Fast mode** - this will override the normal setting in the fixture and force fast mode.

**B/O while moving** - this will prompt the fixture to shut off the light while the pan and tilt is moving to a new position. This should not be used when moving pan and tilt in slow fading scenes.

#### Effect Settings

These settings will usually have effect on any other effect (color, gobo, intensity etc).

**Tracking** - the fixture will calculate effect speeds according to the DMX signals received from LightJockey. This means that for example that a color change programmed as a 5 second fade will take 5 seconds.

**Speed** - this will assign a specific fixed speed to all effects. They will no longer move according to any fades programmed into scenes. Use the fader on the right to assign the speed value. In certain instances this is the only way to control speeds on some effects (e.g. gobo shake speed on the RoboScan 918-S or MAC 500-S).

**Shortcuts Disabled** - this will override the shortcut enabled setting in the fixture.

**Shortcuts Enabled** - this will override the shortcut disabled setting in the fixture.

**B/O When Moving** - when enabled the fixture will cut off the light output while effects are moving, for example to hide a shift from one gobo to another.

#### Shortcuts

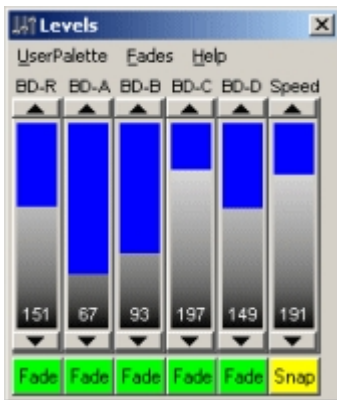
Some fixtures implement a shortcut feature. Shortcut means that the fixture will use the shortest/fastest route to the new effect position. For example on a color wheel, when shortcut is disabled, the fixture will go the 'long way' from the first to the last color. If shortcut is enabled, the fixture will move the 'shortest' distance (the other way around).

See also [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup>, [extended controls for user defined profiles](#)<sup>[118]</sup>

### 7.3.10.2 Extended controls for user defined profiles

Click extended controls  from on [fixture tool bar](#)<sup>[57]</sup> to access extended controls. The extended

controls are used for controlling functions that does not fit well into the predefined fixture functions such as color or gobo palettes. The control mimics a standard 8-bit DMX fader layout (DMX channel based, values from 0 to 255). Since the control doesn't really reflect the effect it is often necessary to refer to the fixture DMX protocol when using the extended controls (note: some profiles have DMX values documented in profile notes).




Example of extended control for user defined profile (barn door control)

See also [fade state buttons](#)<sup>[93]</sup>, [extended controls for built in profiles](#)<sup>[117]</sup>

## 7.3.11 Lamp controls

### 7.3.11.1 Lamp controls for built in fixtures

The lamp control is accessed by clicking  on the [fixture tool bar](#)<sup>[57]</sup>. The control is only available for fixtures with discharge lamps. Use the [intensity control](#)<sup>[96]</sup> to control lamp power to fixtures with halogen lamps. Since discharge lamps often take several minutes to re-strike and frequent re-striking wears out the lamp faster, it is not advisable to power off the lamps just to re-strike a few minutes later.



Lamp control for built-in profile



Click to program a lamp strike command. Note: some Martin fixtures are capable of measuring the time between when the lamp was powered off and the strike command. If this time is less than the lamp cool down time (typically 3-6 minutes) the fixture will refuse to strike the lamp. In this case the fixture may display a display message such as "HOT" in the display.



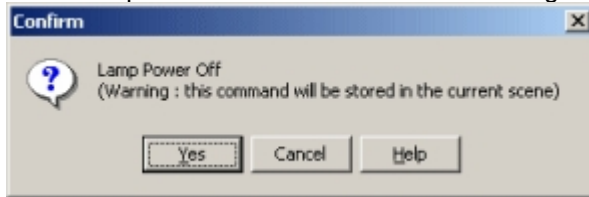
Click to program a lamp off command. Many fixtures require that the lamp-off command is left 'active' for at least 5 seconds or more before actually powering off the lamp.

The lamp commands often use the same control address as shutter and strobe commands so when programming a lamp commands sequences into a cue, make sure that no other sequence with higher priority overwrites the commands.

#### Lamp off Warning

Both lamp strike and lamp off commands are programmed into the scene, so be careful not to unintentionally include a lamp off into the current sequence.

When lamp off command is selected a warning dialog is shown - click yes to confirm the command.




Lamp off warning

Many newer fixtures that are equipped with a display have the capability of disabling lamp off commands via DMX. This is to avoid sending a lamp off by mistake, when using a conventional DMX console without fixture profiles. Refer to the fixture documentation for how to enable the lamp on and off commands.

See also [fade state buttons](#)<sup>[93]</sup>, [fixture control elements](#)<sup>[94]</sup>, [lamp controls for user defined profiles](#)<sup>[120]</sup>

### 7.3.11.2 Lamp controls for user defined profiles

The lamp control is accessed by clicking the lamp icon  on the [fixture tool bar](#)<sup>[57]</sup>. The control is only available for fixtures that support either lamp on or off commands or both. The command is stored as part of the current scene, *this means that if the sequence is saved and later used, this command will power off the lamp*. Powering off discharge lamps usually means that they will have to cool down before being able to re-strike. Typically this will take 3 to 8 minutes. Striking the lamps often will cause a significantly lower lamp life-time, so only power off lamps when necessary.



Lamp control for user defined profiles


See also [fade state buttons](#)<sup>[93]</sup>, [lamp controls for built in profiles](#)<sup>[119]</sup>

## 7.3.12 Reset control

### 7.3.12.1 Resetting fixtures, built in profiles

A reset command instructs the fixture to re-align their mechanical parts to the default position and possibly also it's internal 'logic'. While resetting, fixtures will not respond to any commands.

#### Immediate reset command

For most built in profiles there are two ways to send a reset command to the fixture. Send an immediate reset command by selecting the relevant fixtures, then click  on the [fixture tool bar](#)<sup>[57]</sup>.

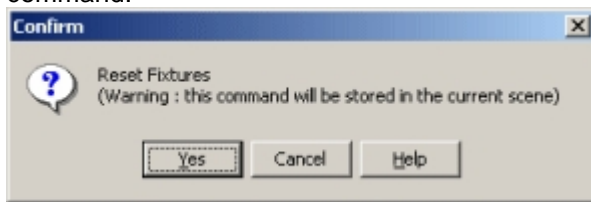
#### Programmable reset command



Programmable reset control



To include a reset command in a scene see [extended controls for built in profiles](#)<sup>[117]</sup>. Note that when a reset command is programmed the following warning will appear - click yes to include the reset command.




*Programmable reset warning*

See also [resetting fixtures, user defined profiles](#)<sup>[121]</sup>

### 7.3.12.2 Resetting fixtures, user defined profiles

A reset command instructs the fixture to re-align their mechanical parts to the default position and possibly also it's internal 'logic'. While resetting, fixtures will not respond to any commands. Note that not all fixtures and profiles support reset commands through DMX (please refer to fixtures documentation).

#### Immediate reset command

Send an immediate reset command by selecting the relevant fixtures, then click  on the fixture tool bar. The immediate reset command does not get stored in any sequence.

#### Programmable reset command

To include a reset command in a scene, use one of the control channels usually exposed in [extended controls for user defined profiles](#)<sup>[118]</sup> - please refer to fixture protocol documentation for exact control channel and DMX value for reset command.

See also [resetting fixtures, built in profiles](#)<sup>[120]</sup>

## 8 Smoke machines and hazers

### 8.1 Controlling DMX smoke machines and hazers

DMX smoke machines and hazers may be controlled from LightJockey either via generic smoke machine/hazer profiles or via built-in profiles for specific products. These profiles are automatically linked to the [smoke control](#)<sup>[122]</sup> - to control smoke machines or hazers without linking to the smoke control, use a suitable [generic DMX profile](#)<sup>[84]</sup>. Note that output (smoke for smoke machine profiles, haze and fan levels higher than 0 for hazer profiles) generated by the smoke control always overrides values programmed into scenes. If the smoke control is generating output the profiles smoke machine / hazer control will automatically flash a **Smoke control active!** or **Haze control active!** warning to indicate that the current output is generated by the smoke control rather than the individual profile control.

Note that some smoke machines/hazers may have special functions allocated to control channels which may cause unwanted side effects when using the smoke/hazer control - please refer to specific product documentation.

#### Generic profiles

##### Generic DMX Smoke machine profile

The profile can be found under the Generic heading in the [fixture configuration](#)<sup>[66]</sup> dialog.

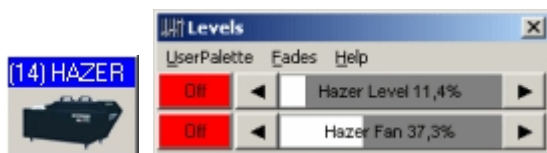


Generic smoke machine icon and control

The profile implements control for single channel DMX smoke machines. In order to work with this profile the smoke machine must have zero output at DMX value 0 and full output at DMX value 255. Note that the level of smoke on some smoke machines may not correspond to the level indicated on the 'smoke level' bar. Also, some smoke machines may switch off the heater when DMX value 0 is received, to keep the heater on at all times a default DMX value may be set via [default DMX output](#)<sup>[53]</sup>.

#### Generic DMX Hazer profile

This profile implements control for DMX controlled hazers. The profile can be found under the Generic heading in the [fixture configuration](#)<sup>[66]</sup> dialog



Generic hazer icon and control

The profile uses two DMX channels - the first channel is assigned to control the haze output level (values 0-255), the second to control the speed of the fan (values 0-255). Hazers may be controlled with this profile if they have a compatible protocol (output level on first DMX channel, fan on second channel and no more than 2 DMX channels total) or by patching control channels using the [global patch dialog](#)<sup>[20]</sup>.


#### Build in profiles

Built in profiles, such as the profile for Jem ZR 24/7 Hazer allows more precise control over special functions such as auto fan selection. The control values generated by the [smoke control](#)<sup>[122]</sup> are automatically converted/scaled to match the products valid control value ranges to avoid unwanted side effects by calling up special functions.



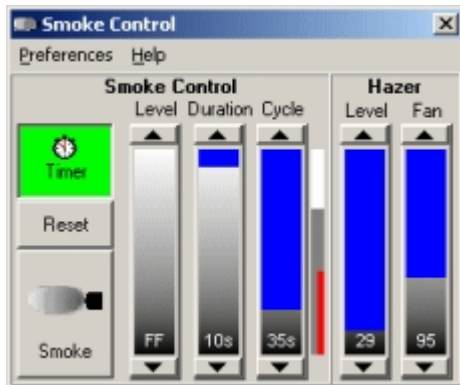
Control for Jem ZR 24/7 hazer

## 8.2 The smoke control

The smoke control is accessible via  on the [fixture tool bar](#)<sup>[57]</sup>. The smoke control allows immediate control of DMX compatible smoke machines and hazers independently of programming. To utilize the smoke control the smoke machine(s) or hazer(s) must be configured using the [DMX smoke machine or DMX hazer](#)<sup>[121]</sup> profiles. The smoke control takes control of all DMX smoke machines or hazers that are configured using these profiles. Once configured, the smoke machine or hazer can be programmed as any other fixture, or it may be controlled independently via the smoke control overriding any programs.

Note that with some built-in profiles such as Jem Roadie X-treme, smoke level and output is controlled via the smoke control, while fan level is controlled by the hazer control - please refer to

[fixture notes](#) <sup>59</sup>.



*The smoke control*

### Smoke machine control

The Smoke control has two parts - the left part controls smoke machines by emulating a smoke machine remote control - the right side is used to set a continuous level of haze on a DMX hazer without the need to program the smoke level into scenes or the [default DMX output](#) <sup>53</sup>.

**Smoke Button** - clicking and holding **Smoke** will instruct the smoke machines to smoke for as long as it is held down.

### Using the timer

**Timer** - enables and disables smoke controls automatic cycle function.

**Cycle** - the cycle time is represented by the cycle fader and has 32 different levels, ranging from 5 seconds to 60 minutes. When the timer is enabled, the control will repeat the cycle continuously.

**Duration** - the duration fader sets the length of time in which the smoke machine is instructed to smoke once every cycle, at the end of the cycle.

**Level** - the level fader represents the output level at which the smoke machine is instructed to smoke.

**Reset** - Clicking **Reset** resets the cycle time, and restart the cycle.

The small vertical bar in the right hand side of the smoke control illustrates the cycle time (total height), the duration (white part of the bar) and the elapsed cycle time (red line). During activation of smoke output, either via the smoke button or via the timer function, any smoke levels programmed into scenes will be overridden.

### Haze Control

The haze control may be used to set an output and fan level on a DMX hazer without the need to program the level into scenes. The hazer controls does not use the timer function, the output and fan levels set are always active and are sent continuously to the hazer. The level and fan values will override any levels programmed into scenes as soon as the output level or fan level is set above 0.

### Preferences menu

**View haze control** - view or hide the haze controls (hiding does not disable the haze controls).

**Enable timer on startup** - the smoke timer will be activated as soon as LightJockey starts up.


**Reset cycle on smoke** - clicking **Smoke** will automatically reset the cycle time.

**Smoke button use level** - the output generated by clicking **smoke** is identical to the level set with the level fader. If this option is disabled the smoke machine will be instructed to smoke with max output (DMX value 255) when the smoke button is pressed.

**Smoke button toggle X seconds** -- these options makes it possible to output smoke for a longer time using the **Smoke** button without holding down the mouse button. For example if the 'Smoke button toggle 4-5 seconds' option is selected the button will stay pressed for another 4-5 seconds after the mouse button is released. This option only works when clicking the smoke button directly, not when the smoke button is activated through [hotkey](#) <sup>205</sup> or via the 2532 or DMX-in.

## 9 The sequence control

### 9.1 The sequence control


The sequence control is used to program and execute the [current sequence](#)<sup>[18]</sup>. To open the sequence control, click  on the [sequence/cue tool bar](#)<sup>[55]</sup>.




*The sequence control*

#### Saving and loading sequences

Click  to open the [save sequence dialog](#)<sup>[125]</sup>.

Click  to open the [List of sequences](#)<sup>[127]</sup>. Use this list to select an already existing sequence to load into the [current sequence](#)<sup>[18]</sup>.


#### New sequence


Click  to clear the current sequence and create a new, empty sequence. If the current sequence is not saved before a new sequence is created, it will be lost.

#### Deleting sequence files

To delete an existing sequence file, see [list of sequences](#)<sup>[127]</sup> or [deleting multiple data files](#)<sup>[48]</sup>. Note: Save, load and new icons are all duplicated on the [sequence/cue tool bar](#)<sup>[55]</sup>.



#### Adding, inserting and deleting scenes

Click  to add another scene to the end of the sequence. The content of the current scene is copied to the new scene. The maximum number of scenes in a sequence is 999.



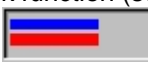
Click  to open up the [insert scene dialog](#)<sup>[128]</sup>

Click  to open up the [delete scenes dialog](#)<sup>[129]</sup>

#### Previous and next scene

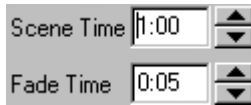
  Previous and next scene are only enabled if the sequence has more than one scene. Click to go to the previous or next scene in the current sequence. Upon reaching the first or last scene the sequence will loop to 'the other end'. Alternatively, right-click the button to go directly to the first or last scene of the sequence.

#### Sequence playback

  These buttons will execute (playback) the sequence either in reverse or forward. The playback will use the programmed [scene and fade times](#)<sup>[22]</sup> (see below). It is possible to disable the use of fade time when using the playback function (see below). During playback the elapsed scene and fade times are illustrated by these lines . The blue line illustrates the elapsed scene time,

the red line illustrates the elapsed fade time.

### Scene and Fade Times



Use these controls to change the scene and fade time for the current scene. Use the up/down buttons to change the times, or type the time directly (click the field to activate, then type the new value). It is possible to assign an individual scene and fade time to each scene. For new sequences, the default scene and fade times defaults to 1.00 seconds and 0.05 seconds respectively.

Use the following options when setting scene and sequence times:

[Synchronize scene and fade time](#) - this will synchronize the scene and fade time so they are identical.

[Global Scene Time](#) - this will cause all scenes to use the same scene time.


[Global Fade Time](#) - this will cause all scenes to use the same fade time.

### Fade mode



This menu option will toggle between 'enable fade' and 'disable fade'.

When fade is **enabled**, using playback or previous/next buttons, the sequence will execute using the programmed fade time. When fade is **disabled**, all effects will snap to the new position, regardless of fade time and fade state. This option often makes it faster to browse through a sequence with long fade times since it is not necessary to wait for the fade to complete before evaluating the scene contents. Note that the fade disable is only effective the sequence control while editing. As soon as the sequence becomes part of a cue, it will use the programmed fade time and effect fades.

Click  to switch the sequence control into blind mode - see [sequence blind mode](#)<sup>[129]</sup> for details.

### Add To current cue




This button will add the sequence to the current cue, provided there is enough free slots left in the [cue control](#)<sup>[132]</sup>. As the cue relates to sequence numbers, this button will only be enabled if the sequence has been previously saved (saving the sequence assigns a number to new sequences).

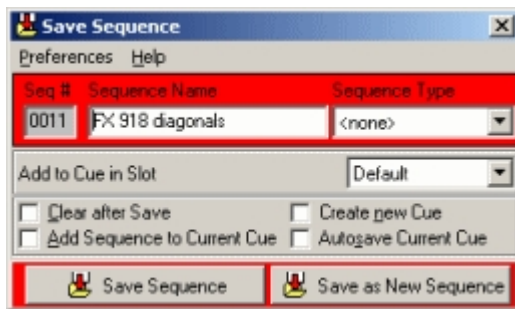
### Snapshot

Select Snapshot from the menu to record current DMX output values to the current scene or sequence - see [Snapshot and recording from DMX output](#)<sup>[130]</sup> for details.

See also [basic programming terms and elements](#)<sup>[18]</sup>

## 9.2 Save sequence dialog

The save sequence dialog is accessed by clicking  located on the [sequence/cue tool bar](#)<sup>[55]</sup> and on the [sequence control](#)<sup>[124]</sup>.




Save sequence dialog




**Seq #** - a number that is used to uniquely identify the sequence. The number is applied to the sequence when saving the sequence for the first time, so for a new sequence this field will be blank until the sequence is saved. It is not possible for users to modify the sequence number.

**Sequence name** - this is the sequence name that is used through out LightJockey. The name can be changed at any point, providing that the sequence is re-saved after the name has been changed. Since the sequence number uniquely identifies the sequence, the name has no other function than identifying the sequence to the user.

**Sequence Type** - it is possible to assign a pre-defined sequence type to the sequence. Currently the sequence type is reserved for future use and has no effect, other than being able to act as a sort key in the [list of available sequences](#)<sup>[127]</sup>.

Click  **Save as New Sequence** to save the current sequence to a new sequence file (and assign a new sequence number). Both new sequences and sequences that has previously been saved may be saved as new a sequence. If an already existing sequence is saved as a new sequence, the old, original sequence is left intact (much like saving a document with a new filename in a word processor).

Click  **Save Sequence** to re-save a sequence that has previously been saved. Saving the sequence will overwrite the contents of the original sequence.

### Save options



**Clear after Save** - enabling this option to automatically clear the contents of the current sequence after it has been saved. This is the same as selecting [new sequence](#)<sup>[128]</sup> after the sequence is saved.

**Add Sequence to Current Cue** - this option will add the sequence to the current cue after the sequence has been saved. The sequence is only added once so if it already is part of the current cue, it will not be added a second time. Check **Show Add to Cue Slot** in the preference menu to force the sequence to be added to a specific slot in the [cue control](#)<sup>[132]</sup>. When enabled the sequence will be added to the cue in the selected slot number, unless it is already part of the current cue. Select the slot from the drop down list to the right. The list contains a *default* option for the default sequence slot, and entries for the 12 individual slots in the cue control. Note that the cue slot names are [user definable](#)<sup>[143]</sup>. If the option is disabled the sequence will always be added in the default slot.



Adding the save sequence to the cue in a specific slot

**Create New Cue** - this will automatically create a new cue when the sequence is saved and add the sequence to the cue. The cue will be given the name of the sequence. Use this option (and auto save current cue) as a time saver when writing sequences that are the basis of a cue, or when writing cues that only consists of one sequence.

**Autosave Current Cue** - this will automatically save the current cue after the sequence is saved.

### Preferences Menu

**Auto Close** - When enabled the dialog closes automatically when the sequence is saved.


**Save on [Enter]** - When checked the [Enter] key on the keyboard acts as hotkey for the Save and Save New buttons.

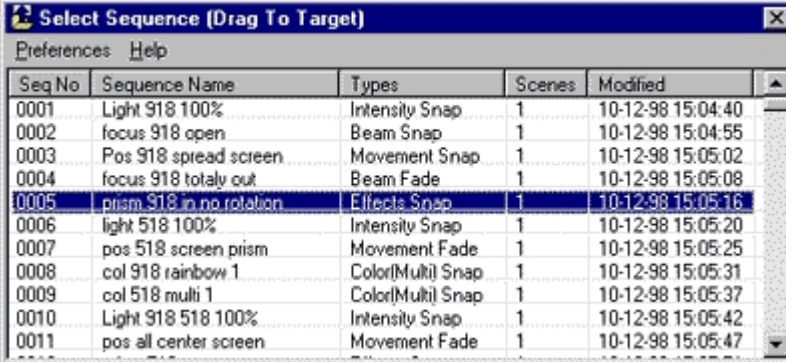
**Quicksave use Save Options** - when checked, [quicksaving](#)<sup>[50]</sup> the sequence uses the various save options (clear, add etc.). If not checked, save options are ignored.

**Show 'Add to Cue Slot'** - shows the **add to cue in slot** list (see above)

See also [sequence control](#)<sup>[124]</sup>, [system preferences](#)<sup>[50]</sup> (quick save options).

## 9.3 List of sequences

The *list of sequences* contains all previously saved sequences. The list is opened by clicking  located on the left hand side of the [sequence/cue tool bar](#)<sup>[55]</sup> or the [sequence control](#)<sup>[124]</sup>. Use the list to select sequences for various purposes including loading into the current sequence and adding a sequence to a cue.



Seq No	Sequence Name	Types	Scenes	Modified
0001	Light 918 100%	Intensity Snap	1	10-12-98 15:04:40
0002	focus 918 open	Beam Snap	1	10-12-98 15:04:55
0003	Pos 918 spread screen	Movement Snap	1	10-12-98 15:05:02
0004	focus 918 totaly out	Beam Fade	1	10-12-98 15:05:08
0005	prism 918 in no rotation	Effects Snap	1	10-12-98 15:05:16
0006	light 518 100%	Intensity Snap	1	10-12-98 15:05:20
0007	pos 518 screen prism	Movement Fade	1	10-12-98 15:05:25
0008	col 918 rainbow 1	Color(Multi) Snap	1	10-12-98 15:05:31
0009	col 518 multi 1	Color(Multi) Snap	1	10-12-98 15:05:37
0010	Light 918 518 100%	Intensity Snap	1	10-12-98 15:05:42
0011	pos all center screen	Movement Fade	1	10-12-98 15:05:47

List of sequences

### Preferences menu

There are several ways select sequences from the list. Sequences in the list may also be selected directly to various targets depending on options set in the **preferences** menu.

### Drag Mode

This is the default mode for the sequence list. When in this mode it is possible to load the sequence into the current sequence in the following ways:

1. Drag the sequence from the list to an empty spot on the desktop.
2. Right-click the sequence line and select "Edit Sequence" from the popup menu.
3. Double-click the sequence line
4. Highlight the sequence line and press [Enter] on the keyboard.

In general, when in drag mode, sequences can be dragged from this list to their intended targets, possible targets includes the [cue control](#)<sup>[132]</sup>, where sequences may be placed in cue slots by dragging them from the list to the cue control.

For certain purposes (for example when selecting a sequence for auto startup), the list contains an Ok button. To select the sequence, highlight it and click Ok.

**Browse to Edit** - This will load the highlighted sequence into the current sequence without double click or [Enter]. Use the mouse or keyboard to highlight the sequence lines. When using the keyboard, the window must have focus for the keys to work.

**Browse to Cue** - This will move the highlighted sequence into the cue, provided there is enough free slots. To move the sequence into a specific slot in the cue, highlight the slot in the cue and then browse the sequences.

### Columns

By default, the displays the following information about each sequence:

Seq No	The unique number that identifies the sequence.
Sequence Name	The name given to the sequence by the user.
Types	The sequence type assigned to the sequence. See <a href="#">save sequence dialog</a> <sup>[125]</sup> .
Scenes	The number of scenes in the sequence.
Modified	The time of the last modification to the sequence.

The Preferences menu contains options to hide or show any of these columns. If the user does not need all information, hiding some of the columns may free space on the desktop (Preferences -> Columns)

**Default visible columns** - sets visible columns to default width

**Default view** - sets default columns and default width

### Sorting Sequences

It is possible to sort the list by the contents in each the columns. Click on the column header to sort the list in ascending order according to the column contents.

### Sequence popup menu.

Right-click on any line containing a sequence to bring up the menu:

**Edit sequence** - load the sequence file into the [current sequence](#)<sup>[18]</sup>.

**Add Sequence To Cue** - adds the sequence to the current cue.

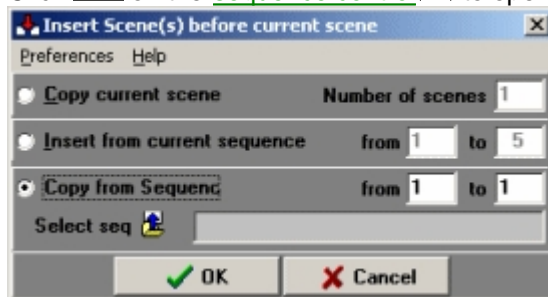
**Add to BG Cue** - add the sequence to the current [background cue](#)<sup>[167]</sup>. If all slots are filled in the background cue the sequence will overwrite the sequence in the last slot.

**Add to 2510 list** - This option is only available if the [2510 list control](#)<sup>[290]</sup> is open.

**Delete the sequence file** - deletes the sequence file. To delete multiple sequences at once, select **System -> Delete Files -> Sequences** from the [main desktop menu](#)<sup>[47]</sup>.

## 9.4 Inserting scenes

Click  on the [sequence control](#)<sup>[124]</sup> to open the insert scene dialog.



*Insert scene(s) dialog*

The insert scene implements the following options for inserting new scenes (before the current scenes) into the sequence:

**Copy current scene** - this will insert one or more new scenes before the current scene, and copy the content of the current scene to the new scene(s). Use **Number of Scenes** to specify the number of scenes to insert.

**Insert from current sequence from scene** - this will copy and insert a number of existing scenes from the current sequence and insert them before the current scene. Use **from** and **to** to specify which scenes to copy. An example: a sequence consisting of 10 scenes and the current scene is 6. Inserting



scene 1 to 3 from the current sequence, will insert a copy of scene 1 to 3 before scene 6 extending the sequence to 13 scenes in total.

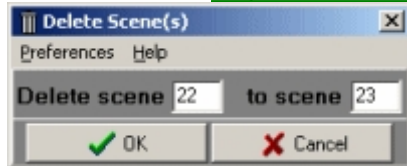
[Copy from Sequence](#), copies scenes from another sequence. Click **Select seq** to select which sequence to copy scenes from and specify the scene numbers to copy using **from** and **to**.

### Preferences Menu

**Ok on [Enter]** - this option lets the [Enter] key on the keyboard act as a hot-key for the Ok-button.

## 9.5 Deleting scenes

Click  on the [sequence control](#)<sup>[124]</sup> to open the delete scenes dialog.



*Delete scenes dialog*

Use the fields to determine which scenes to delete (from - to) from the sequence. Since the current sequence always contains at least one scene, deleting all scenes, resets the current sequence to one scene with default (all off) output.

### Preferences Menu

**Ok on [Enter]** - This option lets the [Enter] key on the keyboard act as a hot-key for the Ok-button.

## 9.6 Sequence blind mode

The sequence blind mode is activated via  on the [sequence control](#)<sup>[124]</sup>. By default the access to Sequence Blind mode is disabled, but may be enabled by checking **Allow Sequence Blind Mode** option in the [System preferences dialog](#)<sup>[50]</sup>.



*Background color indicating blind mode*

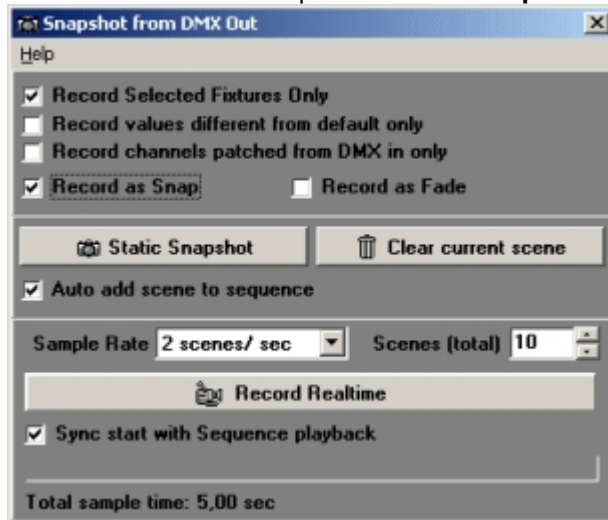
When sequence blind mode is enabled the field containing the sequence name in the sequence/cue tool bar turns orange as a reminder. With the sequence is in blind mode, the output generated by the current sequence will not be part of the final output. Cues and background cues will continue to generate output. When the blind mode is disabled, the current sequence will again contribute to the final output. Sequence blind mode has several purposes. It is possible to program and edit sequences without changing the output (useful for rehearsals). It also is possible to change several parameters on several fixtures and enable the changes only when disabling blind mode; sort of a Go command. When entering blind mode the current contents (if any) of the current scene will be copied to a special buffer that will be made part of the output. This allows the user to enter and exit blind mode without the entire contents of the scene being removed whenever entering blind mode. The buffer is cleared when exiting blind mode. If a sequence that is part of the current cue is loaded to the editor while in blind mode, the contents buffer will automatically change to reflect the contents of the sequence being loaded so that the current cue will remain 'intact'.

This buffering may be disabled by deselecting the **Keep Contents When Entering Blind Mode** switch in the preferences menu on the [sequence control](#)<sup>[124]</sup>.

See also [sequence control](#)<sup>[124]</sup>, [freeze output](#)<sup>[198]</sup>, [Offline/Online switch](#)<sup>[198]</sup>

## 9.7 Snapshot and recording from DMX output

Using snapshot and real-time recording to capture the current DMX output and convert it into static scenes in the current sequence. Select **Snapshot** from the sequence control menu to open the dialog.



*Snapshot/real-time recording dialog*

### Filters and options

**Record Selected Fixtures Only** - record values for fixtures that are selected - if not checked, all values (all DMX control channels) for all fixtures are recorded.

**Record values different from default values only** - only record DMX output value (DMX control channels), if the value is different from the [default DMX](#)<sup>[53]</sup> output value.

**Record channels patched from DMX in only** - only record values for channels that has DMX-in as source (see [Global Patch](#)<sup>[20]</sup>).

**Record as Snap** - Set [fade state](#)<sup>[93]</sup> for recorded values to Snap.

**Record as Fade** - Set [fade state](#)<sup>[93]</sup> for recorded values to Fade.

The filters and options applies both to static snapshots and real time recording (see below).

### Static snapshots

Click the Static Snapshot button to capture the current DMX output to the current scene. Values already programmed into the scene will be overwritten unless they are filtered out by the filter options.

**Clear Current Scene** - click to clear the contents in the current scene. The clear function is filtered the same way as snapshot, except for the default value on function (which is ignored)

**Auto add scene** - automatically adds a new scene to sequence after taking the snapshot.

#### Hint:

To take several snapshots from a static scene containing pan/tilt positions and pan/tilt macros, first save the 'source' scene as a sequence (source sequence). Next, execute the sequence in the [background cue](#)<sup>[16]</sup> control. Since the output from the background cue has higher priority than the active sequence, the pan/tilt macro values from the source sequence will not be merged with the new pan/tilt positions from the snapshot contained in the current scene. Recording multiple snapshots from a pan/tilt macro may be a quick way of generating a sequence with pseudo random pan/tilt positions, especially if the sequence is used in random trig mode in the cue.

### Real-time recording

The real-time recording options first captures and records individual scenes from the output in real time and then combines the captured scenes into one multi-scene sequence. The function is especially useful to create sequences for downloads to the 2510 playback controller, or to create very long fade times (60 sec+) by recording a dedicated sequence. Note that the snapshot/recording dialog must

remain open while sampling.

**Sample rate** - select the sample rate from the sample rate drop down box, the sample rate ranges in discrete steps from 1 scene/second to 20 scenes/second.

**Scenes (total)** - the total number of scenes to be recorded - the maximum value is 999 and the minimum value is 2. The total recording time, which is a combination between sample rate and total number of scenes, is indicated at the bottom of the dialog.

**Record Realtime** - Click to start recording - the progress bar at the bottom illustrates remaining recording time. Once the specified scenes are recorded, a new dialog will appear. Click **Yes** to convert the recording to a sequence. **Note:** the new sequence created will overwrite the contents of the current sequence so if the DMX output created is generated by the current sequence it may be a good idea to save the source sequence before recording.

**Sync start with Sequence playback** - use this option to synchronize the start of recording with the start of sequence playback. First enable the option, then click **Record Realtime**. Finally, click either playback button on the [sequence control](#) <sup>[124]</sup> to start simultaneous sequence playback and recording.

To record even more complex setups (e.g. using cues and generic DMX macros) setup the 'program' in a cue list and add a hotkey function (e.g. Sequence playback fwd) to start recording. Note that the cue list may add a slight delay between commands, so it may be a good idea to record one or two extra scenes so that the first couple of scenes can be deleted once the new sequence has been created.

#### Tips:

##### Recording macros

To record a pan/tilt macro or Generic DMX macro, the total recording time should be as close as possible to the macro cycle time. When using different cycle times, the shorter time(s) should be a fraction of the longest cycle time (e.g. 1/2 or 1/3 of the longest cycle time). This way the resulting sequence always contains the entire macro cycle. There is no difference between recording a macro with a short cycle time with a fast sample rate and recording the same macro with a long cycle time and a lower sample rate.

##### Recording sequences for the 2510

Since the 2510 playback controller cannot fade DMX values or play back sequences containing macros, real-time recorded sequences containing many scenes can be used to emulate these functions in the 2510. To re-produce a smooth movement originally made through a fade or macro the sequence should be recorded with a fairly high sample rate (2-10 scenes pr second or even 20 scenes pr second) and the scene time of the sequence should be fairly short. The high sample rate and short scene time in combination will emulate the real-time DMX calculations usually made by LightJockey in the 2510. The actual sample rate and scene time needed depends a lot on what type of fixture is being used as well as individual fixture effects.

##### Creating sequences with long fades

Normally, scene fade times are restricted to 60 seconds. If very long fade times are required (e.g. 60 minutes) use the record real-time function to break the transition up into multiple scenes.

Example, making a fade lasting one hour:

First prepare the sequence containing the fade (e.g. a CMY from 0% saturation to 100% saturation). Set the scene and fade times to 6 seconds.

Next set the real time recording sample rate to 10 scenes pr second and the total number of scenes to 60 (or 20 scenes pr second and 120 scenes for double resolution). Record and convert to a sequence using the sync with sequence playback option. Set the sequence scene time to 60 seconds (or 30 if recorded with double resolution). The total sequence now contains the entire transition and plays back in one hour.

Depending on type of effect and fixture used, it may be necessary to increase the resolution to avoid visible 'bumps' when a DMX new value is sent to the fixture. 20 scenes/second, 256 scenes total and a scene/fade time of 12.8 seconds will create a sequence containing all values in a 8-bit control channel fade from 0 to 100%. Use scene time to control the sequence playback time (a scene time of 14 seconds with 256 scenes makes the time for one sequence loop very close to one hour).

## 9.8 Sequence fades

While not strictly part of the [sequence control](#)<sup>[124]</sup>, the sequence fades control offers the possibility of modifying the fixtures fade state on a more global sequence level than just using the fade state button for each effect (control channel). The control is accessible from the **fades** menu of most [fixture controls](#)<sup>[92]</sup>.



*The sequence fade state control*

The fade control works the following way. LightJockey assigns a control type attribute to each of the fixtures control channels. The type of fixture control on which the control channel has its main function (e.g. a color-type control channel or a beam-type control channel) determines the value of this attribute.

Use the fade control to change the fade state of all the [selected](#)<sup>[80]</sup> fixtures. To change the fade state in all the scenes in the sequence, check the *All Scenes* box. For example to change the pan/tilt fade state from fade to snap for a number of fixtures in all scenes in the sequence, check the *Movement* box, the *All Scenes* box and the *Fade -> Snap* box. Then Click Ok.

The control may also be used to 'remove' certain effects from a sequence. For example check the *Intensity* box and the *All Off* box to remove intensity commands from all the selected fixtures.

Note that the control does not actually remove the programmed values, it just changes the fade state. Re-applying a snap or fade state will make the programmed values 'active' again.


### Notes

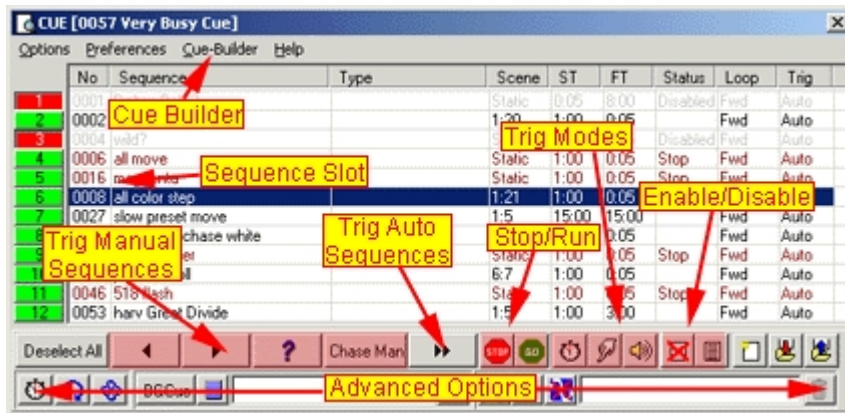
Since each control channel is assigned one attribute value only, the fade control may not have obvious functions for multi function channels. A good example is the reset command or stand-alone commands for Martin fixtures. These commands are usually programmed on the same control channel as shutter and lamp commands. Since shutter commands are typical intensity commands the control channel has been given the attribute value of *intensity*, rather than the *level / extended* attribute. This means that setting the level/extended fade state to off does not affect these commands, even if they are placed on the extended fixture control.

For [user definable fixture profiles](#)<sup>[247]</sup> the control channel attributes are applied in the following prioritized order (last has priority): Movement/position, beam, effects, level (extended), intensity, gobo, color

## 10 The cue control

### 10.1 The cue control

The cue control is opened by clicking  on the right hand side of the [sequence/cue tool bar](#)<sup>[55]</sup>.



The cue control

The cue control is used to construct and execute cues that contains up to 12 sequences to execute in parallel. The cue control implements options to manipulate sequence timings, loop options and movement macro scaling. The cue control is also be used to launch [background cues](#)<sup>[167]</sup> or [generic DMX macros](#)<sup>[153]</sup>.

The state and contents of the cue control can be saved to a data file - the saved file can then be re-loaded from the list of cues. A saved data file is referred to as 'a cue'. The cue control and associated cue files are the principal 'play-back' method in LightJockey. A large number of cue control functions and options are available as [keyboard hotkeys](#)<sup>[205]</sup> or via remote controls such as [DMX in](#)<sup>[231]</sup> or the [2532 direct access controller](#)<sup>[225]</sup>.

### Adding sequences to a cue

There are several ways of assigning a sequence to each of the 12 sequence slots.

From the [list of sequences](#)<sup>[127]</sup>:

1. Drag and drop the already saved sequence from the list into the cue slot (*drag mode must be selected in the preference menu on the list of sequences*).
2. Right-Click the sequence line in the list and select **add sequence to cue** (this will only work if there is a free slot for the sequence).
3. Enable the **Browse to Cue** function in list of sequences preferences menu and click the sequence to add.

From the [save sequence dialog](#)<sup>[125]</sup>:

Enable the **Add Sequence to Current Cue** switch - this will automatically add the sequence to the cue when the sequence is saved (provided there is a free slot for the sequence). If the sequence is already part of the cue, it will not be added a second time.

### Removing sequences

To remove one or more sequences from the cue, select the slots, right-click and select **Clear Slot(s)** from the popup menu.

### Rearranging sequences within the cue

To rearrange the order of the sequences simply drag the sequence to a different slot (note that *drag sequences* in the preferences menu must be enabled, otherwise dragging of sequences is disabled within the cue control). Dragging a sequence to a different slot prompts a popup menu the following options:

**Move Sequence** - will move the sequence to the target slot.

**Swap Sequences** - will swap the two sequences, if the target slot is already used.

**Copy Sequence** - will copy the sequence line into the target slot.

See [cue control columns](#)<sup>[142]</sup> for an explanation on the individual columns of the cue control and [cue control columns and slot colors](#)<sup>[142]</sup> for an explanation on the different colors used to indicate the

different states of sequences in the cue.

### Sequence slot priorities

Since it is perfectly possible to write several sequences that addresses the same fixture/effect; and to include these sequences in the same cue - the cue has a simple sequence priority system: **The higher the slot number, the higher the output priority**

Example: A sequence in slot 1 addresses a fixture color wheel and sends it to red. Another sequence in slot 2 also addresses the same fixture and color wheel but sends it to yellow. Since slot 2 has priority over slot 1 the resulting output will send the color to yellow.

The priority system works on individual DMX control channels so it is perfectly possible (and often desirable) to access individual effects on a fixture from different sequences in the cue.

### Triggering sequences in the cue

Once placed in a sequence slot, a sequence containing more than one scene is triggered (advanced to the next scene) using one of 3 different trig sources:

**Auto-trig** - sequence is triggered automatically using the preprogrammed scene time

**Manual trig** - sequence is only triggered by a user action

**Audio trig** - sequence is triggered by an audio trig from the [audio analyzer](#)<sup>[192]</sup>

For more details on trig options see [triggering sequences in the cue](#)<sup>[144]</sup>. For further options on sequence timings and sequence loop options see **Advanced Cue Options** below.

### Cue control functions

Click **Select All** to select (highlight) all sequences in the cue. If one or more sequences are already selected, click to de-select all sequences.



Click either icon to manually trig sequences within the cue (see [triggering sequences in the cue](#)<sup>[144]</sup>)



Click **STOP** to stop a sequence or restart a stopped sequence. A stopped sequence will not trig on any trig source. If no sequences are highlighted all sequences will be stopped or started when the button is clicked. The stop status is NOT saved with the cue.



Click to set the trig mode of the sequences (Auto trig, Manual trig and Audio Trig). See [triggering sequences in the cue](#)<sup>[144]</sup>



Enables/Disables sequences.

Disabled sequences do not contribute to the output of the cue. The state is saved with the cue, and will be used the next time the cue is loaded, providing **Preferences -> Cue Preferences -> Restore Sequence Enabled State** is enabled.

It is also possible to enable/disable sequences remotely for example by using DMX in, keyboard hotkeys or the 2532 direct access.

### New cue



Click to clear the current cue. If the current cue is not saved before it is cleared it will be lost.

### Saving and loading cues



Click this to bring up the [save cue dialog](#)<sup>[136]</sup>.



Click this to bring up the [list of cues](#)<sup>[137]</sup>. Use this list to select an existing cue and load into the cue control. See also [transparent cues](#)<sup>[149]</sup>.

### Advanced cue options

The advanced options panel at the bottom of the cue control contains several advanced tools to manipulate the cue. The panel may be hidden or displayed from the *Preferences/View* menu (see below).



Click to access the [cue time control](#)<sup>[147]</sup>

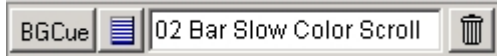


Click to access the [sequence slot loop options](#)<sup>[145]</sup>



Click to access the [cue macro control](#)<sup>[148]</sup>


### Launching background cues from the cue control



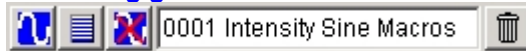
Add a [background cue](#)<sup>[167]</sup> to be automatically launched when the cue is loaded, by dragging the background cue from the [list of background cues](#)<sup>[169]</sup> to the background cue field in the cue control.

Click  to toggle the [background cue control](#)<sup>[167]</sup>

Click  to toggle the [list of background cues](#)<sup>[169]</sup>

Click  to clear the background cue from the cue.


### Launching generic DMX macros from the cue control




Add a Generic DMX macro to be automatically launched when a cue is loaded by dragging the macro from the [list of generic DMX macros](#)<sup>[166]</sup>.

Click  to toggle [the generic DMX macro editor](#)<sup>[156]</sup>

Click  to toggle the [list of generic DMX macros](#)<sup>[166]</sup>.

Click  to toggle the current generic DMX macro on/off.

Click  to remove the generic DMX macro from the cue.

### Cue control preferences menu

[View Preferences](#)

[Columns](#) - Show or hide the individual columns in the cue control

[View Advanced Options](#) - View or hide the advanced options panel

#### Sequence Slot Preferences

[Drag Sequences](#) - Enable/disable internal drag of sequences.

[Use Status Colors](#) - By default the different lines in the cue control are color coded according to the status of the individual sequence. Colors may be hard to read on some displays (e.g. Laptop displays). Use this switch to disable the color-coding of the lines. It may be necessary to reload the cue in order to get all lines updated. See [cue control columns and slot colors](#)<sup>[142]</sup> for an explanation on the different colors used to indicate the different states of sequences in the cue.

[Double-click to edit Sequence](#) - With this option enabled, double clicking a sequence in the cue will place it into the [sequence editor](#)<sup>[124]</sup>.

[Sequence Slot Labels](#) - See [sequence Slot Labels](#)<sup>[143]</sup>

#### Sequence Flash Preferences

[Latch Flash Sequence](#) - Check this option to keep flashed sequences latched. A latched sequence will not disappear like a normal flashed sequence. To clear the latched sequence either flash the sequence a second time, or use the *Release Latched Flash* [hotkey](#)<sup>[205]</sup>.

[Release Flash on Load](#) - Checking this option will automatically release any flash sequence on load of a new sequence.

#### Sequence Trig Preferences

[Hotkey Trig Changes Sequence Direction](#) - When enabled, [hotkey](#)<sup>[205]</sup> trigs (e.g. trig bounce slot#) will change the [sequence loop direction](#)<sup>[145]</sup> according to the direction given by the hotkey trig. Note that

manual triggered sequences in chase mode will always change the trig direction according to the latest hotkey press.

### Cue Preferences

**Disable BG Cue Latch** - Disables the ability to latch background cues from the cue

**Release Current Sequence on Load** - When enabled, the current sequence is automatically cleared whenever a new cue is loaded (disable the [sequence changed warning](#)<sup>[50]</sup> to avoid warnings when the sequence is cleared)

**Restore Sequence Enabled State** - restores the sequence enabled/disabled state as set when the cue was saved

**Save Chase Times** - chase times for manually triggered sequences are saved with the cue, see [triggering sequences in the cue](#)<sup>[144]</sup>

**Disable Fade Times in Chase Mode** - sequences in chase mode have their [fade times](#)<sup>[93]</sup> disabled, effectively [snapping](#)<sup>[93]</sup> all effects, see [triggering Sequences in the cue](#)<sup>[144]</sup>.

**Allow Remote Enable/Disable** - when this option is disabled, remote sequence on/off commands (e.g. via [DMX in](#)<sup>[231]</sup>) are not accepted by the cue control.

**Restore Macro Control Values** - this option must be enabled to restore saved [macro control](#)<sup>[148]</sup> values when reloading the cue. If not checked saved values are ignored when loading the cue.


**Show Scene time as BPM** - when enabled, scene time is displayed as BPM (beats pr minute) rather than the usual time format.

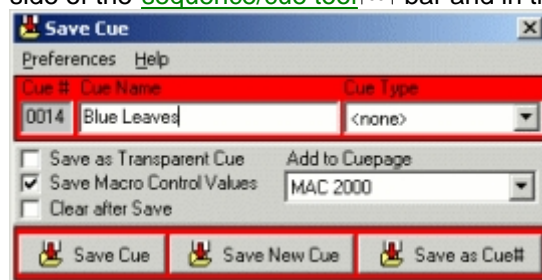
**Transparent Cues** - see [transparent cues](#)<sup>[149]</sup>

**Sequence Intensities** - see [sequence intensities](#)<sup>[150]</sup>

See also [background cues](#)<sup>[167]</sup>, [transparent cues](#)<sup>[149]</sup>, [sequence intensities](#)<sup>[150]</sup>, [cue-builder](#)<sup>[150]</sup>, [generic DMX macros](#)<sup>[153]</sup>

## 10.2 Save cue dialog

This dialog is used when saving a cue. The dialog is opened when clicking  located on right hand side of the [sequence/cue tool](#)<sup>[55]</sup> bar and in the [cue control](#)<sup>[132]</sup>.



Save cue dialog



**Cue #** - a number that is used to uniquely identify the cue. The number is applied by the LightJockey when saving the cue for the first time, so for a new cue this field will be blank until the cue is saved.

**Cue name** - this is a name for the cue that will be used through out LightJockey. The name can be changed at any point, providing that the cue is saved after the name has been changed. The name has no other function than identifying the cue to the user.

**Cue Type** - It is possible to assign a pre-defined cue type to the cue. Currently the cue type is reserved for future use.


**Save as Transparent Cue** - when checked the cue is saved as a [transparent cue](#)<sup>[149]</sup>.


**Save Macro Control Values** - when checked the [cue macro control](#)<sup>[148]</sup> values are saved with the cue.


**Clear after Save** - when checked the cue is automatically cleared after being saved.



**Add To Cuepage** - automatically add the cue to a specific page in the [list of cues](#)<sup>[137]</sup>. If a cue is already present on a page (when re-saved) it will not be added a second time; if it is present on a different page than the one specified it will not be removed from the original page.

Click  **Save New Cue** to save the current cue to a new cue file (and assign a new cue number). Both new cues and cues that has previously been saved may be saved as new a cue. If an already existing cue is saved as a new cue, the old, original cue is left intact (much like saving a document with a new filename in a word processor).

Click  **Save Cue** to re-save a cue that has previously been saved. Saving the cue will overwrite the contents of the original cue file.

Click  **Save As Cue#** to save the current cue to be saved with a specific cue number of the users choice through the save as Cue# dialog.



Save as Cue# dialog

Clicking **Save As Cue #** brings up the save as cue dialog. Type the new cue number in the Cue# field - if an existing cue is already registered with that cue number, the name of the cue will show up in the cue name field. **Warning** : If a cue using this number ready exists, saving the current cue will overwrite the existing cue with the current cue - there will be no further warnings if an already existing cue is overwritten.


## Preferences Menu

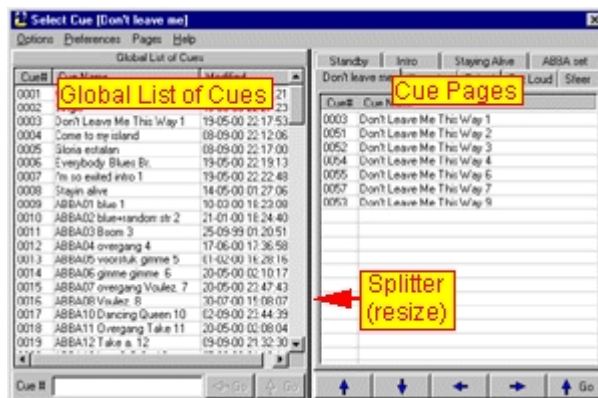
**Auto Close** - this option will close the save dialog automatically when the cue is saved.

**Save on [Enter]** - this option will allow the [Enter] key on the keyboard to act as a hot-key for the **Save Cue** and **Save as New Cue** buttons.

## 10.3 List of cues

Use this list to retrieve previously saved cues or to drag cues to various configuration settings (do not confuse the list of cues with [cue lists](#)<sup>[169]</sup>).

The list is opened by clicking on the  icon on the right hand side of the [sequence/cue tool bar](#)<sup>[55]</sup> or the [cue control](#)<sup>[132]</sup>.

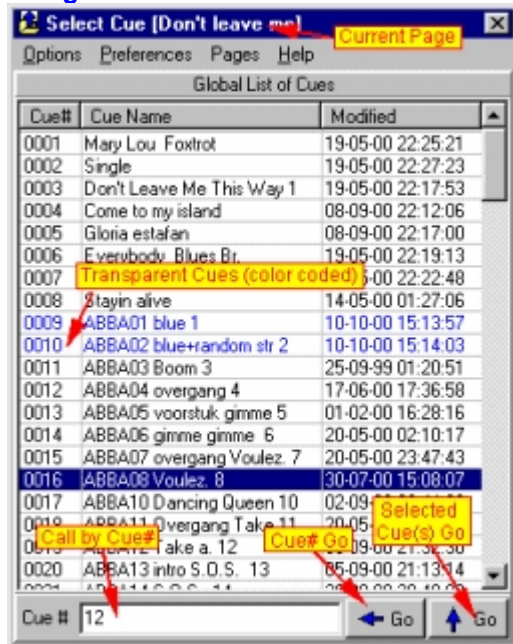


The list of cues

The list contains two sections - the global cue list and the cue pages. The global list contains all previously saved cues, while the cue pages contains user defined pages with any of the cues from the global list in any order. By default the control defaults to showing the global list only. Make the global list and cue pages sections visible by checking **View Global List** and **View Cue Pages** respectively in the preferences menu. To hide either section, un-check the respective view from in menu - note that one of the two sections are always showing. When both the global list and the cue pages are showing, the two sections can be horizontally resized by dragging the vertical splitter between the two sections.

See [cue pages](#)<sup>[140]</sup> for information on how to configure use the cue page section.

### The global list of cues



The global cue list

The Global list of cues is a list containing all previously saved cues. It is also possible to delete individual cue files from the list.

### List Columns

The list contains three columns, the cue# which is a unique identifier for each cue, the cue name and a modified date. The columns may be individually horizontally resized by dragging the splitter between each column header. Alternatively use **Preferences -> Global List Preferences -> Columns** to hide one or more columns. The global list may be sorted according to each column by clicking on the respective column header.

### Transparent cues

By default the list displays [transparent cues](#)<sup>[149]</sup> using a blue color code (normal cues are drawn in black) - to disable the color coding and mark transparent cues with a preceding (T), un-check **Use Color Code for Transparent Cues** in the preferences menu.

### Loading and editing cues

#### Loading a cue

There are a number of different ways to load a cue back into the [cue control](#)<sup>[132]</sup> from the global cue list.

The simplest is to double click the line in the global list containing the cue. Alternatively a cue may be loaded by highlighting the line and then:

1. press the [Enter] key (this option may be disabled, see later)

2. right click the line and select load cue from the popup menu
3. use a keyboard hotkey (see later)
4. click **selected cues GO** (up arrow)
5. type the cue number in the call by cue# field and press [Enter] or click **Cue# Go** (left arrow)
6. load the cue directly (using browse mode, see later)
7. drag the line on to the desktop or the cue control

### Editing a cue

To edit a cue, highlight the line, right-click and select **Edit Cue**. When editing a cue, the cue is retrieved to the cue control much like the load command. However, any [sequence link options](#)<sup>[145]</sup> programmed in the cue are not actually performed - linking cues are stopped at the end of the loops without linking the next cue.

### Loading multiple cues

Loading several cues in one go only makes good sense if all (but possibly the first cue to load) of the cues to load are [transparent cues](#)<sup>[149]</sup> - however there is no built-in check that this is actually the case. Loading multiple non-transparent cues will just result in the last cue being executed. **Note : if multiple cues are loaded the warning on cue changed option is temporarily disabled.** To load multiple cues, make sure that the **Enable Multi-Cue Load** option is enabled (preferences menu). First highlight the cues, then select a load option as when loading a single cue (except for the double click, or browse). Note that it is not possible to load multiple cues across cue pages. When loading multiple cues via the global cue list or cue pages, the cues are loaded and evaluated in a top to bottom order. Alternatively, type the cue numbers into the Cue# field. Separate the cue numbers with a '+', e.g. 1+2+3 loads cues 1,2 and 3.

### Deleting cues

Highlight the cues to delete - then right-click and select **Delete Cue(s)** from the popup menu. Warning - deleted cues are gone for good.

### Useful Hotkeys for the global list

A number of keyboard hotkey functions may be helpful when working with the global list of cues - see [hotkeys](#)<sup>[203]</sup> for an explanation of how to assign hotkeys to functions.

**Toggle List of Cues** - toggles the list of cues on and off.

**Load Selected Cue (Global List)** - loads the selected cue from the global cue list, regardless if the list has Window focus (the [Enter] key only works if the global list has focus).

**Focus Cue# Selection** - shows the list of cues if necessary and forces windows focus to the cue# selection field. This is a useful option if cues are usually selected via the cue# entry. If for example, the 'c' key is assigned to this function, precede all cue number entries with a 'c' (e.g. 'c123') to make sure that the cue# entry gets focus.

It is also possible to assign specific cues directly to a hotkey - see [hotkeys](#)<sup>[203]</sup>.

### The preferences menu

**View Global List & View Cue Pages** - used to show or hide the global list and cue pages respectively.

**Global List preferences & Cue Pages preferences** - used to set preferences for the global list and cue pages respectively.

**Load cue on [Enter]** - by default highlighting a line in the global cue list or one of the cue pages and then pressing enter will load the cue. This behavior may be disabled by un-checking this option.

**Browse Mode** - check **Browse Cues** in the preferences menu to switch to browse mode. When in browse mode the cue is automatically loaded as soon as the line is highlighted, either by clicking on the line or using the keyboard cursor keys. When browse mode is enabled it works both in the global list and on the cue pages.

**Enable multi-Cue Load** - used to enable or disable loading of multiple cues. The option also enables or disables multi-cue load from cue pages.

**Use Color Code for Transparent Cues** - when checked, transparent cues are shown in blue to distinguish them from non-transparent cues. When un-checked, the names of the transparent cues are

preceded with a (T).

### The global list preferences

The global list preferences menu is a sub-menu to the main preferences menu, use it to set preferences for the global list.

**View Global Cue# Entry** - When checked the call by Cue# field is visible at the bottom of the list. Un-check to hide the entry.

**Track Active Cue** - When checked the global cue list automatically tracks the active cue in the global cue list when ever a new cue is loaded (e.g. by the a cue list or hotkey)

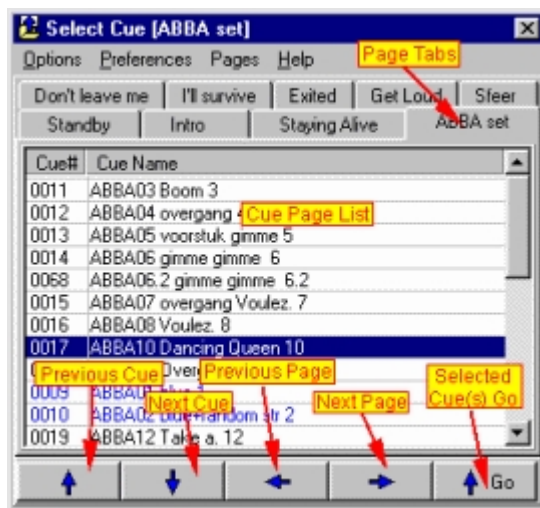
**Columns** - Use this sub menu to hide columns or set the global list to the default view.

**Sort Order** - Use to set sort order for the global list. This sub menu may also be used to sort the list according to the cues transparent status.

**Cue pages preferences** - see [cue pages](#) <sup>[140]</sup>

## 10.3.1 Cue pages

The cue pages are a part of the [list of cues](#) <sup>[137]</sup> and represent user defined lists of existing cues. Because of the more structured approach using pages, the cue page section often offer a better alternative to manually driven cue-lists. Note that the maximum number of pages is limited to 255. See [list of cues](#) <sup>[137]</sup> for general list of cue configuration options and notes. Different pages are located on individual 'tabs'. There are always at least one cue page available. The actual page setup may be saved and then retrieved at a later point by selecting **Save Page Setup** or **Load Page Setup** from the options menu.



*Cue pages (view cue pages only)*

### Managing pages

#### Using the pages sub-menu

The pages sub-menu, right-click anywhere on the cue page list, and select pages from the popup menu.

**Add New Page** - adds a new page to the end of the pages list

**Insert New Page** - the insert command inserts a new page right before the current page.

**Delete Current Page** - deletes the current page

**Edit Current Page Name** - opens a dialog to edit the name of the current page

**Clear Current Page** - removes all cue from the current page.

#### Using the pages menu

**Add New Page** - adds a new page (same as the pages sub-menu).

**Re-order Pages** - use customize the order of pages - use drag and drop to re-order the pages in the

Re-order Cue Pages dialog.

[Clear All Pages](#) - clears all contents of existing pages.

[Delete All Pages](#) - deletes all existing pages.

### Adding cues to pages

Cues are added to the cue pages from the [Global list of cues](#)<sup>137</sup>; when adding cues make sure that both the global list and cue pages are visible (check both view entries in the preferences menu). The same cue may be added any number of times to any pages, even added several times to the same page - practical when setting up a 'sequential' list re-using the same cue several times. Add cues to the current page by dragging them from the global list (highlight several cues before dragging to add multiple cues at once). Alternatively, highlight the cue(s) in the global list, right-click one of the highlighted cues and select **Add cues to Page** from the popup menu. To insert the selected cues before another cue on the page list, highlight the cue on the page list first, then select **Insert cues on Page** from the popup menu. To remove cues from the cue page, highlight the cues, right click and select **Clear Selected cues**.

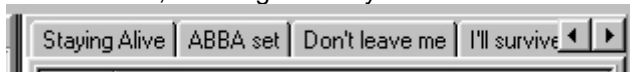
### Re-arranging cues in page lists

Re-arrange the cues on the individual simply by dragging them around in the list. To avoid unintended re-ordering of lists, The list may be **locked**, by checking **Lock Page Lists** in the list right-click popup menu. Highlight lines and then use standard cut, copy & paste operations to copy or move cues around on the same page or even to different pages.

### Cue pages preferences

Access the cue pages preferences menu through the preferences menu.

[MultiLine Page Tabs](#) - check to enable multi-line page tabs. If unchecked the page tabs will be forced onto one line, showing as many tabs as the width allows.



*Single line tabs*

[Circular Page Selection](#) - when checked, page selection (see later) is circular: selecting next page from the last page automatically swaps to the first page, and selecting previous page from the first page swaps to the last page.

[Automatic Page Change](#) - when checked, selecting next and previous cue (see later) will automatically change page to next or previous page respectively if necessary.

### Maneuvering the cue pages

Maneuver between pages either by selecting the page directly on the tab or by using the previous and next buttons located at the bottom of the page list. Right-click previous or next buttons to go straight to the first or last page respectively. It is also possible to assign keyboard hotkeys for previous and next page selection (see later).

### Selecting and loading cues

Cues can be loaded from the cue pages much like from the global cue list (double click, browse mode, right-click and select load, select and load using the go button, etc).

### Previous/next cue buttons

Alternatively use the previous/next cue buttons at the bottom of the list to load the previous or next cue on the page respectively. If no cue is selected on the current page, the last or first cue is automatically selected. Right-click the previous/next buttons to select the last or first cue line directly **without** actually latching the cue.

If the cues are normally executed in a sequential order, check **Automatic Page Change** in the cue pages preferences menu for automatic change of page after the last or first cue on the page. If unchecked the page will not be changed automatically.

### Useful hotkeys for the cue pages

A number of keyboard hotkey functions may be helpful when working with the cue pages - see [hotkeys](#) <sup>[203]</sup> for an explanation of how to assign hotkeys to functions.

[Toggle List of Cues](#) - toggles the list of cues on and off.

[Load Selected Cue \(Cue Pages\)](#) - loads the selected cue(s) of the current cue page, regardless if the page has Window focus (the [Enter] key only works if the page has focus).

[Previous/Next Cue Page](#) - selects previous or next cue page respectively.

[Cue Page Latch Previous/Next Cue](#) - Loads the previous or next cue on the page.

[Cue Page Select Previous/Next Cue](#) - Selects the previous cue on the page but does not load the cue. It is also possible to assign a specific cue directly to a hotkey - see [hotkeys](#) <sup>[203]</sup>.

### Useful DMX in functions for the cue pages

There's also a number of useful [DMX in](#) <sup>[237]</sup> options if LightJockey is primarily run remotely from a DMX console. The options makes it fairly simple to create 'sequential' pages, e.g. pages for different songs at live performances.

[Latch Current Cue from Page](#) - Latches the currently selected cue on the page.

[Previous/Next Cue Page](#) - selects the previous or next cue page.

[Latch Previous/Next Cue from Page](#) - latches the previous or next cue from the cue page.

[Select Previous/Next Cue from Page](#) - selects but do not latch the previous or next cue from the cue page.

## 10.4 Cue control columns and slot colors

### Slot on/off state



*Slots on/off state buttons*

Use the on/off buttons to the left of the sequence slots to enable and disable individual sequences in the cue. When a slot is disabled it the sequence is still a part of the cue but it has no effect on the output generated by the cue. The default state for a sequence is the enabled state and the button is green and in raised state - when a sequence is disabled the button is red and depressed. The sequence state can be toggled by clicking on the button or by using the [keyboard hotkeys](#) <sup>[203]</sup>.

### Columns

No	Sequence	Type	Scene	ST	FT	Status	Loop	Trig
----	----------	------	-------	----	----	--------	------	------

**No** - this column contains the sequence number. The cue uses the sequence number as reference to the sequence, so all changes to a sequence are automatically carried over to the cue.

**Sequence** - this column contains the name of the sequence (if any).

**Type** - This column contains the sequence type (if any). Currently the sequence type has no effect but is reserved for future use.

**Scene** - this shows the current scene of the sequence in the slot in the form X:Y where X is the current scene, and Y the maximum number of scenes in the sequence. If the sequence only contains one scene this field will read static.

**ST** - short for scene time. This shows the scene time for the current scene in the sequence. Unless the time has been scaled by the cue time control (see later) this will be the scene timed that was originally saved with the sequence.

**FT** - sort for fade time. This shows the fade time for the current scene in the sequence. Unless the time has been scaled by the cue time control (see later) this will be the fade timed that was originally

saved with the sequence.

**Status** - this column shows the current status of the sequence slot. If a sequence is present and the status field is empty it means that the sequence is executing the current scene. See below for an explanation of the different states.

**Loop** - the cue also allows different types of loop control settings for each sequence in the cue (see [sequence slot loop options](#)<sup>[145]</sup>).

If no loop options has been set the default value of this field is  *fwd*  which indicates that the sequence runs in a default loop, first to last scene, then loop to first scene again.

**Trig** - this field shows the trig source of the sequence (see [triggering sequences in the cue](#)<sup>[144]</sup>)

### Status of individual sequence slots in the cue

**Stop** - means that the sequence has stopped executing either through user intervention using the stop button, or simply because the sequence is static and already has executed it's scene. The sequence will also stop if the loop options has identical first and last scenes (see later).

**Disabled** - the sequence is disabled.

**Error** - An error has occurred. The most likely error is that the sequence file has been erased after the cue was saved with the sequence number. In this case the sequence name will read 'load error'.

**Edit** - The sequence is currently being edited. When the sequence is being edited it is temporarily taken out of the cue output. The sequence state will revert to normal when the current sequence is cleared again. The reason for this state is to avoid that a sequence being edited contributes to the cue with the 'old' sequence contents (the contents is not really changed until the sequence is saved) during editing.

**Out** - The sequence has terminated its loop conditions and is now 'out' - see

[Sequence slot loop options](#)<sup>[145]</sup>

**Link** - The sequence has terminated its loop conditions and is set to link to another cue - see

[sequence slot loop options](#)<sup>[145]</sup>

### Slot color codes

Note: the use of status colors may be disabled through the [cue control](#)<sup>[132]</sup> preferences menu

**Black** is used to indicate that the sequence is running normally.

**Maroon** is used to indicate a static sequence or a sequence that has stopped.

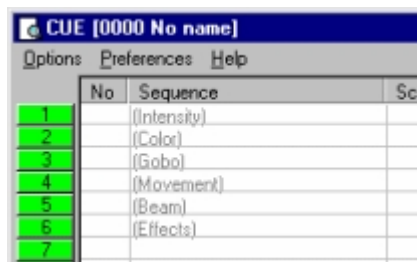
**Red** Indicates Error, such as referencing a sequence that does not exist, or to indicate that a manual sequence is in [chase mode](#)<sup>[144]</sup>.

**Gray** is used to indicate a disabled sequence.

**Blue** is used to indicate a sequence that is currently being edited

**Green** is used to indicate a 'link-cue' sequence in edit mode.

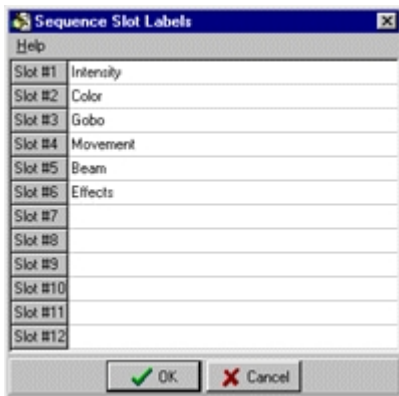
## 10.5 Modifying sequence slot labels



### Sequence slot labels

To facilitate systematic cue programming the individual sequence slots of the cue may be labeled.

Note that the slot label is only visible in the cue control when the sequence slot is empty. To label a slot, select **Sequence Slot Labels** from the preferences menu in the [cue control](#)<sup>[132]</sup>.



*Sequence slot label dialog*

The label is also used for reference in the [save sequence dialog](#)<sup>[125]</sup>, if the **Show Add to Cue Slot** option is selected.

## 10.6 Triggering sequences in the cue

Trig is the term that describes the 'action' that causes a sequence in to progress to a new scene. Sequences with only one scene cannot be triggered (such sequences are termed static sequences). The LightJockey supports three modes of triggering sequences: **Automatic** trig using internal clock and scene time, **Manual** trig requiring input from the user, and **Audio** trig - which requires audio input via a Windows compatible sound card (see [using audio input](#)<sup>[192]</sup>).

The auto and audio trig-modes may be combined with any of the [loop options](#)<sup>[145]</sup>, e.g. bounce or random. In manual trig mode the new scene is selected by the manual trig method (forward,reverse,random).



*Trigmode buttons (auto, manual, audio)*

These buttons are used to select the trig method of the sequence(s). Highlight the sequence(s) in the cue control and click to select the trig mode.

The assigned trig mode is displayed in the [trig column](#)<sup>[142]</sup> of the cue control.

### Manual trig mode

When in manual trig mode the sequence must be triggered by the user in order for the sequence to change to the new scene.



Click any of these buttons to trig sequences in manual trig mode. Sequences may be triggered in reverse, forward or random direction. If no sequences are high-lighted in the cue control, all manual sequences in the cue will be triggered - otherwise only selected manual sequences are triggered.

The functions of these buttons are also available as [keyboard hotkeys](#)<sup>[205]</sup>, as well as keyboard hotkeys for triggering individual sequence slots.

### Chasing sequences

#### Manual Triggered sequences in Chase Mode

The [Chase Man](#) button is used to switch manually triggered sequences in and out of chase mode.

When in chase mode, a manual sequence switches into a special form of auto trig mode. The trig time of the sequence is determined by the user, by using the time between the last two clicks on any of the manual trig buttons or hotkeys. The scene fade time is set to the same value as the chase time unless the *Disable Fade Time in Chase Mode* option in the cue preference menu is checked. When fade time



is disabled all effects in chased sequences will be snapped. The chase rate is not affected by the [cue time control](#)<sup>[147]</sup>. If the **Chase Man** button is disabled all chasing sequences switches back in to manual trig mode. Note that current chase rates are only saved with the cue if *Save Chase Times* is enabled in the cue control preferences menu and the **Chase Man** button is enabled.

#### Using global chase rate

Enable *Sequence Trig Preferences / Use global chase rate* in the cue control preferences menu to force all manually triggered sequences to chase to a global chase rate. The global chase rate is set the same way as chase rates for individual sequences (see above) but carries over when a new cue is loaded, effectively ignoring any previously saved chase times.

When the option is enabled and a new cue is loaded all manually triggered sequences will automatically be chased using the global chase rate, making it possible to 'follow a beat' using chases over multiple cues.

#### Automatic trig mode

Sequences in Auto trig mode will be triggered using the internal clock. By default sequences are triggered using the programmed scene times. The scene times may be modified (scaled) on the fly by using the [cue time control](#)<sup>[147]</sup>.

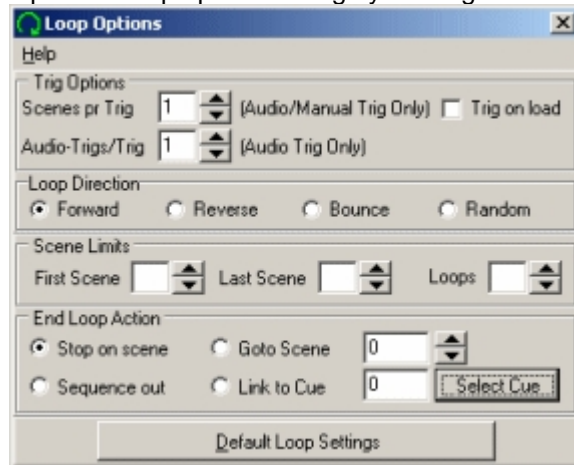
The  may be used to trig sequences in auto-trig mode manually.

#### Audio trig mode

Sequences in audio-trig mode will synchronize trigs to the dynamics of the music- see (see [using audio input](#)<sup>[192]</sup>).

## 10.7 Sequence slot loop options

Open the loop options dialog by clicking  on the [cue control](#)<sup>[132]</sup>.



Loop options dialog

By default a (non static) sequence in the cue control will execute from the first to the last scene and then loop back to first scene again in an endless loop. The loop options dialog may be used to modify the trig and loop behavior for the sequences in the cue.

#### Sequence trig options

**Scenes / Trig** - indicates how many scenes the sequence executes when a manual or audio trig occurs. Note that scenes automatically following the first scene triggered are executed in auto trig mode, using the sequences pre-programmed scene and fade times. Also the sequence executes the 'extra' scenes in forward direction regardless of the sequence loop settings (see below).

This setting has no effect if the sequence is in auto-trig mode. Default value is 1 (1 scene pr. trig)

**Trig on Load** - This option forces the sequence to 'trig' when the cue is loaded (without any trig actually occurring) - the option only has an effect if the scenes/trig value is higher than one.

**Tip:** One use of the scenes/trig option is a quick flash type effect for manual or audio triggered sequences. For example to program an audio triggered intensity *flash* effect, create a simple two-scene sequence. First scene should contain a blackout while the second scene should contain an *intensity-on* scene. Set fade and scene times to a low value. Add the sequence to a cue, and set the scenes/trig option to 2 scenes pr. trig and the sequence to manual or audio trig mode. When the cue is loaded it will include the sequence executing scene 1. When the sequence is triggered it will fire scene 2, automatically followed by scene 1, hence creating an automatic flash effect. Note that the sequence will not respond to a new trig before both scenes have executed (using auto time). Experiment with different scene/fade times and fade/snap states to obtain different types of flashes. To create an audio-triggered *flash chase*, just add more alternating *off* and *on* scenes to the sequence.

**Audio-Trigs / Trig** - indicates how many audio trigs that should occur before the sequence actually trigs a new scene. This setting is ignored if the sequence is in auto or manual mode.

### Sequence loop directions

The first set of options dictates the direction of the loop.

**Forward** - the default loop direction.

**Reverse** - execute the sequence backwards.

**Bounce** - execute the sequence from first to last scene, then 'bounce' back from last to first scene. I.E : 1->2->3->4->3->2->1->2 etc.

**Random** - select a random scene from the sequence.

**Tip:** The random scene option is actually a nice option when programming for clubs and dance venues where precise looks are not that important. When two or more sequences in the cue use the random scene mode they will combine to create randomly selected looks, but still within the 'style' programmed into the sequence. For example, a sequence may contain 10 different warm color combinations; another sequence could contain 10 different gobo selections, while a third could contain 10 different movement patterns. This would potentially give  $10*10*10 = 1000$  ! different looks - all from the same cue.

### Limits

The limit options enable the user to limit the sequence to a certain scene interval by specifying a first and last scene.

It also allows for finite number of loops. When the number of loops is set it is possible to set an end loop action (see below).

Note that it is not possible to limit the number of loops for a sequence in random scene mode.

**Tip:** When programming cues that are to be executed in a specific order (e.g. via the [cue list](#)<sup>[169]</sup>) it is often much easier to program transitions in the same sequence, even if the different elements goes into different cues. Use the first/last scene and loop count to 'clip' the sequence into the single transition elements in the cue. For example:

- Cue 1: sequence scene 1 to 3 , 1 loop (and stop)
  - Cue 2: sequence scene 4, 1 loop (static)
  - Cue 3: sequence scene 5-7, default loop (unlimited loops)
- etc.

### End loop actions

If the Loop count is set to a finite number, it is possible to define what should happen to the once the sequence has executed all the loops.


**Stop on scene** - the sequence stops on the last scene. The sequence maintains the output of the last scene.

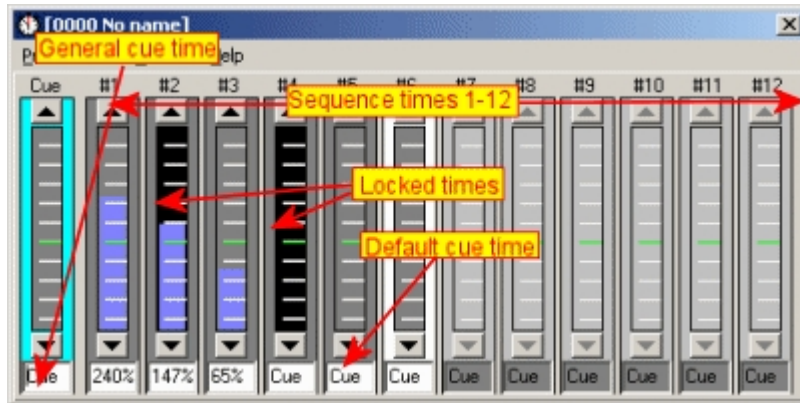
**Sequence out** - the sequence disables itself - no longer contributing to the output of the cue.

**Goto scene**- jumps to a specified scene within the same sequence and stop there.

**Link to cue** - load and execute another cue. Click **Select Cue** to select the cue to link to. To avoid that the cue is performing the actual link while editing the cue - use the [edit cue](#)<sup>[137]</sup> option to load the cue, rather than the 'Load Cue' when loading the cue for editing.

## 10.8 Cue time control

The cue time control is accessed via  on the cue control



*The cue time control*

The cue time control allows the user to alter the 'dynamic' expression of a cue by scaling the scene and fade times of the individual sequences in the cue much like x-fade speed/time on conventional consoles. The scaling method means that the time control will also work with sequences with different scene times. By using the sequence cue time control it is often possible to re-use sequences in different contexts simply by slowing down or speed up the sequences in the particular cue. The cue time control consists of 13 virtual faders. The first fader controls the overall cue, while the next 12 control the individual sequence slots. It is not possible to set times for sequence slots that does not have a sequence assigned (indicated by a light gray background color). The cue time itself (controlled by the first fader) is an easy way to modify the overall dynamic expression of the cue of on the fly. By default, all cue and sequence times are set to the default **CUE** time. Using the default time means that the sequences will play back with the scene and fade times they were programmed with.

It is possible to scale the sequences scene and fade times by using the fader for the individual sequences. The possible scaling ranges from 1% to 999% - 100% represents the original times (no scaling) and is equivalent to **CUE**. In order to change and synchronize more than one sequence in the cue, select the sequences by highlighting the lines in the cue control. Note that scaling will not make the sequence exceed the 60 second scene/fade time limit.

The cue time (the first fader) has overall control over all the sequences in the cue. However the cue time fader will only control the sequences that are not already controlled by the individual time faders (time for the individual sequences must be '**CUE**'). The times scales values set with the cue time control are saved together with the cue.


A scaling control for [movement macros](#)<sup>[102]</sup> may be linked to the main cue time fader as well (see [cue macro control](#)<sup>[148]</sup>).

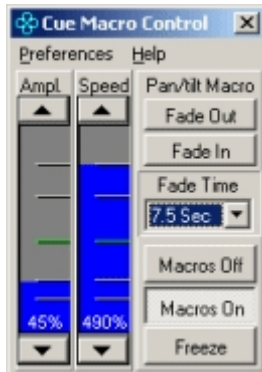
### Controlling cue times from external control sources

It is possible to override the cue time values from an external control source such as DMX-in or Fingers. This may transfer control from on-screen, virtual faders to real physical faders on a console. Using the cue time control preferences menu (**override options**) the override may be set to work on changes only (1,2,3) - default setting is on changes only (1). Overriding **on changes only** means that cue time parameters are only changed if there is an actual change in the incoming DMX values - this allows the cue to load with it's pre-programmed timing parameters, and only change the timing if an actual DMX in change occurs. The selections 1, 2 and 3 indicates that a change of 1,2 or 3 DMX values must occur before the timings are changed. Use 2 or 3 for consoles with unstable fader decoding. Selecting **Always** means that the timing parameters are always overwritten by the incoming DMX values.

Note that an incoming DMX value of 0 automatically selects the per-programmed timing for the cue (time fader is marked '**CUE**').

## 10.9 Cue macro control

Access the cue macro control by clicking  on the cue control.



The cue macro control

The cue macro control is used to scale the amplitude and speed parameters on any [movement macros](#)<sup>[102]</sup> currently active in sequences in the cue. The control will not affect macros active in the [background cue](#)<sup>[167]</sup> or in the current sequence. The macro control has two faders - one to scale the macro amplitudes (pan and tilt amplitude) and one to scale the macro speeds. The speed fader may be linked to other functions (see later).

By default the faders scales the amplitude and speeds from 0% to 100%, where 100% means that the macros run as programmed. Setting the amplitude scale to 0% effectively disables the macros and the fixtures will move to the programmed pan/tilt positions. Setting the speed scale to 0% will stop the macro from running but still include the macro's pan and tilt into the final fixture positions.

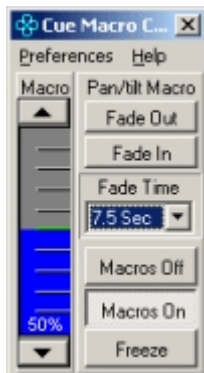
From the preferences menu it is possible to set the fader range from 1%-999% - values above 100% will scale the macro's amplitude and speeds above the programmed values. Note that the values will never exceed the maximum value 127 for amplitude or speed, but may scale down to a value of 0 as scaled values goes below 1. The function of both the amplitude and speed faders may be remote controlled via [DMX in](#)<sup>[231]</sup>.

In order to save the Macro Control values together with the actual cue, check *Save Macro Control Values* in the [save cue dialog](#)<sup>[136]</sup> when saving the cue. Also, make sure that the *Restore Macro Control Values* in the [cue control](#)<sup>[132]</sup> preferences/cue preferences is checked, otherwise the values are ignored when reloading the cue.

### Linking the speed fader

#### Linking speed to amplitude

Via the preference menu, the speed fader may be linked to the amplitude fader. When speed is linked to amplitude, only one fader is visible, making control with a mouse easier as one fader will control both the amplitude and speed.



*Speed fader linked to amplitude fader*

[Linking speed to cue time](#) - The speed fader may also be linked to the [cue time control](#)<sup>[147]</sup> - when linked to the cue time, the cue time fader will control the speed, scaling the speed value from 1% to 999%. When the speed is linked to the cue time control, only the amplitude fader is available.

[Fade out, Fade in buttons](#) - These buttons will 'fade' the position of the faders in and out at a pre-determined time. The actual time is selected from the fade time list below the buttons.

[Macros Off, Macros On](#) - These work the same way as the fade buttons, except that the transition is instant (equals a fade time of 0).

[Freeze](#) - this button freezes the macro in place (the macro doesn't 'advance') - the effect is identical to setting the speed scale to a value of 0%.

Macro fade, on/off and freeze buttons may be assigned to [hotkeys](#)<sup>[205]</sup> or [2532 direct access](#)<sup>[225]</sup> keys.

### The Preferences menu

[Fader Range](#) - selects between 0%-100% and 1% to 999% ranges.

[Speed Fader Link](#) - Used to link the speed fader other functions.

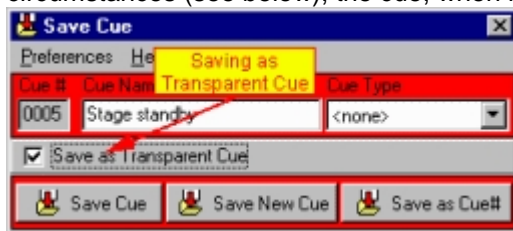
[Allow Fader preset](#) - When disabled, clicking any of the faders will cancel any fade out or fade in or off state and activate the faders. When enabled it is possible to preset the faders values with the mouse while the macros are fading or off.

[Show Values as %](#) - Show the values as %-values or as numerical values.

## 10.10 Transparent cues

Normally when loading a cue, the contents of the cue will replace the entire contents of the cue control (often a different cue). This means that slots not used in the newly loaded cue will 'overwrite' slots in the previous cue with an empty slot. When a cue is loaded in transparent mode, only slots containing sequences will overwrite the slots from the previous cue. This means that if a cue containing sequences in slot 1,2 and 3 is loaded transparently, it will leave any contents existing into slots 4 to 12. Using transparent cues effectively requires some pre-planning. One way of using transparent cues to good advantage is to keep individual groups of fixtures in single sequences, and use specific slots in the cue for these groups. This way a new cue containing a sequence for a particular group of fixtures only can be loaded into the existing cue, without 'disturbing' all other fixtures running in other sequences.

When [saving](#)<sup>[136]</sup> a cue, it may be saved as a transparent cue. This means that under default circumstances (see below), the cue, when loaded, will load as a transparent cue.



*Saving as transparent cue*

The [cue control](#)<sup>[132]</sup> has a set of switches in the **Preferences -> Transparent Cues** menu that dictates the way transparent and non-transparent cues are loaded.

[Use transparent cues](#) - cues are loaded transparently only when previously saved as a transparent cue.

[Force transparent cues](#) - all cues are loaded transparently.

[Ignore transparent cues](#) - no cues are loaded transparently.

When programming transparent cues it may be useful to enable the *Show Add to Cue Slot* in the preferences menu of the [save sequence dialog](#)<sup>[125]</sup> to add the sequence to a specific slot.

See also [cue control](#)<sup>[132]</sup>

## 10.11 Sequence intensities

The sequence intensity function is only available as a function through [DMX in](#)<sup>[23h]</sup> or via [Fingers for LightJockey](#)<sup>[21b]</sup>. Each sequence slot in the cue may be assigned a DMX or in channel or Fingers fader that modifies the programmed intensity values of each of the fixtures in the sequence loaded into the sequence slot. The function only modifies 'active' intensity values ([fade state](#)<sup>[93]</sup> must be either snap or fade), and the modification is proportional to the programmed value (Sequence intensity at 25% means output at 25% of programmed value). The function does not modify the programmed fade state, fade time or other components of the sequence.

If one or more, but not all Sequence intensities (1-12) have been assigned, LightJockey considers the remaining sequence slots to be set at a sequence intensity value of 100% (see below). While the Sequence intensity works independently from the [master intensity](#)<sup>[23h]</sup> control, any modification to global intensities by the Grand Master or sub-masters still applies to the final intensity output.

Sequence Intensities operate in one of 3 modes. The mode is selected from the **Preferences Menu** of the [cue control](#)<sup>[132]</sup>. The mode applies to all sequence intensities (1-12).

**Default** - In default mode the cue is evaluated as usual with the sequence in the highest number slot having highest priority. The final intensity of individual fixtures is determined by the highest priority sequence with 'active' intensity information for the particular fixtures *modified* by the assigned sequence intensity.

**Use HTP** - In HTP mode, the highest intensity value in *any* sequence with an active intensity component is used for the final output. This includes any sequences slots that are not directly modified by sequence intensity - these will always force the fixture to use programmed intensity (100%).

**Use LoTP** - in LoTP mode - the lowest modified intensity value of any sequence is used. Sequences that do not contain 'active' intensity values do not contribute to the lowest value.

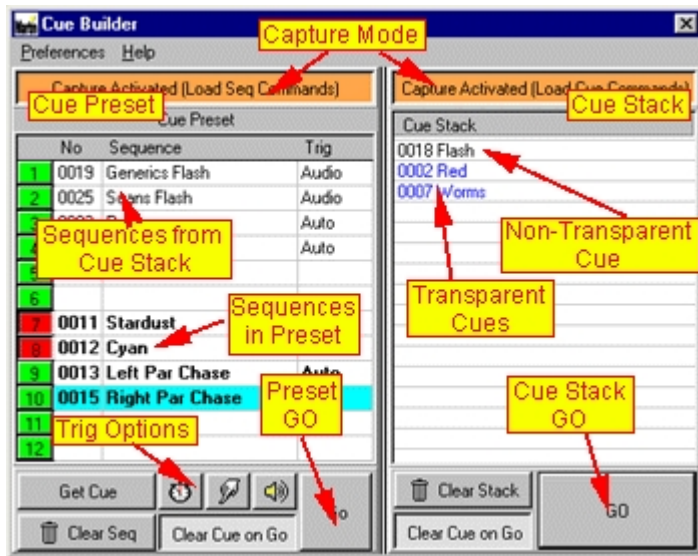
Note that for HTP/LoTP calculations, it is the programmed scene value modified by the sequence intensity value that is used to determine which sequence generates the intensity output - not the value generated by an eventual fade programmed into the sequence; e.g. programmed value of 100% will be calculated as 100% even if the momentary output generated by the sequence is only 50% due to an active fade in the sequence.

A few examples - the % values represent intensity values programmed in the sequences, - represents no intensity value programmed. S.I. represents the Sequence Intensity value:

	Fixture 1	Fixture 2	Fixture 3	Fixture 4	Seq. Int.
Seq #1	-	100%	50%	10%	30%
Seq #2	100%	-	-	-	40%
Seq #3	30%	50%	-	50%	50%
-	-	-	-	-	-
Default	30% x 50%	50% x 50%	50% x 30%	50% x 50%	
HTP	100% x 40%	100% x 30%	50% x 30%	50% x 50%	
LoTP	30% x 50%	50% x 50%	50% x 30%	10% x 30%	

## 10.12 The cue builder

The cue builder control is a tool to pre-build the contents of a cue, before transferring the contents to the current cue. The cue builder is usually used to build cues on the fly while the current cue is running. The Control is opened from the **Cue-Builder** menu in the [cue control](#)<sup>[132]</sup> or via [hotkey](#)<sup>[205]</sup>.



Cue builder control

The cue builder consists of two parts, the cue preset part and the cue stack part. The two parts may work together and combine into a final cue or as separate controls. **Important:** To avoid confusion, when the capture commands (see below) are enabled, the cue builder is **ONLY** active as long as the control is visible. When the control is closed, capturing is disabled and cue builder functions (including hotkey access) are no longer accessible

### View Options




Use the Preferences/View menu to enable or disable the cue preset or cue stack respectively.

#### The cue preset

The cue preset part mimics the actual cue control as it has the same 12 sequence slots as the cue control. Preset the cue by dragging sequences from the [list of sequences](#)<sup>[127]</sup> to one of the 12 slots in the cue preset (or use the capture function - see below). Then click **GO** (or assign a hotkey to the GO button function) to latch all the sequences to the current cue. Note that the cue preset only offers a few possibilities to preset the behavior of the sequences. For example, it is not possible to set any of the loop options from the cue preset. To preset cues with the more complex options use the cue stack instead.

**Sequence On/Off** - Each sequence slot has an on/off button on the left side. Use this to preset the sequence to on or off state.

**Get Cue** - Click **Get Cue** to transfer sequences from the current cue to the cue preset.

**Trig Options** - Highlight sequences, and click either of the trig buttons    to pre-select the sequence [trig method](#)<sup>[144]</sup> (auto, manual or audio). Right-click the trig buttons to set all sequences to that particular trig-mode.

**Clear Seq** - Highlight sequences and click **Clear Seq** to clear the highlighted slots - right-click **Clear Seq** to clear all slots.

Alternatively, right-click any slot and select the *Clear Selected Sequence* or *Clear All Sequences* from the popup menu

**Clear Cue on Go** - When enabled the current cue is automatically cleared before the sequences are latched. When disabled, the cue is not cleared before the sequences are latched.

**GO** - Click GO to transfer the pre-set sequences to the current cue.

#### The cue stack

The cue stack allows the user to pre-select multiple existing cues and latch these to the current cue simultaneously. Cues are added to the stack by dragging them from the [list of cues](#)<sup>[137]</sup> (or by using the capture option, see later). The content of the stack is then transferred to the current cue by a single GO command.

Since the cue stack transfers cues rather than sequences, it is possible, using the cue stack' to build a cue that contains sequences with any of the options available to cue control (e.g. loop or timing controls). Transferring multiple [non-transparent](#)<sup>[149]</sup> cues doesn't really make sense (they would just overwrite each other), so only one non-transparent cue is allowed in the stack - adding a second non-transparent cue to the cue stack simply replaces the existing cue.

There is no limit to the number of transparent cues that can be added, but the same transparent cue can only be added to the stack once.

Since the cues in the stack are always added to the current cue from the top of the stack, the order of the cues in the stack is significant. If the stack contains a non-transparent cue, it will automatically be located at the top of the stack (if it was added to the current cue after a number of non-transparent cues, it would just overwrite these cues). The order of non-transparent cues in the stack may be re-arranged by drag and drop.

[Clear Stack](#) - click to clear the entire contents of the stack. To remove individual cues, highlight the cues, right-click and select remove from the popup menu.

[Clear Cue on Go](#) - when enabled the current cue is cleared before the cues from the stack are applied. Note that if the stack contains a non-transparent cue the current cue will be cleared automatically by the non-transparent cue. The cues in the stack are transferred to the current cue from the top of the stack.

### Capture Buttons

Enable the capture buttons to capture *load sequence* (do not confuse with sequence flash) and *load cue commands* to the preset cue and cue stack respectively. The respective capture commands are only active if the cue builder control is open and the cue preset and cue stack are visible.

[Capturing Load Sequences commands](#) - Sequences are automatically added to the cue preset in as high a priority position as possible. If there are no free slots in the preset it will replace the sequence in slot 12.

[Capturing Load Cue commands](#) - Cues are automatically added to the stack in the order they are loaded. Only one non-transparent cue may exist in the stack. Attempting to load another non-transparent cues will replace the existing transparent cue. Attempting to add the same cue twice by capturing the load command will remove the cue from the stack.

**Notes:** The cue stack capture command is primarily useful for installations using remote access such as the 2532 to load cues. Using cue stack capture allows the user to build the cue stack from cues using the 2532 load cue commands.

### Preferences Menu

#### View Menu

[Default View](#) - resize the cue builder to default size.

[Cue Preset](#) - enable or disable the cue preset

[Cue Stack](#) - enable or disable the cue stack

#### Cue Preset Menu

[Default Enable Sequence Capture](#) - enable the sequence capture by default.

[Force Sequence Reload](#) - if disabled, sequences transferred to the current cue will not restart if the slot in the current cue is already occupied by the same sequence. If enabled, the sequence will always restart regardless of the contents on the cue.

[Auto Clear Sequences on Go](#) - all sequences are cleared from the cue preset when the GO command is executed.

#### Cue Stack Menu

[Default Enable Cue Capture](#) - enable cue capture by default.

[Auto Clear Stack on Go](#) - the cue stack is automatically cleared when a GO command is executed.

[View Cue Stack in Cue Preset](#) - when enabled, the resulting contents (sequences in the resulting cue) of the cue stack are automatically added to the cue-preset. If a GO command is issued for the cue-preset, these sequences are included in the sequences that are transferred to the current cue. Note that it is not possible to change trig modes for the sequences from the cue stack in the cue-preset.

When disabled, the cue stack sequences are not transferred to the cue preset. This function is primarily useful as pre-view for users that uses the cue stack only.



[Use Color Code for Transparent Cues](#) - when enabled, transparent cues in the cue stack are shown in blue in the cue stack (non-transparent cues are shown in black).

## 11 The generic DMX macro

### 11.1 Generic DMX macros

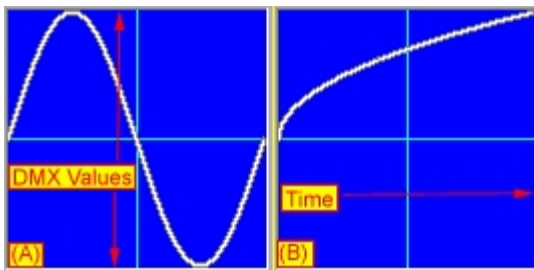
**Using generic DMX macros effectively requires a good understanding of how the DMX protocol works, both in general as well as for individual fixtures. Without this knowledge it is quite easy to program undesired side effects such as fixture reset or even lamp off by mistake.**

The generic macros are not intended as a replacement or substitute for [Movement macros](#)<sup>[102]</sup>. The movement macro connects pan and tilt DMX values together in a way that makes it easy to create dynamic figures such as circles, ellipses or figures of eights. However the Generic DMX macro does have more flexibility in terms of macro types and delay functionality than the movement macro - for example to run two different macros (or delays) on pan and tilt respectively use the generic DMX macro rather than the movement macro.

Although the generic DMX macros have some similarities with the movement macros they are quite a different in most respects. First of all the generic macros can affect any DMX control channel, not just pan/tilt channels. Secondly they are not part of scenes like the movement macros, but instead they are an individual type of programming element much like [background cues](#)<sup>[167]</sup> or [statics](#)<sup>[189]</sup>. Generic DMX macros are launched as part of a [cue](#)<sup>[132]</sup>. Each macro holds information for all DMX control channels across all configured fixtures - the same macro entry can contain different macro shapes and parameters for any individual DMX control channel - pan/tilt macros use the same macro type for both pan and tilt.

#### Macro shapes

The generic macros are implemented using different pre-defined 'shapes' - e.g. a sine wave, to 'modulate' a reference value to generate a final DMX output for individual DMX control channels. On the graphical macro representation below, the Y-axis represents the macro DMX values and the X-axis represents how the macro value is changing in time. The horizontal cyan line represents a 'reference' value of 0. Macros can contain both positive (above the reference) and negative (below the reference line) values as (A) or positive values only as (B) - when executing, the macro will simply add the positive values to the reference DMX value, and subtract the negative values from the reference DMX value. The different macro shapes can be used to program different types of effects - some are suited to slow smooth transitions while other are suited to faster snappier chase-type of effect.



*Macro shapes - graphical representation (the generic macro editor)*

The reference value used is either the combined output of all other programming elements (the current sequence, cue, statics, etc.) - or a base value contained in the macro itself - using the first method, the final output generated by the macro depends entirely on the contribution from the other elements, while the latter method ensures a predictable output value. The values generated by the macro ranges from -255 (at max negative) to 255 (at max positive) - these values are normally scaled by an amplitude factor to remain within a 'sensible' range - in any case the final DMX output values are automatically limited to 0 to 255.

### Macro Parameters

Each macro can be manipulated by 4 parameters.

**Positive amplitude** - scaling of the positive (the part above the 0-line) part of the macro.

**Negative amplitude** - scaling of the negative (below the 0-line) part of the macro.

Both amplitudes can be set at a value between -255 and 255; assigning negative value to any of the two the amplitudes has the effect of 'mirroring' the relevant part across the 0-value line.

**Cycle time** - determines how fast the macro 'executes' one cycle.

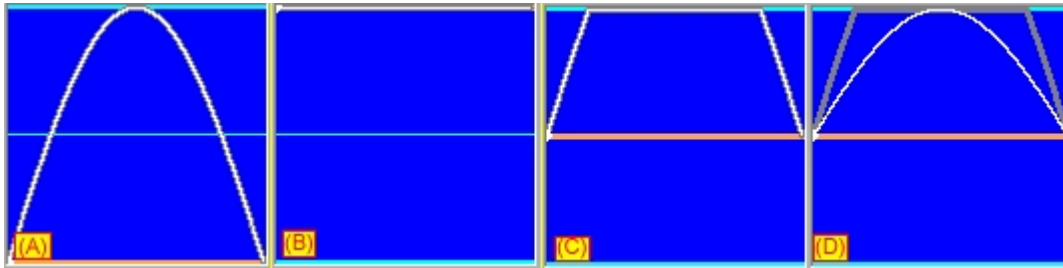
**Direction** - determines in which 'direction' the macro executes.

### Examples

#### Example: using a macro shape with positive values only

The Roboscan 918 has intensity control on control channel offset 1 (offsets starting at 0) with min/max intensity settings at DMX values 0 and 255 respectively.

By assigning a 2\*Sine macro shape (essentially the first half of a full sine wave) and a maximum positive amplitude (255) to the channel, this macro will automatically generate values between 0 and 255 thus instruct the 918 to raise and lower the intensity from min to max and back to min again following the and half sine wave shape in time. The macro values will combine with either the base value of the macro or the value generated by the other program elements



(A) If reference value is 0 all the time, the result will be that the fixture will perform exactly as programmed by the macro.

(B) If the reference value is kept at 255 the resulting combined values will range from 255 to 512. Since 255 is absolute the maximum DMX value, the final output will automatically be cut at 255 - resulting in no changes in the fixture intensity at all.

(C) If the reference value is kept at 128, all combined values above 255 will still be cut at 255 so the intensity of the 918 will be at max for most of the time and only drop to a minimum value of 128 (approx. 50% intensity) when the macro contributes with a 0 value.

(D) As (C) but by scaling the macro with positive amplitude of 127 rather than 255 it is still possible to 'contain' the macro shape within the 0-255-value range. In this case the 918 will be programmed to an intensity level between 50% and full, following the half sine shape.

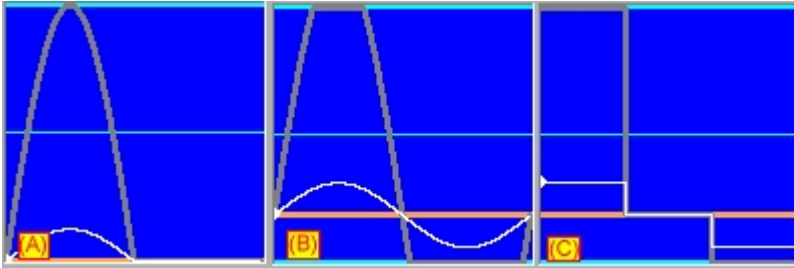
#### Example: using a macro shape with positive and negative values

The Roboscan 918 controls color wheel 1 on control channel offset 2 with the following values (for the lower part of the DMX value interval).

DMX-Value	Color
0	open white
16	blue 111
32	red 301
48	magenta 507
64	green 202
80	yellow 604
96	purple 502

112	blue 101
128	pink 312
144	cyan 401

Each full color position is exactly 16 DMX values apart.



(A) Sine macro shape - reference value at 0 (*open white*) and a positive amplitude at 32 - in the first half of the macro the 918 will move from *open white* to *Red 301* and back to *open white* again passing *Blue 111* both ways - in the second half it will remain at *open white* (since values are cut at 0).

(B) Reference value at 48, positive **and** negative amplitudes at 32 - the 918 will now oscillate smoothly around the base value (48 = *Magenta 507*) - in the first part of the macro it will move from *Magenta 507* towards *Yellow 604* (48+32 = 80) and back again - on the last half it will move from *Magenta 507* towards *Blue 111* (48-32 = 16) and back again.

(C) Same as (B) but with a different type of macro shape (2/3 Square) - the transitions between the different colors are no longer smooth (as in the sine shape) but snaps between *Yellow 604*, *Magenta 507* and *Blue 111* without ever transmitting DMX values in between these 3 values.

### Macro Delays

While several fixtures performing the exact same macro shape may look good in some instances it is usually when adding various amounts of delay to individual channels that the macros really makes an impact.

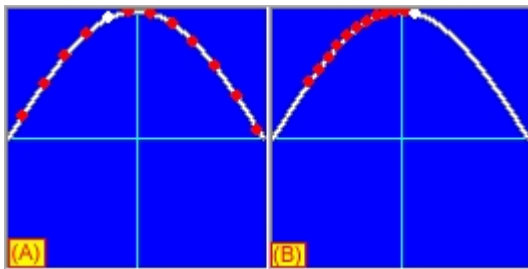
### Channel Macro Index and delays

The macro engine calculates the macro value for a specific channel according to the channels *channel macro index* or position, in the macro cycle - on the graphical macro display the index value is represented by the position of the dot on the x-axis. Each macro shape contains 8192 discrete values describing the shape, which means that the *channel macro index* can have a value between 0 and 8191. Each macro value represents a specific point and value in the macro shape. As the macro executes the *channel macro index* is incremented or decremented according to the programmed macro cycle time and direction - the index value is automatically 'looped back' into the 0-8191 interval when the 'outer' extremes of 0 or 8191 are reached.

As each individual channels *macro index* is incremented or decremented according to cycle time and direction, running different cycle times or macro directions may cause individual *indexes* to become unsynchronized when selecting new macros.

The *channel macro index* can be programmed to reset for the affected channels when a new macro is launched in the cue or when *Restart Macro* is clicked in the Generic Macro Editor (this resets *index values* for all channels).

Specifying a delay for a channel simply subtracts the delay value (ranging from 0 to 8191) from the current *channel macro index*. By programming the same shape and parameters to a number of channels, but assigning a different delay value to each channel, the channels will 'position themselves' differently in the macro shape by subtracting the individual delay values from the *channel macro index* which is usually identical for all channels.



Macro delays

In the figure above, the dots represent different channels all running the same shape and parameters but with different delays. Delays can be spread over the whole macro shape (A) or set closer together for a 'follow the leader' type of effect.


### Programming 16 bit control channels

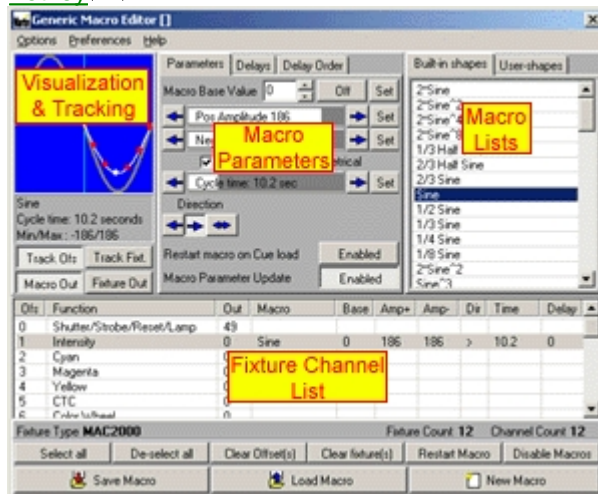
The Generic DMX Macro differentiates between 8-bit control channels and 16-bit control channels. Macro shapes and parameters assigned to 16-bit MSB control channels are used to generate values for both MSB and LSB channels utilizing the far superior resolution in DMX values offered by 16-bit control. It is not possible to assign macro shapes or parameters to 16-bit LSB control channels.

For further information on programming macros see the [generic DMX macro editor](#)<sup>[156]</sup>

See also [movement macros](#)<sup>[102]</sup>, [generic DMX macro editor](#)<sup>[156]</sup>

## 11.2 The Generic DMX macro editor

Before programming generic macros for the first time, please read the [generic DMX macros](#)<sup>[153]</sup> section. The generic DMX macro editor is opened by clicking  in the [cue control](#)<sup>[132]</sup> or by [hotkey](#)<sup>[205]</sup>.



The generic DMX macro editor

### The Macro Editor

The Generic Macro editor is used to program the [generic DMX macro](#)<sup>[153]</sup> entries in the [cue control](#)<sup>[132]</sup>. The editor is split into 4 different parts plus a command panel with often-used commands.

### Macro Shapes List

The Macro list on the far right contains the available macro shapes - note that before a specific macro

shape can be assigned to fixture control channels at least one fixture and at least one DMX control channel must be selected. For a more detailed description see [macro shapes lists](#)<sup>[158]</sup>

### Visualization & tracking

The Visualization and tracking panel visualizes the current macro by showing the graphical shape of the macro and tracking the resulting DMX values of the affected fixtures/DMX channels. For a more detailed description see [macro visualization and tracking panel](#)<sup>[159]</sup>.

### Fixture Channel List

The Fixture Channel list allows selection and programming of one or more DMX channels of the selected fixtures. The list also shows the programmed macros and associated parameters for each channel (offset) for the selected master fixture.

For a more detailed description see [fixture channel list](#)<sup>[161]</sup>

### Macro Parameters

The Macro parameter panel contains the various parameters that will effect the execution of the programmed macro. For a more detailed description see [generic DMX macro parameters](#)<sup>[161]</sup>

### Selecting which fixtures/channels to program

Select the fixture(s) to program by selecting the fixture icons on the desktop as usual. When one or more fixtures are selected on the desktop, the available DMX control channels of the selected [master fixture](#)<sup>[80]</sup> are shown in the fixture channel list. Note that it is only possible to program one type of fixture at a time, much like programming for example color settings using the regular [fixture color control](#)<sup>[108]</sup>.

### Selecting the macro type

To program a macro or edit macro parameters for one or more fixture channels, simply highlight the line(s) representing the DMX control channels (note that channel offset value starts at 0 not 1). Once one or more channels are highlighted select the macro shape to use from the macro list by clicking it (double click if already highlighted). Once the macro has been selected, use the controls on the parameters panel to set the associated macro parameters and delays.

### Setting macro parameters

See [Generic macro parameters](#)<sup>[161]</sup> for more information on the individual macro parameters. See [Generic macro delays](#)<sup>[163]</sup> for more information on delay settings. Note: It is not possible to program parameters before a macro shape has been assigned to the control channel; before setting any parameters make sure that a shape is selected.

Use the first tab on the macro parameter panel to set the following parameter values:

**Base Value** - set a value between 0 and 255, select 'Off' to disable the use of base values for the programmed macro.

**Positive Amplitude** - use the negative amplitude drag bar to set the amplitude for positive parts of the macro shape. Right click on the bar for a popup menu with often-used values.

**Negative Amplitude** - use the negative amplitude drag bar to set the amplitude for negative parts of the macro shape. Right click on the bar for a popup menu with often-used values.

**Cycle Time** - use the cycle time drag bar to set the time for a complete macro cycle.

**Direction** - use the direction arrows to set the macro execution direction to left, right or bounce which automatically changes direction on the left or right 'bounds'.

**Delays** - use the controls on the two last tabs on the parameter panel to set delay style, order and values for the selected channels.

### The command panel

The command panel contains buttons for often-used functions such as multiple channel selection and saving and loading macros.

**Select All** - click to select all DMX channels in the Fixture channel list, and Deselect all to deselect all channels. Selecting all channels for a fixture is primarily useful when programming generic DMX controls, for example a dimmer pack running par lamps controlled with a single

[generic DMX fixture profile](#)<sup>[84]</sup>.


[Clear Offset\(s\)](#) - click to clear all macro parameters from the selected channels - click **Clear Fixture(s)** to clear all channels for all selected fixtures.

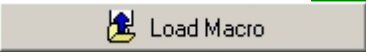
[Restart Macro](#) - click to reset the *channel macro index* to 0 for all fixtures (see

[Generic DMX Macros](#)<sup>[153]</sup> - delays section, for an introduction to *channel macro index* and delays).

[Disable Macros](#) - click to disable **ALL** macros running - this includes any macro running from the cue. This function is especially handy when retrieving the base and amplitude values from the current sequence.

### Saving and loading macros

Click  to save the macro using the [Save Macro dialog](#)<sup>[165]</sup>. Make sure to give the macro a descriptive name before saving it. Note, if [macro quick save](#)<sup>[50]</sup> is enabled, the macro may be re-saved without using the save dialog, just by right-clicking **Save Macro**. Once a macro has been saved it can be launched from any cue simply by adding the macro from the [Select macro list](#)<sup>[166]</sup> to the Generic Macro slot in the [cue control](#)<sup>[132]</sup>.

Click  to open the [list of previously saved macros](#)<sup>[166]</sup>. To load a macro to the macro editor, either drag it from the list to an empty spot on the desktop, or right click the macro in the list and select **edit macro** from the popup menu. Note, if [macro quick load](#)<sup>[50]</sup> is enabled, the current macro may be re-loaded from file without using the macro list, just by right-clicking **Load Macro**.

Click  to clear the contents of the macro editor.

### Preferences Menu

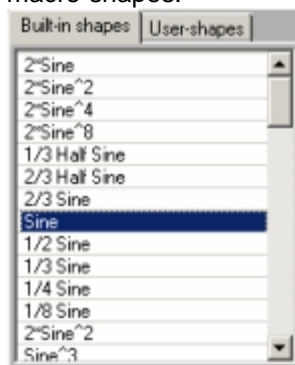
[Clear Macro on Editor Close](#) - automatically clear the macro editor when it is closed - default is checked.

[Slow Macrodisplay Update](#) - lowers the update rate of the graphical macro display - recommended setting on slower PCs.

See also [movement macros](#)<sup>[102]</sup>, [generic macro delays](#)<sup>[163]</sup>

## 11.3 The macro shapes lists

There are two macro shapes lists available. A list of built-in macro shapes, and a list of user-defined macro shapes.



*Macro shapes list*

### The built in macro shapes list

The built-in Macro shapes list contains a number of predefined macro shapes. These macro shapes cannot be modified. To assign a shape to one or more fixtures/DMX channels, first select the fixture icons on the desktop. Next, highlight the channels in the Fixture Channel list. Finally, select (highlight) the macro shape in the shapes list (if the shape is already selected but not assigned, double click to

force assignment). The different types of shapes in combination with [delays](#)<sup>[163]</sup> and macro cycle time can be used for a wide variety of effects. As different fixture types allocate different functions on different DMX control channels in different ways, there aren't really any rules for applying shapes to DMX control channels. Experiment a lot, and check the fixtures DMX protocol for possible pitfalls (such as programming an unintended fixture reset). Shapes such as *Sine* macros are typically used for slow smooth effects, while shapes such as *Square* or *Stair* generates snap-type effects. Most shapes exists in several versions, for example the sine shape exists as a *sine*, *1/2 sine*, *1/3 sine*, *1/4 sine*, *1/8 sine*. Use the *Sine* shape for a continuous effect, and the *1/X Sine* shapes in combination with delays for chase effects.

#### The user-defined macro shapes list

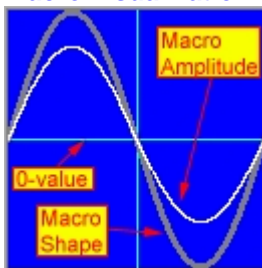
There is currently no editing facilities for user defined macros available within LightJockey. The tab is reserved for later use.

## 11.4 Macro visualization and tracking panel

The Visualization and Tracking panel is used to visualize the currently selected macro shape and parameters. The panel has two basic modes of operation: Macro visualization (Macro out) and Fixture Output Visualization (Fixture Out). The panel also may also visualize the DMX values transmitted by fixtures in either Offset Tracking mode (Track Ofs) or Fixture tracking mode (Track Fixt.). The name of the current selected macro shape is displayed below the tracking panel together with the programmed macro cycle time and min/max DMX values generated by the macro. To monitor the macro shape and parameters for a particular fixture/channel, select the fixture on the desktop, then highlight the channel in the [Fixture Channel List](#)<sup>[161]</sup>.

**Note:** 16 -bit LSB control channels are not shown on the tracking panels.

#### Macro visualization

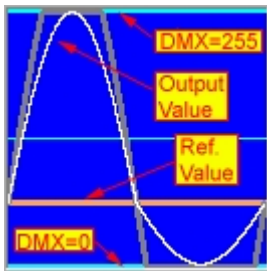


Macro visualization (Macro Out button)

In *Macro out* mode the panel displays the macro shape and amplitude parameters without regards to other DMX values generated for the DMX channel that is being monitored. The original macro shape is shown as a gray line while the resulting macro after applying positive and negative amplitudes is shown as a white line (note, default amplitude values are zero - use the amplitude drag bars to set amplitude values). The horizontal cyan line represents the 0-point - values above the line are positive (1 to 255 that are added to the DMX output value) while values below the line are negative (1 to 255 that are subtracted from the DMX output value). By setting amplitude values less than 0 (negative amplitude values), the macro shape will be mirrored over the 0-point reference line so that positive values become negative values and negative values become positive.

Note that the Min/Max values generated by the macro shape/amplitude combination is displayed below the macro image.

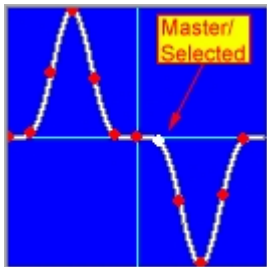
#### Fixture output



*Fixture output visualization (Fixture Out button)*

In *Fixture Out* mode the display changes to show the resulting DMX output values after the value is generated by combining macro with the reference value. The basic macro shape is still shown in gray, while the white line now represents the resulting, combined DMX output value. The top horizontal cyan line represents the absolute maximum DMX output value at 255, while the bottom cyan horizontal line represents the absolute minimum DMX output value at 0 (the center cyan line is for 50% reference). If the reference value is a static [macro base value](#)<sup>[167]</sup> the base value is shown as an orange line - if the macro base value is disabled, the reference value is shown as a green line. Note that the Min/Max DMX values generated by the macro shape combined with the current reference value is displayed below the macro image.

#### Fixture DMX value tracking



*Fixture DMX channel tracing*

The current DMX output value may be tracked for multiple or individual fixtures by enabling **Track Ofs** or **Track Fixt**. In **Track Ofs** mode the panel tracks the selected channel (offset) in the fixture channel list across selected fixtures (master fixture value is shown as a white dot, slave fixtures are shown as red dots). In **Track Fixture** mode the panel tracks channels for the selected fixture only - select (highlight) the channels to display in the fixture channel list.

**Track Fixture** mode is primarily useful when applying macros to several of the fixtures control channels - for example chasing macro channels on a [generic DMX fixture profile](#)<sup>[84]</sup> or when creating effects that uses multiple fixture control channels such as CMY rainbow effects.

Note : The value tracking only shows values for fixture types identical to the selected master fixture.



## 11.5 The fixture channel list

Ofs	Function	Out	Macro	Base	Amp+	Amp-	Dir	Time	Delay
0	Shutter/Strobe/Reset/Lamp	0							
1	Intensity	0							
2	Color1 Wheel	0							
3	Color2 Wheel	0							
4	R-Gobo Wheel	0							
5	R-Gobo Pos/Speed	0							
6	F-Gobo Wheel	0							
7	Focus	0							
8	Iris	0	Log	0	255	255	-	0.0	0
9	Prism	0							
10	Pan MSB (16 bit MSB)	249	Sine	128	127	127	>	16.8	0
11	Pan LSB (16 bit LSB)	222	N/A						
12	Tilt MSB (16 bit MSB)	0							
13	Tilt LSB (16 bit LSB)	0	N/A						
14	Dim/Tilt Control	0							

The fixture channel list

The fixture channel list is used to select fixture DMX control channels to program as well as monitor values for already programmed channels. Select (highlight) one or more control channels in the list to program.

**Note:** The channel list represents how the fixtures control channels are mapped internally. For user-defined profiles with 16-bit control channels (pan/tilt) this may not necessarily be identical to the way the final output is patched (see [global patch](#)<sup>[207]</sup> or [DMX output monitor](#)<sup>[60]</sup> for properly patched DMX out data)

### List Columns

**Ofs** - DMX Control channel offset - note first offset is 0 (not 1)

**Function** - Contains a description of the control channel. Note that for user defined fixture profiles, the column contains what ever the original profile author decided to enter as channel description (which may be nothing at all). 16-bit control channels are marked as MSB or LSB control channels - It is not possible to assign Macro shapes or parameters to LSB control channels - LightJockey automatically utilizes the superior value resolution offered by 16-bit parameters and splits the MSB/LSB parts automatically.

**Out** - This column shows the current *DMX output value*.

**Macro** - The macro column displays the programmed macro shape.

**Base** - The base column shows the programmed base value - if the base value is disabled the value is displayed as *off*.

**Amp+** - Displays the programmed positive amplitude.

**Amp-** - Displays the programmed negative amplitude.

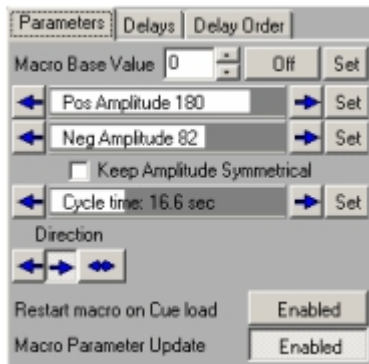
**Dir** - Displays programmed direction. > Indicates forward direction, < indicates reverse direction and <> indicates a bounce.

**Time** - Shows the programmed Macro Cycle time

**Delay** - Shows the programmed delay. Maximum delay value is 8191.

## 11.6 Generic macro parameters

See also [generic macro delays](#)<sup>[163]</sup> Besides the macro shape the generic DMX macro engine also associates a number of parameters with each DMX control channel.



Setting macro parameters (parameters tab)

Click **set** to force the displayed parameters to selected fixtures - useful for example when updating fixtures that are selected as slave fixtures after the values have been set - or to synchronize parameters for multiple fixtures.

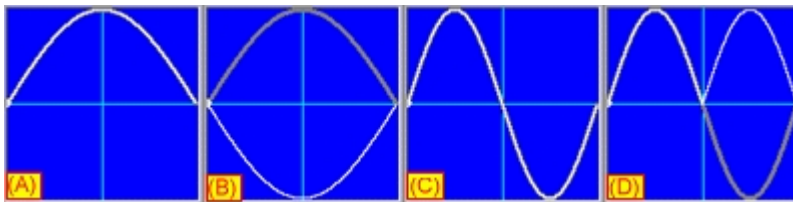
### Base value

When a macro is programmed it may contain a base value (default is base-value enabled, value = 0). When a base value is selected the macro engine will automatically use the base value as reference value when adding and subtracting values from the macro. When base values are disabled, the macro engine will add or subtract values *from whatever DMX value is generated by other programming elements*. The base value may be disabled for the macro by clicking **Off**. Right clicking the base value field brings up a popup menu with often used values.

The advantage of programming a base values is that the resulting DMX output is predictable since it always combines with the static base value. Disabling the base value allows much more flexibility in the combined DMX value output - for example, a macro that 'oscillates' around a color on a fixtures color wheel can be combined with a multi-scene sequence that has different color wheel positions in each scene. The result is that the color wheel 'oscillates' around different colors depending on the actual scene of the sequence. The disadvantage to disabling the base value is that some combinations of DMX values may actually lead to very undesirable effects, such as fixture reset or lamp off.

### Positive and negative amplitudes

The positive and negative amplitudes dictate the 'vertical size' of the macro shape - or in other words how much the macro shape is amplified. The macro shape contains values ranging from -1 through 0 to 1, so the amplitude values translates directly into DMX min/max values generated by the macro - e.g. a positive amplitude of 45 will add a maximum of 45 to the output value (when the shape is at max value). Note that when the amplitudes are negative, the shape is mirrored across the shape 0-value line basically inverting the shape.



- (A)  $2 * \text{Sine}$  shape - positive amplitude = 255
- (B)  $2 * \text{Sine}$  shape - positive amplitude = -255 (shape inverted)
- (C)  $\text{Sine}$  shape - Positive and Negative amplitudes = 255
- (D)  $\text{Sine}$  shape - Positive and Negative amplitudes = -255 (shape inverted)

### Macro cycle time

The macro cycle time determines how fast the macro shape is 'traveled through'. The time interval ranges from 0.4 seconds to 595 seconds (approx 10 minutes). That the distribution of cycle times is not linear, the 'resolution' is much higher at lower time values. Note that the default value is 0, which

means that the macro is static.

### Macro direction

Use the direction arrows to set the 'travel' direction of the macro (best seen when tracking offset values). The bounce direction will automatically bounce the macro off either. Note that delay values are not considered when bouncing the macro.

### Restart macro on cue load

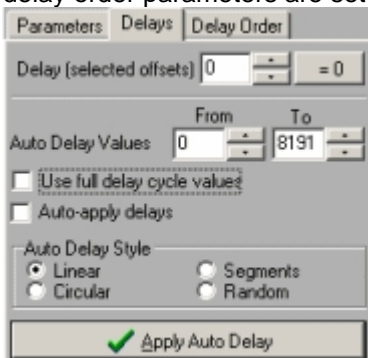
When enabled loading the macro in a cue will automatically restart the affected channels - for more details see [Generic DMX Macros](#)<sup>[153]</sup>, Channel Macro Index and delays. Note that the option will only restart the macro channel indexes when the macro is actually loaded as part of a cue - not when the macro is added to a cue, neither when the macro is loaded into the editor.

### Macro parameter update

When disabled, manipulated parameters are not actually programmed - disable to select different macro shapes and amplitudes without actually effecting the selected fixtures.

## 11.7 Generic macro delays

See [generic DMX macro](#)<sup>[153]</sup> for details on delay and channel macro index. The macro delays and delay order parameters are set on two different tabs.



Setting macro delays (delays tab)

### Manually setting delay values

#### Delay (selected offsets).

Use this field to manually set the delay for one or more control channel offsets selected in the [fixture channel list](#)<sup>[161]</sup>. Maximum delay value is 8191. Right click the field to select often-used delay values (expressed in percentages) from a popup menu. Note that the option to set the delay value manually is disabled if *Auto-apply delays* (see below) is checked.

### Calculated delay values

Usually, it is a lot easier to let the macro engine calculate delay values than setting them manually. **Auto Delay Values From/To**- enter delay start and end values in these fields and click **Apply Auto Delay** to calculate new delay values (or check **Auto Apply Delays**). Max delay value is 8191 - if the end delay value is less than the start value, the engine will apply delays in the range of: start value->8191->0->end value. Right click the fields to select often-used delay values (expressed in percentages) from a popup menu.

**Use Full Delay cycle values** - when checked, the engine will always distribute the full delay range (0-8191) over the selected fixtures, still taking the *from value* into account. Checking this option will disable the *Auto Delay To* field.

**Auto apply delays** - check this to automatically let any changes in delay parameters take effect immediately. If not checked, it is necessary to click **Apply Auto Delay** to apply the changes.

### Auto Delay Style

The auto delay can be calculated and applied in a number of different ways (delay styles). Note that the

order in which the delays are applied to the fixtures and channels is determined by settings on the **Delay Order** tab (see below).

#### Linear delay (default)

The delay range (from -> to) is applied in a linear fashion with delays spread evenly between the selected fixtures. For example:

From/To = 0/8191; 10 fixtures selected.

Fixture 1: delay = 0%

Fixture 2: delay = 10%

Fixture 3: delay = 20%

...

Fixture 8: delay = 80%

Fixture 9: delay = 90%

#### Circular

The selected fixtures are split in to a number of groups (set the circular group count on the Delay Order tab) - and the delay range is then distributed evenly over the fixtures in each group. For example:

From/To = 0/8191; 12 fixtures selected; circular groups count = 3 (4 fixtures in each group):

(Group 1)

Fixture 1: delay = 0%

Fixture 2: delay = 25%

Fixture 3: delay = 50%

Fixture 4: delay = 75%

(Group 2)

Fixture 5: delay = 0%

Fixture 6: delay = 25%

Fixture 7: delay = 50%

Fixture 8: delay = 75%

(Group 3)

Fixture 9: delay = 0%

Fixture 10: delay = 25%

Fixture 11: delay = 50%

Fixture 12: delay = 75%

#### Segments

The selected fixtures are split in to a number of groups (set the segment group count on the Delay Order tab) - and the delay range is then distributed by evenly over each group so that each fixture in the same group gets the same delay. For example:

From/To = 0/8191; 12 fixtures selected; segment groups count = 4 (3 fixtures in each group):

(Group 1)

Fixture 1,2,3: delay = 0%

(Group 2)

Fixture 4,5,6: delay = 25%

(Group 3)

Fixture 7,8,9: delay =50%

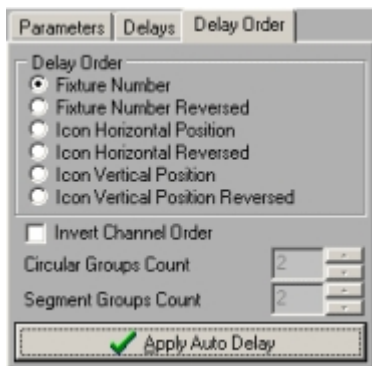
(Group 4)

Fixture 10,12,12: delay =75%

#### Random

The delay applied is a random figure within the from/to range.

When applying a random delay to multiple offsets of the same fixtures, use the Random Delay setting in the preferences menu to select between random delay *By Offset* (all offsets gets individual, random delays) or random delay *By Fixture* (identical, random delays are applied to the fixture for all selected offsets).



*Delay order tab*

The order in which the auto delay is applied to fixtures is determined by the order selected in the delay order box.

[Fixture Number / Reversed](#) - the delay is applied in fixture number order (low to high) or in reverse order (high to Low).

[Icon horizontal Position/Reversed](#) - the delay is applied according to the fixture icon horizontal position (left to right) or in reverse order (right to left)


[Icon vertical Position/Reversed](#) - the delay is applied according to the fixture icon vertical position (top to bottom) or in reverse order (bottom to top).

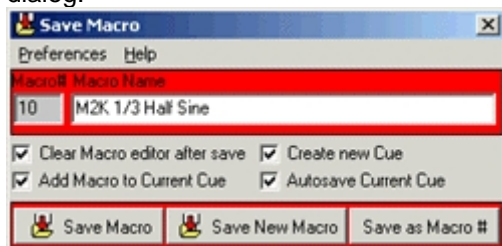
[Invert Channel Order](#) - normally, when assigning delays to multiple channels within the same fixture, delays are assigned to individual channels from top to bottom. Check *Invert Channel Order* to assign the delays from bottom to top.

[Circular Groups Count](#) - sets the Circular Groups count - see Auto Delay Style above.

[Segment Groups Count](#) - sets the Segments Groups count - see Auto Delay Style above.

## 11.8 Save macro dialog

Click  Save Macro in the [generic DMX macro editor](#) <sup>[156]</sup> to open the save macro dialog.



*Save macro dialog*

[Macro#](#) - each generic macro is identified by a unique number.

[Macro Name](#) - Macro name/description.

Click **Save** to (re-) save the current macro using the same macro number (is only enabled if the macro has been previously saved)

Click **Save New** to save the current macro using a new (free) macro number.

Click **Save as Macro#** to save the macro with a specific macro number. The maximum macro number is 9999.

Check *Clear Macro editor after save* to automatically clear the macro editor after the macro has been saved.

Check *Add macro to cue* to automatically add the saved macro to the [cue control macro slot](#) <sup>[132]</sup>.

Check *Create New Cue* to auto save the current cue as new cue.

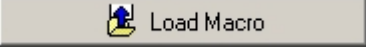
Check *Autosave Current Cue* to automatically save the current cue (unless *Create New Cue* is checked this will re-save the current cue)

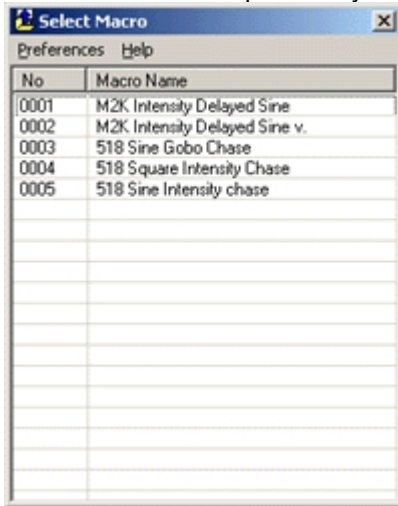
### Preferences menu

**Auto Close** - automatically closes the save dialog when a macro has been saved.

**Save on Enter** - saves the macro by pressing [enter] on the keyboard when typing the macro name.

## 11.9 Select macro list

Click  on the [generic DMX macro editor](#)<sup>[156]</sup> to open the select macro list. Use list to select previously saved macros for either editing or to include the macro in a cue.



Select macro list

### Editing a macro

To edit an existing macro highlight right click the entry in the list. From the popup menu select **Edit Macro**. The [macro editor](#)<sup>[156]</sup> will automatically open if not opened already. Alternatively, drag the line to the already opened Macro Editor, or to an empty spot on the desktop. Also, if neither browse options in the preferences menu (see below) are enabled, double clicking the line will send the macro to the editor.

### Adding a macro to the cue

To add a macro to the cue - drag it from the list to the macro slot in the [cue control](#)<sup>[132]</sup>. Alternatively, right click the line and select **Add Macro to Cue**.

### Delete macro file

To delete a macro, right click the line and select **Delete Macro File** from the popup.

### Preferences


**Browse to editor** - When enabled, the selected macro is loaded directly into the macro editor right away. Use this option to browse through previously saved macros quickly.

**Browse to Cue** - When enabled, the selected macro is added directly into the cue right away. Use this option to browse through previously saved macros quickly.

See also [generic DMX macro editor](#)<sup>[156]</sup>

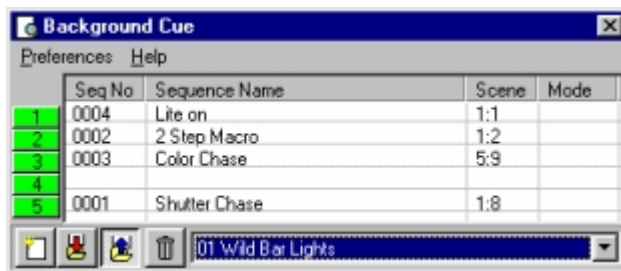
## 12 The background cue

### 12.1 Using the background cue

Click  on the [cue list tool bar](#)<sup>[56]</sup> to open the background cue control. Note that the 'LED' on the button changes its color to green if any sequences are 'active' in the background cue. A red 'LED' means no sequences are active.

The background cue is a construction quite similar to the [cue](#)<sup>[132]</sup> as it allows multiple sequences to be executed in parallel independently of other sequences also executing. The background cue holds up to 5 sequences but does not offer most of the sequence loop- and trig options that regular cue does: for example, any sequence that is a part of the background cue will always execute in a forward direction. The background cue also differs from the regular cue as the output from the sequences contained in the background cue has higher priority than both the contents of the regular cue and the [current sequence](#)<sup>[124]</sup>. This enables the background cue to run sequences that are always 'On' independently of any modifications being done to the current sequence or cue. As with the regular cue, the higher the number of the slot in the background cue the higher the priority of the sequence in the background cue. The total number of background cues is limited to 99.

Note that fixtures programmed in the sequences running in the background cue are still controlled by [blackout](#)<sup>[195]</sup> and [master intensity](#)<sup>[195]</sup> controls. To make specific fixtures (e.g. house lights) totally independent of the blackout and master intensity controls, enable the **Ignore Blackout** and **Ignore Master Intensity** switches in the [Fixture configuration](#)<sup>[66]</sup> for the relevant fixtures. Alternatively, assign the fixtures in question to a separate [intensity sub-master](#)<sup>[195]</sup> and make this sub-master independent of the intensity Master; this way it is still possible to regulate the intensity of those fixtures.



*The background cue control*

#### Assigning sequences to the background cue

To assign a sequence to the background cue, drag it from the [list of sequences](#)<sup>[127]</sup> to a slot in the background cue control. Alternatively right click the sequence in the list of sequences and select **add to BG Cue**

#### Removing sequences from the background cue

To clear one or more slots in the background cue, highlight the slot, right-click then select **Clear Sequence(s)**.

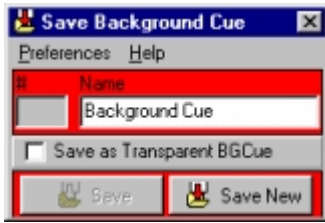
#### Clearing and saving the background cue



Click to clear the contents of the current background cue.



Click to open the save background cue dialog.



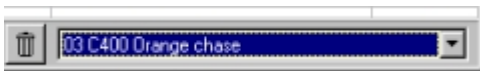
The save background cue dialog

Click the **save** to re-save an existing background cue or the **save new** to save the current background cue as a new background cue.

### Loading background cues




Click to open the [list of background cues](#) <sup>[169]</sup>



Previously saved background cues are also selectable from the selection drop down box in the lower right hand corner of the background cue control. In order to restore the sequence slot state (on or off) that the background cue was saved with, make sure that **Preferences -> Restore Sequence On/Off State** is enabled. If disabled the background cue will always load with all slots enabled. A background cue may also be automatically as part of a cue.

### Deleting background cue files



Click  to delete the current background cue file. To delete multiple background cue files, use [deleting multiple data files](#) <sup>[48]</sup> or select and right-click in the [list of background cues](#) <sup>[169]</sup> and select **Delete background Cue Files** from the popup menu.

### Selecting sequence trig mode

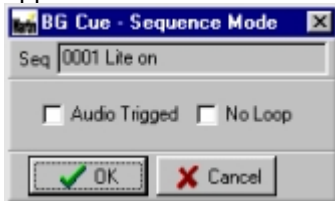
Right-click the sequence slot to access the Sequence Mode dialog to set the sequence mode. The following trig modes are possible for sequences in the background cue:

**Auto triggered** - default mode. Uses the preprogrammed scene and fade times.

**Audio triggered** - using trig information from the [Audio Analyzer](#) <sup>[192]</sup> and the sequences preprogrammed scene and fade times.

**No-Loop Mode** - same as auto triggered but the sequence doesn't loop after the last scene.

When sequences are set to Audio triggered or No-Loop mode, an indication (A and -L respectively) will appear in the mode column of the background cue control.



The Sequence Mode dialog


### Transparent background cues

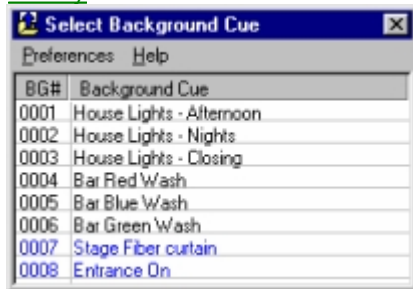
Like the ordinary cue the background cue implements [transparency](#) <sup>[149]</sup>. Normally, when loading a background cue, each of the background cues slots will be overwritten by the contents of the loaded background cue - even if the slots in the new cue has no sequence assigned. However, when a background cue is saved as a transparent cue, on reloading, empty slots will not overwrite existing sequences. To save a background cue as transparent - check '**Save as Transparent BGCue**' in the save dialog. In the background cue drop down list, transparent background cues display a **(T)** in front of the background cue name.



See also [cue control](#)<sup>[132]</sup>

## 12.2 List of background cues

Call up the list by clicking the  icon on the [background cue control](#)<sup>[167]</sup> - or by assigning a [hotkey](#)<sup>[205]</sup>.



List of background cues

This list contains all previously saved background cues. Use this list to select and load a background cue (a background cue may also be loaded using the drop down list on the [background cue control](#)<sup>[167]</sup>). The list also acts as source for drag and drop operations for background cues.

### Loading background cues

To load the background cue either double click the line containing the cue, or highlight the line and use the [Enter] key on the keyboard. A background cue may also be loaded by dragging it to the desktop.

### Deleting background cue files

Highlight the lines containing the background cues to be deleted, then right click and select **Delete Background Cue Files** from the popup menu.


### Preferences Menu

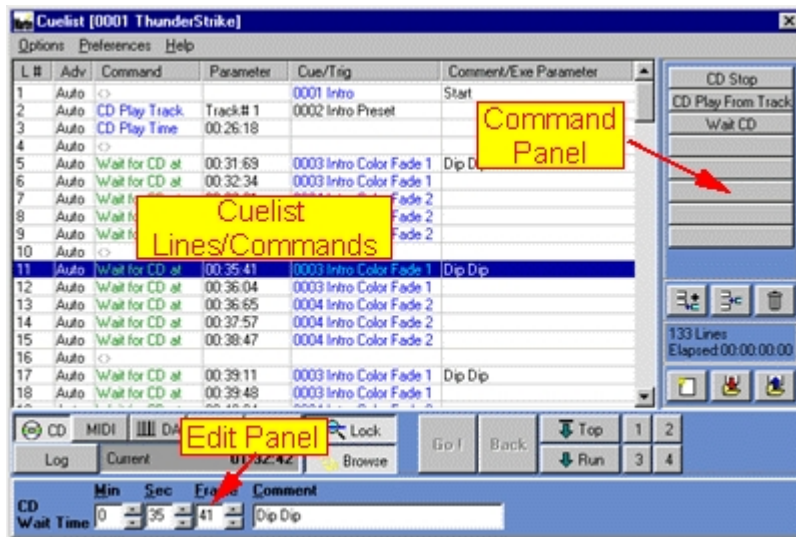
[Use Color Code for Transparent Cues](#) - when enabled transparent background will be shown in blue, when disabled transparent cue names will be pre-fixed with a (T)

[Follow Active BG-Cue](#) - when enabled the active background cue will be automatically selected in the drop down list.

## 13 The cue list control

### 13.1 The cue list control

The cue list control is opened by clicking the  on the [cue list tool bar](#)<sup>[56]</sup>. A cue list consists of a number lines containing of commands that are used to execute cues in a pre-defined order from top to bottom. The cue list may be driven manually (using a 'Go' to advance the cue list), by 'elapsed time' (using a specific wait time), by PC-Clock (24 hour clock) or by external time code in form of time code from Audio CD, Digital audio or video (e.g. MP3 or MPG files) or MIDI time code and SMPTE. The cue list has two states, the passive *edit* state and the active *playback* state. When active, the contents of the cue list is locked and cannot be modified.



The cue list control, edit mode

### The cue list control

The cue list control consists of 3 parts, the cue list itself (with lines containing commands and various functions), the edit panel below the cue list and the command panel to the right of the cue list. The edit and command panels may be hidden (from the preferences/view menu); an option, which may be handy to save space on the desktop once the cue list has been programmed.

### The cue list

The cue list itself is represented by a list of lines that may one of a number of 'active' or 'passive' commands. Active commands are commands that, for example, instructs the CD-ROM drive to play a certain track, while a passive command could be a wait command, that simply waits until a certain condition is met - e.g. the time code has passed 1:00:00. Each line may also contain an instruction to latch or trig sequences in a cue.

### Cue list columns

**L #** - cue list line number

**Adv** - advance method (manual or automatic)


**Command** - contains the command for the line, for example a wait command


**Parameter** - contains parameters for the command, for example a specific time code


**Cue/Trig** - contains cue number or instructs the cue control to trig certain sequences in the cue.

**Comments/EXE Parameter** - user comments or parameters for external applications.

### Adding, inserting and removing lines in the cue list

Click  to add one more lines to the cue list (there is no practical limit to the number of lines in a single cue list) - right click the button to add 10 lines at a time.

Click  to insert a new empty line before the selected line in the cue list - right click the button to insert 10 lines at a time.


Click  to delete the selected lines in the list.

### Rearranging lines in the cue list

Lines may be rearranged in the cue list by simple drag and drop operations. Select one or more lines and drag them to the desired location. Note that when dropped on an existing line the dragged lines will be inserted above the line on which they are dropped. Drag lines below the list to move to the end of the list. It is also possible to rearrange the lines by selecting standard Cut, Copy & Paste operations from the right click popup menu. For example, to copy the 5 top lines to the bottom of the list, highlight

the 5 lines, right click and select copy. Then right click at the bottom of the list (or deselect all highlighted lines), right click and select paste. If lines are pasted 'on top' of a highlighted line they are inserted before the highlight.

### Clearing, saving and loading cue lists

Click  to clear the current cue list and start a new cue list.

Click  to [save the current cue list](#)<sup>[176]</sup>.

Click  to open the list of [previously saved cue lists](#)<sup>[176]</sup>. Select the cue list to load into the cue list control.

Note that these buttons are duplicated on the [cue list tool bar](#)<sup>[56]</sup>.

To delete a single cue list file, right click the cue list in the [list of cue lists](#)<sup>[176]</sup> and **select delete cue list file**. To delete multiple cue list files, use the delete cue list files dialog (main menu/system/delete files).

### Importing other cue lists into the current cue list

To import a previously saved cue list into the current cue list, drag it from the [list of previously saved cue lists](#)<sup>[176]</sup> onto the cue list lines - this will insert the imported cue list before the line it is dropped on. To add the imported cue list to the end of the list, drag the cue list to an empty line below the current cue list.

### Manual vs. automatic line advance



*Cue list Go/Back buttons*

Each line in the cue list may be set to either manual or automatic advance (default is automatic). To change one or more lines, highlight, right click and select **Set Advance Mode** from the popup menu. The difference between a manual and automatic line is that the manual line waits for a user input (Go command) before performing the commands or latching the cues in the line. Also, if a line is set to manual advance certain commands (e.g. wait time code commands) are ignored (see commands). The Go command may be set by clicking **GO!** (only enabled if the cue list is active and waiting for a go command). Unless the cue list is waiting for a Go command on the first line, it is also possible to issue a **Back** command that will cause the cue list jump back one line.

A few cue list commands are ignored if the advance mode is Manual, see [cue list commands](#)<sup>[177]</sup>.

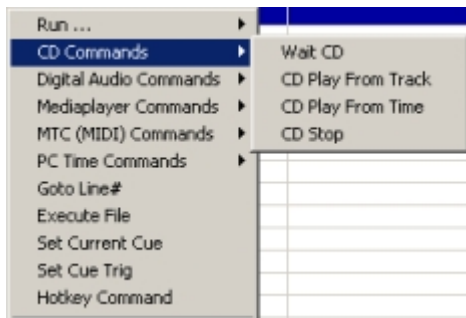
Both the Go and Back commands are available through [Hotkeys](#)<sup>[203]</sup>, [DMX in](#)<sup>[231]</sup>, [MIDI in](#)<sup>[239]</sup> commands or by assigning the function to the [2532 direct access controller](#)<sup>[225]</sup>.

Manual and automatic advances may be mixed freely within the cue list; it is perfectly possible to 'interrupt' a mainly automatic cue list (e.g. time code driven) by one or more manual lines to wait for a user input. Likewise a mainly manual cue list may include a number of automatic advance lines, for example to latch a number of cues with specific timing by a single Go command.

When an active cue list is waiting for a manual go, it is possible to jump directly to a different line by right-clicking the desired line and selecting **Jump to this** from the popup menu.

### Assigning commands to lines

To assign a specific command to one or more lines, highlight the line(s), right click and select the command from one of the submenu's on the popup menu.



Selecting commands from popup menu

Once a command has been used it will appear on the 'recent commands list' on the command panel. The buttons stores the 8 commands that have been most recently used. Clicking a command button is similar to selecting the command from the popup menu. Right click the button to clear the command from the recent commands list. To remove commands from one or more cue list lines, highlight the lines, right click and select **Clear/Clear Command** (*Clear line* clears the whole line). See [cue list commands](#)<sup>[177]</sup> for details on individual commands and parameters.

### Assigning parameters to commands

Most commands require a parameter to function, i.e. a 'CD Play Track' requires a track parameter (track number) or a 'Wait for CD at' command requires a time code to wait for. Once a command has been set on a line the required parameters (and comments) may be set via the edit panel at the bottom of the control. To edit the parameters, highlight the required line(s) and edit the parameters. If several lines are highlighted, only lines with identical commands will have their parameters changed.



Editing a CD wait time

See [cue list commands](#)<sup>[177]</sup> for details on individual commands and parameters.

### Assigning cues to lines

Assign a cue to be latched by the cue list line simply by dragging it from the [list of cues](#)<sup>[137]</sup> to the cue list line. To add the same cue to multiple lines, load the cue then highlight the lines and select **Set Current Cue** from the right click popup menu.

Both [transparent](#)<sup>[149]</sup> and non-transparent cues can be assigned to a line. To latch multiple cues (one non-transparent, the rest transparent) to the same time code (or by the use of a single Go command), simply add multiple lines with auto advance and without any time code or other commands. Remember that non-transparent cues overwrite all slots in the cue control so make sure to add the non-transparent cue BEFORE the transparent cues.

1	Auto	CD Play Track	Track# 1	
2	Auto	Wait for CD at	00:03:00	0015 Non-Transparent Cue
3	Auto	<>		0012 Transparent cue 1
4	Auto	<>		0013 Transparent Cue 2
5	Auto	<>		0014 Transparent Cue 3
6	Auto	Wait for CD at	00:04:00	0016 Another Cue
7	...	...	...	...

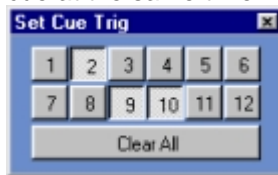
Latching multiple cues

### Triggering sequences in cues

Rather than having a line latch a cue, the cue list may trig one or more sequences in the cue.

Highlight the relevant line (s) and select **Set Cure Trig** from the right click popup menu. Select one or more of the 12 sequence slots to be trigged - when the line is executes each of the sequences will be

triggered exactly once, regardless of programmed trig method (auto, manual, audio). The sequence will be triggered in the programmed [loop direction](#)<sup>[145]</sup>. It is not possible to have a line latch a cue and trig the cue at the same time.



Setting cue trigs

To remove cues or trig commands from one or more lines, highlight the lines, right click and select **Clear/Clear Cue/Trig** (*Clear line* clears the whole line).

**Tip:** When using trig from the cue list, make sure to either set the sequence to manual trig in the cue, or alternatively give it a very long scene time when programming the sequence and then select auto trig in the cue. If the sequence is set to manual trig, make sure to disable **Chase Man** in the cue control otherwise the sequence will start chasing after the first two trigs.



### Adding/editing comments

The final column is used for comments or for [external program parameters](#)<sup>[183]</sup>. To set or edit a comment, highlight the line(s), and edit the comment via the comment field on the edit panel.

### Starting and executing the cue list



An active (running) cue list

To start the cue list, click  **Top** or  **Run**. Clicking Top will start the cue list executing from the first line, while clicking Run will start the cue list executing from the selected (highlighted) line in the cue list. While a cue list is active the Top/Run buttons are both replaced by a **STOP** button. Click this to stop the cue list from executing. While active, it is not possible change any of the cue list lines, and it is not possible to add, insert or delete any lines in the cue list. To modify the cue list, it must be stopped first (click STOP). Alternatively the cue list can be started from the right click popup menu, where **Run from top** and **Run from line** have same functions as the **Top** and **Run** buttons. "Run to line" has a different function - see below. It is also possible to start the cue list by right clicking one of the mark buttons (see below), or via [hotkey functions](#)<sup>[205]</sup>. During cue list execution the 'active' and 'next' lines are highlighted in gray and blue respectively. The active line (gray) is the line that has previously executed; e.g. if the line contains a cue command this cue has been loaded in the cue control, while the the next line (blue) is the line waiting to execute (for example waiting for a specific time code or manual go command).

### Preferences Menu

[View, Default Columns](#) - Resizes the list columns to default sizes.

[View, Edit panel](#) - toggles the edit panel on and off.

[View, Command panel](#) - toggles the command panel on and off.

**Use color codes** - toggles color codes on and off. When color codes are enabled, different types of commands and parameters are shown in different colors.

**Ignore first Wait Elapsed on run** - when enabled, the cue list will ignore the first wait elapsed command if started with a run command. When programming, enable this to avoid having to wait for the first elapsed time before the cue is latched.

**Load Cue on double click** - when enabled, double clicking a line containing a cue loads the cue into the cue control. Use to load cues directly from the cue list without enabling cue browsing.

**Stop Audio/Media Playback when Cuelist stops** - automatically stops audio or media file playback started by the cue list when the cue list stops; either when the cue list runs out or is stopped manually.

**Automatic Cue Update on Run** - When this option is enabled the cue list control will automatically try to locate and launch the relevant cues that are located before the line that is used as start point for the run command. This option is only useful when working with [transparent cues](#)<sup>[149]</sup> in the cue list. The cue list control will search and launch cues after the following rules: Launch the latest previous non-transparent cue, and then launch any transparent cues between the non-transparent cue and the 'run-line'.

**Auto seek audio tracks/media file on Run** - When enabled, the cue list control will automatically perform load, seek and play commands on audio an track if the run command is executed on a wait time code line.

**MIDI Timecode, stop list on Timecode timeout** - automatically stops the cue list when reception of MIDI time code stops.

**MIDI Timecode, Restart List on Timecode Timeout** - automatically restarts the cue list when reception of MIDI time code stops. Enable this option to slave the cue list after an external MTC/SMPTE device in continuous loops (e.g. from a laser disc player).

**Autosave Cuelist on Exit** - automatically save the cue list when LightJockey is closed down. An auto save cue list may be re-loaded via Options/Load Autosave. Note that only the most recent auto save is available for reload (and only if the auto save option is enabled).

### Other cue list functions

**Run to line (right click popup menu ->run..)**


Using this command causes the cue control to be updated with the contents as if the cuelist has been executed until (and including) the specific cuelist line. The function is handy when loading transparent cues in the cuelist since the contents of the cue control depends on previously sequentially loaded (transparent) cues. The function ignores all other types of commands than cue commands.

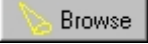
### Using marks



*The 4 mark buttons*

The cue list control contains 4 mark buttons (1-4). These buttons may be used as shortcuts to specific lines in the cue list. To mark a specific line, highlight it, right click and select **Set Mark** from the popup menu. Once a line has been marked, click the corresponding mark button to jump to that line. If the button is right clicked the cue list will start executing at this line (identical to highlighting the line, and then click **Run**) - as the mark functions are also available as [hotkey functions](#)<sup>[205]</sup>, using marks as shortcuts can be a considerable time saver when programming cue lists. Note that the marks refer to line numbers only, so if lines are inserted or deleted before the mark they will no longer point to the same line.

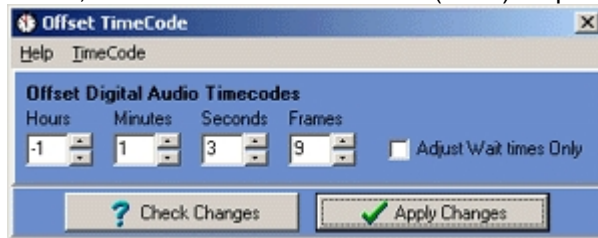
**The Lock button**  When the lock button is enabled, the cue list control will try keep the 'currently active' line in the center of the scrolling list when executing the cue list. The button has no function when the cue list is not running.

**The Browse button**  When the browse button is enabled, the cue list control will launch and trig cues from the cue list when individual lines are highlighted. This is a handy option when browsing through the cue list manually. Disable to avoid that the cue list launches and trigs cues.

Enable "Load cue on double click" in the preferences menu to load cues from the cue list without enabling cue browsing.

### Offset Time code function

It may sometimes be necessary to offset all or a portion of the time codes in the cue list, e.g. if the audio track is moved to a different media (from one CD to another). To offset time codes, highlight the relevant lines (possibly the whole cue list), right click then select offset time code from the popup menu. The 5 offset options will offset Digital Audio time codes, Media player time codes, CD time codes, MIDI time code and PC time (clock) respectively.



*Offsetting CD time code*

Set the required time code offset by entering the offset values in the corresponding fields. Click **Check Changes**, to check if offsetting will lead to overflow or underflow in the resulting time codes - overflow is when a time code is larger than the permitted values (e.g. 25 hours, 10 minutes on PC clock), underflow is when time codes are below the permitted values (e.g. negative hour value on PC clock). If an offset is applied with resulting overflow or underflow values the resulting time codes are automatically adjusted to maximum or minimum values, e.g. -01:00:00 is adjusted to 00:00:00. Check **Adjust Wait times Only**, to adjust wait times only. If unchecked all relevant time code commands are adjusted (e.g. play or seek commands). When offsetting MIDI time code, make sure to select the correct frame rate, otherwise the offset may be wrongly calculated using too few or too many frames.

### Sorting wait times

Lines in the cue list may be sorted by wait times (ascending order only). Highlight the lines to sort, right click, and select **Sort Wait Times** - then select the type of wait time to sort: Digital Audio wait time, Media Player wait time, CD wait time or MIDI wait time.

Note that the following restrictions apply to lines being sorted:

1. Selection must not be fragmented (selected lines must be one continuous block).
2. Selected lines must not contain other commands than a Wait of the selected type (e.g. wait CD).

### Converting old-style cue lists


LightJockey version 1.08 build 2 implements a new cue list engine adding new functionality to the cue lists. These changes require a new file format that is not compatible with previous versions. To manually update a cue list created with previous LightJockey versions, select **Import Old Format Cuelist** from the Options menu. Select the cue list file to import from the file dialog. On import, the cue list will automatically be converted to the new format - remember to re-save the cue list in the new format.

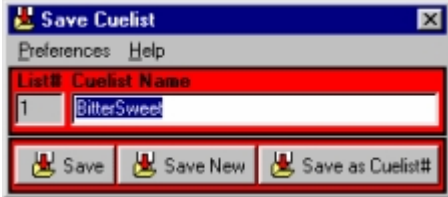
### IMPORTANT NOTE

If any of the old cue lists have been programmed to link to other cue lists it is vital that the new cue lists are saved with the same cue list number as the old cue lists. Use **Save as Cuelist#** in the [save cue list dialog](#)<sup>[176]</sup> to ensure that the cue lists are saved with the required number (find the old cue list number from the filename when importing).

See also [cue list commands](#)<sup>[177]</sup>, [using time code in cue lists](#)<sup>[179]</sup>, [MIDI/SMPTE time code](#)<sup>[182]</sup>, [using Winamp for digital audio playback](#)<sup>[186]</sup>, [using the LightJockey Mediaplayer](#)<sup>[183]</sup>, [launching external programs from the cue list](#)<sup>[183]</sup>

## 13.2 Save cue list dialog


This dialog is used when saving a cue list. The dialog is opened when clicking  icons located on right hand side of the [cue list tool bar](#)<sup>[56]</sup> bar or in the [cue list control](#)<sup>[169]</sup>.





Save cue list dialog

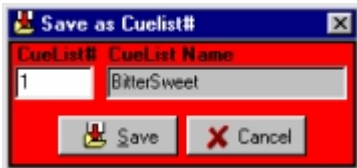
**List #** - This is a number that is used to uniquely identify the cue list. The LightJockey applies the number when saving the cue list for the first time, so for a new cue list this field will be blank until the cue list is saved.

**Cuelist Name** - This is the name for the cue list that will be used through out LightJockey. The name can be changed at any point, providing that the cue list is saved after the name has been changed. The name has no other function than identifying the cue list to the user.

Click  Save New to save the current cue list as a new cue list file (giving it a new cue list number). If a previously saved cue list is saved as a new cue list, the old file is left intact.

Click  Save to re-save the current cue list. The option is only available if the cue list has been previously saved and thus given a cue list number. Saving the cue list will overwrite the contents of the previous save.

Click  Save as Cuelist# to save the current with a specific cue list number. Use the following dialog to specify the cue list number.



Save cue list as dialog


Note that if an existing cue list has the same number as specified it will be overwritten by the new save.

### Preferences Menu

**Auto Close** - This option will close the save dialog automatically when the cue list is saved.

**Save on [Enter]** - Check this option to make the [Enter] key act as hotkey for the **Save** button.

## 13.3 List of cue lists

Click  located on the [cue list tool bar](#)<sup>[56]</sup> or the [cue list control](#)<sup>[169]</sup> to open the list with previously saved cue lists.



No	Name	Lines	Modified
0001	Manual Cuelist	11	21-06-2004
0003	EraseMe	48	21-06-2004
0004	test	11	21-06-2004
0005	TestCL	11	21-06-2004
0006	CD Test	11	21-06-2004
0007	Abba3	25	21-06-2004
0009	1-10	10	21-06-2004
0011	MTC Test	12	21-06-2004
0012	Mediaplayer Test	7	21-06-2004

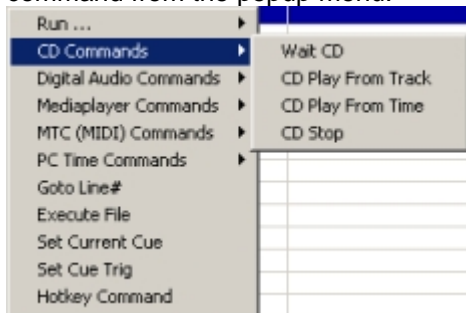
List of cue lists

To load a previously saved cue list into the [cue list control](#)<sup>[169]</sup>, double click the cue list in the list or right click the line and select **Load Cuelist**. To sort the list by the contents of any column, click the column header. To delete a cue list file, highlight the list right-click and select **Delete Cuelist File** from the popup menu.

Dedicated [hotkey functions](#)<sup>[203]</sup> are available for next, previous and start functions.

## 13.4 Cue list commands

Assign commands to the cue list by highlighting one or more lines, then right click and then select the command from the popup menu.



Selecting commands from popup menu

Most commands have specialized parameters associated - to set or edit the parameters, highlight the line(s) and modify the parameters through the edit panel.



Editing command parameters

### Audio CD Commands and parameters

The CD commands are used to control the audio CD playback via [CD-ROM drive](#)<sup>[40]</sup>.

**Wait CD** - Instructs the cue list to wait for a specific time code from the Audio CD. Parameters are Minutes (0-99), Seconds (0-59) and Frames (0-74). Command is ignored in Manual Mode.

**CD Play From Track** - Instructs the CD-ROM drive to start playback from a given track. Parameter is track number (1-99).


**CD Play From Time** - Instructs the CD-ROM drive to start playback from a given time code (e.g. in the middle of a track). Parameters are Minutes (0-99), Seconds (0-59) and Frames (0-74).

**CD Stop** - Instructs the CD-ROM drive to stop playback. No parameters.

### DA Commands (Digital Audio Commands)

Commands associated to Digital Audio played back via [Winamp](#)<sup>[186]</sup>.

**Wait DA** - Instructs the cue list to wait for a specific time code. Parameters are Hours (0-23), Minutes (0-59), Seconds (0-59) and Frames (0-99). Command is ignored in Manual Mode.

**Play DA File** - Loads and plays Digital Audio file. Parameter is filename - click  on the edit panel to open the file dialog and select the file.

**Cue DA File** - Loads audio file but do not start playback. Parameter is filename.

**DA Stop** - Stops playback of audio file. No parameters.

**Seek DA** - Seeks to a position in the audio file. Parameters are Hours (0-23), Minutes (0-59), Seconds (0-59) and Frames (0-99). To start playback within a track at a given time code, cue the audio file, then seek the time code and finally add a DA Play command.


**DA Play** - Instructs Winamp to (re-)start playback - usually used after a cue or seek command.

**DA Timecode Factor** - Used to modify time code from Winamp due to a Winamp time code inconsistency - see [Winamp time code issues](#)<sup>[187]</sup>

### Mediaplayer Commands

Commands associated to digital media files played back via [LightJockey Mediaplayer](#)<sup>[183]</sup>

**MP load file** - Load a media file - either a Mediaplayer Playback file or a media file. Parameter is

filename - click  on the edit panel to open the file dialog and select the file. Note that loading an actual media file may take several seconds. The cue list will wait for a maximum of 5 seconds for the file to load before proceeding to the next cue list line. If a longer wait is required add a wait real-time command after the cue file command.

**MP Play** - Play the loaded media file from its current position

**MP Seek** - Seek to a specific location within the loaded media file. Parameters are Hours (0-23), Minutes (0-59), Seconds (0-59) and Frames (0-99). Note that seeking into a media file (especially digital video files) may take several seconds. Note that it may take the Mediaplayer several seconds to 'catch up' in audio and video after the seek command has completed. The cue list will wait for a maximum of 5 seconds for the seek command to complete before re proceeding to the next cue list line. If a longer wait is required add a wait real-time command after the seek command.

**MP Stop** - Stop playback and set position to beginning of file

**MP Pause** - Pause playback.

**MP Wait** - Instructs the cue list to wait for a specific time code to be returned from the Mediaplayer. Parameters are Hours (0-23), Minutes (0-59), Seconds (0-59) and Frames (0-74). Command is ignored in Manual Mode.

**MP Close Clip** - Stop and clear the current media clip.

**Mediaplayer/MP Start** - Start the LightJockey Mediaplayer.

**Mediaplayer/MP Close** - Close the LightJockey Mediaplayer.

### MTC (MIDI Time code) Commands

See also [using time code in cue lists](#)<sup>[179]</sup>

**Wait MTC** - Instructs the cue list to wait for a specific MIDI Time code. Parameters are Hours (0-23), Minutes (0-59), Seconds (0-59) and Frames (0-23,24 or 29 depending on MTC format). This command is ignored in Manual Mode.

**Autoseek MTC** - Special MTC command, see [Using Time code in cue lists](#)<sup>[179]</sup>. This command is ignored in Manual Mode.

### PC Time Commands

Time code commands using the internal PC clock.

**Wait Elapsed** - Instructs the cue list to wait for a specific amount of time to pass. Parameters are Minutes (0-99), Seconds (0-59) and frames (0-99). Command is ignored in Manual Advance Mode.

**Wait PC-Clock** - Waits for the PC clock to reach a specific time. The time code is based on a 24-hour clock. Parameters are Hour (0-23), Minutes (0-59) and seconds (0-59). Command is ignored in Manual Advance Mode.

**Wait Date-Change** - Waits for the PC date to change - use when PC-Clock timing crosses midnight (00:00:00).

For more advanced scheduling functions (such as running different cue lists according to calendar or day of week) see [LJ Manager](#)<sup>[287]</sup>.

### Other Commands - command popup menu

**Goto Line#** - Instructs the cue list to jump to a specific line within the cue list itself. The command is really only useful at the end of a cue list for automatic restart. Parameter is line number. If the line parameter is higher than the number of lines in the list, the goto command is ignored.

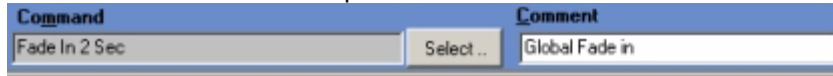
**Execute File** - Launches an external program. See

[Launching External programs from the cue list](#)<sup>[183]</sup>. Parameters are filename and command parameters for the external program.

**Set Current Cue** - Sets the cue parameter of the highlighted line(s) to the current cue (if any).

**Set Cue Trig** - Trigs one or more sequences in the cue (see [cue list Control](#)<sup>[169]</sup>)

**Hotkey Command** - Executes a [hotkey command](#)<sup>[205]</sup>. Select the command to execute via the Select button on the command edit panel.



*Executing a hotkey command from the cue list*

**Note** : not all hotkey commands makes sense in a cue list context - especially 'flash' functions which will only execute the first part of the action (usually some kind of on function) - User discretion required.

### Other Commands

**Flash Sequence** - This command is not found on the popup menu. To add a flash sequence command simply drag and drop the sequence from the list of [sequences](#)<sup>[127]</sup>. The sequence is flashed in the cue control context, so only one sequence may be flashed at any given time. Use the duration parameter to set the duration of the flash (max 99.9 seconds) - when the specified time has elapsed the flashed sequence is automatically removed.

**Load background cue** - This command is not found on the popup menu. To instruct the cue list to load a [background cue](#)<sup>[167]</sup> simply drag the background cue from the [list of background cues](#)<sup>[169]</sup> to the required line in the cue list. Alternatively, call up a regular [cue](#)<sup>[132]</sup> that includes a background cue.

**Link Cuelist** - This command is not found on the popup menu. A cue lists may be instructed to link to another cue list by dragging the cuelist to link to from the [list of cue lists](#)<sup>[176]</sup> to the required line in the current cuelist. Then, when prompted select link from the cue list link or import dialog. Remember to save the cuelist before starting, as any changes are lost when linking to a different cue list.

## 13.5 Using time code in cue lists

Cue lists are often used to synchronize lights to music. The synchronization is obtained by utilizing time code from playback media. Currently LightJockey supports the following types of time code:

**Audio CD time code**, when the audio CD is played in the CD-ROM drive.

**MTC (MIDI time code)** - MIDI time code also includes SMPTE using a suitable SMPTE to MTC interface.

**Windows media time code** - time code returned from playback of Windows media files including digital audio and video files using the built-in [LightJockey MediaPlayer](#)<sup>[183]</sup>.

**Digital audio files using Winamp for playback.** Winamp supports a wide number of Digital audio formats including MP3, WMA, MID (MIDI) and WAV (wave file format), note that LightJockey can only interface with Winamp series 2 from version 2.74 and it has been found that there are potentially [serious issues](#)<sup>[187]</sup> with time code consistency from Winamp. The Winamp interface is mainly for backwards compatibility, and it is strongly suggested to use LightJockey Mediaplayer to playback digital audio and video.

Program the cue list to wait for a specific time code, by using a [wait command](#)<sup>[177]</sup> from the relevant source (e.g. **Wait CD** from the [CD commands](#)<sup>[177]</sup>). To edit a time code, highlight the line and edit the time code via the edit panel.

**Audio CD via built in CD player using CD-ROM drive**, see also [audio CD control](#)<sup>[40]</sup>

The time code from an Audio CD uses the time code embedded in the CD audio track, and is based on

elapsed disc time in the form of Minutes:Seconds:Frames.

The number of frames per second is defined as 75. Use the [cue list commands](#)<sup>[177]</sup> to start and stop playback from the Audio CD.

**MTC (MIDI time code) and SMPTE via MIDI interface**, See also [MIDI/SMPTE time code](#)<sup>[182]</sup>

Use a PC/MIDI interface (or sound card with MIDI capabilities) to interface to MIDI/SMPTE timecode devices.

MIDI time code is actually a subset of SMPTE time code embedded in the MIDI protocol, To utilize a SMPTE time code source the interface must be able to convert SMPTE to MTC. An example of such an interface is MIDISPORT 8X8S from MidiMan ([www.midiman.net](http://www.midiman.net)). MTC is based on a 24 hour clock with Hours:Minutes:Seconds:Frames. The number of frames depends on the actual variant of MTC/SMPTE used by the source:

24 fps (frames 0-23)

25 fps (frames 0-24)

30 fps - drop frame (0-29 frames, two 'dropped' every 1 minute)

30 fps (frames 0-29)

Make sure to select the correct frame setting when editing MIDI time code. The cue list has a [special command](#)<sup>[177]</sup> for MTC, the **AutoSeek MTC** command. When this command is placed at the very top of the cue list and the cue list is activated with a **start from top** command, it will cause the cue list to jump to the closest matching wait MTC line upon re-reception of time code. This command is mainly useful when programming cue lists.

The source of the MIDI time code must be configured via the [hardware setup dialog](#)<sup>[42]</sup>.

**Digital audio files using Winamp for playback**, see also [using Winamp for digital audio](#)<sup>[186]</sup>

**NOTE : Current versions of Winamp have a problem with time code consistency (see [Winamp time code issues](#)<sup>[187]</sup>). This problem may make Winamp unsuitable for projects requiring tight time code synchronization.**

LightJockey implements a command and time code interface to Winamp. Winamp is NOT distributed together with LightJockey but must be acquired separately. Winamp supports a wide variety of digital audio formats, including MP1, MP2, MP3, WMA (Windows Media Audio files), WAV (wave files), CDA (Audio CD tracks) and more. LightJockey 'remote controls' Winamp and receives time code back to use in the cue list during audio playback. Winamp uses the same time format for all types of digital audio, regardless of media (hard disk / Audio CD). The time format used by the interface always elapsed track time in the form of Hours:Minutes:Seconds:Frames (0-99).

**Windows media files using LightJockey Mediaplayer for playback**, see also

[LightJockey Mediaplayer](#)<sup>[183]</sup>

Using LightJockey Mediaplayer, which in turn uses Windows Media Player functions, a wide variety of media files including digital audio and video formats may be played on the PC and the time code from these files may be used to synchronize the lighting. The time format returned the Mediaplayer is elapsed time in the form of Hours:Minutes:Seconds:Frames (0-99)

### Displaying time code


When using time code, the cue list control will show the currently received time code (including elapsed time, and PC clock) below the actual list. Click the relevant button to change the source of the time code being displayed (certain time codes are unavailable unless a suitable interface has been configured. When the cue list is running, the control will automatically switch to the relevant time code display (e.g. when waiting for a CD time code, it will automatically switch to display time code from the CD).

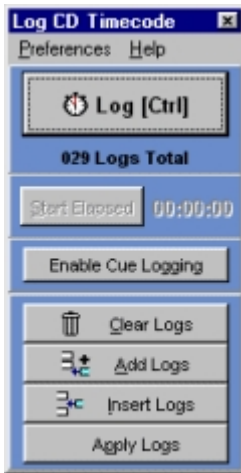


*The cue list time code controls*

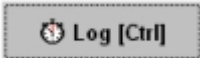
### The log time code control

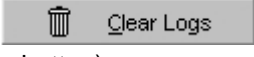
While it is possible to enter time codes manually through the edit panel, it is often much easier to log


time code directly, e.g. while listening to audio track playback. To log time code entries, display the required time code source in the cue list control, and then click . This opens the Log time code control.





The log time code control

Click  to log the current time code. One entry is logged for each click. To use the keyboard rather than the mouse to log time codes, the [CTRL] will act as a hotkey when the log control has focus. Alternatively a regular [hotkey](#)<sup>[205]</sup> may be configured - this hotkey works regardless of focus, (but only if the log control is open).

Click  to clear the current batch of logs (the total number of logs is shown below the log button).

Click  to add the logged time code to the end of the cue list - new lines are automatically created.

Click  to insert the logged time codes above the selected line in the cue list - new lines are automatically created.

Click  to apply the logged time codes to the highlighted lines in the cue list (the first log is applied to the highlighted line with the lowest number). Use this method when re-logging time codes rather than editing them manually.

**Start Elapsed** - only selectable when Elapsed PC Time has been selected as source on the cue list Control. Click to restart the elapsed clock timer.

**Enable Cue Logging** - when this button is enabled, each time a cue is loaded (from the list of cues, via the 2532, MIDI or DMX-in or via hotkeys) the cue number is logged together with the time code. Note that logging will only occur if the log control is open. When the logs are assigned to the list, the logged cues are applied as well.

### Preferences Menu

**Auto-Insert Empty Lines** - automatically inserts an extra empty line after each time code when the logs are assigned to the cue list.

**Auto-Clear Logs** - logs are automatically cleared after add, insert or apply.

See also [cue list control](#)<sup>[169]</sup>, [cue list commands](#)<sup>[177]</sup>

## 13.6 MIDI/SMPTE time code

MIDI Time code may be used as a triggering source for the cue list. Basically MIDI Time code (MTC) is SMPTE time code embedded in the MIDI protocol and should not be confused with MIDI Clock, MIDI Tempo or MIDI song pointers (which are not supported by LightJockey). To interface LightJockey to an MTC source, either use a MIDI interface and connect to a source transmitting regular MIDI time code, or for SMPTE sources, an interface that converts SMPTE to MTC (see reference below). Note that LightJockey only supports time code transmitted by quarter frame time code, not time code transmitted by MIDI SysEx Messages.

The source of the MIDI time code must be configured via the [hardware setup dialog](#)<sup>[42]</sup>.

### Reference Interface

The LightJockey implementation has been written and tested with a MIDISPORT 8X8S from MidiMan. This interface is an external 19" rack-mount and connects to the PC either with USB or standard RS232. The interface converts SMPTE time code to MIDI time code and has provisions for stripping SMPTE code to an audio media as well. The interface automatically recognizes the SMPTE frame type received. The interface also has 8 MIDI channels out and 8 MIDI channels in. See more details at [www.midiman.net](http://www.midiman.net) (link valid at the time of writing).

### Notes on SMPTE frame types

SMPTE time code (and thus MIDI time code) exists in a number of variations that varies in the number of frames that are transmitted pr second).

SMPTE to MTC interfaces should by itself be capable of auto detecting the received SMPTE frame type and embed this information in the MTC. However, if this not the case, make sure that to match the maximum frame number in the cue list entries does not differ from the number of frames in the actual time code or the cue list will not synchronize properly.

SMPTE formats includes

24 fps (frames 0-23)

25 fps (frames 0-24)

30 fps - drop frame (0-29 frames, two 'dropped' every 1 minute)

30 fps (frames 0-29)

### Notes on SMPTE to MIDI time code

The conversion from a SMPTE source to MIDI time code has two effects. The full SMPTE time code is broken down into 8 separate MIDI messages, and 4 MIDI messages are sent pr SMPTE frame received. This effectively halves the resolution of the converted time code since a total of 8 messages (two SMPTE frames) are needed. For this reason, if possible, select the highest possible frame rate when striping the media with time code.

Subsequently, the conversion also means that upon completion of the 8 messages LightJockey is notified 2 frames later than the actual SMPTE time code is received by the interface. This is not a problem if the time-codes are logged directly from the interface since the 'delay' is constant. However, if programming entries from a SMPTE time code reference, remember to subtract 2 frames from each time code entry.

### Preferences menu

MIDI Timecode

**MTC Timeout -> Stop List on Timecode time-out** - with this option enabled the cue list will stop executing if the MIDI time code times out. Note that a timing threshold for timeout can be set in the [hardware configuration](#)<sup>[42]</sup>.

**MTC Timeout -> Restart List on Timecode time-out** - to have the cue list automatically restart when the time code transmission is stopped, check this option. Use this option to avoid having to manually restart the cue list when the time code is terminated and then restarted.

This option should also be used if the time-code is paused and resumed during the execution of the cue list - in this case, make sure to add an 'AutoSeek MTC' command at the top of the cue list. This will ensure that the cue list continues at the appropriate line when the time-code is resumed.

**MTC Timeout -> Ignore Timecode time-out** - With this option enabled, the cue list ignores any timeouts

on the MTC stream.

**Sync Frames** - enable sync frames to skip a number of time code frames from the time code source before 'locking' on to the time code. Some time code sources may require a one or more complete time codes before they start to transmit 'correct' time code. Incorrect time code may cause a waiting cue list to execute one or more incorrect commands.

See also [using time code in cue lists](#)<sup>[179]</sup>, [cue list commands](#)<sup>[177]</sup>

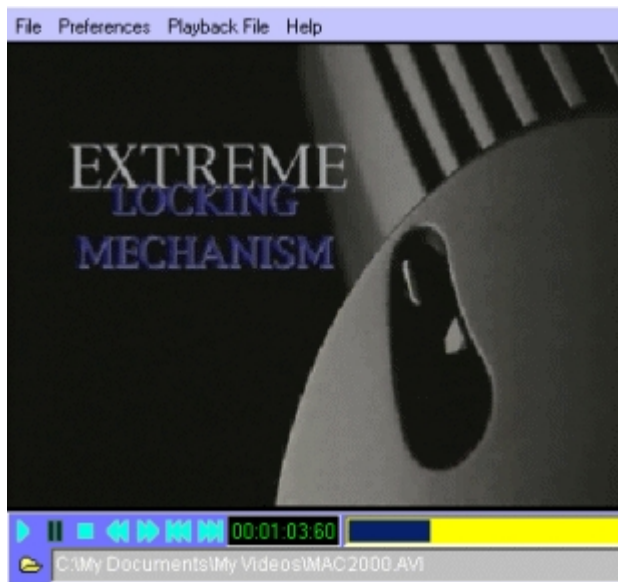
## 13.7 Launching external programs from the cue list

Use the [execute file command](#)<sup>[177]</sup> in the cue list to launch external programs. External programs could in principle be anything, for example digital video viewers, but will most likely be a custom made program for specific requirements.

The program may be launched with a number of parameters such as a filename or special command switches. Parameters are entered in the column normally used for comments, so when using the execute command it is NOT possible to use comments on that particular line. Since LightJockey doesn't know anything about the external programs, what they do or how they behave, there are a couple of considerations to consider when launching external programs.

The program must be able to take all settings and commands through the parameters (or by saving specific setups that are automatically recalled when the program is launched). It is not possible to communicate with the program from LightJockey. If the program is repeatedly launched (for example by a looping cue list), the program must be able to handle this by not launching a second instance if it is already running. If the program is re-launched in a new instance, it will eventually suffocate the PC when too many instances are running. The entire path for the executable including the name of the executable cannot exceed 127 characters. The total length of the parameters cannot exceed 40 characters.

## 13.8 Using the LightJockey MediaPlayer



*LightJockey MediaPlayer*

The LightJockey MediaPlayer is a separate application which utilizes Windows Media Player (tm) to play a multitude of digital media files including digital audio (MP3, WMA etc) or digital video (MPG, AVI, etc) files - note that the LightJockey MediaPlayer will not play any other formats not supported by the installed Windows Media Player (see below). Note that Since the application uses Windows Media Player functions it must be installed on the PC for the LightJockey MediaPlayer to work. At the time of writing, the newest version of the Windows Media Player can be downloaded from

<http://www.microsoft.com/windows/windowsmedia/download>. The LightJockey Mediaplayer is used from the [cuelist](#)<sup>[169]</sup> where it can be programmed to play back media files and send back time code to the cue list for synchronization between media file and lights.

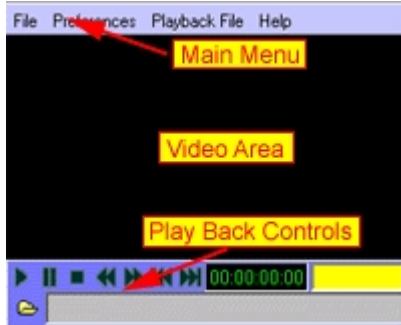
### Media File Formats

Since the LightJockey Mediaplayer uses the functions of Windows Media Player it is capable of playing all media file formats that the Windows Media Player can with the exception of CD audio. For playback of audio CDs use the built in [Audio CD player](#)<sup>[40]</sup>.


There are however a number of pitfalls when using digital media files. First of all, Windows Media Player may not directly support specific encoding formats (Codecs) - although sometimes a solution to running specific formats may be found from 3rd party providers (often free on the Internet). Also on multi-monitor systems, the Media Player may be capable of playing a video clip on the primary monitor but not on the secondary monitor, or only play the file on the secondary monitor with very poor performance. Another thing to look out for is Media License system recently introduced by Microsoft - the license system may prohibit playback of certain files on other PCs that they were originally 'licensed' to (for example when using the Media Player to record tracks from an audio CD to the PC in WMA format). Also there may be a time limit associated with the file so it may only be used for a certain period. Finally be careful using media files with variable bit rate - the Media Player may not be consistent in time codes when comparing the time code returned after playing the file from start to a certain point and seeking to that point; the Mediaplayer may return a different time code for the same physical file location depending on how it got there.

### Media files and playback files

The Mediaplayer works with two different types of files: Media files, which are the basic digital video or audio files, and playback files which are files that contain the name of a media file plus some extra playback information about playback window position and size that may be useful when the Mediaplayer is programmed via the cue list - see more below.



### Using the Mediaplayer

To open the LightJockey Mediaplayer, click  in the [cuelist control](#)<sup>[169]</sup>. By default the MediaPlayer user interface is divided into 3 distinct areas, the **Main Menu**, the **Video** area and the **Playback Controls**. If using the Mediaplayer for audio playback only, the window may be resized to take up as little space as possible (see below). The Mediaplayer doesn't have a normal windows caption bar to move the window around - to move the window around simply click the video area (or to the right of the main menu) and drag the window to the required position. To resize the window - hold down [Shift], then click and drag the window.

### Main Menu

Note that most of the commands in the main menu are also available from a popup menu that appears when right-clicking in the video area - use this popup menu when the control areas are toggled off.

#### File

[Load Media File](#) - load a media file

[Save Playback Definition](#) - save a playback definition.



[Load Playback Definition](#) - load a playback definition.  
[Recent Media file](#) - pick from the 5 most recently loaded media files.  
[Recent Media file](#) - pick from the 5 most recently loaded playback files.  
[Exit](#) - close the MediaPlayer.

#### Preferences

[Start up/Display Size](#) - use to select the default window size and position on startup. Check 'Custom Size' to start up using the same position and size as the window had when the MediaPlayer was used the last time. Select 'Full Screen' to start up in full screen mode, for multi-monitor a systems specific monitor may be specified as well.  
[Show Controls](#) - when disabled the main menu and playback controls will not be visible on startup (use the right click popup for most commands).  
[Stay on Top](#) - check the MediaPlayer to stay on top of other Windows (requires a restart of the MediaPlayer).  
[Minimum Size](#) - resize to minimum hiding the video area; a useful setting when the MediaPlayer is used for playback of audio files only.  
[Default Size](#) - resize to a size of 320x200 pixels.  
[Media Clip size](#) - resize the video area to the original size of the video clip (especially useful when in no-controls mode).

#### Playback File

Use this menu to program settings for a playback file.

[Use current settings](#) - use the current settings for the playback file.  
[Show Controls](#) - check to show the main menu and playback controls; uncheck to hide menu and controls.  
[Loop Playback](#) - instructs the MediaPlayer to loop the media clip indefinitely. The only way to stop a looped playback from the cue list is by an explicit [MP Stop command](#)<sup>[177]</sup>.  
[Custom Display Size](#) - use the same window position and size as when the playback file was saved.  
[FullScreen display](#) - use a full screen window.  
[FullScreen Monitor](#) - select monitor for full screen window.  
[Save Playback Definition](#) - Save the current playback definition.  
[Load Playback Definition](#) - Load a playback definition.

#### The Playback controls



The playback controls are (in order): Play, Pause, Stop, Fast rewind, Fast Forward, Frame back and Frame forward. Note that not all digital media formats support frame forward and back commands (the frame buttons will be disabled). The play and pause commands are duplicated on the video area popup menu.

The media time code is in the format of elapsed hours:minutes:seconds:1/100 seconds (this is the time code returned to the cue list).

The clip position bar may be used to set the current position - simply drag the bar to the desired location.

Click the folder button to load a new media file.

See also [cue list commands](#)<sup>[177]</sup>, [using time code in cue lists](#)<sup>[179]</sup>, [playing multiple, simultaneous media files from the cue list](#)<sup>[185]</sup>

## 13.9 Playing multiple, simultaneous media files from the cue list

By default, media clips played by LightJockey MediaPlayer returns current time code to the cue list. Since multiple simultaneous time codes makes no sense to the cue list, only once instance of the

LightJockey MediaPlayer interacting with the cue lists allowed at any time - this also means that only one media clip can be played using the LJ MediaPlayer. However, multiple instances of the MediaPlayer can be started by launching the MediaPlayer as an external program from the cue list.

**Warning** : Playing multiple simultaneous media clips (especially multiple video clips) can cause a serious CPU load on any PC to the extent that the PC bogs completely down or Windows crashes. If playback of multiple simultaneous media clips is needed please make sure to use a PC that is fast enough to handle the playback properly.

### Restrictions when launching the LJ MediaPlayer as external program

When the MediaPlayer is launched as an external program it runs as an independent instance - so when launched this way it is not possible to interact with this instance of the MediaPlayer from the cue list. The MediaPlayer plays the media clip exactly one time from start all the way to the end, ignoring any loop options. A [MediaPlayer playback file](#)<sup>[183]</sup> is required to specify the media clip and MediaPlayer settings.

#### How to:

13	Auto	Wait for MP at	00:00:45:00		
14	Auto	Execute	C:\LJ_W2K\LJMediaPlayer.exe		Avisample2.mps 5
15	Auto	^			

#### Launching the MediaPlayer

1. Use the [execute file](#)<sup>[177]</sup> command to specify the LJ MediaPlayer as program to execute (LJMediaplayer.exe). The program is located in the main LightJockey folder.
2. Specify the Playback file to be loaded by the MediaPlayer as parameter - specify the file name only (e.g : videosample1.mps). **Important:** The name of the playback file **must not** contain any spaces and the playback file **must** be located in the default playback files folder [in the current user library](#)<sup>[62]</sup>: <LightJockey>\User\<User Library Folder>\MediaPlayerSettings\ (this is the default location of playback files).
3. Specify an optional wait time parameter (in seconds). Since loading time of a large media file may vary from time to time, the wait parameter is useful when the MediaPlayer is loading a large media file but still required to start playback at a specific time. If no wait parameter is given the MediaPlayer will load the media file and start playing immediately - when a wait time is used the MediaPlayer will load the media file on startup but wait the specified amount of time before actually starting playback.

See also [cue list commands](#)<sup>[177]</sup>, [using time code in cue lists](#)<sup>[179]</sup>, [launching external programs from the cue list](#)<sup>[183]</sup>, [using the LightJockey MediaPlayer](#)<sup>[183]</sup>

## 13.10 Using Winamp for digital audio playback

### Important Note:

After the initial implementation of the Winamp interface it has been discovered that Winamp has serious problems with time code consistency. Please read the following section: [Winamp time code issues](#)<sup>[187]</sup>. If precise time codes are needed for time code synchronization the [LightJockey Mediaplayer](#)<sup>[183]</sup> is be a better alternative to Winamp.


Winamp is a piece of software developed by Nullsoft for playback of digital audio files. Winamp is not restricted to MP3 files only, but supports a multitude of digital audio formats. Winamp is a registered trademark of Nullsoft. Winamp is NOT distributed LightJockey but must be acquired separately. At the time of writing Winamp may be downloaded freely from [www.winamp.com](http://www.winamp.com). Please refer to Winamp's own documentation on how to setup and operate Winamp.



Winamp

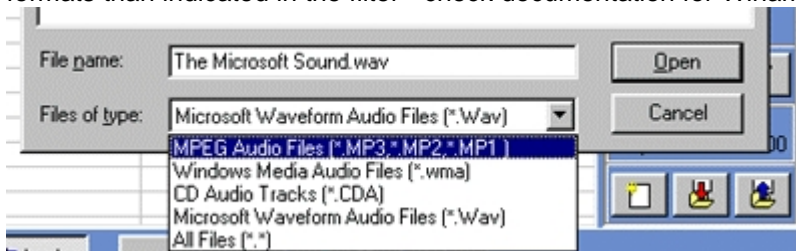
**Note:** The LightJockey interface only supports Winamp version 2 and a minimum of version 2.74 is required.

### Configuration notes

LightJockey's [cue list](#)<sup>[169]</sup> utilizes Winamp for playback of digital audio and time code feedback by 'remote controlling' specific Winamp functions. To prepare LightJockey to use Winamp, it must be configured via the [hardware setup dialog](#)<sup>[221]</sup>; on the Digital Audio/Audio CD tab, select **Winamp**. To automatically launch Winamp when needed, LightJockey must know the exact path to the Winamp executable (usually winamp.exe). click  to open up a file dialog and locate winamp.exe. Alternatively, Winamp should be started manually before any attempt to use Winamp from the cue list.

### Using Winamp in the cue list

When using Winamp to playback audio in the cue list, the actual digital audio file name is transferred from the cue list to Winamp. When selecting the audio file for the cue list, switch the file type in the file selection dialog to enable to selection of different audio file formats (Winamp actually supports more formats than indicated in the filter - check documentation for Winamp for the exact formats supported).



Changing the file filter

### NOTES

The interface between LightJockey and Winamp has been tested with Winamp version 2.74 (the current version at the time of writing). Note that earlier versions of Winamp may not support the needed functions..

See also [using time code in cue lists](#)<sup>[179]</sup>, [cue list commands](#)<sup>[177]</sup>

## 13.11 Winamp time code issues

After the initial implementation of the LightJockey/Winamp interface it has been discovered that there are problems with the time code consistency of Winamp (as some users found out the hard way - sorry guys). At the time of writing it is not known if there will be a bug fix for Winamp. The problem is that Winamp gets the time code wrong when playing the audio track - it simply doesn't advance the current time code with as many milliseconds as it should. The problem affects almost any digital audio file format (MP3,WMA,WAV) except that MP3 files encoded at 96KBP seems to work just fine.

Experiments show that the problem exists with the following formats:

- .MP3 (except for 96KBP encoded files) - Winamp only counts approx. 0.25 second less pr minute.
- .WMA : Winamp counts approx. 1.75 seconds less pr. minute (factor may vary)
- .WAV : Winamp counts approx. 0.25 seconds less pr. minute

The problem occurs as seek commands (Seek DA or moving the track bar on Winamp) seem to decode the time correctly. For example: Use a DA seek to position the track in an MP3 track at around 04:00:00 and let the track play - log a time code at some recognizable event in the track (e.g. 04:05:00). Next let the track play from the beginning - when the track reaches the event the time code (which was logged at 04:05:00) the time code from Winamp will be at approx 04:04:00 - so the time code lags about a second after the original log (approx. 0.25 seconds pr minute). Since most time code synchronized cue lists are made by seeking and logging and fine-tuning to small bits of the track at a time this poses a real problem as Winamp does not return identical time code when the track is played from the start.

### Partial Fix

Fortunately the time code inconsistency seems to be fairly consistent - at least with regards to MP3 files, which allows at least a partial fix namely multiplying the time code from Winamp with a factor when playing the full audio track.

Use the fix the following way:

#### When logging time codes:

Enable the **Auto Seek audio tracks/media files on Run** option in the preferences menu (the cue list). Then highlight the closest cue list line containing a wait or seek command above the 'area of interest' - depending on the contents of the cue list it may be necessary to add 'artificial' wait commands just to force a seek close to the relevant part of the track. Start the cue list with the **run** command (rather than the run from top command). Try to seek as close to the relevant part of the track as possible - remember that after just 30 seconds the time code from an MP3 file will be about 1/8 of a second off behind.

#### When running the full track:

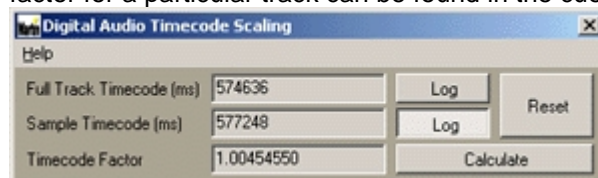
When you are ready to run the entire cue list insert a **DA timecode Factor** (command menu, Digital audio commands) command at the top of the cue list - the command accepts one parameter which is the factor that modifies the time code received from Winamp. For MP3 files a factor of **1.0040 - 1.0045** seems a good choice.

Then start the cue list from top. Note that the cue list time code display now marks the incoming time code with an \* since it is now modified by the factor (e.g. 03:33:44\*).

Note that the factor is only applied when the cue list actually executes a **DA Timecode Factor** command - it automatically cleared (or rather reset to 1.0) as soon as the cue list is stopped or re-started. If necessary, multiple commands with different values may be inserted in the same cue list.

### Factor calculator

If the recommended factor doesn't seem to work, then a small tool to calculate the relevant scaling factor for a particular track can be found in the cue list 'tools' menu.




#### Scaling factor tool

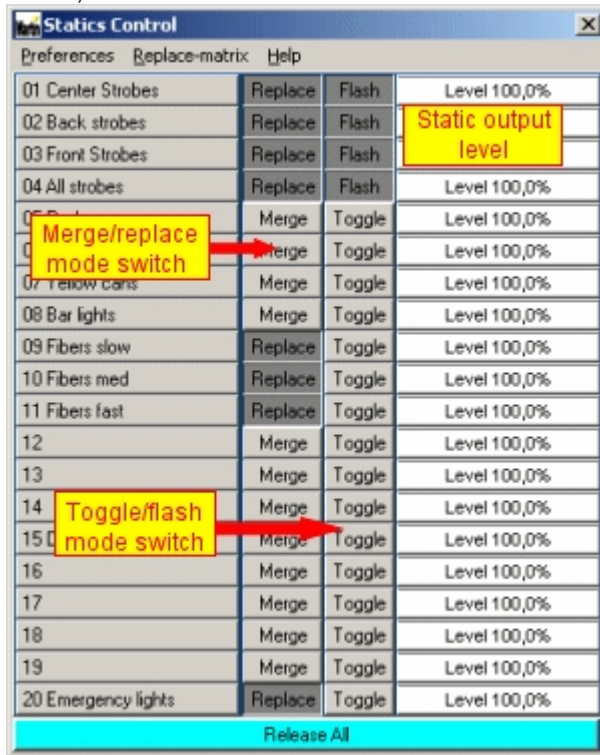
The dialog works by comparing two time codes and calculating the factor - here is the easiest way to use it:

Click the top log button (full track time code) and start the track from the beginning (or from the intended start location). Let the track run all the way to the end - the highest time code received is automatically kept as reference (click reset to reset the time to 0). Next, click the second log button (sample time code), click reset (to reset the time code to 0) - and start the track about 10 -20 seconds from the end of the track and let it play to the end.

Once the track has finished playing click **Calculate** to calculate the factor between the two time codes and use this factor in the cue list.

## 14 The statics control

The Statics Control can be opened via , located on the [cue list tool bar](#)<sup>[55]</sup>. If any of the static control entries are active, the 'LED' on the button turns green as a reminder - when no entries are active, the 'LED' is red.



The statics control

The primary purpose of the statics control is to control 'simple' fixtures or effects with only on/off states, usually controlled via dimmer- or switch packs. It may however, be used to control any parameter of any fixture. The static control works by combining the contents of up to 20 individual static scenes into a single static scene, which in turn is combined with the rest of the output values generated by LightJockey to create the final output. The combined output of the static entries has a higher priority than the current cue, but lower priority than the current background cue. To activate the contents of a static single entry, click the corresponding button (or assign a [hotkey](#)<sup>[203]</sup>). Releasing (see toggle and flash modes later) the entry will remove the contents of this entry from the combined output of the static control. The combined output of the active static entries is calculated by using the latest take precedence (LTP) principle. This means that if the same parameter (DMX control channel) is accessed in more than one static entry, the **last activated** entry has priority. The LTP evaluation works even if multiple entries are activated or deactivated. This method is different from the current cue, where the sequence priorities are based on their location within the cue.

### Programming static entries

The contents of the static entry is programmed like programming any other scene using the [current sequence](#)<sup>[18]</sup>. To apply the contents of the current scene to one of the 20 static entries, right-click the corresponding button and select **record and save current scene** from the popup menu. *Note that the record and clear options are not available as long as the entry is enabled (button is down) - release the entry before trying to save saving to it.*

The contents of the current scene, including the fade time, is now copied to the static entry. Give the entry a descriptive name and click **save**. To clear the contents of the entry, select **Clear Static Entry**

from the popup menu.

Hint: program all scenes for the static entries in one sequence, this will make it easier to re-edit the contents of the static entries later.

### Toggle and flash modes

The entries may be activated in one of two modes, toggle mode or flash mode. In toggle mode, one click on a button (or one press of a hotkey) will activate the entry, another click will release it. In flash mode the entry is only active for as long as the mouse button or hotkey is held down.

For hotkey activation of entries in flash mode, note that the PC keyboard does normally not register more than 3 or 4 keys held down simultaneously.

### Merge and replace modes

The buttons may apply the scene contents in one of two modes: replace or merge mode. Use the buttons on the control to switch an entry between replace and merge mode. In merge mode the contents of the entry is merged with the contents already present in the static scene; in replace mode the entry, when activated, may replace one or more already active entries as specified by the replace matrix, [see static merge and replace modes](#) <sup>[19]</sup>.

### Static output levels

The level controls are hidden by default - enable **View Static Levels** in the preferences menu to show the drag bars. Use the static level controls to scale (0-100%) the overall output values of the statics entry. Note that all values in the static entry are scaled; regardless of what control channel the value belongs to, so the static level is typically only used when the static entry contains settings for fixture intensities or generic fixtures like dimmer packs. Typically the level controls will be remotely controlled via for example via DMX in, but they can also be controlled manually via the mouse. When controlling statics from an external source the static should be recorded with a default fade time (0.05 sec).

### Scene fade times

The use of fade times in the statics control are deactivated by default (all values are snapped regardless of programmed fade state) - to enable the use of fade times, enable the **Statics use Fadetimes** switch in the preferences menu.

### The preferences menu

**Statics Use Fadetimes** - enable to set the static control to use fade times, when disabled, fade times are ignored.

**View Static Levels** - enable to view the static levels (default disabled).

**Default Levels at 0%**, **Default Levels at 100%** - selects the default value for the level controls - default is 100% (full output)

**Level Auto Static Enable**, **Level Auto Static Disable** - with these options enabled, the static entry will automatically be enabled when the level control is at a level higher than 0%, and disabled when the level is at 0%. When the options are disabled the enable/disable state must be set separately. Typically these options are used to automatically enable/disable the static entries when the level is remotely controlled via DMX in or the 2518. Note that every time an entry is enabled, it will take first priority in the output of the statics control (LTP).

### Typical uses of the static control

The primary strength of the static control is its independence of the contents of the cue. This means that the statics may be enabled or removed on the fly regardless of the contents of the actual cue, or even during programming. A typical use would be switching various 'simple' fixtures on and off. Each static entry contains one or more fixtures; individual fixtures are only programmed into one entry. The static control could also be used to flash various modifications such as colors moods or strobe onto intelligent fixtures. For 'live' use, the static may contain settings for guitar or drum solos, audience 'blindings' or similar effects.

## 14.1 Static merge and replace modes

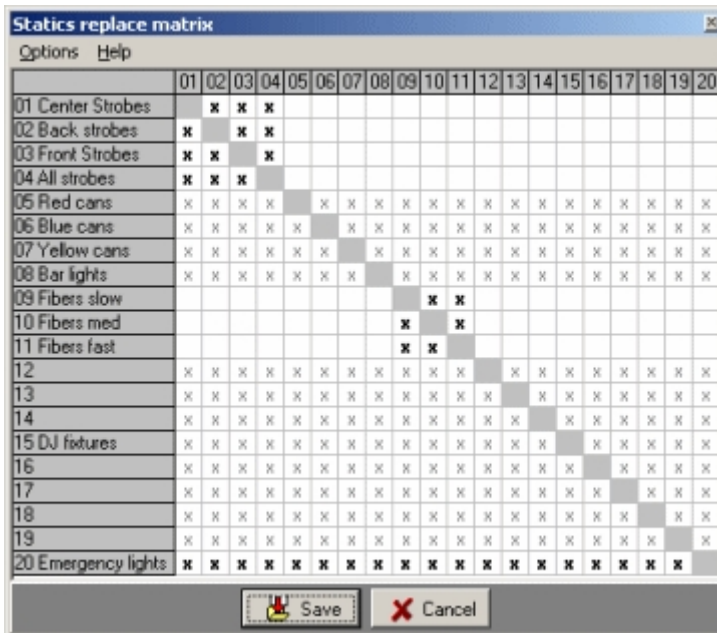
A static entry may be set into either Merge or Replace mode by clicking the corresponding merge/replace mode button on the [statics control](#)<sup>[189]</sup>.

### Merge mode

When a static entry in merge mode is activated its output is merged into the existing static output using LTP priority (latest takes precedence).

### Replace mode

When a static entry in replace mode is activated, it may automatically replace (deactivate) one or more of the other static entries. The exact entries to be replaced is determined by the statics replace matrix (click **Replace-matrix** on the [statics control](#)<sup>[189]</sup> to access the matrix).



Statics replace matrix

The matrix contains a horizontal and a vertical entry for each static entry. To setup the replace pattern click the corresponding cell for the static entries horizontal line. Entries to be replaced by each static are marked with an 'X'. Click the cell to toggle the X on and off - right click the leftmost or top most gray cell to set or clear replace status for an entire row or column.

Note: for static entries currently not in replace mode, the replace indicator (X) will be grayed out indicating that it has no current function.

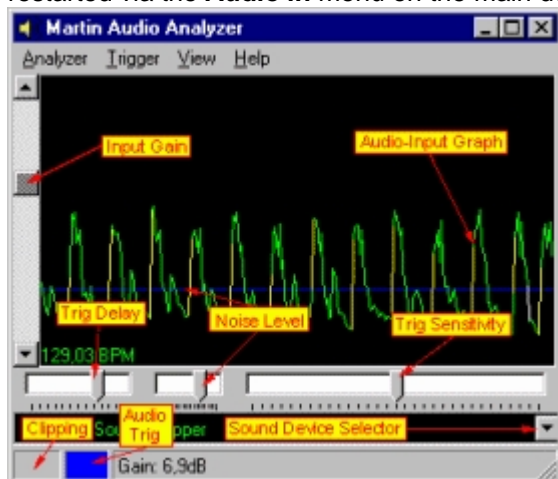
Example:

In the matrix above, the first 4 entries all contain static entries for 'strobes'. Each of the entries are switched to replace mode and are set to replace each other. The effect is that activating either of the 4 strobe entries will automatically deactivate any of the 3 other entries, so only one entry can be active at any given time.

## 15 Using audio input

The Audio-in function in LightJockey is used to trig [scenes in a sequence](#)<sup>[144]</sup> in the cue control. The function relies on the Windows sound system, which means that the PC must be equipped with a Windows compatible sound card with working drivers. The audio-in function must be enabled via the [Hardware setup](#)<sup>[22]</sup> dialog (**Main Menu -> Setup -> Hardware Setup**).

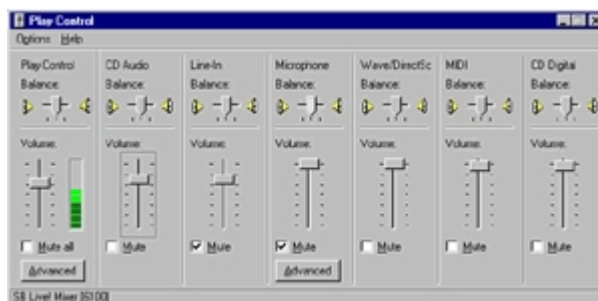
The audio-input from the sound card is analyzed via a separate module(Martin Audio Analyzer) before information is passed to LightJockey. The module is an external application that is automatically launched when LightJockey starts up. If the Analyzer for some reason is closed down it may be restarted via the **Audio in** menu on the main desktop.



*Audio Analyzer - time line View*

### Adjusting Windows audio properties

Since the audio-in uses the Windows sound system, it might be necessary to adjust the Windows audio properties. Usually, when Windows installs drivers for sound cards it also installs a volume or play control that usually lies with a small icon in the tray on the Windows taskbar. Depending on which features are supported by the actual sound card and drivers, the play control may support more or less features. If the PC contains more than one audio-input device, different devices may be selected via the *sound device selector*. Note that the *Microsoft Sound Mapper* is not a physical device. Selecting the *sound mapper* will always use the default/primary sound device in the system. Usually sound cards supports numerous audio inputs such as microphone, Line-in and CD-ROM - but the support for different input sources may vary with the actual sound hardware, especially on laptop a PC. Also note that some sound cards/drivers may limit the number of input sources that may be used at any one time.



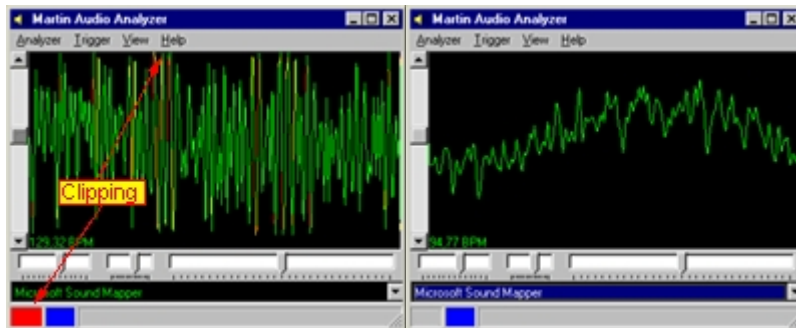
*An example of a Windows play control*

Use the play control to ensure that the input source is enabled (not muted) and to adjust the input level of the source. Before adjusting the input level, switch the Audio Analyzer into real-time view (**View ->**



**Show -> Input -> Real-Time**). The real-time view continually shows a small portion of the sampled sound input. If the input is adjusted a level that is too high, there is a good chance that the sound card hardware will 'clip' the samples which means that the analyzer no longer gets the proper information about the dynamic characteristics of the music. If the input is level adjusted too low, the input may no longer have enough 'resolution' to enable a good trig analysis. A well-adjusted input will show a graph that never 'max-out', thus clipping the input - but still have enough dynamics for a good analysis.

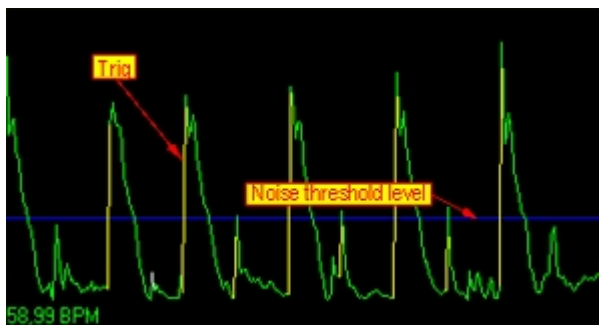
Note that the Sound Analyzer draws the graph in yellow when the sample is close to clipping level and in red when the sample is clipped. The analyzer also shows a clip indicator in the lower left corner even when the real-time view is not used.



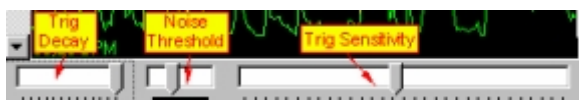
Audio Analyzer - Real-time view

### Adjusting the triggering sensitivity

Once the input level has been adjusted - there are various parameters that may be adjusted to decide how the analyzer finds the trig information in the music. Adjusting these parameters is best done with the analyzer in time-line view (**View -> Show -> Input -> time-line**). The time line view shows the last 5.8 seconds of 'dynamic' information contained in the audio in.



The analyzer detects trig information by comparing the current input level with the previous input levels. If the current level exceeds the previous levels by a certain factor (see below) the analyzer indicates a trig. Detecting trigs this way ensures that the trigs are found independently of the actual input level of the sampled sound. Trigs are shown on the graph as yellow lines. There are various factors that may influence whether the analyzer detects a trig or not.



**Noise Level** - a noise threshold limit may be applied. The threshold may be used to filter out noise, or may be used to filter out trigs that appear below a certain threshold level. The range of the noise threshold may be set from low to high in the **Trigger -> Noise level** menu. The threshold itself may be adjusted using the middle drag bar or by dragging the blue line representing the threshold directly on the graph.

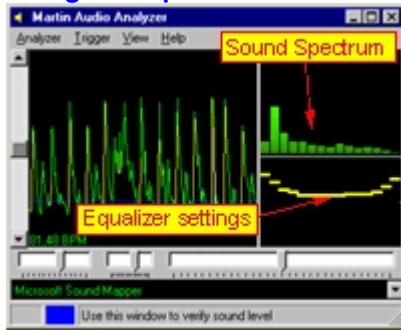
**Trig Decay** - the trig decay is the time that must pass from one trig until the next can occur. The decay

time may be adjusted using the leftmost drag bar from between approx. 0.05 to 0.6 seconds.

**Trig Sensitivity** - the trig sensitivity regulates how much the current sample must exceed the previous sample in order to detect a trig. The sensitivity is set using the rightmost drag bar, and ranges from about a factor 2 to a factor 10.

**Input Gain** - the input gain works by scaling the graph representing the audio-input. While the scaling will not affect trig decay or sensitivity, it will affect how the trigs are found with regards to the noise threshold level.

### Using the Equalizer



The audio analyzer also implements a 16-band equalizer that may be used to enhance or dampen certain frequency ranges of the sound spectrum. Enhancing certain frequency ranges means these ranges will be enhanced in the final sound input for the analyzer - for example enhancing the 3 lowest bands will ensure that the input that is analyzed is very dominated by bass information in the music. Note that the equalizer routines contain a lot of calculations and are **VERY** CPU insensitive. For this reason running the sound analyzer on a low spec PC is not recommended since it will slow anything else down including the rest of LightJockey. Minimum recommended PC for using the equalizer is a Pentium 300 MHz or equivalent.

### Analyzer menu

Auto save changes - Saves any changes as soon as they are applied.

Pass key presses to LightJockey - Pass any key presses to LightJockey; this allows the use of LJ hotkeys even if the Audio Analyzer has Windows focus.

### Trigger menu

Use Equalizer - enables the equalizer, see [using audio-in](#)<sup>[192]</sup>.

Set default -> Equalizer or Gain - re-sets levels to default for Equalizer and Gain.

Noise level -> Low, Medium and High - sets the range of the noise threshold.

### View Menu

Run minimized - when launched the analyzer will minimize and not take up space on the desktop. To restore click the **ljsound** button on the windows taskbar.

Stay on Top - when checked the analyzer stays on top of most other forms even when another window gets the focus.

Show Input -> None, Real-time or Time-Line - set to disable the graph or shows the graph as real time or time line.

Trigger Faders - shows or hides the adjustment drag bars.


Sound Cards - shows or hides sound device selector.

## 16 Global functions

### 16.1 Global intensity control

#### 16.1.1 Blackout/restore

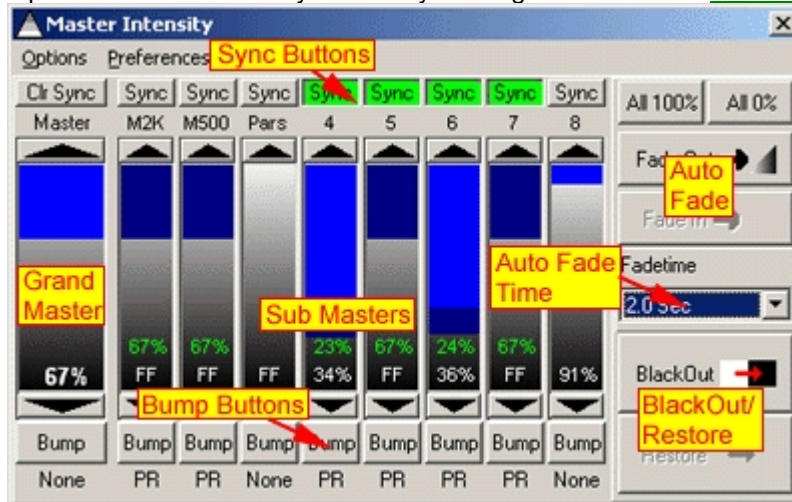
The blackout function is a global blackout affecting all fixtures. The blackout function may be disabled for individual fixtures in the [fixture configuration](#)<sup>[66]</sup> dialog. Blackout is a temporary overlay function and does not affect any programmed sequences or cues. When a blackout command is given, LightJockey will select the fastest way of disabling the light output on the fixtures. This usually means using the fixtures shutter if available. For fixtures without a shutter LightJockey will use alternatives to try to blackout the fixture - e.g. the RoboColor II blackout is by shutting off the halogen lamp, and the Roboscan 812 by selecting the black out gobo on the gobo wheel. Use Restore to restore output from a blackout.

The Blackout command can be selected either from  on the [fixture tool bar](#)<sup>[57]</sup>, or via the [master intensity control](#)<sup>[195]</sup> or for example through [hotkeys](#)<sup>[203]</sup>. The icon as a toggle, when clicked the first time, it will set state to blackout - when clicked a second time it will restore from blackout. By default, a warning will appear on the screen when blackout is engaged. This warning may be disabled in the [system preferences dialog](#)<sup>[50]</sup>.

See also [master intensity](#)<sup>[195]</sup>

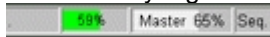
#### 16.1.2 Master intensity control

Open the Master intensity control by clicking  on the [fixture tool bar](#)<sup>[57]</sup>.



*Master intensity control*

The master intensity control contains virtual faders for the Grand Master (Master) and 8 sub-masters. The grand master and sub-masters are used to regulate the overall intensity level of the fixtures controlled by LightJockey. The level of the Grand Master is also displayed on the [status bar](#)<sup>[58]</sup>

 as a reminder.

#### Fixtures without intensity control

LightJockey uses the fixtures intensity controls (through the DMX protocol) to modify intensity levels. However, some fixtures do not implement any means of controlling intensity level. For example the Roboscan 218 only has shutter control for a light on/off control, while the Roboscan 812 use gobo and/or color wheels to obtain a blackout. LightJockey cannot regulate the intensity of these fixtures

beyond on/off. For fixtures of this type LightJockey will blackout the fixture using shutter or color or gobo wheels when the overall intensity level reaches 0% (note: for user defined profiles this feature must be enabled in the profile).

### Warnings

By default a warning will appear on the screen when Blackout or auto fade in or out is engaged. The warnings may be disabled in the [System Preferences dialog](#)<sup>[50]</sup>.

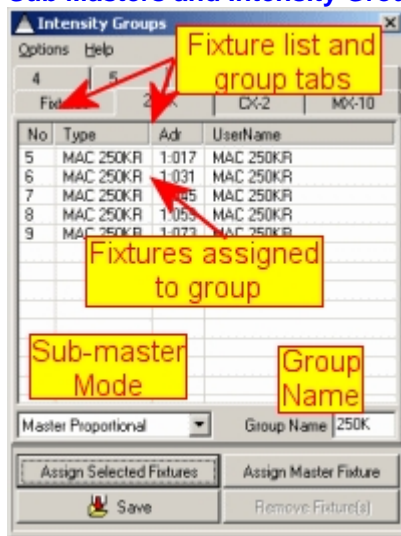
### Grand Master

The Grand Master, by default, modifies the intensity level of all fixtures. The exceptions are fixtures assigned to sub-masters that are configured to be unaffected by the Grand Master (see below), and fixtures that are set to ignore Grand Master in the [fixture configuration](#)<sup>[66]</sup> dialog.

Both the grand master and sub-masters works by modifying the intensity level **proportionally** to the programmed intensity level before the DMX data is transmitted to the fixtures. That means if a fixture is programmed to 50% intensity and the grand master is set to 75 %, the resulting intensity will be 75% x 50% = 37.5%.

The 8 sub-masters may be used to control the intensity level of specific groups of fixtures. Besides being modified by the grand master, the intensity level of a fixture can only be controlled by one other sub-master. The resulting intensity levels from sub-masters also depend on the level of the grand master as well (see below).

### Sub Masters and Intensity Groups



*Intensity groups dialog*

The 8 sub-masters each work on each their own individual intensity group. To assign fixtures to intensity groups, select **Groups** from the master intensity control main menu. The group intensity dialog contains 9 different lists accessed by the group tabs. The first list named 'fixtures' lists all the fixtures configured in LightJockey together with the group they are currently assigned to. If a fixture is not assigned to any groups it will indicate *master* as group control. To assign fixtures to a group, activate the group on via the tab, and then [select](#)<sup>[80]</sup> the relevant fixture icons on the desktop. After the relevant fixtures have been selected, click **Assign Selected Fixtures** to assign the selected fixtures to the group. **Assign Master Fixture** will assign the master fixture only. If the fixture(s) are already assigned to another group, they will automatically be removed from that group. To remove fixtures from a group without assigning them to another group, highlight the fixtures in the group list and click **Remove Fixture(s)**. The intensity groups may be given a name of up to 5 characters in length. **Note that modifications to groups do not take effect until saved.**

### The Bump Buttons

Each of the 9 faders has a bump button assigned. Left clicking and holding the bump button forces the

level of the fader to full for as long as the button is held down. When released the level will return to the previous level. To latch the bump state (automatically keeping the bump state without holding the mouse button) use right-click. When latched, the bump state is kept at on until the button is clicked again. A typical use of the bump buttons is to 'flash' fixture intensities manually to the beat of the music. The bump button functions may also be assigned to [keyboard hotkeys](#)<sup>[205]</sup>. Note that bumping a fader will overwrite any level set by remote input (for example levels set by DMX in).

### The Sync Buttons

The Sync buttons may be used to synchronize 2 or more sub-masters. When sync is enabled for multiple faders, the faders will synchronize their levels as soon as the level of one fader is changed. Sync has no effect on faders under remote control.

### Sub Master Modes

The sub-masters may operate one of in 4 different modes.

**Master Proportional mode** - in this mode the master level modifies the sub-master just as fixture intensity is modified by the Grand Master. This means that if a fixture is programmed at 75% intensity, and it belongs to an intensity group at 50% and the Grand master is at 30% the resulting intensity will be  $75\% \times 50\% \times 30\% = 11.25\%$ . This is the default setting

**Master LoTP Mode** - in this mode, resulting intensity is calculated by comparing the Grand Master level with the Sub Master level. The lowest is used to calculate the resulting intensity value (lowest take priority).

**Master HTP Mode** - same as LoTP mode, but in this case the higher value is used (highest take priority). This mode may be useful for fixtures that should never dim out completely (e.g. front lights).

**Master No Effect** - In this mode the sub master is not affected by the Grand Master at all.

### Auto Fade out and in

The **Fade Out** and **Fade In** provides a tool to automatically create timed fades on the Grand Master. It is also usually obtains a smoother fade than trying to fade directly on the screen with the mouse. Note that the **Fade In** button is only enabled when a fade out or blackout is currently active (since it needs a level to fade in from). Likewise the **Fade Out** is not active as long as a blackout or fade out is active. Use the drop down box to select between different times for the fade out/in action (from 0.5 second to 10 seconds) - selecting another the time will not affect the currently active fade (if any).

#### Fading in from a blackout

It is possible to fade in from a blackout, however this may not work on all types of fixtures as the fade uses the intensity function of the fixture, while blackout normally uses the shutter function to obtain the blackout as fast as possible. For this reason fading in from a blackout will not work on, for example, a Roboscan 218 or Mac 600.

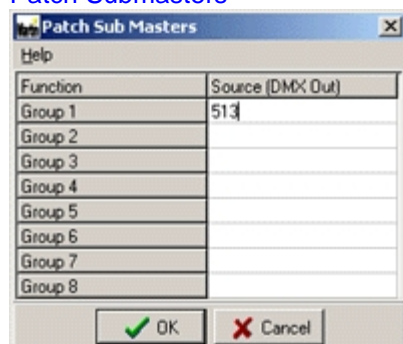
The auto fade out and fade in functions may be assigned to [keyboard hotkeys](#)<sup>[205]</sup>.

### Blackout and Restore

The blackout / restore buttons duplicate the function of the single blackout/restore button on the [fixture tool bar](#)<sup>[57]</sup>. See also [blackout/restore](#)<sup>[195]</sup>

### Options Menu

#### Patch Submasters



### Patch Submasters dialog

The sub master patch dialog implements the possibility of controlling the value of a sub master from a 'normal' DMX output channel. An example of use would be to automatically fade a number of generic DMX channels (e.g. par cans) while simultaneously running a chase on the same channels.

To patch one or more sub masters, configure a generic DMX fixture (up to 8 channels) and patch the addresses of the generic DMX output from the individual channels to the sub masters. Remember to include the relevant fixtures in the sub master group.

#### Preferences menu

##### Show Master Only

Check to hide the sub-masters, thus making the control take up less space on the desktop. Note that the sub-masters will be active even though hidden.

##### Show Values as %

It is also possible to toggle between values displayed on the fader between absolute values or % values.


##### Synchronize Bump

Check to enable simultaneous bumps on synchronized masters.

See also [DMX in](#)<sup>[231]</sup>, [sequence intensities](#)<sup>[150]</sup>


## 16.2 Freeze output

By default the freeze switch is disabled, the use of the freeze function may be enabled by enabling

**Allow Freeze Output** in the [system preferences dialog](#)<sup>[50]</sup>. The freeze state can be set through  on the [fixture tool bar](#)<sup>[57]</sup> or through a [hotkey function](#)<sup>[205]</sup>. When the DMX output is frozen, LightJockey immediately stops calculating new DMX output values as a result of fades or macros. When 'de-frozen' calculations are continued from where they were stopped. If assigned to a [hotkey flash function](#)<sup>[203]</sup> the freeze function can be used to great effect to for example freeze lights in place when there is a break in the music. Note that sequences running the cue are still being triggered.

See also [sequence blind mode](#)<sup>[129]</sup>, [Offline/Online switch](#)<sup>[198]</sup>

## 16.3 Offline / Online switch

The switch is set via the  on the [fixture tool bar](#)<sup>[57]</sup> (the button mimics the current offline state). By default access to the Offline/Online switch is disabled, access is enabled by checking **Allow Offline Switch** option in the [system preferences dialog](#)<sup>[50]</sup>. When LightJockey is offline it stops transferring new DMX values to the DMX hardware (the hardware does not stop refreshing the physical DMX signal but the DMX values remain unchanged). During offline state all usual calculations and macros are still performed and the resulting DMX output is still routed to the [Offline Visualizer](#)<sup>[283]</sup>. This allows for blind programming while still maintaining a static DMX output to connected fixtures.

See also [sequence blind mode](#)<sup>[129]</sup>, [freeze output](#)<sup>[198]</sup>.

## 16.4 Follow spot function

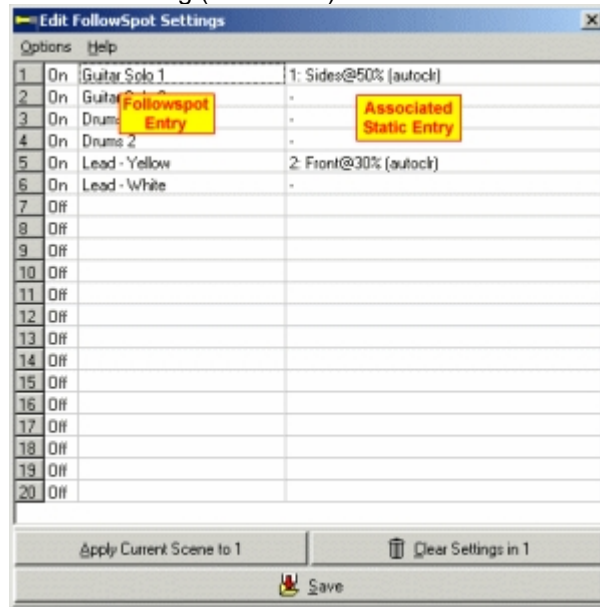
To enable the follow spot function, click  on the fixture tool bar. Use follow spot function to temporarily take manual control over one or more fixtures.

The follow spot function uses the [current sequence](#)<sup>[123]</sup> to first apply a pre-defined contents to the current scene (e.g. open white, pan/tilt position) then allowing the user to change the fixture(s) position using the position control (and other attributes using the normal fixture controls). Note that the follow

spot settings will **not** overwrite output created by [generic DMX macros](#)<sup>[148]</sup>. LightJockey may hold up to 20 different pre-defined follow spot settings.

### Editing the follow spot settings.

To edit the follow spot settings using the follow spot settings dialog. To access the dialog, select **Main Desktop menu -> Setup -> Preferences -> Edit Follow spot Settings** - or right click the follow spot icon on the [fixture tool bar](#)<sup>[57]</sup>, and select **Options -> Edit Settings** from the menu of the follow spot selection dialog (see below).



*Edit follow spot settings dialog*

Follow spot settings are not restricted to merely using pan/tilt positions and intensity settings, any effect may be programmed into the follow spot setting (e.g. color or iris settings). Use this feature to set the initial state that the fixture(s) should assume when switched into follow spot mode. To set the parameters which should be applied to each fixture when in follow spot mode, simply program them into the current scene - (hint: clear the current cue before programming the follow spot scene as this makes it easier to see exactly what is being programmed). Once the fixtures are programmed, **make sure that all programmed follow spot fixtures are selected on the desktop**, then highlight one of the 20 follow spot presets, and click **Apply Current Scene to Preset#**. When applying the preset scene, LJ records the programmed parameters for all selected fixtures. Effects that are not programmed will use [default DMX values](#)<sup>[53]</sup> when the follow spot settings are used (see later). Enter a name for the follow spot setting directly in the field in the *Follow spot entry* column. To clear a follow spot setting, highlight the setting, then click **Clear settings in preset#** - to clear all follow spot settings select **Clear all Follow spot Settings** from the Options Menu.

### Associating static entries with follow spot settings

To argument a follow spot, a static [static entry](#)<sup>[189]</sup> may be associated with enabling a follow spot setting - an associated static entry will automatically be enabled (latched) when the follow spot setting is activated (see below).

Use the static entry to enforce specific settings to fixtures that are not included in the follow spot setting - e.g. automatically reduce front lights to 30% intensity as soon as the follow spot setting is activated - without overwriting other parameters such as colors or positions from the current cue.

To associate a static entry with the follow spot setting, right click the corresponding line list. Then select the static entry from the popup menu (set static):

**Apply Current Scene** - apply current scene to follow spot setting


**Clear Entry** - clear the follow spot setting

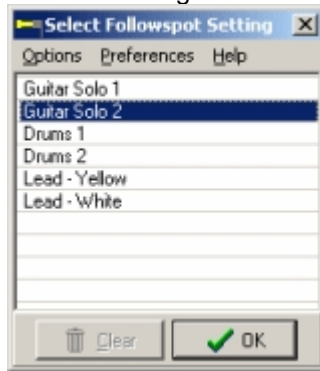
**Set Static** - select a static to be associated with the follow spot setting

[Clear Static](#) - clear associated static

[Set static as Auto Clear](#) - mark static entry as Auto Clear to automatically disable the static when deactivating the follow spot setting (see below).


### Using (activating) the follow spot settings

To activate a follow spot setting right-click  on the fixture tool bar to display the follow spot setting selection dialog. If the icon is left-clicked, the last activated follow spot setting will be re-activated.



*Follow spot selection dialog*

To select a specific follow spot setting, highlight the line and click Ok (or double click the line). A setting may also be activated using keyboard [hotkeys](#)<sup>[205]</sup> or the [2532 direct access](#)<sup>[225]</sup>. Once a follow spot


setting has been activated, it can be 'released' by clicking **Clear** or by clicking  on the [fixture tool bar](#)<sup>[57]</sup>. When a follow spot setting is activated, LightJockey will automatically call up the [intensity](#)<sup>[96]</sup> and [pan/tilt controls](#)<sup>[98]</sup> for the selected fixture(s). As the setting is activated, LightJockey will apply all the pre programmed parameters (follow spot settings) to the fixtures designated as follow spots. Parameters not programmed will be set to the [default DMX values](#)<sup>[53]</sup>. Finally, all effects (DMX control channels) are set to [snap](#)<sup>[93]</sup> to move the fixture into the follow spot settings as fast as possible.

### Use only selected fixtures as Follow spots

When a follow spot setting is recorded, the selection state of all fixtures are also recorded. When activating a follow spot setting, LightJockey will automatically re-select these fixtures and deselect all other. If **Use only selected fixtures as Follow spots** (preferences menu) is enabled, ONLY the fixtures that already are selected will be re-selected when a new follow spot setting is activated.

**Tip:** If multiple fixtures are used together in a follow spot setting, make sure to select **Relative Movement** in the [pan/tilt control](#)<sup>[98]</sup>

## 16.5 Fixture solo function

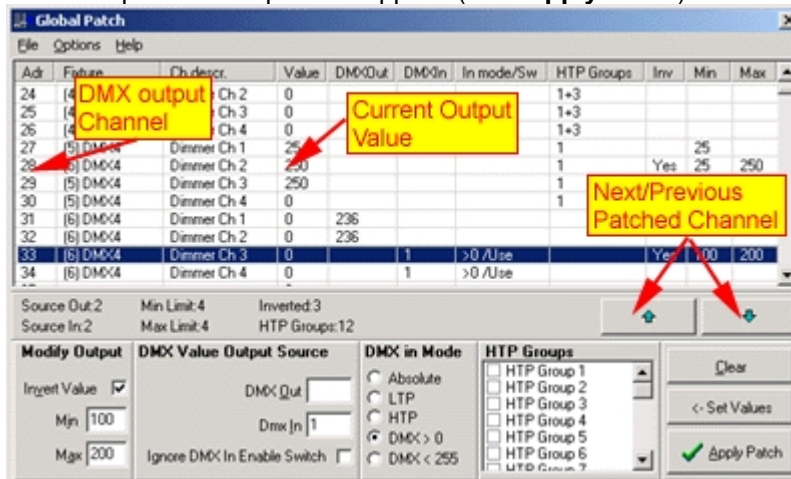
The fixture solo function is activated via  on the [fixture tool bar](#)<sup>[57]</sup> or by using a keyboard [hotkey](#)<sup>[205]</sup>. The solo function may be disabled (to avoid confusing inexperienced users) via the [system preferences](#)<sup>[50]</sup> dialog. When disabled the button is not visible on the tool bar. The solo function is primarily a tool to help during programming. It works by sending a blackout command to all [non-selected fixtures](#)<sup>[80]</sup> (only fixtures that have a defined blackout function are affected). The blackout means that only selected fixtures will have light output. The blackout 'moves' with the fixture selection - this has the effect that if, for example, the solo function is used in connection with the [next/previous fixture](#)<sup>[87]</sup> function, only the currently selected fixture will be visible. If no fixtures are selected, the blackout command will be cleared from all fixtures.



## 16.6 Global patching

### 16.6.1 Global patch dialog

The global patch is accessed via the [main setup menu](#)<sup>[50]</sup> or by right-clicking on a fixture icon and select Global Patch from the popup menu. The latter method aligns the patch list with the fixtures DMX address. The global patch allows patching the 'source' of individual DMX output channels as well as defining attributes such as minimum and maximum values or. The dialog is also used to assign individual channels to [HTP channel groups](#)<sup>[203]</sup>. Note: Changes in the dialog will not take effect on the actual output until the patch is applied (click **Apply Patch**).



The global patch dialog

Click **Previous** or **Next** to locate the previous or next channel containing any patch settings. To clear all settings for one or more output channels, highlight the relevant lines and click **Clear**. To clear all patch settings, select **New Global Patch** from the File Menu. To 'synchronize' all settings for multiple channels, highlight the relevant lines, change settings if necessary, then click **<-Set Values**.

#### Setting the minimum and maximum output value of a DMX channel.

To set the minimum and/or maximum value of one or more channels, highlight the corresponding lines in the patch list. Set the minimum and/or maximum values in the Min and Max fields respectively. Alternatively, highlight, right-click and select **Clear -> Min** or **Clear -> Max** from the popup menu. A minimum value of 0 and the maximum value of 255 are default and will not be displayed in the patch-list. When the patch is applied, minimum and maximum limits are applied to the DMX output values before the values are transmitted to the fixtures and do not affect the programmed data. For example, if an output channel is programmed to a value of 5 and a minimum value of 10 is set, the DMX output will never go below 10. If the minimum value is removed or lowered below 5, the channel will output 5 as programmed.

**Tip:**Applying a minimum output level for par cans for similar fixtures using halogen lamps can drastically shorten the time it takes the lamp to 'go on' (pre-heat).

#### Inverting the DMX output value

Setting the invert flag inverts the output value of the channel, e.g. a programmed value of 0 is inverted to the value of 255, or a value of 100 is output as 155. The operation performed is analog to inverting the output of a fader on a normal console so that the fader has maximum output when all down and minimum output when pushed to the top. So the inverting of the value is performed before any min/max constraints are applied so the inverted output values will still be inside the min/max interval.

#### Modifying the source of output values

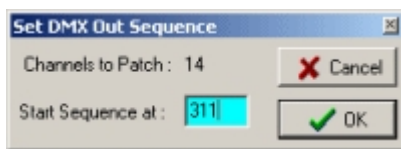
##### Modifying the DMX Output source

Changing the DMX output source means changing the source of the DMX output value transmitted to

the channel. The source of the DMX output value can be another DMX output channel or a DMX input channel. Patching several output channels to the same source may be useful when there is a need to control multiple channels from one source (e.g. a generic DMX fixture profile fader) or, using DMX in, from a console fader. Often, when using generic DMX fixtures such as Par 64 or pin spots, it is practical to control the fixtures in groups, even if each fixture has an individual DMX address on the dimmer rack (see HTP groups below). Unless the dimmer/switch packs supplying the fixtures has the capability of patching and it is necessary to allocate an individual channel to each of the fixtures (which may use up a lot of generic controls/channels). Using the patch tool it is possible to reduce the number of 'control channels' needed to control the number of groups that are used.

#### Setting the source to a DMX output channel

To patch one or more channels so that they take their output value from another output channel, highlight the lines representing the channels to be patched, and then enter the source address in the DMX Out field. The source channel is displayed in the 'DMXOut' column in the patch-list.



*Patching channels sequentially*

To patch multiple channels sequentially (e.g. 30->1, 31->2, 32->3, etc.), highlight the target channels and, right-click and select **Set DMX out Sequence** from the popup menu. In the dialog enter the address for the first source channel and click Ok.

#### Setting the source to a DMX input channel

To patch one or more channels so that they take their output value from a DMX input channel, highlight the corresponding lines and enter the relevant DMX input channel in the DMX In field. The source channel will be displayed in the 'DMXIn' column in the patch-list. To patch multiple channels sequentially (e.g. 30->DMX in 1; 31-> DMX in 2; 32-> DMX in 3 etc.) highlight the target channels and, right-click and select **Set DMX In Sequence** from the popup menu. In the dialog enter the address for the first DMX input source channel.

To patch a full DMX 512 in link to a specific DMX out Link, select **Options -> Patch DMX in**. This function may be used to verify programs on another console via the Offline Visualizer.

See also [DMX in](#) <sup>[23]</sup>

#### Selecting the DMX in mode

The DMX in source may be applied in one of 5 ways:

**Absolute** - the DMX input value always overwrites the output value.

**LoTP** - the DMX input value only overwrites when the DMX input value is lower than the programmed output value.

**HTP** - the DMX input value only overwrites when the DMX input value is higher than the programmed output value (highest takes precedence).

**DMX > 0** - the DMX input value only overwrites when the DMX input value is higher than 0.

**DMX < 255** - the DMX input value only overwrites when the DMX input value is lower than 255.

Set or change the DMX in mode for individual channels by selecting the relevant lines and then select the DMX in mode.

The two last modes are particular useful to control certain fixture functions manually via DMX-in. For example, to control the color wheels of a number of fixtures via a fader, patch the color control channels to a DMX in channel, and set the mode to < 255. When the console fader is at a value < 255 it overwrites the output value generated by LightJockey, when the fader is moved to a value of 255, the output generated by LightJockey will not be overwritten - effectively switching the DMX input override off. The DMX input patches is by default linked to the **Overwrite Enable** function in the [DMX-in setup](#) <sup>[23]</sup> dialog. The Overwrite Enable switch may be used to enable or disable all DMX in overwrites entirely. To make individual DMX-in patches independent of the Overwrite Enable function,

select the relevant lines, right-click and set the **Ignore DMX In Enable switch**. Channels marked as ignoring the switch will always be overwritten by the DMX in channel values regardless of overwrite Enable state.

**HTP Groups** - see [HTP Groups](#)<sup>[203]</sup>

### Saving and loading Global Patch settings

The global patch settings may be saved to a file for later retrieval. Save and Load functions are available from the File menu. LightJockey will try it's best to warn about 'suspect' patches (e.g. channel 1 is patched from channel 2, that in turn is patched from channel 1). If a suspect patch is found, a warning dialog will be shown (Nested Patches Found). If the dialog appears, please re-check patches.

**Tip:** If the patched channels are used to control fixtures that does not need a fixture profile (e.g. generic DMX fixture profiles) - any unused DMX channel may be patched without configuring a fixture in the [fixture configuration](#)<sup>[66]</sup>. When unused channels are patched this way there will be no way to actually see that the channels are used if new fixtures are added later on. It is therefore a good idea to configure generic DMX fixtures to match these addresses, even if programming the fixtures via these controls is not possible since the output values are taken from the source channels, and not from the programmed scenes. But at least there will be an indication to show that the channels are already in use. The icons may even be 'hidden' on a [desktop tab](#)<sup>[45]</sup> created for this purpose. If the patched channels does have a fixture profile assigned to them (e.g. uses a [generic DMX fixture profile](#)<sup>[84]</sup>), the fixture controls will reflect the output ONLY when the controls [fade state](#)<sup>[93]</sup> is set to off.

## 16.6.1.1 HTP groups

HTP groups is a useful tool to for patching multiple groups of single channel fixtures through DMX in (such as multiple groups of par cans via dimmer packs). HTP groups are configured via the [Global Patch](#)<sup>[203]</sup> dialog. Access to HTP groups is only possible through [DMX in](#)<sup>[231]</sup>, [Fingers for LightJockey](#)<sup>[210]</sup> or via [hotkeys](#)<sup>[205]</sup> (limited functions). LightJockey implements 24 individual HTP groups, and each DMX output channel can be member of one or more HTP groups. When determining the DMX output values for a particular channel assigned to one or more HTP groups, LightJockey compares the DMX value generated by any active 'program' with the 'value' of each of the HTP groups - and then selects and outputs the numerically highest value. Hotkeys can be used for the first 12 HTP groups, but are restricted to HTP group values of off (DMX value = 0) and on (DMX value = 255) which may still be quite useful for on/off fixtures running though a switch pack, or for flashing par cans full on and off.

### Caution !

Checking DMX output generated by HTP groups is a fairly time consuming process, especially if many channels are affected. Users of low spec PCs may experience a degradation of overall speed and DMX output 'quality' if many channels are assigned to HTP groups.

### HTP groups and master intensity control

By default, output generated by HTP groups is not affected by [intensity master or sub master](#)<sup>[195]</sup> settings. Check *Enable HTP group master intensity control* in the preferences menu to enable master intensity control of HTP groups. Note that only 'intensity type ' channels are affected by master intensity settings.

## 17 Hotkeys

### 17.1 Using hotkeys

#### Keyboard functions for selecting fixtures

When [selecting fixtures](#)<sup>[80]</sup> by clicking on the fixture icons, the following mouse/keyboard combinations are available:

[\[shift\]+left-click fixture icon](#) - force master. This will force the fixture into master status, regardless of it's

previous selected state.

**[Control]+left-click fixture icon** - solo fixture select. This will select the fixture as master and de-select all other fixtures.

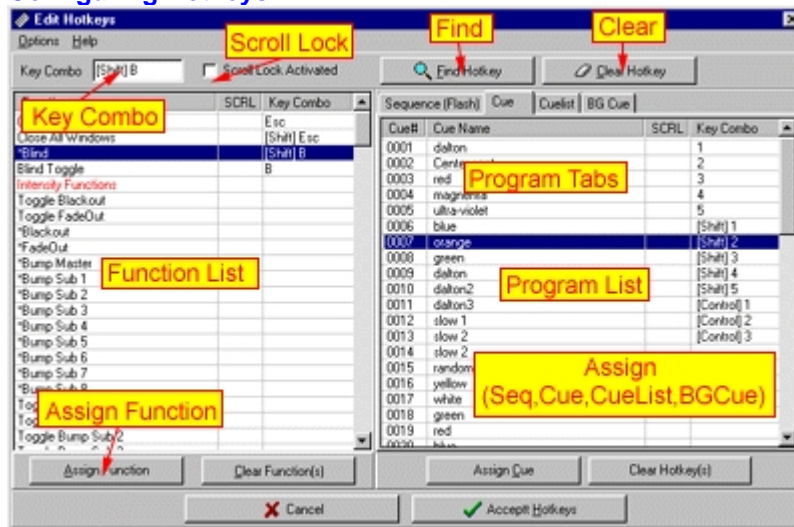
**[Control]+"rubber-banding" fixture icons** - this will select fixtures within rubber band frame only. Rubber-banding means to click and hold down left mouse button and then drag a rectangle around the fixture icons before releasing the button again.

### Keyboard hotkeys

LightJockey may be setup to use keyboard as hotkeys to select different functions, programs and effects directly. In order for the hotkeys to work LightJockey must have the Windows focus (one of the LightJockey windows must be the 'active' window). If any other program has focus, the keyboard commands will not be passed to the LightJockey application. The hotkeys will not have effect outside LightJockey. This restriction, by default, includes the [Offline Visualizer](#)<sup>[283]</sup> which may be configured to pass key presses to LightJockey. Hotkeys function may be globally enabled or disabled by setting or clearing the **Hotkeys Enabled** switch in the **Main -> Setup -> Hotkeys** menu. To edit the hotkeys configuration, select **Edit Hotkeys** from the **Main -> Setup -> Hotkeys** menu.

Note that hotkey actions may be disabled in some parts of the application, e.g. during [fixture configuration](#)<sup>[66]</sup>.

### Configuring Hotkeys



The edit hotkeys dialog

The edit hotkey dialog lists the functions and programs that are may be assigned to hotkeys. To assign a key or key combination to a function or program, first press the key or key combination to 'record' the key or combination. The 'recorded' key or combination will appear in the *Key Combo* window. Note that it is the key itself that is registered not the 'value' of the key. Alpha-keys ("a" -"z") will always register as capitals ("A"-"Z"). [Control] and [Shift] combinations such as [Shift]E or [Control]E are recognized as separate hotkeys. Some keys are not pre-defined in Windows but have a function that depends on the currently installed keyboard driver. These keys will list their value as [XXX]. [Alt] combinations are not recognized by the hotkey system, but are reserved for use by the normal Windows hotkey system. Furthermore, Windows reserves a couple of keyboard combinations for itself, e.g. [Control]+[Esc]. These combinations are also not available as hotkey combos.

To see if a particular key/combination is already in use, record the key/combination and click **Find Hotkey**. If the key or combo is already assigned to a function or program, the assigned function will be highlighted in the relevant list.

To clear a particular key/combination, record the key and click **Clear Hotkey**. Alternatively locate and clear the relevant functions or programs and click **Clear Functions** or **Clear Hotkeys(s)** located at the bottom of each list.

### Disable hotkeys in dialogs

To disable the hotkeys in dialogs where normal keyboard operation is required (such as when entering a name in save dialogs), check the **Disable Hotkeys in Dialogs** item found in the options menu. By default hotkeys are disabled in dialogs.

### Using Scroll Lock

The scope of hotkeys may be limited by enabling the scroll lock switch for each key/combination. With scroll lock the hotkey will only work when scroll lock function of the keyboard is enabled. To set or clear the scroll lock attribute for multiple entries, select the lines, right click and select set or clear scroll lock from the popup menu.

### Keyboard Function Keys (F1-F12)

The function keys F1-F12 and their respective shift/control combinations will always work, regardless of disable in dialogs or scroll lock setting.

### Assigning Functions to hotkeys

To assign a function to a particular hotkey, record the key combination and highlight the function in the function list. Then click **Assign Function**.

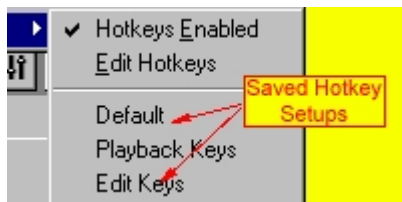
See [hotkey functions](#)<sup>[205]</sup> for a more detailed explanation of the individual functions.

### Assigning programs to hotkeys

It is possible to assign hotkey to a specific program (sequence, cue, cue list or background cue). To assign a hotkey to a program, record the hotkey and select (highlight) the program in the relevant list. Then click **assign 'program'**.

### Saving and loading hotkey setups

Since different operators may prefer different hotkey setups, or different setups may work better in different situations (for example programming vs. playback), it is possible to save and reload different hotkey setups. In order to save the current setup, select **Save Hotkeys** from the options menu and use the standard Windows file dialog to save the setup with a filename. To load a setup, either select **Load Hotkeys** from the **options** menu, or select the from the **Main Menu -> Setup -> Hotkeys -> Setup** menu, where up to 8 previously saved setups will appear below the **Edit Hotkeys** item (if any files present).



Selecting setups from the hotkey menu

See also [hotkey functions](#)<sup>[205]</sup>

## 17.2 Hotkey functions

### Hotkey function types

**Hotkey enable functions** - a hotkey enable function is a function that enables a certain state, for example the Blackout function enables blackout while Restore restores from a blackout.

**Hotkey toggle functions** - a toggle function is a function that toggles between two states. e.g. the Blackout/Restore function will toggle between blackout and restore each time the key is pressed. Most functions are either enable or toggle functions.

**Flash Functions** - a Flash function is a function that is activated as soon as the hotkey combo is selected, and deactivated when the hotkey key combo is released.

Since the state of the [Shift] and [Control] keys are read at the point where the 'main' hotkey is pressed, make sure to press and the [Shift]/[Control] keys **before** the 'main' key and to release the

[shift]/[Control] keys **after** the 'main' hotkey has been released. Or avoid using [Shift]/[Control] functions for flash functions. Flash functions are marked with an \*. Note that due to the nature of the PC keyboard, it may be impossible to hold more than a couple of keys down in flash mode before the keyboard buffer runs full and the keyboard stops responding.

### System functions

**Close Window** - Closes the current active LJ window (except the main LJ desktop)

**Close All Windows** - Closes all LJ windows (except the main LJ desktop)

**\*Freeze Output** - see [freeze output](#)<sup>[198]</sup>. Freezes the DMX output values while the key is held down. Fade calculations and movement macros are stopped, but sequences in cues are still triggered. (flash function)

**Freeze Output Toggle** - see [freeze output](#)<sup>[198]</sup> - the mode toggles on and off for each key press.

**\*Freeze + B/O** - Combines freeze and Blackout command (flash function)

**Freeze + B/O toggle** - Combines freeze and Blackout command - toggles on and off for each key press.

**DMX Offline, DMX Online, DMX OnLine/OffLine toggle** - see [offline/online switch](#)<sup>[198]</sup>

**2532 Control** - Toggles the [2532 control](#)<sup>[225]</sup>

**Virtual Fingers** - use to toggle [virtual fingers](#)<sup>[224]</sup>

**Fingers status panel** - use to toggle [fingers status panel](#)<sup>[216]</sup>

### Intensity functions

**Toggle Master Intensity Control** - Toggles the [master intensity control](#)<sup>[195]</sup> on and off

**Blackout/Restore** - Toggles blackout/restore (as the [blackout button](#)<sup>[195]</sup>)

**Blackout** - Sets Blackout

**Restore** - Restore from blackout

**Fade Out/Fade In** - Toggles the fade out / fade in states, using the fade time set in the [master intensity control](#)<sup>[195]</sup>

**Fade Out** - Starts a Fadeout using the Master Intensity fade time.

**Fade In** - Starts a Fade in using the Master Intensity fade time.

**Fade Out 1-10 Sec / Fade In 1-10 Sec** - Starts a fade out or fade in using the specific time.

**Master Intensity off/full/+1/+10/-1/-10** - Immediately sets or modifies the level of the intensity master - note that when using a hotkey for 'fading' by holding down a key on the keyboard, the 'fade time' is determined by the system keyboard repeat rate.

**\*BlackOut** - Sets Blackout for as long as the key is held down - when the key is released the output is restored.

**\*FadeOut** - Activates fadeout for as long as the key is held down - when the key is released a fade in is performed. Both fade out and fade in use the default fade time selected on the [master intensity control](#)<sup>[195]</sup>.

**\*Bump Master, \*Bump Sub 1-8** - bumps the individual [master intensity](#)<sup>[195]</sup> faders (Flash Function).

**Toggle Bump Master, Toggle Bump Sub 1-8** - toggles bump status on the individual faders on the [master intensity](#)<sup>[195]</sup>.

### HTP groups

**\*HTP group X - Bump** - Flashes the channels belonging to the [HTP group](#)<sup>[201]</sup> to On (DMX value = 255).

**HTP group X - Toggle** - Toggles the channels belonging to the [HTP group](#)<sup>[201]</sup> between On (DMX value = 255) and Off (DMX value = 0).

### Fixture controls

**Fixture controls (Intensity -> Level/Special)** - Toggles the individual [fixture controls](#)<sup>[92]</sup> - fixture controls will only be shown if they are valid for the current, selected [master fixture](#)<sup>[80]</sup>

**Toggle Intensity Palette -> Toggle Levels/Special Palette** - Toggles the corresponding [user palette](#)<sup>[95]</sup> on and off.

**Toggle Position Preset** - Toggles the [position preset](#)<sup>[106]</sup> list on and off.

**Toggle All Palettes/Presets** - Toggles all [preset](#)<sup>[106]</sup> or [user palettes](#)<sup>[95]</sup> on and off.

**P/T Macro** - Toggles the [movement macro control](#)<sup>[102]</sup>.

FanOut Control - Toggles the [fan out control](#)<sup>[101]</sup>.  
 Position Options - Toggles the [position options control](#)<sup>[98]</sup>  
 Mirror Pan, Mirror Tilt, Swap and 360 deg - Activates each of the functions from the [position options control](#)<sup>[98]</sup>  
 Pan Relative +/- Tilt Relative +/- - Moves the pan/tilt for the selected fixture(s).  
 Home Selected Fixtures - Moves the pan/tilt for the selected fixture(s) to Home position. [fade state](#)<sup>[93]</sup> is defaulted to snap.  
 All Controls - Toggles all fixture controls from Intensity to Effects controls, controls will only be shown if they are valid for the current [master fixture](#)<sup>[80]</sup>

### Other

Generic Controls - Toggles the [generic DMX control](#)<sup>[86]</sup> on and off.  
 Smoke Control - Toggles visibility of the [smoke control](#)<sup>[122]</sup>  
 \*Smoke Button - Controls the smoke button on the Smoke Control (flash function)  
 Toggle smoke timer - toggles the smoke timer button on the Smoke Control.  
 CD Control - Toggles the [audio CD control](#)<sup>[40]</sup>  
 Follow spot 1-10 - Activates [follow spot settings 1 to 10](#)<sup>[198]</sup>  
 Clear Followspot - Clears the current follow spot setting (if any)  
 View DMX Output - Toggles the [DMX output monitor](#)<sup>[60]</sup>.  
 Toggle Notes - Toggles the Notes on and off. Normally standard keys are captured by the notes window which will prevent a 'normal' hotkey from closing the window. Assign a function key (F1-F12) for the function or use [Escape] to close the Window.  
 Autostrike lamps toggle - Toggles the auto strike lamps function on and off (see [startup options](#)<sup>[52]</sup>)  
 Assign Preset# - Assign position preset 1 to 10 to selected fixtures.

### Sequence functions

Sequence Control - Toggles the [sequence control](#)<sup>[124]</sup>  
 Toggle List of Sequences - Toggles the [list of sequences](#)<sup>[127]</sup>.  
 Next Scene - Advances the current sequence to the next scene  
 Previous Scene - Advances the current sequence to the next scene  
 Add Scene - Adds a scene to the current sequence  
 First Scene - Places the current sequence in the first scene  
 Last Scene - Places the current sequence in the last scene  
 Quick Save Sequence - [quicksaves](#)<sup>[50]</sup> the current sequence  
 New Sequence - Performs a clear/new Sequence Command.  
 Set Sequence Blind - Sets the [sequence blind](#)<sup>[129]</sup> state  
 \*Sequence Blind - Sets the [sequence blind](#)<sup>[129]</sup> state (flash function)  
 Clear Sequence Blind - Clears the [sequence blind](#)<sup>[129]</sup> state  
 Sequence Blind Toggle - Toggles the [sequence blind](#)<sup>[129]</sup> state  
 Playback Fwd,Rev, Stop - Activates the playback functions on the [sequence control](#)<sup>[124]</sup>

### Cue functions

List of cue functions - these functions relate to the [list of cues](#)<sup>[137]</sup>  
 Toggle List of Cues - Toggles the [list of cues](#)<sup>[137]</sup>.  
 Load Selected Cue (global list) - loads the selected cue from the global list of cues.  
 Load Selected Cue (Cue Page) - loads the selected cue from the current cue page.  
 Force Cue# selection - forces Windows focus to the Cue# entry.  
 Previous Cue Page - selects the previous cue page.  
 Next Cue Page - selects the next cue page.  
 Cue Page Latch Previous Cue - latches the previous cue on the current cue page.  
 Cue Page Latch Next Cue - latches the next cue on the current cue page.  
 Cue Page Select Previous Cue - selects the previous cue on the current cue page, but does not latch the cue.  
 Cue Page Select Next Cue - selects the next cue on the current cue page, but does not latch the cue.

Cue control functions - these functions relate to the [cue control](#)<sup>[132]</sup>

**Toggle Cue Control** - Toggles the [cue control](#)<sup>[132]</sup>

**Toggle Chase Manual** - Toggles 'Chase Man' function in the [cue control](#)<sup>[132]</sup>

**Toggle Chase Fade** - Toggles the *Disable Fade time in Chase Mode* option in the [cue control](#)<sup>[132]</sup> preferences menu.

**\*Flash selected Sequence** - Adds the selected sequence (if any) to the current cue in flash mode (sequence is removed as soon as the key is released). If the sequence list is closed the last selected sequence is loaded.

**Release latched Flash** - Releases a latched flash sequence.

**Quick Save Cue** - [quicksaves](#)<sup>[50]</sup> the current Cue

**New/Clear Cue** - Performs a new cue command.

**Toggle Select All** - Toggles the select all / deselect all button on the [cue control](#)<sup>[132]</sup>.

**Cue Time Control** - Toggles the [cue time](#)<sup>[147]</sup> control.

**Cue Loop Control** - Toggles the [sequence slot loop options](#)<sup>[145]</sup> control.

**Cue macro control functions** - these functions relate to the [cue macro control](#)<sup>[148]</sup>

**Cue Macro Control toggle** - Toggles the [cue macro control](#)<sup>[148]</sup>

**Pan/Tilt Macro : Fade In, Fadeout, Macro Off, Macro On** - Hotkeys for corresponding buttons in the [cue macro control](#)<sup>[148]</sup>.

**Pan/Tilt Macro : Reset Amplitude, Reset Speed** - Resets speed and amplitude in the [cue macro control](#)<sup>[148]</sup>.

**Pan/Tilt Macro : Freeze, Run, Toggle Freeze, \*Freeze** - Freezes pan/tilt macros running in the cue (\*Freeze is a flash function')

**Toggle Cue slot selection**

**Toggle Slot#** - toggles slot selection state on/off

**Toggle Seq On/Off**

**All Slots Off** - Sets all sequence slots to off (effectively switching off the cue)

**All Slots On** - Sets all sequence slots to on

**Toggle Slot##** - Toggles the enabled/disabled state of the individual sequence slots

**Clear Cue Slot**

**Clear Sequence #** - Clears the corresponding sequence slot #

**Sequences Stop/Go**

**Seq # Stop** - Stops the corresponding sequence in slot #

**All Sequences Stop** - Stops all Sequences

**Seq # Go** - Starts the corresponding sequence in slot #

**All Sequences Go** - Starts all Sequences

**Seq # Stop/Go Toggle** - Toggles stop/go state for the corresponding sequence in slot #

**All Sequences Stop/Go** - Toggles stop/go state all Sequences

**Emulate Audio Trig** - Emulates a trig from the [audio analyzer](#)<sup>[192]</sup>

**Triggering multiple sequences**

**Trig Selected Manual\* (Default/Fwd/Rev/Rnd/Bounce)** - Trigs individual selected (highlighted) sequences if the sequences are in manual trig mode.

**Trig Selected Auto\* (Default/Fwd/Rev/Rnd/Bounce)** - Trigs individual selected (highlighted) sequences if the sequences are in auto trig mode.

**Trig Selected\* (Default/Fwd/Rev/Rnd/Bounce)** - Trigs individual selected (highlighted) sequences.

(\*) If no sequences are selected, all sequences in the relevant mode are triggered.

**Trig All Manual (Default/Fwd/Rev/Rnd/Bounce)** - Trigs all manual sequences regardless of selected state.

**Default** - Trigs with the sequence(s) with the default (programmed) loop function..

**Fwd** - Trigs the sequence(s) in a forward loop direction.

**Rev** - Trigs the sequence(s) in a reverse loop direction.



**Rnd** - Trig the sequence(s) random scene mode.  
**Bounce** - Trig the sequence(s) in bounce mode.

#### Triggering individual sequences

**Trig Seq# Default** - Trigs the individual sequence slot # with the default (programmed) loop function.  
**Trig Seq# Fwd** - Trigs the individual sequence slot # one scene forward  
**Trig Seq# Rev** - Trigs the individual sequence slot # one scene backwards  
**Trig Seq# Rnd** - Calls up a random scene in the sequence slot #  
**Trig Seq# Rnd** - Calls up a random scene in the sequence slot #

#### Cue builder functions

**Toggle Cue Builder** - Toggles the [cue builder control](#)<sup>[150]</sup>  
**Toggle Cue Capture Activate** - Toggles Cue Builder Cue Capture  
**Toggle Seq Capture Activate** - Toggles Cue Builder Sequence Capture  
**Cue Stack Go** - Activates Cue Builder Cue Stack Go Command  
**Cue Preset Go** - Activates Cue Builder Cue Preset Go Command  
**Get Cue** - Activates Cue Builder Get Cue Command  
**Clear Cue Stack** - Clears the cue stack  
**Clear All Seq** - Clears all sequences from the Cue preset list (same as right clicking 'Clear Seq')

#### Generic DMX macro editor functions

**Generic Macro Engine Off** - Stops the [generic DMX macro engine](#)<sup>[156]</sup>. This affects all running macros including any macro running from the [macro editor](#)<sup>[156]</sup>.  
**Generic Macro Engine On** - Starts the [generic DMX macro engine](#)<sup>[156]</sup>  
**Generic Macro Engine Toggle** - toggles on/off state of the [generic DMX macro engine](#)<sup>[156]</sup>  
**Toggle Generic Macro Editor** - Toggles the [generic macro editor](#)<sup>[156]</sup>  
**Toggle Generic Macro List** - Toggles the [list with Generic Macros](#)<sup>[166]</sup>  
**Clear Generic Macro Editor** - Clears the contents of the Generic Macro Editor  
**Generic Macro Slot Off** - Switches the Generic Macro (if any) associated with the Cue Off.  
**Generic Macro Slot On** - Switches the Generic Macro (if any) associated with the Cue On.  
**Toggle Generic Macro Slot** - Toggles the Generic Macro (if any) associated with the Cue On/Off.

#### Cue list functions

**CueList Control** - Toggles the [cue list control](#)<sup>[169]</sup>  
**Toggle List of Cuelists** - Toggles the [list of cue lists](#)<sup>[176]</sup>  
**Quick Save CueList** - [quick saves](#)<sup>[50]</sup> the current cue list  
**Cuelist Start Top** - Executes a Start Top Command  
**Cuelist Start Selected** - Executes a Run Command  
**Cuelist Go** - Trigs the cue list Go command. If the cue list is not already active (running) a 'Run from top' command is given to the cue list.  
**Cuelist Back** - Trigs the cue list Back command. The cue list must be active (running) for this command to be work.  
**Cuelist Stop** - Stops the current cue list executing.  
**Cuelist Stop and Clear** - Stops the current cue list executing and clears the current cue.  
**Cuelist Goto Mark 1-4** - jump to Mark  
**Cuelist Run from Mark 1-4** - Executes a Run command at Mark 1-4  
**Log Timecode** - Logs time code (if the [log time code control](#)<sup>[179]</sup> is visible).  
**Cuelist select prev, next and start** - scrolls up and down and starts a cuelist in the [list of cue lists](#)<sup>[176]</sup>.

#### Background cue functions

**Toggle BGCue control** - Toggles the [background cue control](#)<sup>[167]</sup>.  
**Clear BGCue** - Clears the current [background cue](#)<sup>[167]</sup>.  
**Toggle BG Cue List** - Toggles the [list of background cues](#)<sup>[169]</sup>.  
**BGCue - Toggle slot 1-5** - Toggles the individual slots of the background cue on and off.  
**BGCue - All Slots Off/On** - Sets the state of all slots in the background cue to off or on respectively.  
**Load Selected BG Cue** - Loads the currently selected (highlighted) background cue from the select

background cue list (this function only works when the list is opened)

### Statics control

**Statics control** - toggles the [statics control](#)<sup>[189]</sup>.

**Static 01-10** - Sets the on/off state of the individual [statics control entries](#)<sup>[189]</sup>. Note that the key will act as flash if the static entry is designated as flash.

**Release statics** - Releases all enabled static entries.

### Fixture selection

**Toggle Inclusive/Exclusive** - Toggles inclusive/Exclusive [fixture selection](#)<sup>[80]</sup> mode.

**Next Fixture** - Selects next fixture (see [next/orevious fixture](#)<sup>[81]</sup>)

**Previous Fixture** - Selects previous fixture (see [next/orevious fixture](#)<sup>[81]</sup>)

**De-select All Fixture** - de-selects all fixtures.

**Toggle Fixture Solo** - Toggles [fixture solo](#)<sup>[200]</sup> on and off.

**\*Fixture Solo** - Sets [fixture solo](#)<sup>[200]</sup> mode (flash function).

**Select fixture like master** - Hotkey for the [fixture icon popup](#)<sup>[59]</sup> command 'Select all of this type' - selects all fixtures of the same type as the master fixture.

**Select programmed** - Hotkey for the corresponding [desktop popup](#)<sup>[45]</sup> command - selects all fixtures programmed in the current scene.

**Select programmed (Master)** - Hotkey for the [fixture icon popup](#)<sup>[59]</sup> command 'Select all programmed of this type' - selects all fixtures of the same type as the master fixture which are programmed in the current scene.

### Fixture groups

**Toggle Group View** - Toggles the [fixture group view](#)<sup>[83]</sup> on and off.

**Fixture groups 1-20** - Selects user defined fixture groups 1-20. Note that the groups must be defined first using the [fixture group view](#)<sup>[83]</sup>.

### Offline Visualizer

**Toggle Offline Visualizer** - Toggles the [Offline Visualizer](#)<sup>[283]</sup> enabled/disabled state. Note that when disabled, the Offline Visualizer does not close down, but just minimize and deactivate.

**User Camera 1-8** - Hotkeys for user defined cameras in the [Offline Visualizer](#)<sup>[283]</sup>. Cameras 1-8 are selected in the order they appear in the list on the Visualizer tool bar.

### Emulate 2532

**2532 Emulate Latch, 2532 Emulate Flash, 2532 Emulate User Key** - Emulates the functions of 2532 keys. See [emulating the 2532](#)<sup>[231]</sup>.

**Release Flash** - Releases the flash sequence. See [emulating the 2532](#)<sup>[231]</sup>.

**2532 Next page, 2532 Previous page** - Selects next or previous page respectively.

### DMX in

**DMXin Functions Disable** - Disables [DMX in functions](#)<sup>[231]</sup>.

**DMXin Functions Enable** - Enables [DMX in functions](#)<sup>[231]</sup>.

**DMXin Functions Toggle** - Toggles [DMX in functions](#)<sup>[231]</sup> Enable/Disable.

See also [hotkeys](#)<sup>[203]</sup>

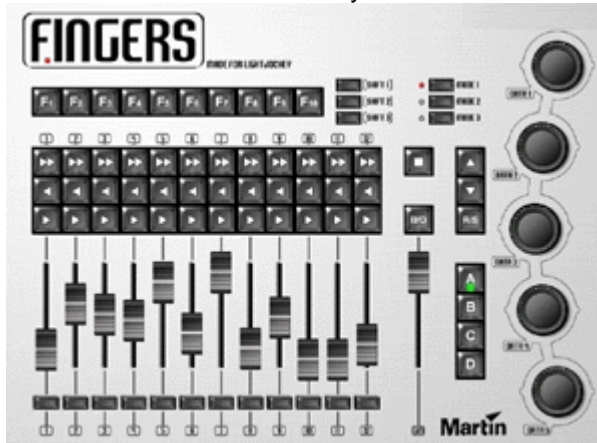
## 18 External control

### 18.1 Fingers for LightJockey

#### 18.1.1 Introduction to Fingers

Fingers for LightJockey is a dedicated LightJockey hardware front-end which includes buttons, faders and jog wheels for hands-on control of several of LightJockey's functions. Fingers connects through

RS-232 and requires a free serial port (COM1 - COM4). For PCs without serial port use a standard USB to RS-232 converter may be used.




*Fingers front panel*

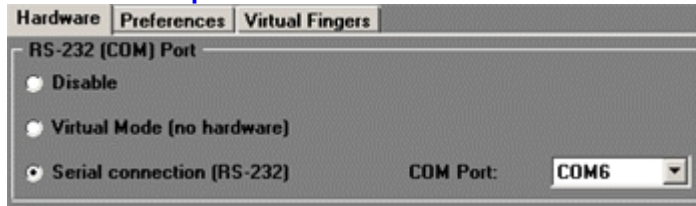
LightJockey contains a [virtual model of Fingers](#) <sup>[224]</sup> that mimics the function of the physical Fingers. Although the virtual model is not a substitute for the real one, with a few restrictions, it may be used to setup and operate LightJockey as if the physical unit was connected.

See also [Fingers setup](#) <sup>[217]</sup>, [Fingers controls overview](#) <sup>[213]</sup>, [configuring and using the function buttons](#) <sup>[217]</sup>, [configuring and using the scroll buttons](#) <sup>[218]</sup>, [configuring and using the cue slot button functions](#) <sup>[219]</sup>, [configuring and using fader and bump functions](#) <sup>[220]</sup>, [configuring and using jog-wheel functions](#) <sup>[223]</sup>, [Fingers status panel](#) <sup>[216]</sup>, [virtual Fingers](#) <sup>[224]</sup>

## 18.1.2 Fingers setup

Open Fingers setup dialog via **Fingers** on the main menu or via the setup icon:  on the [Fingers status panel](#) <sup>[216]</sup> or [virtual Fingers](#) <sup>[224]</sup>. It is necessary to configure LightJockey to use Fingers before using any of the functions (initial setup via **Fingers** on main).

### Hardware setup tab



*Fingers hardware setup*

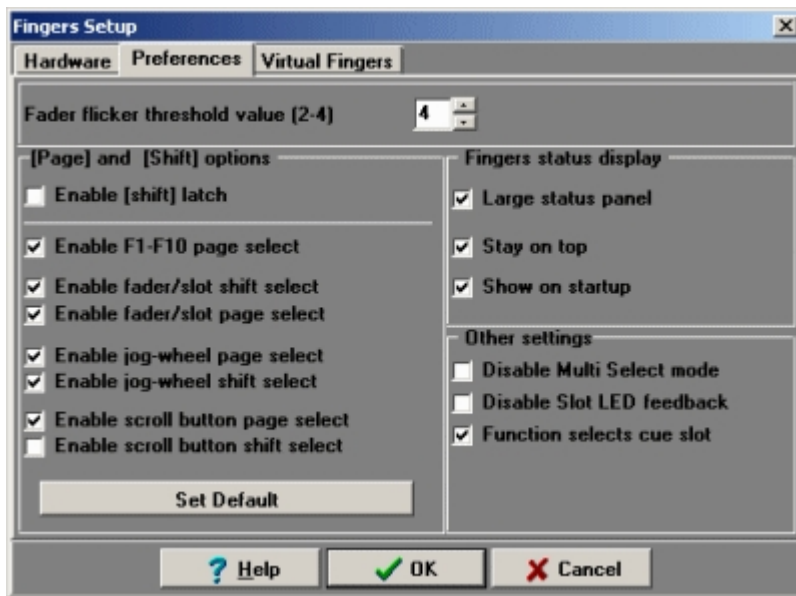
### RS-232 (COM) Port

**Disable** - all fingers functionality is disabled

**Virtual Mode** - this enables the virtual Fingers.

**Serial connection (RS-232)** - connect to physical Fingers. Select the serial port (COM1 - COM 9) in the drop down box to the right.

### Preferences tab



*Fingers preferences*

#### Fader flicker threshold value

To avoid value flicker on the faders from the analogue to digital conversion, Fingers implement a filter that requires the value change for the fader to be above a certain threshold value. By default the threshold value is 4, which means that any change in fader value must be at 4 or higher to register. Fader changes to 0 and 255 (full) always registers regardless of threshold value. The threshold value may be lowered to 2 or 3, but be aware that this may cause fader values to flicker on some physical units.

#### [Page] and [Shift] options

Page and shift options refer to how the buttons, faders and jog wheels work in combination with shift and page (A,B,C,D) buttons.

It is possible to expand or restrict the number of possible combinations by enabling shift and page selections for each group of controls.

**Enable [Shift] latch** - latches the shift state - to release a shift state, press the button a second time (shift is always latched on the [virtual Fingers](#)<sup>[224]</sup>)

**Enable F1-F10 shift select** - enables the F1 to F10 buttons to be configured according to shift state.

**Enable Fader/slot shift select** - enables the faders and slot buttons to be configured according to shift state

**Enable Fader/slot page select** - enables the faders and slot buttons to be configured according to page selection

**Enable jog-wheel shift select** - enables the jog-wheels to be configured according to shift state

**Enable jog-wheel page select** - enables the jog wheels to be configured according to page selection

**Enable scroll button shift select** - enables the scroll buttons to be configured according to shift state

**Enable scroll button page select** - enables the scroll buttons to be configured according to page selection

**Set Default** - sets the default shift/page selection options. By default, only fader/slot page select and scroll button shift select are enabled.

For more information on the effect of shift and page selection see [fingers controls overview](#)<sup>[213]</sup>

**Fingers Status Display** - settings relates to the [status panel](#)<sup>[216]</sup>

**Large status panel** - uses the large [status panel](#)<sup>[216]</sup>

**Stay on top** - forces the status panel to stay on top of other windows

**Show on startup** - automatically shows the status panel at startup

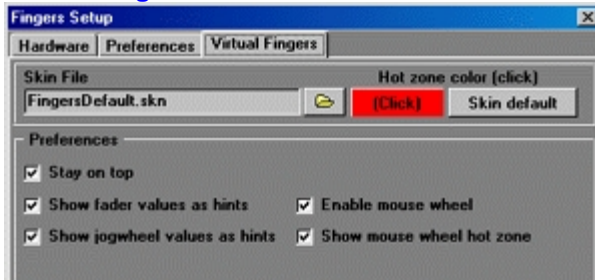
#### Other Settings

[Disable Multi Select mode](#) - disables [multi select mode](#)<sup>[224]</sup>.

[Disable Slot LED feedback](#) - disables [cue slot state feedback on LEDs](#)<sup>[219]</sup>

[Function selects cue slot](#) - when enabled, functions that relate to a specific cue slot are reflected by selecting (high-lighting) the corresponding cue slot when the function is activated. If the option is disabled functions will not select the corresponding cue slot(s).

### Virtual Fingers tab



*Virtual Fingers settings*

See also [virtual Fingers](#)<sup>[224]</sup>

[Skin File](#) - click the folder icon to select a different skin for Virtual Fingers (note in case of update by download, extra skins may not be available).

[Hot zone color](#) - click the left button to select a custom color for mouse wheel hot-zones. Select **Skin default** to use the default color for the skin in use.

[Stay on top](#) - forces Virtual Fingers to remain on top of other forms.

[Show fader values as hints](#) - displays a faders values as a hint when it is moved.

[Show jog -wheel values as hints](#) - displays a jog-wheels value change as a hint when it is moved.

[Enable mouse wheel](#) - enables mouse wheel control of faders and jog-wheels

[Show mouse wheel hot zone](#) - displays a 'hot' rectangle when the cursor is within range of a fader or jog-wheel for mouse wheel control.

See also [introduction to Fingers](#)<sup>[210]</sup>

## 18.1.3 Fingers controls overview

The following sections gives a description of each of Finger's control sections.

### The Mode Buttons



The mode buttons may be used to switch Fingers into different modes of operation. Currently only mode 1 is available while modes 2 and 3 are non-functional and reserved for future expansions.

### The Shift Buttons



The shift buttons may be used to alter the function of buttons, faders and Jog-wheels. The 3 buttons allows for 4 different shift states: no shift, shift 1, shift 2 and shift 3. By default, the buttons works like the shift key on a PC keyboard, in the sense that the shift state is cleared to 'no shift state' as the button is released. The shift buttons may be configured as 'latch' buttons so the state is not altered when the button is released (causing the shift buttons to toggle state and act like the PC keyboard caps lock). To release a latched shift, press the shift button a second time. On [virtual Fingers](#)<sup>[224]</sup> the

shift buttons are treated as in latch mode.

### The Page buttons (A-D)



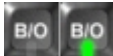
Page buttons may be used to select 4 different pages of functions. Most control groups (faders, jog wheels, button groups) may be configured with different functions according to the selected page. The current selected page is indicated by the page button LED. The page buttons are also used to invoke multi-select mode (see below)

### Shift state and page selection, notes

Most Fingers controls may be [setup](#)<sup>[211]</sup> to contain different functions according to shift state (shift buttons) and page selection (buttons A-D).

In order to use or configure the functions in the different shift states and on different pages, use the corresponding shift or page button to switch Fingers into the relevant shift state or to the relevant page. Although enabling shift state and page selection for the various controls will greatly expand the number of possible functions it also means that functions may be spread over a large number of shift/page combinations, thus requiring multiple Fingers button presses to activate.

### The B/O button and GM (Grand Master)



The B/O button and GM fader both have fixed functions and are always controlling LightJockey's [blackout](#)<sup>[195]</sup> state and [master intensity](#)<sup>[195]</sup> level respectively.

Note both blackout state and Master intensity level may still be manipulated from LightJockey, even if Fingers is attached. The Blackout button LED reflects the following intensity states:

**Off** - Master intensity at full

**Blinking** - Master intensity at less than full (Master intensity set at less than 100% or

[master intensity](#)<sup>[195]</sup> auto fade in/out in action)

**On** - Blackout

B/O and GM are not affected by shift or page button combinations.

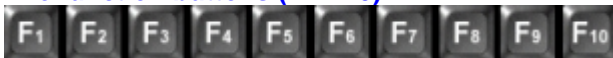
### The 'Square' button



The Square button has two functions. Tap the button to show and hide the [fingers status panel](#)<sup>[216]</sup>.

Hold the button for more than 0.5 seconds to deactivate Fingers commands - when in deactivated state, the status panel still shows relevant feedback (fader positions or slot selections) but any commands sent from Fingers are ignored by LightJockey. The function of this button is not affected by shift state or page selection.

### The function buttons (F1-F10)



The function buttons may be used to invoke a large number of LightJockey functions including [hotkey functions](#)<sup>[205]</sup> and various programming elements such as cues or cue lists. The function buttons are always decoded with respect to the current shift state, thus giving access to 40 (4 x 10) different functions - 10 functions for each shift state. The function buttons may also be [configured](#)<sup>[211]</sup> to react on page selection as well as shift state, increasing the number of possible assignable functions to 160 (10 x 4 x 4). If function button page selection is enabled, the [status panel](#)<sup>[216]</sup> will show functions as assigned to each page (each column represents a page selection). Use the shift buttons to switch the shift state in order to access and configure the different 'shift block' of functions.

If function button page selection is disabled the status panel shows functions according to shift state (each column represents a given shift state).

See [configuring and using the function buttons](#)<sup>[217]</sup> for configuration details and [hotkey functions](#)<sup>[205]</sup> for more information on the individual hotkey functions.

### The scroll buttons



The scroll buttons may be configured to open and scroll in and select items from various lists (up, down, select). Alternatively the buttons may be configured as scroll in a cue list or go/back/run-stop in a manually driven cue list. The function of the scroll buttons may be [configured](#)<sup>[217]</sup> to depend on page selection and/or shift state allowing for a total of up to 16 different scroll functions. See [configuring and using the scroll buttons](#)<sup>[218]</sup> for more information on the individual selection functions.

### The cue slot buttons

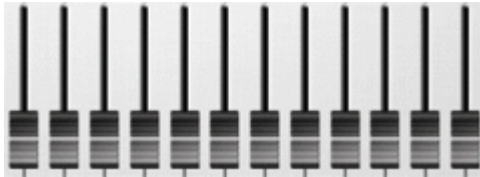


The block of 3 x 12 buttons are referred to as the cue slot buttons. These buttons are primarily for functions relating to individual sequence slots in the [cue control](#)<sup>[132]</sup>. Each row of buttons may be configured with a function (e.g. sequence trig forward) and each button then affects an individual slot in the cue control (e.g. button number 3 affects cue slot no 3). Slot buttons may be configured to depend on shift state and page selection, resulting in a total of 32 (2 x 4 x 4). See [configuring slot button functions](#)<sup>[219]</sup> for more information on the individual cue slot functions.



The top row of the cue slot buttons are also used to select slots or faders [in multi select mode](#)<sup>[224]</sup>

### The faders



The block of 12 faders may be configured with several different types of functions ranging from intensity control to statics level control. Individual functions are assigned to all 12 faders as a whole, and each fader then controls one out of several individual sub-functions - e.g. when configuring the faders to [statics level](#)<sup>[189]</sup> control for static entries 1-12 - each fader controls the level of one static entry (e.g. fader no 4 controls the level of static entry #4). Fader functions may be [setup](#)<sup>[217]</sup> to depend on page selection and shift state allowing for a total of 16 (4 x 4) different functions assignable to the fader block. See [configuring and using fader and bump functions](#)<sup>[220]</sup> for more information on the individual fader functions. See also [multi select mode](#)<sup>[224]</sup>.

### The bump buttons



The function of each of the bump button is associated with the function of the fader that the button corresponds with. If for example the fader controls the value of an [intensity sun master](#)<sup>[195]</sup> pressing the bump button will force the level of the sub master to 100%. Note that many of the fader functions have an inverted bump function - if the control level is already at full then activating the bump button will force the level to zero (inverted bump). When a bump button is released, the effect being bumped will return to the logical value of the corresponding fader. E.g. if the bump button is pressed with the function at a value of 50% (bump forces the value of the control to 100%), the value of the control will return to 50% when the bump button is released. It is still possible to move the corresponding fader while the bump button is held - this will cause the control to restore to the new

value set by the fader as the bump button is released. If a bump button is held during page and/or shift changes it will still release the function that was assigned to it when pressed. See [configuring and using fader and bump functions](#) <sup>[220]</sup> for more information on the individual fader and bump button functions.

### The jog wheels


Since jog-wheels have no 'physical position' the 5 jog-wheels may be used to affect values of various functions directly without concern for 'activating' the jog wheel first. Turn the wheel clockwise for increasing a functions value, counter-clockwise for decreasing the function value. Most jog-wheel functions implement an acceleration function - the faster the wheel is turned, the more the value is increased or decreased. For small adjustments turn the wheel slowly.

The actual function of the jog-wheels may be [configured](#) <sup>[217]</sup> to depend on page selection and shift states implementing up to 80 (5 x 4 x 4) possible jog-wheel functions. See [configuring jog-wheel functions](#) <sup>[223]</sup> for more information on the individual functions

See also [introduction to Fingers](#) <sup>[210]</sup>

## 18.1.4 Fingers status panel

The Fingers status panel is used to provide on-screen information about Fingers - it is also used when configuring Fingers functions by dragging functions to the status panel.

Open the status panel from the main menu (**Fingers -> Status panel**) or from Fingers itself by tapping the square button . Tap once to open, one more time to close.



The status panel exists in two versions a small and a large version - the large version requires a horizontal screen resolution of 1024 or higher to be fully visible. Use the [Fingers setup](#) <sup>[217]</sup> dialog to change between the small and large formats. Both panel versions shows the same type of information, the larger panel however, may contain function longer descriptions (e.g. full hotkey function names or longer cue names).

The top part of the panel shows the functions assigned to the F1-F10 buttons - each column represents the functions of the buttons in different shift states or on different pages (see [configuring and using the function buttons](#) <sup>[217]</sup>).

The middle part shows functions assigned to [jog-wheels](#) <sup>[223]</sup> including the changes made by turning a jog-wheel. It also shows the current shift state as well as the current mode and page selection.

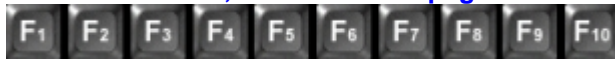
The lower part shows the current physical and logical values and selection state of the [faders](#) <sup>[220]</sup>. It also, in the lower right hand corner, shows the functions assigned to the current shift/page combination of [scroll buttons](#) <sup>[218]</sup> and [cue slot buttons](#) <sup>[219]</sup> and [fader pages](#) <sup>[220]</sup>.

See also [introduction to Fingers](#) <sup>[210]</sup>



### 18.1.5 Configuring and using the function buttons

#### Function buttons, shift state and page buttons



The function buttons are always affected by the current shift state - this means that each of the buttons may be configured with 4 different functions - the function invoked by the button depends on the shift state. Hint: To make sure a button always has the same function regardless of shift state simply configure the same function for all shift states. Function buttons may also be [setup](#)<sup>[217]</sup> to depend on page selection (using page buttons A-D) - in this case each button has 16 possible functions (4 for each shift state x 4 for each page).



*Fingers status panel, function button columns*

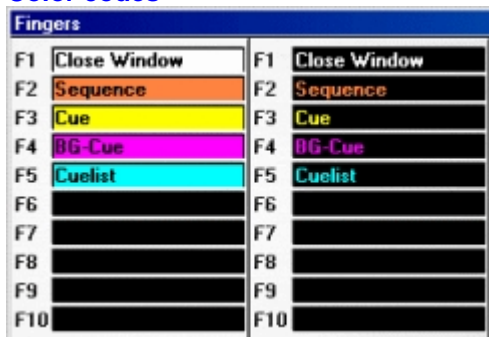
The [status panel](#)<sup>[216]</sup> always shows 4 columns with functions buttons - if function button page selection is not enabled, the 4 columns shows the allocated functions according to each of the 4 shift states. If page selection is enabled, the columns show the functions assigned for pages A-D respectively. Change the shift state to view, use and configure functions for the other shift states - the status panel automatically change the contents of the function button columns to reflect the functions assigned to the function buttons for the selected shift state.



*Fingers status panel, function button columns - shift state or page selection highlight (shift 1 or page B)*

Note that column representing the current active set of functions will highlight the functions using a colored background to make it easier to identify which functions are currently active.

#### Color codes



For quick identification of the type of function assigned to the function button, the different types of functions are color-coded:

- Hotkey functions are displayed with a white color
- Sequences are displayed with an orange color
- Cues are displayed with a yellow color
- Background cues are displayed in magenta color
- Cue lists are displayed in cyan color

**Assigning a hotkey function:** on the [status panel](#)<sup>[216]</sup>, right click any of the fields representing the function buttons and select show function list from the popup menu. Then drag the function from the function list to the field representing the button. See [hotkey functions](#)<sup>[208]</sup> for more details on the individual functions.

Note that the small size status panel may display a short form of hotkey function names in order to fit the smaller layout of the small status panel - the large size status panel shows the regular hotkey function name.

**Sequence, cue, background cue or cue list:** To assign an existing program element to a button, drag the element from the corresponding list off (for example the [list of cues](#)<sup>[137]</sup>) to the field representing the button. Alternatively, right-click the field and select "Assign current <element>" to assign an already active (loaded) element to the button.

Hint: to configure a button with a [generic macro](#)<sup>[153]</sup>, create a transparent cue containing only the macro and assign the cue to the button.

Hint: To see the number and full name of a program element (e.g. a sequence), make sure the status panel has Windows focus - then let the mouse cursor hover over the text field for a short while to see the full information being displayed as hint.

Pressing a button containing a hotkey function activates the function.

Pressing a button containing a sequence will cause the sequence to flash in the cue control.

Pressing a button containing a cue will load the cue

Pressing a button containing a background cue will load the background cue

Pressing a button containing a cue list will load (but not start) the cue list

**Clearing functions:** to clear a function, right-click the field representing the button. Select **Clear Function** to clear the function assigned to the button.

Select **Clear all** - to clear all assigned functions for all function buttons (including any shift and page combinations).

See also [introduction to Fingers](#)<sup>[210]</sup>

### 18.1.6 Configuring and using the scroll buttons



The 3 scroll buttons are typically used scroll in and select items from various lists. The functions for the scroll buttons configures the specific function of all 3 buttons at once (e.g. with previous, next and select functions) - it is not possible to configure the 3 buttons individually.

#### Configuring shift state and page selection for scroll buttons

The scroll buttons may be [configured](#)<sup>[211]</sup> to change their function according to shift state and/or page selection - thus giving access to assign up to 16 different scroll functions.



[Status panel](#)<sup>[216]</sup> showing the current scroll button functions

**Assigning a function** - on the status panel, right-click either of the 3 text fields representing one of the scroll buttons, then select show function-list from the popup. Drag the desired function from the list to either of the text fields representing the scroll button functions.

**Clearing functions** - to clear a function, right-click any of the text fields representing the scroll buttons - then select **Clear Function**.

Select **Clear all** - to clear all assigned functions for all scroll buttons (including any shift and page combinations).

#### Available scroll functions

**List of selections** (Up/Down scrolls list up and down, R/S loads cue).

**Select Cue (Global)** - scrolls and selects from the [global list of cues](#)<sup>[137]</sup>

**Select Cue (Page)** - performs the same actions as select cue (global) above, except that it scrolls in and selects from the [list of cues](#)<sup>[137]</sup> page view. Hint: check *Automatic page change* in the pages preferences menu on the list of cues dialog to automatically change pages when scrolling.

**Select Sequence** - scrolls in and selects from the [list of sequences](#)<sup>[127]</sup>

**Select Cuelist** - scrolls in and selects from the [list of cue lists](#)<sup>[176]</sup>

**Select BGCue** - scrolls in and selects from the [list of background cues](#)<sup>[169]</sup>

**Select Macro** - scrolls in and selects from the [list of generic DMX macros](#)<sup>[166]</sup>

The above functions all automatically open and make the relevant list visible if it is closed.

**Active Select** - scrolls in any of the lists mentioned above - in order to work one of the lists must have windows focus (be active)

### Cue list functions (in main cue list window)

**Cuelist (Manual)** - used to run a manual [cue list](#)<sup>[169]</sup>. **Up** = back, **Down** = Go, **R/S** = start / Stop

**Cuelist (Edit)** - used to scroll in the cue list in edit mode **Up** = back, **Down** = Go, **R/S** = start at current line/stop

See also [introduction to Fingers](#)<sup>[210]</sup>

## 18.1.7 Configuring and using the cue slot button functions

The cue slot buttons are used for functions affecting individual sequences in the [cue control](#)<sup>[132]</sup>. To manipulate more than one cue slot at a time with a single button, invoke Fingers [multi select mode](#)<sup>[224]</sup>.



### Configuring shift state and page button selection for cue slot buttons.

The functions of the cue slot buttons may be [setup](#)<sup>[211]</sup> to change their function according to shift state and/or page selection - thus giving access to assign up to 16 different sets of cue slot button functions. Note that shift and page selection for cue slot buttons are the same as the shift and page selection for [faders](#)<sup>[220]</sup>.



[Status panel](#)<sup>[216]</sup> showing the current cue slot button functions.

**Assigning a function:** on the status panel, right-click the text field representing the cue slot buttons, then select show function-list from the popup. Drag and drop the desired function from the list to the text field.

**Clearing functions:** to clear a function, right-click any of the text fields representing the scroll buttons - then select **Clear Function**.

Select **Clear all** - to clear all assigned functions for the cue slot buttons (including any shift and page combinations).

### Available cue slot functions

**Slot On/Off** - toggles the sequence in the cue slot on and off

**Slot on flash** - enables the sequence in the slot as long as the button is held down

**Slot On Solo** - enables sequence in the corresponding cue slot and disables all other slots

**Slot OnSolo Flash** - enables sequence in the corresponding cue slot and disables all other slots for as long as one or more flash buttons are held down.

**Slot Clear** - clears the sequence in the cue slot

[Slot Stop](#) - stops the sequence in the cue slot  
[Slot Start](#) - starts the sequence in the cue slot  
[Slot Start/Stop](#) - toggles start stop for the sequence in the cue slot  
[Slot Trig Def](#) - trigs the sequence in the cue slot with it's default loop options (see [sequence slot loop options](#)<sup>[145]</sup>)  
[Slot Trig Fwd](#) - trigs the sequence in the cue slot in a forwards direction  
[Slot Trig Rev](#) - trigs the sequence in the cue slot in a backwards direction  
[Slot Trig Rnd](#) - trigs the sequence in the cue slot to a random scene  
[Slot Trig Bounce](#) - trigs the sequence in the cue slot in a bounce fashion (see [sequence slot loop options](#)<sup>[145]</sup>)  
[Slot Auto Trig](#) - switches the sequence in the slot into auto trig mode  
[Slot Audio Trig](#) - switches the sequence in the slot into audio trig mode  
[Slot Manual Trig](#) - switches the sequence in the slot into manual trig mode  
[Slot Trig Type](#) - changes the trig type of the sequence in slot between auto, audio and manual trig mode  
[Slot On/Off \(Sync\)](#), [Slot Start/Stop \(Sync\)](#), [Slot Trig Type \(Sync\)](#) - these functions work the same as above, except that in [multi-select mode](#)<sup>[224]</sup> they synchronize the effect for all selected slots, e.g. all selected slots are switched on or off, rather than toggled individually.

### Cue slot state LED feedback

If the top row of buttons is configured with the Slot On/Off function, the LEDs reflects the state of the cue-slot the in following way:

Off : slot is empty (or sequence being edited)

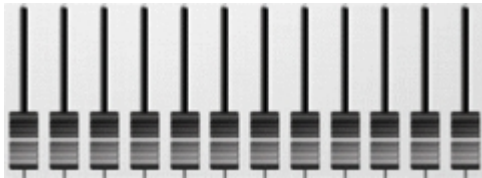
blinking : slot contains sequence but is off

On : slot contains sequence and is on

Slot state LED feedback may be disabled in the [setup dialog](#)<sup>[211]</sup>

See also [introduction to Fingers](#)<sup>[210]</sup>

## 18.1.8 Configuring and using fader and bump functions

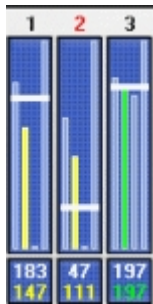


### Using faders

#### Fader values - physical and logical values

As the faders may be configured, via page and shift buttons, to control different functions, the physical location of the fader may not always correspond with the value of the function controlled - this is typically the situation when using page or shift buttons to change the function of the faders or at startup where faders may be located randomly while the function value is determined by startup conditions. Also some functions controllable from Fingers may still be manipulated using the usual LightJockey controls so even if the intensity sub groups are controlled by faders, sub group levels can still be altered from the [master intensity control](#)<sup>[195]</sup>.

To get around the problem with faders not positioned at the same value as the function value, LightJockey implements a 'value crossing' method to activate a fader, which means that an inactive fader must physically cross from one side of the value to the other before it is activated. The method is best illustrated using the status panel where the fader and function values are both illustrated using different colors for different states.

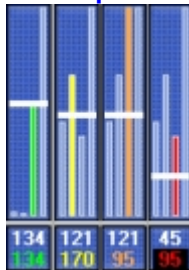


Each of the 12 faders is represented on the status panel, showing the value of each of the 4 functions allocated to pages A to D. The value of the function assigned to the current selected page shown in as highlighted bars, in the example above, as yellow and green bars, while the functions assigned to the other pages are shown as cyan bars. The physical value of the fader is always represented as a white horizontal bar as well as a white numerical value shown just below the value bars. The logical value of the function controlled by the fader is shown as a color-coded bar with the numerical value (also color coded) as the second value below the fader value bars.

In the example above faders 1 and 2 have a physical value that is different from the value of the function they control (color code = yellow) while fader 3 is active (color code = green). Moving fader 3 will affect the function immediately while faders 1 and 2 must be moved to or across the function value (fader logical value) in order to activate. In the example fader 1 must be moved down to 147 or below to activate while fader 2 must be moved up to 111 or above.

Inactive faders activate as soon as their physical value reaches or crosses the logical value (which is a representation of the function it controls).

### Status panel color codes



On the [status panel](#)<sup>[216]</sup>, different color codes are used for the bar and numerical value representing the fader:

**Cyan** - function on another page.

**Green** - fader is active

**Yellow** - fader is inactive (needs to reach or cross value to activate)

**Orange** - Bump button held

**Red** - Fingers deactivated (see 'square' button above).

### Fine-tuning fader values

To avoid any flicker caused by the analogue to digital conversion of the fader values, Fingers implements a minimum change threshold value that must be exceeded before the change is accepted - any changes below that threshold is ignored, except when the new value is 0 or full (255) - these two values are always accepted. By default the threshold value is set to 4 (see [Fingers setup](#)<sup>[217]</sup>) which means that a change in value must be 4 or greater to register. Most functions do not really require very fine adjustments but to fine-tune the value of a fader use the function [fader relative](#)<sup>[223]</sup> assigned to one of the jog-wheels (see below) to adjust the logical fader value and hence the assigned function value.

### Selecting faders for relative adjustment without actually the values

In rare circumstances it may be desirable not to actually move a fader in order to activate it or select it for [relative adjustment](#)<sup>[223]</sup> by jog-wheel - since a moving the fader may have an undesired effect - e.g. the need to adjust a fader value from 0 to exactly 1. In this case, hold down the square button for more

than 0.5 seconds to deactivate fingers commands, then move the fader to select it and finally release the square button.

#### Forcing fader activation from a specific 'direction'

The above mentioned method is also useful to force an activation from a specific direction - for example when moving multiple faders activating at different values such as 'catching' a number of statics levels from 'below' in one fluid motion. In this case the physical value of all relevant faders needs to be brought below the logical value, which normally may cause the fader to activate, but without actually activating the fader. To avoid activating any faders, press and hold the square button for more than 0.5 seconds. Then, while holding the square button, pull all faders below their logical values - and then finally release the square button.

#### Configuring fader functions

Fader functions are configured as single functions that is assigned to all 12 faders at once (fader page functions) - each fader then controls an individual sub-function (e.g. when using faders to control [static levels](#)<sup>[189]</sup> each fader controls the level of a single static entry. The fader page function also determines the function of the bump button. By default Fingers can hold a separate function for each of the 4 pages (buttons A-D). This capacity may be expanded by [configuring](#)<sup>[217]</sup> Fingers to include shift state selection for faders a well. Note that shift state and page selection settings for faders are identical to the settings for [cue slot buttons](#)<sup>[219]</sup>.



Status panel showing fader page functions (active page selection is highlighted)

**Assigning a function to a fader page:** on the status panel, right-click the text field representing the fader page, then select show function-list from the popup. Drag and drop the desired function from the list to the text field.

**Clearing functions:** to clear a function, right-click any of the text fields representing the fader page - then select **Clear Function**.

Select **Clear all** - to clear all assigned functions for the cue slot buttons (including any shift and page combinations).

#### Available fader page functions

**Sequence Intensity** - see [sequence intensities](#)<sup>[150]</sup>. Each fader controls the intensity component of the individual sequences in the cue (slots 1-12 respectively) - for fixtures that do not implement intensity control LightJockey will attempt to black out the fixture when the intensity level is set to 0.

Note - sequence intensity state is not reset when a new cue is loaded. Bump button: holding the bump button will force the intensity to full (100%). If the intensity level is already at full it will be forced to 0.

**Seq. Intensity/On-Off** - this function controls the sequence intensity the same way as **Sequence Intensity** (see above) does, but it also automatically switches the sequence off if the intensity level is 0 and automatically switches the sequence on if the intensity level is > 0.

**Sequence Time, Sequence Time (Inv)** - see [cue time control](#)<sup>[147]</sup>. Each fader controls the time scale for individual sequences in the cue (slots 1-12 respectively). Sequence Time (Inv) inverts the scaling direction (fast at max fader value).

Note, cue times are reset when a new cue is loaded. Hint: To control the cue time rather than individual sequence times, assign the **cue time** function to one of the [jog-wheels](#)<sup>[223]</sup>. Bump button: pressing the bump button forces the time scale to 100% (default)

**Statics 1-12 Level, Statics 13-20 Level** - see [statics control](#)<sup>[189]</sup>. Each fader controls the level of a static entry (entries 1-12 or 13-20 respectively). Hint: When using Fingers to control statics levels, check level auto enable and disable options in the statics control preferences to automatically enable static entries when the level is set above 0% and automatically disable the entry when the level is set to 0%. Bump button: holding the bump button will force the level to full (100%). If the level is already at full it will be forced to 0.

**Intensity Group** - see [master intensity control](#)<sup>[195]</sup>. Each fader (only faders 1-8) controls an individual

intensity sub master. Bump button: holding the bump button will force the sub master to full (100%). If the level is already at full it will be forced to 0.

[HTP Group 1-12](#), [HTP Group 13-24](#) - see [HTP groups](#)<sup>[203]</sup>. Each fader controls a single HTP group. Bump button: holding the bump button will force the HTP group level to full (100%). If the level is already at full it will be forced to 0.

[Sequence DMX Values](#) - The value of each fader acts as a scaling factor for the DMX values generated by each of the 12 sequences in the cue. The DMX value generated by the sequence will be scaled by the fader value (scaling by 0-100%). Note, the sequence DMX value scaling factor is not reset when a new cue is loaded. Bump button: holding the bump button will force the scaling to 100%. If already at 100% scaling value will be forced to 0.

[DMX in \(1-12\), \(13-24\), \(25-36\),\(37-48\)](#) - see [DMX in](#)<sup>[231]</sup>. Use this function to emulate DMX in function from Fingers - when in use the values of the 12 faders are emulating the values of DMX input channel 1-12, 13-24, 25-36 and 37-48 respectively. Hint : Using the global patch dialog a single fader may be patched directly to the DMX output value of one or more DMX channels. Set the **DMX > 0** option (global patch) for each patched channel to automatically 'deactivate' the fader when set to 0%. Bump button: holding the bump button will force the DMX in value to full (100%). If the value is already at full it will be forced to 0.

See also [introduction to Fingers](#)<sup>[210]</sup>

## 18.1.9 Configuring and using jog-wheel functions

Turn the wheel clockwise for increasing a functions value, counter-clockwise for decreasing the function value. Most jog-wheel functions implement an automatic acceleration function - the faster the wheel is turned, the more the value is increased or decreased. For small adjustments turn the wheel slowly. The actual value that the jog-wheel changes the function with is displayed in on the [status panel](#)<sup>[216]</sup> where the function of the jog-wheel is highlighted briefly together with the function value change.

### Configuring shift state and page selection for jog-buttons

The jog-wheels may be [configured](#)<sup>[211]</sup> to change their function according to shift state and/or page selection - thus giving access to assign up to 16 different scroll functions.

### Function value display

Depending on jog-wheel function, the [status display](#)<sup>[216]</sup> will show either a relative value change or an absolute function value.

Relative changes are displayed as *[nn] Function*, where nn is the relative value change, e.g. *[-47] Pan MSB*.

Absolute values are shown as *Function (nn)*, where nn is the absolute function value, eg: *Smoke Ctrl, Level (55%)*

### Jog wheel functions

[Cue Time](#) - see [cue time control](#)<sup>[147]</sup>. Use this function to adjust the overall cue time in the cue time control.

[P/T Macro,Ampl.](#), [P/T Macro,Speed](#) - see [cue macro control](#)<sup>[148]</sup>. Use these functions to adjust the pan/tilt macro amplitude and speed settings. The inverted functions (inv) inverts the wheel direction.

[Audio, Gain and Min Trglvl \(trig level\)](#) - see [audio analyzer](#)<sup>[192]</sup>. Use these functions to adjust gain and minimum trig level threshold for the audio analyzer

If the Audio Analyzer has not been started the status displays *[N/A]* as value.

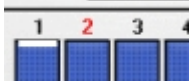
[Smoke Ctrl, Level, Duration, Cycle, Hazer Ctrl, Level, Fan](#) - see [smoke control](#)<sup>[122]</sup>. Use these functions to adjust the corresponding level settings in the smoke control

[Pan MSB, Pan LSB \(16-bit\), Tilt MSB, Tilt LSB \(16-bit\)](#) - see [position control](#)<sup>[98]</sup>. Use these functions to adjust pan/tilt settings for fixtures in the current scene. If the current scene does not contain pan/tilt values (fade state is off), the initial pan and tilt values are captured from the current output values.

[GM Relative](#) - use this function to fine-tune the value of the GM (see [using faders](#)<sup>[220]</sup>)

[Fader Relative](#) - use this function to fine-tune the values of the active fader (see [using faders](#)<sup>[220]</sup>). The function also works on multiple faders when in [multi selection mode](#)<sup>[220]</sup>.

A fader becomes active for jog-wheel adjustment when it is 'touched'. To select which fader to adjust without moving the fader directly (and modify the value), either use [multi select mode](#)<sup>[224]</sup> or deactivate fingers commands (hold square button) before moving the fader. In deactivated mode the LEDs on the top row of the cue slot buttons reflects which fader is selected. The fader selection is cleared when changing page or shift state. The active fader is also indicated on the status panel where the fader number will be highlighted in red.



Status panel highlighting active fader

See also [introduction to Fingers](#)<sup>[210]</sup>

### 18.1.10 Fingers multi select mode

Press and hold one of the page buttons for more than 0.5 seconds to switch Fingers in to multi selection mode (when using Virtual Fingers, right-click a page button). As soon as multi selection mode is activated the page button LED will start to blink indicating multi-selection mode. In multi select mode, one fader or slot button may, depending on the slot selection, affect more than 'it's own' sub-function or cue slot. Use the select buttons (top row of 12 buttons) to select or deselect individual sub-functions and slots - the selection buttons reflects the selection state using it's built in LED by blinking when sub-function or cue slot is selected - press a button to toggle the selection state. Note that multi-select mode may be disabled from the [setup dialog](#)<sup>[211]</sup>



Use buttons to include or exclude slot from multi selection

Note: the [jog-wheel fader relative](#)<sup>[223]</sup> function also affects all selected faders when in multi-select mode.

See also [introduction to Fingers](#)<sup>[210]</sup>

### 18.1.11 Virtual Fingers

Open Virtual Fingers from **Main menu -> Fingers** (or assign a [hotkey](#)<sup>[205]</sup>).

**Important:** Please note that the current version of Virtual Fingers will not work with touch screens. In order for faders and jog-wheels, a mouse or similar device must be used.

In order to make the Virtual Fingers work with LightJockey make sure to select virtual mode in [Fingers setup](#)<sup>[211]</sup> dialog - the Virtual Fingers will not work if LightJockey is configured to use Fingers on any of the serial ports (or if fingers is disabled). Note that enabling Fingers in virtual mode causes LightJockey it use extra CPU resources if virtual fingers is used or not. If virtual fingers is not used make sure to disable Fingers in the setup dialog.

The virtual mode of fingers is in most respects a faithful representation of the real fingers. When running Fingers in virtual mode it may be operated almost exactly as a real fingers, except that it is not possible to use more than one control at a time. Also the virtual model takes up space on the desktop, and is best used on dual-monitor systems or systems with quite large video resolutions.

Fingers button functions are activated by clicking the corresponding virtual button. Move the virtual faders by click, hold and drag. To rotate a jog wheel, click, hold and then move the mouse up or down to simulate rotation. Faders and jog-wheels may also be moved using a mouse wheel (see [setup](#)<sup>[211]</sup>) On the virtual model, shift buttons are always treated as latch buttons (click once to set, a second time to release)

Use the following methods to overcome some of the other limitations of using the virtual model:



**Right click** the square button to simulate holding the button down (deactivating Fingers) - click a second time to release the hold.

**Right click** the page buttons to simulate holding a page button for multi selection

If you find the looks of the virtual Fingers is just a bit too plain, use the [setup](#)<sup>[211]</sup> dialog to select a different skin for the Virtual Fingers.



*Alternative skin*

See also [introduction to Fingers](#)<sup>[210]</sup>

## 18.2 Using the 2532 direct access controller

### 18.2.1 2532 direct access

The 2532 Direct Keyboard is an add-on device that connects to the PC via a standard RS-232 port. The 2532 offers a good alternative to the standard PC keyboard and mouse when calling up programs and performing various actions. The 2532 does not know anything about the application it is used with (in this case LightJockey), so the actual functions of the 2532 needs to be configured within LightJockey. By connecting a suitable printer to the PC, the 2532 configuration may be printed and attached to the 2532.

**Note :** The 2532 must have at least firmware version 3.0 in order to work with LightJockey.

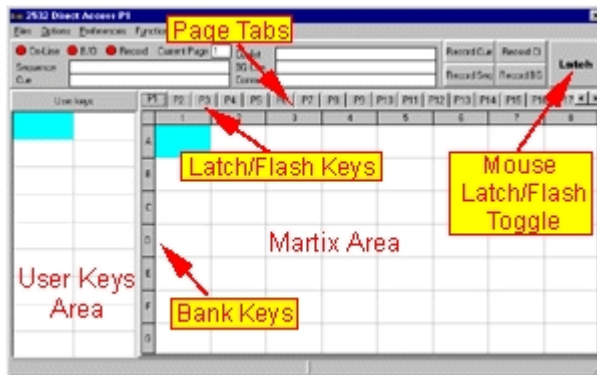
See [the 2532 layout](#)<sup>[225]</sup>, [configuring the 2532 controller](#)<sup>[226]</sup>, [printing the 2532 configuration](#)<sup>[231]</sup>, [emulating the 2532 with keyboard and mouse](#)<sup>[231]</sup>

### 18.2.2 The 2532 layout



*The 2532*

The keys on the 2532 are divided into two sections. The bank, latch and flash keys forming the 7 x 8 matrix - and the 18 user keys.



The LightJockey 2532 control

### The matrix Keys

The matrix consists of 7 bank keys and 8 latch and flash keys giving a total of 56 virtual keys on each 2532 page.

**Latch keys** - the 2532 has 8 latch keys (1-8) placed in a row above the matrix area. The main purpose of the latch keys are to latch programs (cues, cue lists and background cues). The term latch indicates that the program is loaded and executed when the key is pressed. The programs are not 'unloaded' when the key is released. The latch keys may also be used to trig various functions such as fade-out or sequence trig, however if the function itself is a flash function releasing the key will also release the function.

**Flash keys** - placed below the matrix area the 2532 has 8 flash keys (1-8). The main purpose of the flash keys is to flash sequences on top of the current cue. The sequence is only active for as long as the flash key is held down. The output of the flashed sequence has a higher priority than the output sequences in the cue, so the output of flashed sequences will always be effective compared to the output of the cue. For example, if a sequence is programmed with all fixtures in red, then flashing this sequence on top of a cue with all fixtures in blue will force all fixtures to red since the flashed sequence has highest priority.

The flashed sequence never becomes part of the cue, and a multi-scene sequence will always run in a forwards direction with the [scene and fade-times](#)<sup>[22]</sup> programmed into the sequence.

**Bank keys** - together with the latch and flash keys the 7 bank keys A-G sets up a matrix of 56 "virtual" flash keys for each page.

Each bank key enables another row of latch and flash keys. The 2532 always has an active bank (the LED is on), to select a key in a different bank, press the bank key so it flashes (is pre-selected). The active bank is changed to the pre-selected bank as soon as a latch key is pressed - pressing a flash key selects the flash key in the pre-selected bank, but does not change the active bank.

**Pages** - the 2532 control may contain up to 18 matrix pages (for a total of  $18 \times 7 \times 8 = 1008$ ) virtual latch and flash buttons. There are no keys pre-allocated to change page, assign one or more user keys to the task of changing the active 2532 page, or change the active page directly in the control.

**User keys** - the User keys are usually used to activate functions such as changing the active page or perform 'global' functions such as activating a fade-in or fade-out. The function of user keys does not change with the active 2532 page (as the matrix keys does), so the 18 function assigned to the user keys are always instantly available. The user keys can only perform 'functions' they cannot be used to execute programs.

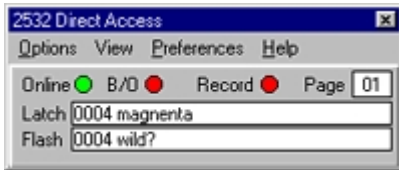
**Blackout Button** - the Blackout button on the 2532 may be used to toggle blackout/restore. However since communication from the 2532 to the PC is one-way, the LED indicating Blackout may be out of sync with the LightJockey blackout status if the blackout is enabled or canceled directly in LightJockey.

See also [configuring the 2532 controller](#)<sup>[22]</sup>

## 18.2.3 Configuring the 2532 controller

The 2532 control is toggled on and off by clicking the  icon on the [cue list tool bar](#)<sup>[56]</sup>. The 2532

control may be displayed in one of two modes, a large size control and a smaller version that can be used to monitor the status of the 2532 connection. Check **Preferences -> Show Large Control** in the menu to toggle between the large and small control sizes. The large size control may be resized to better show the contents of the various buttons. The preferences menu also contains several options to manipulate the text used for the virtual buttons.

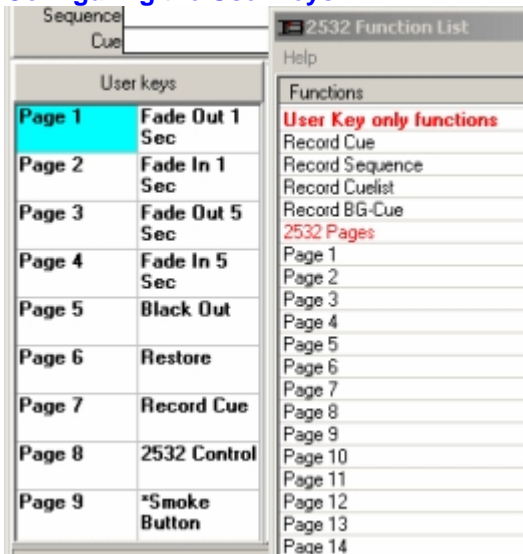


The 2532 control (small)

The online status LED indicates if the 2532 is currently online, the B/O LED indicates if blackout is enabled via the Black-out key on the 2532. The Record LED shows if any record mode (see later) is currently enabled. The page indicator shows which page is currently active, and the sequence and cue values show latched cues and flashed sequence enabled via the 2532. The functions of the 2532 are identical no matter what mode the control is displayed in.

To configure the function of the 2532 keys, switch the control into large size.

### Configuring the User keys



User key configuration

The 2532 user keys may only be used to activate functions (not programs). To configure, open the list with functions by clicking **Function-List** in the menu. To assign a function to a user key, drag the function from the list to the user key on the control. The list contains 3 types of functions, the "User key only functions" at the top of the list, 2532 page selection and the regular [hotkey functions](#)<sup>[205]</sup>. The "User key only functions" may only be assigned to the 2532 user keys and not the matrix keys. 2532 page and hotkey functions may also be assigned to the matrix keys, but do be aware that assigning 2532 page functions to matrix keys can be very confusing for the inexperienced operator - especially if transparent page mode is enabled (see below).

To clear one or more of the user keys, select the keys (hold the mouse button and drag to select multiple buttons), right-click and select **Clear Key(s)**.

### Configuring the Matrix keys

	P1	P2	P3	P4	P5	P6	P7	P8
		1		2		3		
A		Blue Circles		Pink Circles				
B		Bumpy Fire 1		Rotating whites				
C		Go-Go CueList		Macro On				
D		The Slow List		Macro Off				
E		Barlights 1		Macro Fade In				
F		BarLights 2		Macro Fade Out				
G		Strobe White Fast		Strobe White Med		Strobe White Slow		

Matrix keys

The virtual key in the configuration dialog displays both latch and flash values of the individual latch and flash matrix keys on the 2532.

### The Latch Keys

The latch matrix keys may be used to launch programs (cues, cue lists and background cues) as well as changing page and activating [hotkey](#)<sup>[203]</sup> functions.



Color scheme

The different types of functions (cues, cue lists, background cues and hotkey functions) may be color coded in order to differentiate them better - to set the color codes for the text or background select **Preferences -> Font Properties -> Color Scheme** to modify the color scheme.

### Assigning functions to latch keys

**Assigning Cues** - to assign a cue to a latch key, open the [list of cues](#)<sup>[137]</sup> and drag the cue from the list to the appropriate key. Alternatively, right-click the virtual key and select **set latch -> current cue** to set the key to latch the current active cue (if any, otherwise the option is grayed out).

**Assigning Cue Lists** - to assign a cue to a latch key, open the [list of cue lists](#)<sup>[178]</sup> and drag the cue list from the list to the appropriate key. Alternatively, right-click the virtual key and select **set latch -> current cue list** to set the key to latch the current active cue list (if any, otherwise the option is grayed out).

**Assigning background cues** - to assign a background cue to a latch key, open the [list of background cues](#)<sup>[169]</sup> and drag the cue list from the list to the appropriate key. Alternatively, right-click the virtual key and select **set latch -> current background cue** to set the key to latch the current active background cue (if any, otherwise the option is grayed out).

**Assigning Hotkey functions** - the hotkey functions are assigned to the latch keys in the same way as they are assigned to the user keys. Open the list with functions by selecting **Function-List** from the menu and drag the function from the list to the user key on the control. Note that "User Key only functions" cannot be assigned to the matrix keys. See [hotkey functions](#)<sup>[205]</sup> for details on individual hotkey functions.

### The Flash Keys

**Assigning Sequences** - the flash keys may be used to flash a sequence. To assign a sequence to a flash key open the [list of sequences](#)<sup>[127]</sup> and drag the sequence from the list to the appropriate key. Alternatively, right-click the virtual key and select **set flash** -> **current sequence** to set the key to flash the current sequence (if any, otherwise the option is grayed out).

### Using the record function

As an alternative to selecting programs from a list, the record functions can be used to 'record' the currently active program onto the matrix keys. The record function may be enabled by clicking the relevant button on the control (or assign the function to a user key). When the record function is enabled the next key press on the 2532 will 'record' the active program (if any) onto the 2532 key. Note that record cue, record cue list and record background cue options are mutually exclusive.

### Clearing matrix keys

To clear one or more matrix keys, select the keys (hold the mouse button and drag to select multiple buttons), right-click and select the **Clear** sub menu. Select **Clear Latch Values** or **Clear Flash Values** to clear latch or flash values only. Select **Clear Latch & Flash Values** to clear both at the same time.

### Customizing text

Often the text for the user, latch and flash functions does not fit completely into the area representing the button; it may be necessary to customize the text. To do this, right-click the button and select **Customize Text** - make sure that only one button is selected before the right-click, otherwise the option to customize text will be disabled. For the matrix buttons it is possible to customize both the latch and flash text. Note that the custom text is cleared whenever a new program or function is assigned.

### Cut & paste functions

It is possible to replace or move matrix button functions by using simple copy/cut and paste operations that works much like standard Windows cut & paste. To move button assignments, highlight one or more buttons (click and hold the mouse button, then drag the cursor to include more buttons), right click and select cut/copy. Select the target area, right-click and select paste to paste both latch and flash values or paste latch or flash values only.

### Customizing Page Tabs

The page tab names may be edited for better identification. To edit the tab names, select **Preferences** -> **Tab Options** -> **Name Page Tabs** from the 2532 control main menu. To modify the size of the tabs select **Preferences** -> **Tab Options** -> **Set Tab Size**. To modify background and text colors select **Preferences** -> **Tab Options** -> **Tab Colors**.

### Transparent page mode

The transparent page mode is enabled or disabled from the preferences menu. When in transparent page mode, LightJockey will try to find an alternative latch or flash value when ever a key without a latch or flash value is pressed. LightJockey will search through all 18 pages using the same bank and latch or flash key values for a page containing a value. If a page is found to contain a value, the latch or flash value is taken from that page. This mode is especially useful to fix the "2532 not working problem" when operators by mistake changes the active page to a page containing no values, and then gets no response on key presses.

### Files Menu

**New 2532 Setup** - default all contents of the 2532 control.

**Load 2532 Setup** - Loads a previously saved 2532 setup.

**Save 2532 Setup** - Saves the current 2532 setup to a separate file.

**Import Old-Style Setup** - Use this option to import setups made with previous versions of LightJockey. Use the file type selector at the bottom of the file dialog to select between the previous default setup (Select *Old style setup*, then select the 2532.cfg file) or any previously saved setups (Select *Saved 2532 Files - Old Format*, then select any of the .D25 files). Imported setups are automatically converted to the new setup format.

### The Options Menu

[Clear All Pages](#) - Clears the contents of all the matrix pages

[Print Layout](#) - Sends the 2532 layout (user keys and matrix pages to the printer) - see

[Printing the 2532 configuration](#) <sup>[231]</sup>

### The Preferences Menu

[Show Control at Startup](#) - If enabled the 2532 control is automatically shown when LightJockey starts up.

[Show Large Control](#) - Toggles between large and small control format.

[Hide Status Panel on large control](#) - Hides the top status panel when the control is in 'large' format, leaving more space for the user and matrix buttons.

[Emulate With Mouse](#) - See [Emulating the 2532](#) <sup>[231]</sup>

[Enable Transparent Pages](#) - Enable or disable transparent page mode

[Synchronize 2532 Page Selection](#) - If disabled, changing pages on the 2532 will not automatically change the page tab on the LightJockey 2532 control.

[Auto-release Record](#) - If enabled the record function will be turned off each time a new program is recorded to a 2532 button.

[Font Properties](#) - Select Font. Select the font used to display the entries in the user and matrix buttons.

[Font Properties](#) - Color Scheme. Setup a color scheme for the various types of entries in the user and matrix keys.

[Tab Options](#) - Name page tabs. Select this to edit the names on the page tabs.

[Tab Options](#) - Set Tab Size. Select to customize the size of the individual tabs.

[Tab Options](#) - Tab Colors. Select to customize background and text colors (check Enabled to use customized colors)

[Show user keys](#) - If disabled, the control will not show the contents of the user keys leaving more space for the matrix keys.

[Wrap User Key text](#) - When enabled the control will try to fit the complete text for each of the user keys by wrapping the text inside the button area. When disabled, only one line of text is shown pr. button and the text may be cut.

[Wrap Matrix text](#) - When enabled the control will try to fit the complete text for each of the matrix keys by wrapping the text inside the button area. When disabled, only one line of text is shown for latch and flash text respectively and the text may be cut. Note that wrapping the text does not guarantee that the text fits into the button.

[Always split matrix buttons](#) - Normally text within matrix buttons is only split in an upper and lower part if the button contains both a latch and a flash text. Enable this option to force the button to always split the text into an upper (latch text) and lower (flash text) part.

[Matrix button info](#) -Enable. When the matrix button info is enabled the lower part of the 2532 control shows the contents of the selected matrix button in the two panels below the user keys and matrix. If the function is disabled the panels are removed.



[Matrix button info](#) - Show at Mouse cursor. Shows info for the matrix button under the mouse cursor.

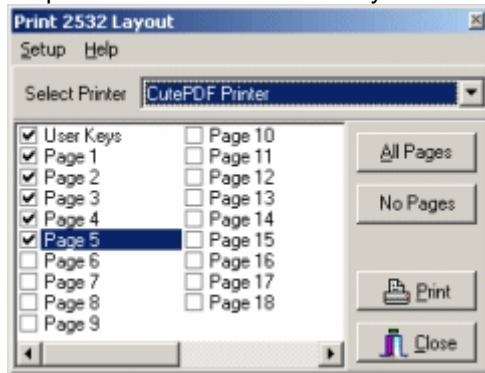
[Matrix button info](#) - Show at Mouse cursor. Shows info for the currently selected (highlighted) matrix button.

### Function-List

Calls up the list of functions. Assign the functions to keys by dragging them from the list to the key.

## 18.2.4 Printing the 2532 configuration

To print out the current user key functions and page layouts select **Options -> Print Layout**.



2532 layout print dialog

Select to print out the user keys and page layouts by checking each item in the list. Click **Print** to start printing. If more than one printer is connected to the PC a different printer may be selected from the list at the top of the dialog. To select a particular printer, select **Setup -> Printer**.

Note that the printout uses the wrap and split options selected in the [preferences menu](#)<sup>[226]</sup>.

## 18.2.5 Emulating the 2532

It is possible to emulate the latch and flash functions of the 2532 by using the 2532 Control, mouse clicks and/or keyboard hotkeys.

To setup the control for mouse emulation, Select **Preferences -> Emulate with mouse -> Enable mouse-click**. When this option is enabled, clicking a virtual key on the 2532 control is identical to pressing the corresponding Latch key on the 2532 controller.

To access the matrix flash functions hold down the [CTRL] key on the keyboard, or click the virtual key using the middle mouse button on a 3-button mouse. The **Preferences -> Emulate with mouse -> Release flash on Mouse-Up** setting determines if the flash function is released as soon as the mouse button is released. If disabled, the flash can only be released by using the release-flash [keyboard hotkey](#)<sup>[205]</sup>. Alternatively, use **Mouse Latch/Flash** toggle button in the top right corner to swap the latch/flash function of a mouse click - when pressed (**Flash**) the mouse click will perform a flash function, when depressed (**Latch**) the mouse click will perform a latch function.

Finally, via **Preferences -> Emulate with Mouse** select either of the two **Mouseclick autoselect** options. When enabled, a click on a button containing either a flash or latch function (but not both) will automatically select the function - when the button contains both a flash and a latch function the default selection of either flash or latch is indicated by the priority selection in the menu. Holding [CTRL] while clicking will invert the selection priority. These options are mainly handy when most buttons contain only one function (either one latch or one flash function).

To use keyboard hotkeys, assign the needed functions (emulate latch, flash and user keys) to keyboard hotkeys. The emulate latch and flash hotkey functions activates the currently selected (highlighted) matrix button, while the emulate user key function activates the currently highlighted user key. Note that the 2532 control must be open for the hotkey functions to work.

See also [2532 direct access](#)<sup>[225]</sup>

## 18.3 Using DMX in


The ability to receive DMX in depends on the [DMX hardware](#)<sup>[37]</sup> used by LightJockey. When a link is configured as DMX-in, all 512 DMX channels are available for DMX-in remote control.

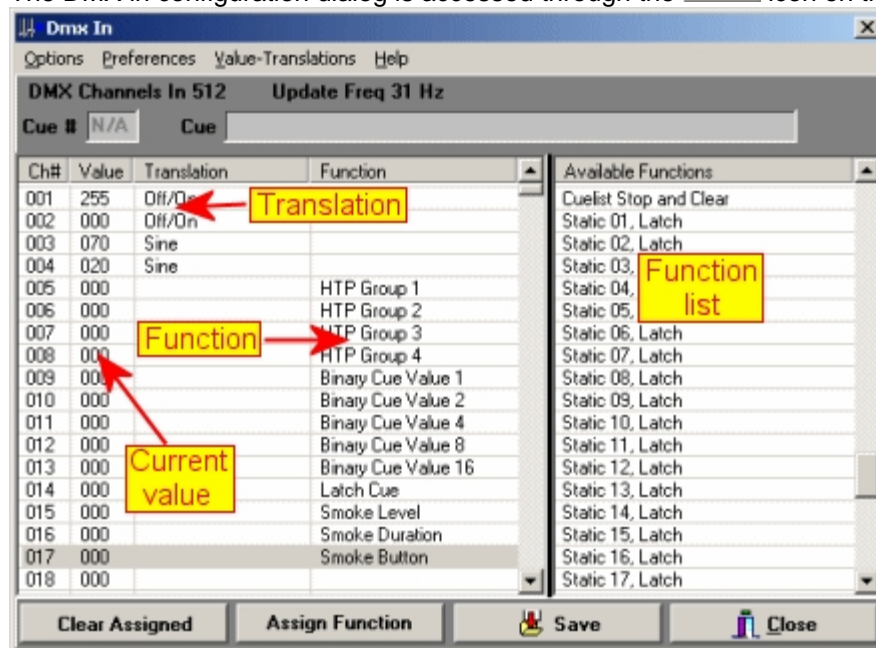
The DMX in capability of LightJockey allows remote control of several functions, such as intensity levels or cues from another DMX source (e.g. another DMX console). Remote control is setup by assigning specific DMX channels from the received DMX signal to pre-defined functions within LightJockey. Some functions such as remote cue control, work by combining the values of several DMX input channels. Received DMX values may also be patched directly to one or more DMX output channels.

When in DMX in mode LightJockey just listens to the DMX like any other DMX fixture, so it is perfectly possible to connect other DMX fixtures to the same DMX link that is used to remote control LightJockey. However, since the cable supplied with LightJockey does not have a DMX through like most DMX fixtures, LightJockey usually goes into the 'end' of the link.

**Note:** to receive DMX input, DMX-in must be enabled in the [hardware setup](#)<sup>[22]</sup> dialog.

### Configuring DMX-In functions

The DMX in configuration dialog is accessed through the  icon on the [cue list tool bar](#)<sup>[56]</sup>.



DMX-in setup dialog

### Monitoring incoming DMX

The upper part of the setup dialog displays the incoming DMX signal. Number of channels received, DMX refresh rate. The refresh rate most often not important unless very low (such as below 10 Hz). The DMX values currently received may be monitored in the list on the left hand side of the dialog.

Note that incoming DMX values may be [translated through a value translation table](#)<sup>[236]</sup> - in this case the displayed value is the translated value which is not necessarily the same value as transmitted from the DMX source.

### Assigning functions to DMX in

To assign a function simply drag the function from the list of DMX functions on the right side to the list on the left side, or highlight both the relevant lines and click **Assign Function**. The leftmost column in the assignment list is the incoming DMX channel number, so to assign the blackout function to incoming DMX channel 10 simply drag the blackout function to the line marked 10 in the assignment list. To clear assignments use the options menu to clear all or specific assignments, or highlight the relevant line(s) and click **Clear Function**.

### Disable DMX-in functions



The hardware option to receive DMX in can only be disabled in the hardware setup dialog. The functions controlled by DMX-in may be disabled by checking **Disable DMX-in functions** in the Options menu (buttons and lists will be grayed out when functions are disabled). Note that disabling functions does not disable DMX in overrides defined in the [global patch dialog](#)<sup>[201]</sup>, only the functions configured in the DMX in dialog. DMX in may also be enabled/disabled through [hotkeys](#)<sup>[203]</sup>.

### Patching DMX in to DMX out

Use the [global patch dialog](#)<sup>[201]</sup> to patch an incoming DMX channel to one or more DMX output channels. DMX input values may be [translated via translation tables](#)<sup>[236]</sup> to translate a full 0-255 value range to one or more specific control values. Use value tables when patching functions that does not take up a full control channel (e.g. to directly override a fixture strobe function that is shared with other functions on the same control channel).

**IMPORTANT:** New assignments and options will **NOT** take effect until the DMX in configuration has been saved.

### Calling up cues via DMX in

As all LightJockey cues have a unique numbers, it is possible to use DMX values to call up a cue, simply by passing the cue number to LightJockey. The cue number is passed using a 'binary' combination of 'on/off' channels, much like a DIP switch. A single channel acts as a 'latch' command so that cue numbers may be setup without actually latching the cue before the complete number has been setup.

Ch#	Value	Transl...	Function
001	000		Binary Cue Value 1
002	000		Binary Cue Value 2
003	000		Binary Cue Value 4
004	000		Binary Cue Value 8
005	000		Binary Cue Value 16
006	000		Binary Cue Value 32
007	000		Binary Cue Value 64
008	000		Binary Cue Value 128
009	000		Latch Cue

*Calling cues via DMX in*

The example above assigns 7 DMX channels (from 1 to 7) for the cue numbers (**Binary cue value** 1 to 128) and one for the **Latch Cue** function. With these 7 DMX channels it is possible to call cues with numbers between 1 and 255 (1+2+4+8+16+32+64+128, cue 0 has a special function). To setup a cue number, set the required binary cue value channels to a value above 127 (50%). In the ABOVE example if channels 1,2,7 have values above 128, cue number 1+2+64=67 is selected. The DMX in dialog displays the currently selected cue number, and if there is an existing cue it also displays the cue name. Use the **Latch Cue** channel to latch the cue - the cue will be latched when the channel has a value above 127 (50%) - if the value is below 128, the cue number is be preset but not latched.

**IMPORTANT:** without the **Latch Cue** function it is **NOT** possible to actually load and execute cues via DMX in.

When **Cue Latch** is enabled (value above 127) and a valid cue number is selected, it is not possible to manually load another cue - it will be overwritten by the remote DMX cue. Cues can be manually loaded if **Cue Latch** is not enabled (value below 128) or if an invalid cue number is selected. In the **Preferences - > Cue Latch** menu there is an option that causes cue number 0 clear the current cue. If this option is not enabled, cues can be loaded manually, as long as remote cue #0 is latched.

### Using cue page functions via DMX in

A number of [cue page](#)<sup>[140]</sup> functions are available as DMX in commands. These commands are primarily useful for 'sequential' loading of cues where the cue pages may act as a sets of small manually driven cue-lists. A good example would be live performances with cues and pages pre-programmed for each song. The commands may be assigned to one DMX in channel and are

executed when the DMX value for the channel rises from below 127 (50%) to 127 or above (assign bump buttons if they are supported by the console).

[Latch Current Cue from Page](#) - Latches the currently selected cue on the page.

[Previous/Next Cue Page](#) - selects the previous or next cue page.

[Latch Previous/Next Cue from Page](#) - latches the previous or next cue from the cue page.

[Select Previous/Next Cue from Page](#) - selects but does not latch the previous or next cue from the cue page.

### Flashing Sequences via DMX-in

Ch#	Value	Transl...	Function
001	000		Flash Seq 0014 All On/home
002	000		Flash Seq 0015 All Red
003	000		Flash Seq 0016 All Yellow
004	000		
005	000		

*Flashing a sequence via DMX in*

It is possible to use a DMX in channel to flash a specific sequence in the current cue, the function is similar to using the flash buttons of the [2532 direct access](#)<sup>[225]</sup> controller. To assign a DMX in channel to flash a specific sequence, drag the sequence from the [list of sequences](#)<sup>[127]</sup> to the DMX-in channel assigned functions list on the assigned functions list. The sequence assigned is flashed as soon as the level of the DMX in channel is above 127 (50%) and released when the level is below 128.

### Latching cues, cue lists and background cues using a single channel.

It is also possible to latch a cue, cue list or background cue via a single DMX-in channel. To assign a cue or cue list to a specific DMX-in channel, drag the cue or cue list from the [list of cues](#)<sup>[137]</sup>, [list of cue lists](#)<sup>[176]</sup> or [list of background cues](#)<sup>[169]</sup> to the DMX-in channel.

### Controlling HTP group levels

[HTP group levels](#)<sup>[201]</sup> may be controlled via DMX in by assigning the **HTP Group (X)** function to a DMX in channel.

### Activating Static Entries

A DMX-in channel may be used to activate a [static entry](#)<sup>[189]</sup>, the entry is activated as soon as the level reaches 50%. Note that the static control entry flash and merge/replace modes disregarded when entries are controlled via DMX-in.

### Static Control Levels

Used to remotely set the level of the individual [static entries](#)<sup>[189]</sup>.

### Sequence On/Off

The DMX in may be used to control the on/off state of each of the sequences in the cue. For this function assign the function **Sequence XX On/Off** to the DMX input channel. Note that the [cue control](#)<sup>[132]</sup> has the capability to enable/disable this function - in order for the cue control to accept remote on/off make sure to enable the *Allow Remote Enable/Disable* in the preferences menu on the cue control as well - also make sure to disable the [cue modified warning](#)<sup>[50]</sup> to avoid the warning when the sequence state has been changed.

### Sequence Intensities

DMX in may be used to override intensity parameters in individual sequences in a cue. See [sequence intensities](#)<sup>[156]</sup> for more details.

### Remote controlling Master Intensity Levels and Blackout

The [master intensity control](#)<sup>[195]</sup>, featuring a grand master and 8 sub-masters, can be remote controlled via DMX in. Simply assign the relevant function to the appropriate DMX in channel, the **Master Intensity** function will control the grand master, while **Intensity Gr.1** to **Intensity Gr.8** will control the

sub-masters.

When the grand master or any of the sub masters are controlled by DMX in, it is no longer possible to set the value manually with the mouse - even if no DMX in is received. When the Grand Master or sub masters are remotely controlled, it will be indicated by displaying the fader mode in red on the Master Intensity Control.

The [blackout](#)<sup>[195]</sup> function can also be assigned to DMX in control. To set blackout the channel value has to be above 127 (50%). Auto Fade Out/In and blackout/restore will still work on intensity levels, even though the levels are controlled by DMX in. Manual blackout will not work if the function is controlled remotely.

### Patching DMX input to DMX output

The values of single or multiple DMX output channels may be controlled directly from the DMX input, effectively patching DMX in values to the DMX output of the LightJockey. Use the [Global Patch](#)<sup>[201]</sup> dialog to patch values from DMX in channels to one or more DMX out channels. Several different overwrite conditions may be set in the global patch (e.g. overwrite on HTP conditions).

### Overwrite Enable Function

The Overwrite Enable function is used as a switch to enable or disable the output overwrites. If the DMX value of the DMX in channel allocated to this function is above 127 (50%) the overwrite function is enabled, if below 127 the overwrite is disabled. If this function is not assigned to any channel, overwrite is always enabled. To setup which DMX input channels should overwrite which DMX output channels, use the [Global Patch](#)<sup>[201]</sup>. Note that the override enable function only enables/disables direct DMX value overrides set through the global patch - it does not affect overrides such as intensity override.

### Cue list commands

A number of cue list commands are available through DMX in. The commands are activated when the level of the DMX in channel crosses over from below 128 (50%) to above 127 (50% - 100%).

**Cuelist Go** - Trigs the cue list Go command. If the cue list is not already active (running) a 'Run from top' command is given to the cue list.

**Cuelist Back** - Trigs the cue list back command. The cue list must be active (running) for this command to be work.

**Cuelist Stop** - Stops the current cue list executing.

**Cuelist Stop and Clear** - Stops the current cue list executing and clears the current cue.

**Cuelist Go (Alt)** - This version of cue list Go uses different value transitions to activate a go command:

Transitions from less than 50% to 50% or above (0-127 -> 128-255)

Transitions from 50%-75% to 75%-100% (128-191 -> 192-255)

Transitions from 75% -> 100% to 50-75% (192-255 -> 128-919)

Where the regular cue list Go commands may require 2 discrete steps from the external console - the alternate command allows the external console to embed each go command in a single static value simply by alternating output values between 50%-75% and 75%-100%. Note: make sure that the external console do not fade value transitions;fading the value from 0% to100 may cause 2 go commands to be issued.

### Smoke control override

Smoke Button, Smoke Level, Smoke Duration, Smoke Cycle, Haze Level and Haze fan may all be used to override the corresponding controls on the [Smoke control](#)<sup>[122]</sup>. The smoke button will be activated as long as the DMX value of the channel is kept above a value of 127.

### Overriding the Cue Macro Control

Assigning **Cue Macro Amplitude** and **Cue Macro Sped** functions to DMX in channels allows the two functions to be remotely controlled via DMX in. Note that both functions scale from 0%-100.0% so it is not possible to increase the amplitude more than the previously programmed amplitude, nor is it possible to increase the speed above the programmed speed.

Each of the two functions have a complimentary inverted version. The inverted function inverts the

captured DMX value, so the higher the 'physical' DMX value, the less amplitude and speed - in effect the macro slows down. The inverted functions makes the functions comparable to overriding the cue time functions (see below) where a higher DMX in value slows the sequence down as well. See [Cue Macro Control](#)<sup>[148]</sup> for more details.

### Overriding the Cue Time Control

The Cue Time control allows direct control with the cue's dynamic timings by scaling the scene and fade times of each of the sequences in the cue. It is possible to assign control of the Cue time fader, and each of the 12 sequence time faders to DMX in. Via the [Cue Time Control](#)<sup>[147]</sup> preferences menu it is possible to set up if the DMX in override should override always or only when changes occurs on the DMX in values.

### Audio Analyzer options override

Audio Analyzer, Gain - Overrides the gain setting on the [audio analyzer](#)<sup>[192]</sup>.

Audio Analyzer, Noise Threshold - Overrides the noise threshold setting on the [audio analyzer](#)<sup>[192]</sup>.

### Trig all manual default, Emulate Audio Trig

Activates the corresponding [hotkey functions](#)<sup>[205]</sup> - note that these functions will activate on a DMX value transition from less than 128 (decimal) to 128 or higher.

See also [DMX in translation](#)<sup>[236]</sup>

## 18.3.1 DMX in translation

### How to use translations

Usually translations will be used when patching a DMX in channel (e.g. from a fader on a conventional DMX console) through to DMX out via the [global patch dialog](#)<sup>[201]</sup>. Since a fixtures DMX protocol may map several functions to the same DMX control channel it is often desirable to map the full control value range (0-255) into a limited selection of the control channel values so a single function may be controlled from a full fader range.

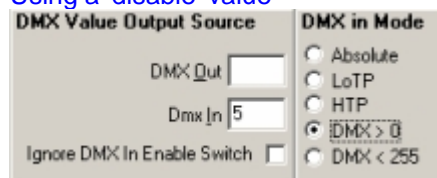
### Example, controlling a Martin MX 10 strobe from a fader on an external console

DMX values	Function
0-49	Shutter on/off commands
<b>50-72</b>	<b>Strobe fast-&gt;slow</b>
73-207	More shutter commands and strobe macros
208-217	Fixture reset
218-255	More shutter commands and lamp control commands

*Martin MX-10 shutter control channel (simplified)*

Using translation, the full fader value range (0-255) can be translated into the value range for the MX-10 strobe (50-72) which controls the MX-10 strobe speed. The translation may even 'invert' the direction so the MX-10 strobos slowly at low values and faster as the fader is raised, which is opposite the fixture protocol itself which will strobe fast at low value and slower as the value gets higher.

### Using a 'disable' value



*Global patch disable DMX in at value 0*

In the above example, mapping the full control range (0-255) into the fixture strobe control range (50-72) is not ideal, since that would cause the fixture to strobe continuously (since DMX in patched to DMX out). The [global patch dialog](#)<sup>[20]</sup> implements options to temporarily 'disable' the DMX input value at the values of either 0 or 255 - by translating a part of the original DMX values (usually the first few values such as 0-5) to either of these 2 values, and setting the corresponding option in the global patch dialog, the console fader now 'disables' at values 0-5.

### Creating new tables

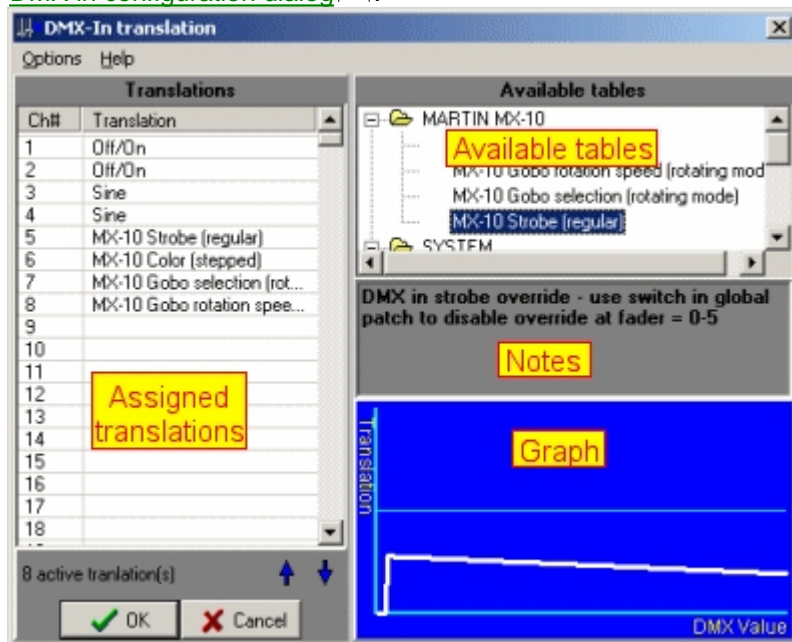
Since there are literally thousands of possible translation tables (each fixture type may require its own set of translation tables) and LightJockey distributions only supplies a few sample tables, there is a very good chance that users will have to create their own translation tables based on specific fixture protocols - see below.

### Available translation tables and assigned translations

When assigning a translation table to a DMX in channel, the translation table is selected from a pool of available tables. The table pool is system-wide which means that it is available in all [user libraries](#)<sup>[62]</sup>, where as the actual translation assignment is used in individual libraries. As tables from the pool may be edited or deleted and to avoid that modifications to tables has unwanted effects to translations in other user libraries, a copy of the original table is used for the actual translation - not the table from the pool. As a consequence modifications to a table in the pool does not affect already assigned translations, even if originally based on the modified table. To update assigned translations so they are identical to the table, use the update method (see below).

### DMX in translation dialog

To access the DMX in translation dialog, select **Value-translations** from the main menu of the [DMX in configuration dialog](#)<sup>[23]</sup>.



DMX in translation dialog

The left hand side of the dialog contains all available DMX in control channels (1-512) and assigned translation tables, while the right hand side contains a list of available translation tables as well as notes and a graphical representation of the selected translation dialog. Note: assigning translations to DMX in does nothing by itself; remember to assign DMX in as source of the relevant DMX output channels in the [global patch dialog](#)<sup>[20]</sup>.

### Assigning and removing translations

Locate the table in the list of available channels and drag it to the line representing the DMX in

channel. Alternatively, first highlight the table, then highlight one or more DMX in channels; finally right-click, one of the selected DMX in channels and select **Assign table:<table name>** from the pop up menu. To remove one or more translations, highlight the DMX in channels, right-click and select **Remove translation** from the pop up menu.

**Note:** when assigning a table to a DMX in channel, a copy of the original table is assigned - not a reference to the table. This is an important difference if the table is later modified - modifying a table does not automatically update the copy made when the table was assigned (see updating translations below)

### Editing existing and creating new tables

To edit an existing table, highlight the table, right-click and select **Edit table** from the pop up menu. To create a copy of an existing table select, right-click and select **Copy table**. To create a new table from scratch select **Create table** from the pop up menu. To create a new table from an already assigned translation, right-click the assignment and select **Copy to new table**.

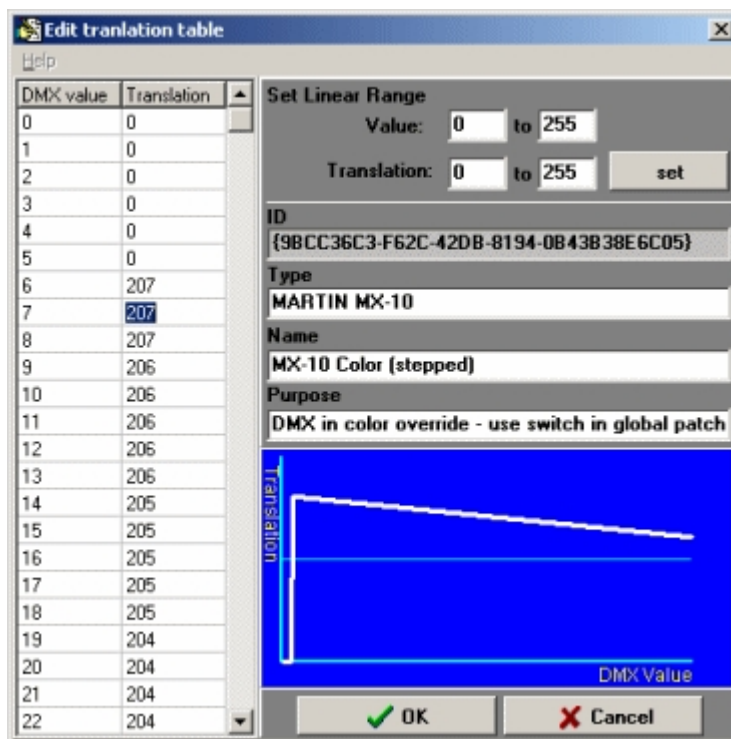
Either option opens the [edit translation table dialog](#)<sup>[238]</sup>

### Updating translations

To update already assigned translation tables with the content of a table that has subsequently been modified, right-click the table entry and select **update translations** - the option is only available if one or more previously assigned translations has content different from the table.

#### 18.3.1.1 Editing translation tables

The built in translation table editor allows users to edit the contents of translation tables, or to create a translation data file for manual editing using an Ascii editor (see below).



*Edit translation table dialog*

### Using the editor

To set or modify single translation values, simply type the desired value into the list on the left (values

0-255 only).

To set a linear range of values use the set linear range function. First enter the value interval to translate and then the value interval to translate to, e.g. to translate values 50 -> 100 into 150 -> 170 enter 50 and 100 into the two value fields followed by 150 and 170 into the translation fields. Then click **set**.

**ID** - The ID is a unique identifier that is used as a reference between assigned translations and the original translation table. The value cannot be modified with the editor.

**Type** - Use the type field to describe the overall type of the table. If the table is for a specific fixture function the type field should contain a description that identifies the manufacturer and fixture type, e.g. **MARTIN MX-10**. When assigning translations, available tables are stored in 'folders' according to the contents in the type field.

**Name** - Name of the table. When created for a specific fixture, the name should describe the function of the table, e.g. **MX-10 Strobe (regular)**.

**Purpose** - Used for further text describing the function of the table, e.g. **DMX in strobe override - use switch in global patch to disable override at fader = 0-5**

Click **Ok** to save the modified table or **Cancel** to discard any modifications. **Note:** Remember to update already assigned translation tables with modified table contents using the update function.

### Using a text editor

Translation tables are stored in files containing ordinary Ascii format text. This means that the contents can be modified with a standard text editor (or even created by custom applications if required). Note that LightJockey does not automatically refresh tables when a file is modified. To refresh tables after manual editing make sure to close the assign translation dialog and then reopen it (opening the dialog refreshes the tables).

### Filename

Translation data files are stored in <LightJockey installation folder>\Users\ValueTables\  
 Filenames are created from type,name and ID in the form of <Type>\_<Name>\_<ID>.vtr

### File contents (example):


```
ID={9B3EA976-8C53-4173-91A8-774C8F881E3D}
TYPE=SYSTEM
NAME=Sqrt
PURPOSE=Sqrt ( )
0=0
1=16
2=23
<etc . . . .>
254=254
255=255
```

The **ID** field contains a unique ID to identify the table (GUID). This means that the same ID cannot be used in multiple translation table files. Do not try to create an ID by random, create a new/empty table and use as template. Custom applications should provide a properly formatted GUID as ID. Contents of **Type**, **Name** and **Purpose** is described above, neither should be left blank. Type and name are limited to 80 characters, while purpose is limited to 255 characters.

Translation values are listed in the form of **DMX value = translates to value** - the file does not have to contain all DMX 256 values, if missing 1:1 is assumed'.

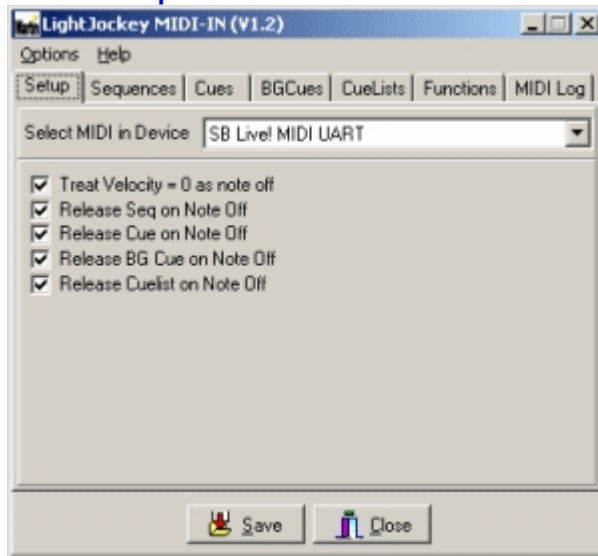
## 18.4 Using MIDI in

LightJockey may use a MIDI note commands to remote control a number of functions from a MIDI device. MIDI-in control requires a suitable MIDI interface installed in the PC and must be enabled in the [hardware setup](#)<sup>[22]</sup>. Once enabled, a separate MIDI in application will automatically launch whenever LightJockey starts up. After it is launched the MIDI in module can be accessed from LightJockey by

clicking  on the [cue list tool bar](#)<sup>[56]</sup>

The MIDI implementation relies on the MIDI functionality that is built in to Windows, LightJockey does not talk to the MIDI devices directly. This means that the MIDI receiver device (for example a sound card with MIDI in capability) must be correctly installed in Windows and the correct drivers must be installed as well. Please refer to the documentation for the MIDI device for documentation on how to install the device in a Windows environment. The MIDI in program also relies on connecting (through software) to LightJockey for certain dynamic data - if LightJockey is not running when the MIDI in program starts up an error message is displayed.

### MIDI In setup



**Selecting the MIDI in Device** - since Windows supports multiple MIDI devices, the first thing to configure is what MIDI in device to use. Select the relevant device from the list of devices on the Setup tab. If no devices are listed, Windows has not registered any MIDI in devices.

**Treat velocity = 0 as note off** - some MIDI devices use a note on command with a 0 velocity value to indicate a note off. LightJockey will by default treat a note on command with velocity = 0 as a note off command - to disable, uncheck this option.

**Release Seq on Note Off** - when option this is checked, the MIDI in module will clear the flashed sequence (see later) when a note off command corresponding to the last sequence note on is received.

**Release Cue on Note Off** - when option this is checked, the MIDI in module will clear the latched cue (see later) as soon as a note off command corresponding to the last cue note on is received.

**Release BGCue on Note Off** - when option this is checked, the MIDI in module will clear the latched background cue (see later) as soon as a note off command corresponding to the last background cue note on is received.

**Release Cuelist on Note Off** - when option this is checked, the MIDI in module will stop the latched cue list (see later) and clear the current cue as soon as a corresponding to the last cue list note on note off command is received.

### The Options Menu

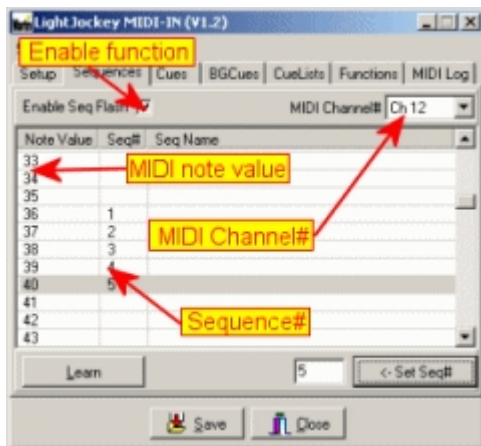
**Run Minimized** - When enabled, this option configures the MIDI in application to start up in minimized form. To restore the application, click the MIDI in button on the [fixture tool bar](#)<sup>[57]</sup> or the corresponding button on the Windows taskbar.

**Stay on Top** - this option keeps the MIDI in module on top of the main LightJockey desktop.

**Auto Save Changes** - when enabled, all changes are automatically saved when the module closes down. If this option is not enabled any changes must be saved before closing (**Save**).

### Sequence, cue, background cues and cue list tabs





### Assigning functions

Using MIDI note commands LightJockey can launch sequences (flash sequences, see [cue control](#) <sup>[132]</sup>), cues, background cues and cue lists.

The sequence, cue, background cues and cue lists configurations are all located on individual tabs. To enable either function, check the enable function box (e.g. enable Sequence Flash) on the relevant tab. Next select what MIDI channel (MIDI address) the MIDI in will have to listen to for that particular function. MIDI supports up to 16 different channels (channels 1-16). Select either 'All to decode the note on command on any MIDI channels or select a single MIDI channel to decode commands on that MIDI channel only. By specifying specific MIDI channels, the MIDI device (e.g. a sequencer or keyboard) may use the other channels for other purposes, such as MIDI instruments or other controllers. It also allows the same note values to be used for sequences, cues and cue lists as long as the MIDI channel is different. Note that not all MIDI transmitters have the possibility to use specific channels, please refer to the documentation for the MIDI transmitter.

There are two methods to assign sequences, cues, background cues and cue lists to MIDI note values. The first is to manually enter the sequence, cue or cue number directly. Highlight the line with the required note value, enter the relevant number in the entry field and click **<-Set**. The second method is to load the relevant sequence, cue, background or cue list in LightJockey, click **Learn** and send the MIDI command (e.g. press the key on the MIDI keyboard). The MIDI In Module will register the current sequence, cue, background cue or cue list and assign this to the received note value.

To clear the assignment for a specific MIDI value, right-click the line representing the value and select **Clear Values** from the popup menu.

### Hotkey functions

Use the functions tab makes to assign LightJockey [hotkey functions](#) <sup>[205]</sup> to MIDI note commands. Note that LightJockey must be running when the MIDI in program starts up, otherwise hotkey function data will not be transferred to the MIDI in program. To assign a function to a note value go to the functions tab and click **Get Functions List**. This brings up a list of available functions. Then simply drag and drop the function from the list to the line representing the MIDI note value.

### Assigning flash functions

Note that some MIDI devices prefers to send velocity = 0 rather than note off commands. If this is the case, make sure to check **Treat velocity = 0 as note off** on the setup tab. Otherwise the flash function may not be disabled again.

### MIDI Monitor.

The final tab consists of a list showing the latest incoming MIDI note on and note off commands. The Monitor can be used to decide what MIDI channels are used by the MIDI transmitter.

## 18.5 Using the 2518 controller via RS-232

### 18.5.1 2518 controller via RS-232


LightJockey may be remotely controlled from a Martin 2518 controller using a standard RS-232 connection. Since this form of remote control does not require other hardware than a standard RS-232 port it is possible to connect the 2518 to LightJockey without using DMX hardware that supports DMX-in. The RS-232 connection uses the same type of RS-232 cable (straight through) as the Upload/Download utility for the 2518 controller (see 2518 manual). When the 2518 is connected as remote control via RS-232 it is not capable of performing as normal, i.e. it does not run sequences or transmit DMX. When switched into RS-232 mode the LightJockey continuously reads the status of the 2518's buttons and faders and controls the output of the 2518 display.

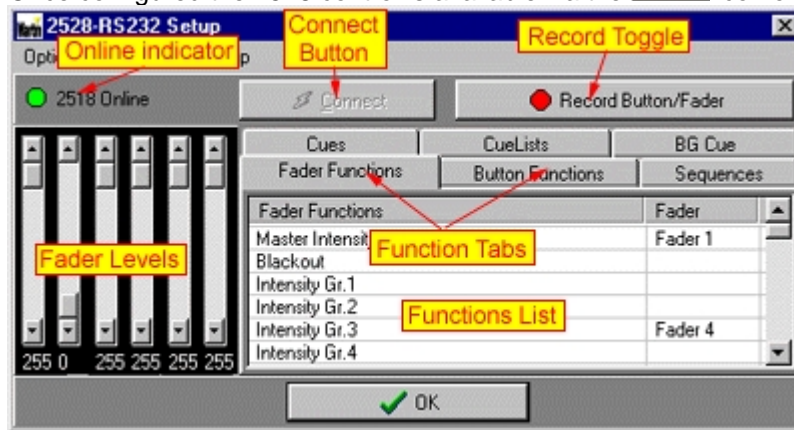
LightJockey implements the 2518 interface in two modes. Mode 1 is supported by all firmware revisions of the 2518, **while mode 2 requires firmware version 2.0** or better in the 2518. The actual version of 2518 firmware is shown as the 2518 is powered up.

See also [2518 via RS-232, mode 1](#)<sup>[243]</sup>, [2518 via RS-232, mode 2](#)<sup>[242]</sup>

### 18.5.2 2518 controller via RS-232, mode 2

Mode 2 of the LightJockey 2518 via RS232 interface is only supported by 2518 firmware revisions 2.0 or higher. The actual firmware revision is shown in the 2518 display during power on. In order to use the 2518 it must first be configured in the [hardware setup](#)<sup>[22]</sup>, make sure to **select the 2518 Mode 2** option in the setup dialog.

Once configured the 2518 control is available via the  icon on the [cue list tool bar](#)<sup>[56]</sup>.



The 2518 control (mode 2)

Under normal circumstances the 2518 will connect as remote control when LightJockey starts up - however if the 2518 fails to connect (for example if powered off when LightJockey started), use **connect** to attempt to establish a connection between the 2518 and LightJockey (also see auto reconnect later). Re-connecting this way also works if the 2518 is temporarily disconnected while LightJockey is running. The online LED indicates the current 2518 connected state.

There are two types of functions available via the 2518: fader functions and button functions.

The fader functions are a sub-set of the functions available via [DMX-in](#)<sup>[231]</sup>. The button functions are identical to the functions available via [keyboard hotkeys](#)<sup>[205]</sup>. Like the keyboard hotkeys it is possible to assign specific sequences, cues, cue lists and background cues to the 2518 buttons.

Click the appropriate **Function Tab** to select between different lists of fader and button functions.

#### Assigning faders and 2518 buttons to functions

There are two ways of assigning functions to faders or buttons.

Enable the Record Toggle button to switch into 'record' mode. When in record mode, moving the fader

more than 50% or pressing a button, will assign the fader or button to the selected function. Alternatively, select the function in the list and right-click the line; then assign the fader or button from the popup menu.

To clear one or more functions, highlight the line(s) and select **clear functions** from the right-click popup menu. To clear all functions, select **Options -> New Setup** from the options menu.

#### Saving and re-loading setups

A setup may be saved into a file for later use. Select **Options -> Save setup file** and **Options -> load setup file** to save or re-load setups.

#### Auto Reconnect

The auto reconnect option found in the preferences menu will prompt LightJockey to automatically attempt a connection to the 2518 every 2 seconds.

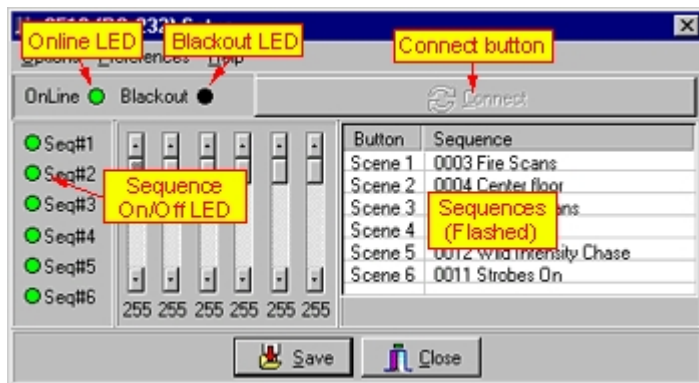
The option may lead to a slightly slower execution of LightJockey itself and is best left off if no 2518 is connected to the PC.

See also [2518 via RS-232, mode 1](#) <sup>[243]</sup>

### 18.5.3 2518 controller via RS-232, mode 1

Mode 1 of the LightJockey 2518-RS232 interface is supported by all 2518 firmware revisions. In order to use the 2518 it must first be configured in the [hardware setup](#) <sup>[22]</sup>, make sure to **de-select the 2518 Mode 2** option in the dialog.

Once configured the 2518 control is available via the  icon on the [cue list tool bar](#) <sup>[56]</sup>.



The 2518 control (mode 1)

Under normal circumstances the 2518 will connect as remote control when LightJockey starts up - however if the 2518 fails to connect, click **connect** to attempt to establish a connection between LightJockey and the 2518. This also works if the 2518 is disconnected while LightJockey is running. The online LED indicates the current 2518 connected state.



The connect button

#### 2518 Functions

The following functions are fixed and cannot be changed by the user:

**DMX Channels buttons** - the DMX channels buttons (the column of buttons leftmost on the 2518) controls the sequence on/off State for the 6 first sequences in the cue control. The state is mimicked by the LEDs on the 2518, LED on is sequence on, LED off is sequence off.

**Faders** - the faders of the 2518 is used to remote control the Master intensities. The leftmost fader controls the Master intensity while the last 5 faders controls sub-masters 1-5.

**Blackout button** - the blackout button toggles the blackout/restore state of the LightJockey.

User definable functions:

[Scenes buttons \(Scenes 1-6\)](#) - the scenes buttons may be used as 'bump' buttons for the Master Intensity control or may be used to flash 6 different sequences in the cue. When used as bump buttons, the buttons may either be configured as bump-flash or bump-latch buttons (set in the preferences menu). When used as sequence flash buttons, configure the buttons by dragging the sequence from the [list of sequences](#)<sup>[127]</sup> onto the line representing the button. Alternatively right-click on the line and select **Add Current Sequence** to add the current sequence. To clear a button, right-click the line and select **Remove Sequence**. A change in sequence configuration does not take effect until saved.

### Options Menu

[Calibrate faders](#) - May be used to initialize the fader calibration routine of the 2518. Click **Yes** to initiate the calibration routine. Once the 2518 has entered the calibration state (DMX channel LEDs are 'running'), move all faders to the absolute top - then press the top **DMX Channels** button. Once all LEDs are out, press the top **DMX Channels** button again. Wait until the 2518 has performed a reset ('01' flashing in the display), then click **Ok** on the dialog. Wait until LJ has re-connected to the 2518.

### Preferences Menu


[Scenes buttons](#) - used to set the function for the scenes buttons on the 2518 (see above).

See also [2518 via RS-232, mode 2](#)<sup>[242]</sup>

## 18.6 MC-X remote control

The Martin MC-X Remote Control is a small 8 button device that uses the DMX protocol to communicate to the main controller. The 8 buttons have an on/off toggle function and are mutually exclusive (only one can be 'On' at a time). The MC-X must be configured in the [hardware setup](#)<sup>[22]</sup> before use. Since the MC-X uses the DMX in function of LightJockey, it is only usable for installations with LightJockey hardware that supports DMX-in. Also as only one DMX-in device can be connected at a time is not possible to use other DMX-in functions options at the same time as using the MC-X unless a DMX merger device is used. When connected to LightJockey the preset buttons on the MC-X may be used to latch [cues](#)<sup>[132]</sup> or [background cues](#)<sup>[167]</sup> and the auto button may be used to launch a [cue list](#)<sup>[169]</sup>. Connecting the MC-X does not exclude the 'normal' use of cues and cue lists. Cues and cue lists may still be loaded manually or via other remote control options.

### MX-C Setup

To access the MX-C setup dialog, click the  icon on the [cue list tool bar](#)<sup>[56]</sup>.



MC-X setup dialog

The dialog contains 7 entries for the 7 preset buttons and one entry for the auto button.

[Assigning cues to the preset buttons](#) - make sure the MC-X is setup to use cues in the preferences

menu. Cues may be assigned by dragging the cue from the [list of cues](#)<sup>[137]</sup>, or by right-clicking the line representing the preset and select **Assign current Cue** from the popup menu. The second approach requires that a cue has already been loaded.

[Assigning background cues to the preset buttons](#) - make sure the MC-X is setup to use background cues in the preferences menu. Background cues may be assigned by dragging the background cue from the [list of background cues](#)<sup>[169]</sup>, or by right-clicking the line representing the preset and selecting **Assign current Background Cue** from the popup menu. The second approach requires that a background cue is already loaded.

[Assigning a cue list to the auto button](#) - the cue list may either be dragged and dropped from the [list of cue lists](#)<sup>[176]</sup> or it may be assigned by loading the cue list and right-clicking the 'auto' line in the MC-X setup dialog.

#### Clearing cues and cue lists

To clear button function, right click the line representing the button and select clear.

#### The preferences menu

[Preset use Cues/Preset use Background Cues](#) - use this switch to determine if the preset buttons are used to call up regular [cues](#)<sup>[132]</sup> or [background cues](#)<sup>[167]</sup>. The dialog will automatically switch between showing assigned cues or background cues.

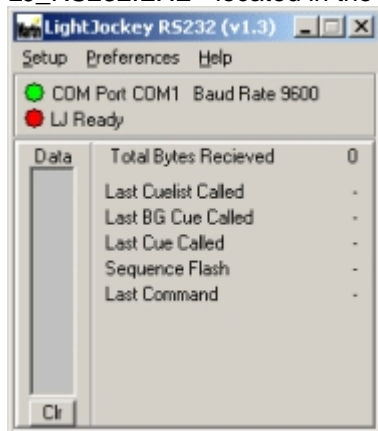
[Clear Cue/BGCue on Preset Off](#) - when enabled the current cue or background cue is cleared when the preset button is toggled off. Note that the cue will only be cleared if it is identical (same cue/background cue number) as the one assigned to the preset button - e.g.. if cue #1 is loaded by preset button 1 it will only clear the cue when toggled off, if the current cue is #1.

[Clear Cuelist on Auto off](#) - When enabled, toggling the Auto button off clears the current cue list, but only if the current cue list is identical to the cue list assigned to the Auto button (see above)

[Clear Cuelist on Preset](#) - When enabled the current cue list will be cleared as any of the preset buttons toggled on. This function will clear any cue list.

## 18.7 RS-232 remote control

The RS-232 remote control option is supported through an external support application, LJ\_RS232.EXE - located in the LightJockey Installation folder.



*The RS-232 remote application*

For automated purposes, either start the program via the Windows Startup folder, or use LightJockey's auto-launch facility in the [startup options](#)<sup>[52]</sup>. The program enables remote control various LightJockey options, such as calling up a cue or call a fade out. Before the application can be used, RS-232 settings to be used must be configured. Select **Setup** -> **RS 232 settings** to configure the RS-232 parameters. Select COM Port from 1 through 4 and one of the possible Baud-Rates. The RS-232 data format is fixed at 8 data bytes, 1 stop byte and no parity.

#### RS-232 Protocol

The RS-232 protocol is based on a 3 byte binary protocol.

The format for all commands are identical: [Command] [Data1 (MSB)] [Data2 (LSB)]

All 3 bytes must be sent to LightJockey within 0.2 seconds, otherwise an incomplete command times out.

All bytes with a value of 128 or above are treated as a [command] byte. Consequently all data bytes must have a value of 127 or lower.

When the both the data bytes are used to send a value the value must be split into an MSB and an LSB pair.

Examples:

To load cue number 130: Send **[129] [1] [2]** - 129 is the Load Cue command, and 1\*128+2 selects cue number 130.

To load cue list number 2 Send **[128] [0] [2]** - 128 is the load cue list command, and 0\*128+2 selects cue list number 2.

Listed below are the various commands accepted by the RS-232 interface application

Function	[Cmd]	[Data 1]	[Data 2]	Notes
Load cue list	[128]	Cue list # MSB	Cue list # LSB	send # 0 to stop current
Load cue	[129]	Cue # MSB	Cue # LSB	send # 0 to clear current
Load background cue	[130]	[BG Cue # MSB]	[BG Cue # LSB]	send #0 to clear current
Flash Sequence on	[131]	[Sequence # MSB]	[Sequence # LSB]	send # 0 to clear current
Smoke Off	[132]	[0]	[0]	see <a href="#">smoke Control</a> <sup>[122]</sup>
Smoke On	[132]	[0]	[1]	see <a href="#">smoke control</a> <sup>[122]</sup>
Smoke timer off	[132]	[1]	[0]	see <a href="#">smoke control</a> <sup>[122]</sup>
Smoke timer on	[132]	[1]	[1]	see <a href="#">smoke control</a> <sup>[122]</sup>
Blackout	[132]	[2]	[1]	see <a href="#">blackout/restore</a> <sup>[195]</sup>
Restore	[132]	[2]	[0]	see <a href="#">blackout/restore</a> <sup>[195]</sup>
Fade in	[132]	[3]	[0]	see <a href="#">master intensity</a> <sup>[195]</sup> , uses preset time
Fade out	[132]	[3]	[1]	see <a href="#">master intensity</a> <sup>[195]</sup> , uses preset time
Enable static entry	[133]	[Static #]	[1]	see <a href="#">statics control</a> <sup>[189]</sup>
Disable static entry	[133]	[Static #]	[0]	see <a href="#">statics control</a> <sup>[189]</sup>
Current cue list Go	[134]	[1]	[1]	manual cue lists only, see <a href="#">cue list</a> <sup>[169]</sup>
Current cue list Back	[134]	[1]	[2]	manual cue lists only, see <a href="#">cue list</a> <sup>[169]</sup>
Cue control slot on	[135]	[slot#]	[1]	see <a href="#">cue control</a> <sup>[132]</sup>
Cue control slot off	[135]	[slot#]	[0]	see <a href="#">cue control</a> <sup>[132]</sup>
Background cue slot on	[136]	[slot#]	[1]	see <a href="#">background cue</a> <sup>[167]</sup>
Background cue slot off	[136]	[slot#]	[0]	see <a href="#">background cue</a> <sup>[167]</sup>

## 19 User definable fixture profiles

### 19.1 The user definable fixtures profiles

User definable fixture profiles make it possible to define profiles for fixtures that are not already included in LightJockey. User defined profiles may be saved, reused, tweaked and transferred to other installations. User defined fixture profiles can use all normal fixture functions including [position presets](#)<sup>[108]</sup>, [movement macros](#)<sup>[102]</sup> and [palettes](#)<sup>[94]</sup> for color, gobos and effects. Most non-Martin fixture profiles are supplied as user defined fixture profiles; the updated library including new or modified profiles can be found on the Internet at:

<http://www.martin.com/service/Software/controller/LJ/list.asp>

Note that user fixtures controlled by a user defined profile will only show up in the [Offline Visualizer](#)<sup>[283]</sup> if they are linked to a [suitable Offline Visualizer profile](#)<sup>[277]</sup>.

In order to define a new or modify an existing profile, a generic **user definable fixture** profile must be [configured](#)<sup>[66]</sup> and placed on the desktop.

There are 3 types of user definable profiles:

[User definable fixture type 2 profile](#)<sup>[255]</sup> (max 32 channels, 16 bit pan/tilt)

This is the type currently used for the profiles included with LightJockey and distributed via the Internet and.

[Generic Scanner 1](#)<sup>[247]</sup> (8 bit, max 8 channels, limited number of functions)

This profile type is maintained for backwards compatibility only and should not be used for new profiles.

[Color Scrollers](#)<sup>[254]</sup> (color palette and intensity control)

A special type of profile used to control fixtures consisting of a separate color scroller and lighting fixture (e.g. a profile spot with external color scroller).

### 19.2 Scanner 1 profile

#### 19.2.1 Configuring the Scanner 1 profile

**Note: this profile type is included for backwards compatibility only - use [generic fixture type 2 profile](#)<sup>[247]</sup> to write new profiles.**

The scanner 1 profile supports the following (optional) user definable features:

[intensity control](#)<sup>[96]</sup> - including shutter, strobe, [grand master](#)<sup>[195]</sup> and [blackout](#)<sup>[195]</sup>. [8-bit pan & tilt control](#)<sup>[98]</sup>, including position presets and movement macros.

[color palette](#)<sup>[108]</sup> - max 16 colors. [gobo palette](#)<sup>[111]</sup> - max 16 gobos. Other functions may be controlled via [generic DMX controls](#)<sup>[84]</sup>.

#### Configuring the scanner 1 fixture profile

To configure the fixture select **Generic Scanner 1** in the list of available (located under User Definable) fixtures in the [fixture configuration](#)<sup>[66]</sup> dialog and give it a valid DMX address. By default the Scanner 1 profile takes up 8 DMX channels but it is possible when defining the profile to reduce the number of channels used. Note that no matter how many channels the fixture actually uses, the auto address feature will always allocate 8 channels for the profile.



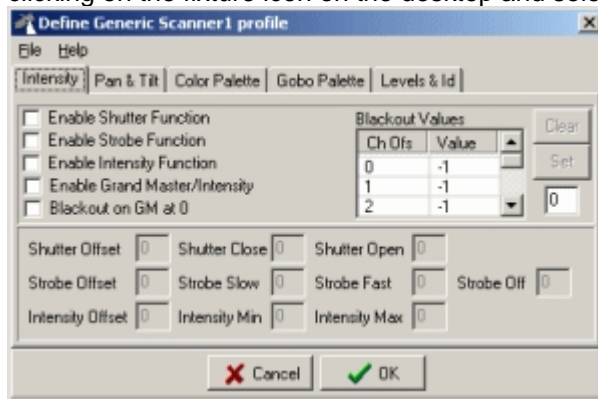
Scanner 1 fixture icon

Once the fixture has been configured and the fixture icon has been placed on the desktop, the fixture profile functions including the optional features may be defined, see [defining the Scanner 1 profile](#) <sup>[248]</sup>

## 19.2.2 Defining the Scanner 1 profile

**Note :** The scanner 1 profile is provided for backwards compatibility only - new profiles should only be created using the [generic fixture 2 profile](#) <sup>[255]</sup>.

In order to use the profile to control the fixture, it is necessary to define the fixture's control channels, and optionally color and gobo palette values. Open the Scanner 1 profile definition dialog by right-clicking on the fixture icon on the desktop and selecting **Define Fixture Profile** from the popup menu.



Scanner 1 profile definition dialog

[Defining the scanner 1 intensity control](#) <sup>[249]</sup>

[Defining the Scanner 1 pan and tilt control](#) <sup>[250]</sup>

[Defining the Scanner 1 color control](#) <sup>[251]</sup>

[Defining the Scanner 1 gobo control](#) <sup>[252]</sup>

[Defining the Scanner 1 level controls](#) <sup>[253]</sup>

### The File Menu

**Save Profile** - this will save the current profile to a file. The profile can then be reused when configuring multiple fixtures of the same type by first configuring a generic scanner 1 and then load the profile for the individual fixtures. Changes to profiles are not dynamic, saving a profile will not automatically update other profiles.

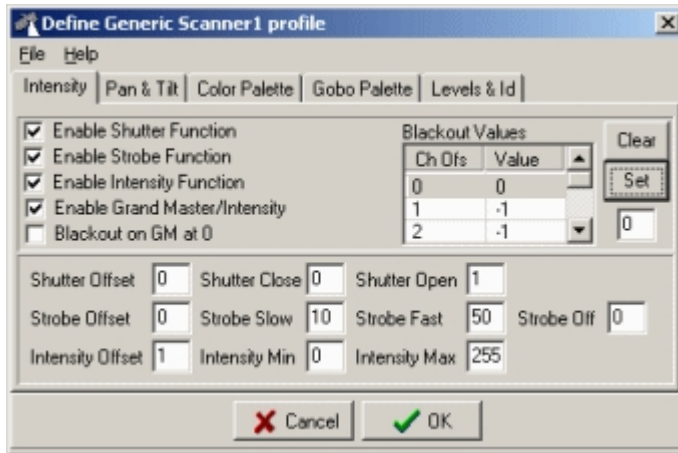
**Load Profile** - this will load a previously saved profile into the current fixture.

**Clear Profile** - this will clear the contents of the current profile.

LightJockey defaults the file path to the following folder <LightJockey Installation>\User\UserFixtures\

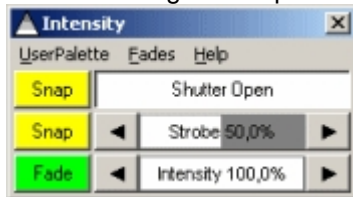


### 19.2.3 Defining Scanner 1 intensity control



Scanner 1 profile - Intensity tab

Use this dialog to set up the intensity control definitions.



Scanner 1 intensity control

Only controls for the enabled functions will be visible - if no intensity control functions are enabled the, intensity control will not be available for the fixture.

**Shutter control** - the shutter control must be controlled on one DMX control channel.

**Strobe control** - the strobe control must be controlled on one DMX control channel.

**Intensity control** - the intensity must be controlled by one channel, and the DMX value for minimum intensity must be lower than the value for maximum intensity. For the intensity control to be linked to the [grand master controls](#)<sup>[195]</sup>, the DMX values for intensity must be valid within 0 to maximum intensity value.

**Enable Shutter Function (Intensity Control Function)** - to enable the shutter function for the fixture, check this option. Make sure to fill out the shutter data fields with appropriate data.

**Enable Strobe Function (Intensity Control Function)** - to enable the strobe function for the fixture, check this option. Make sure to fill out the strobe data fields with appropriate data.

**Enable Intensity Function (Intensity Control Function)** - to enable the Intensity function for the fixture, check this option. Make sure to fill out the intensity data fields with appropriate data.

**Enable Grand Master/Intensity (Intensity Control Function)** - checking this option will link the [grand master control](#)<sup>[195]</sup> to the fixtures intensity control. When not checked the Grand Master does not affect the intensity level of the fixture. This option should only be selected if the fixture supports intensity control. Since the Grand Master works by scaling the DMX value sent to control the intensity, do not enable this option unless the DMX values for controlling the fixture's intensity are within the range of 0 to maximum intensity.

**Blackout on GM at 0** - if the fixture does not support intensity control, checking this option will cause the [grand master controls](#)<sup>[195]</sup> to instruct the fixture to blackout when the GM/sub master intensity level reaches 0.

**Blackout Value Table** - use this table to setup the DMX values needed to blackout the fixture. The table contains values for the maximum 8 control channels allocated for the fixture (note that first channel is numbered 0). A value of -1 means that the specific channel is not affected by the blackout command. If

the fixture supports shutter or intensity control use values that addresses these functions. If no values are entered the fixture will not respond to blackout instructions. To set a channel value, highlight the line in the table then type in the value in the blackout value field and click **Set**. To reset the value to -1 highlight the line and click clear.

#### Shutter Data

Use these fields to set the DMX channel and values needed to control the shutter function. The offset value represents the control channel used to control the shutter on the fixture - note that offset values starts at 0. The shutter close value represents the DMX value used to close the shutter (no lights), and the shutter open value represents the DMX value used to open the shutter.

#### Strobe Data

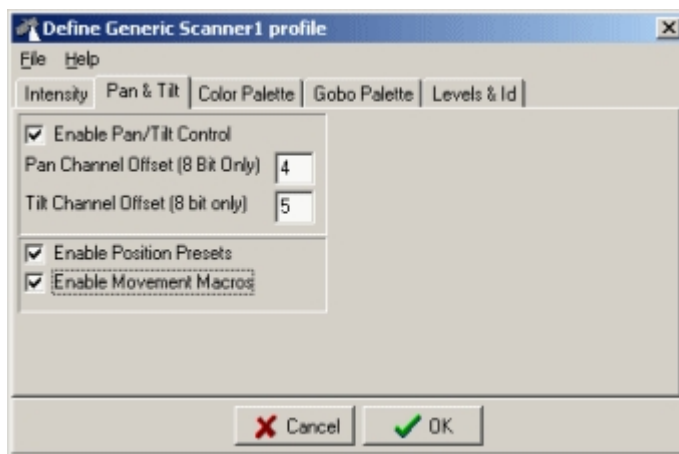
Use these fields to set the DMX channel and values needed to control the strobe function. The offset value represents the control channel used to control the strobe function on the fixture - note that offset values starts at 0. The strobe slow value represents the DMX value where the fixture strobes at the slowest rate, the strobe fast value represents the DMX value where the fixture strobes at the fastest rate.

#### Intensity Data

Use these fields to set the DMX channel and values needed to control the fixture's intensity function. The offset value represents the control channel used to control the intensity function on the fixture - note that offset values starts at 0. The intensity min value represents the DMX value where the fixture has minimum light output, the intensity max value represents the DMX value where the fixture has maximum light output. Note that the minimum value must be smaller than the maximum value for the intensity control to work.

See also [defining the Scanner 1 profile](#)<sup>[248]</sup>

### 19.2.4 Defining Scanner 1 pan & tilt control



Scanner 1 profile - pan & tilt tab

Use this Dialog to set up the Pan and Tilt control definitions for the Scanner 1 profile. The scanner 1 profile only supports 8-bit Pan and Tilt control.

**Note:** In order for the profile to use the Pan/Tilt position control, pan and tilt must be controllable on two individual 8-bit control channels. Furthermore the profile must have valid pan/tilt DMX values from 0 to 255.

[Enable Pan/Tilt Control](#) - checking this option allows the fixture to use the standard [pan/tilt position control](#)<sup>[98]</sup>. This is the only position control available for the scanner 1 profile.

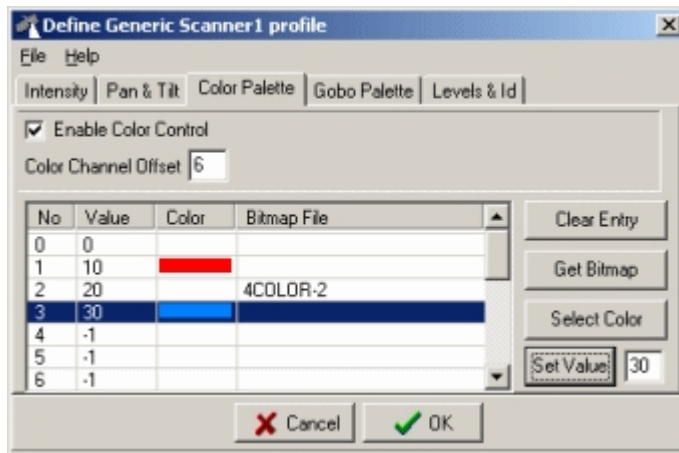
[Pan/Tilt Channel offsets](#) - use these fields to set the DMX channels offsets needed to control the pan and tilt functions of the fixture. Note that offset values starts at 0 for the fixture's first control channel.

[Enable position presets](#) - checking this option allows the profile to use the LightJockey's [position presets](#)<sup>[106]</sup>.

[Enable Movement macros](#) - checking this option allows the profile to use the [movement macros](#)<sup>[102]</sup> associated with the pan/tilt control.

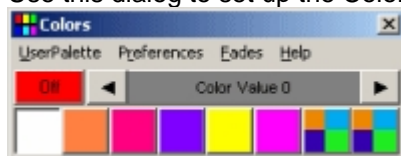
See also [defining the Scanner 1 profile](#)<sup>[248]</sup>

## 19.2.5 Defining Scanner 1 color control



Scanner 1 profile - color tab

Use this dialog to set up the Color control definitions for the Scanner 1 fixture.



Example of scanner 1 color control

**Note:** The Scanner 1 color control supports one single 8-bit color control channel. It also supports a user definable color palette with a maximum of 16 colors, using RGB colors or standard Windows bitmap files (.BMP).

[Enable Color Control](#) - check to enable the color control function for the profile.

[Color Channel offset](#) - use to set the DMX channels offset needed to control profiles color function. Note that offset values starts at 0 for the fixture's first control channel.

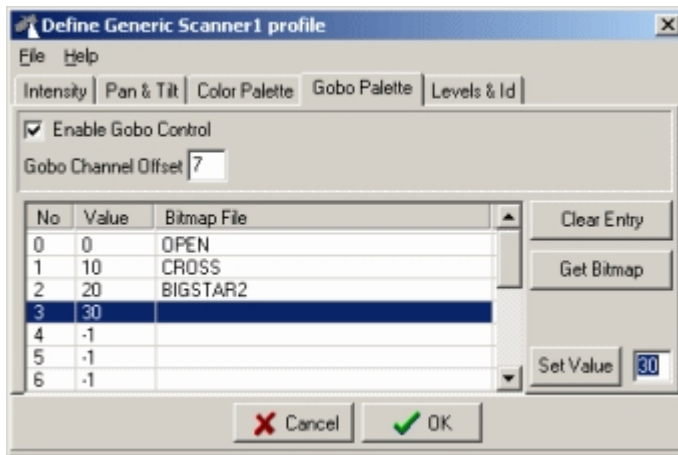
### The color palette

To define color palette entries first highlight the appropriate color palette line. Select the color or bitmap for the palette button by clicking either **get color** or **get bitmap**. Finally, set the corresponding DMX value by entering the value in the Palette DMX value field and click **Set Value**. Clear palette entries by highlighting the lines and click **Clear Entry**. A DMX value of -1 indicates that the palette button is unused. Note that when selecting a bitmap file for the palette button, the bitmap file must be present in the windows folder that is selected by default.

Only palette buttons with defined values will appear on the color control.

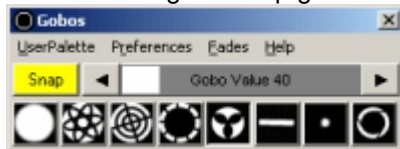
See also [defining the Scanner 1 profile](#)<sup>[248]</sup>, [creating custom bitmaps for palette controls](#)<sup>[278]</sup>

## 19.2.6 Defining Scanner 1 gobo control



Scanner 1 profile - gobo tab

Use this dialog to set up gobo control definitions for the Scanner 1 profile.



Scanner 1 gobo control

### Notes

The Scanner 1 profile gobo control supports one single 8-bit Gobo control channel. It also supports a user definable Gobo palette with a maximum of 16 gobos, using standard Windows bitmaps (BMP files).

[Enable Gobo Control](#) - to enable the Gobo control function for the profile, check this option.

[Gobo Channel offset](#) - use this field to set the DMX channels offset needed to control fixture's Gobo function. Note that offset values starts at 0 for the fixture's first control channel.

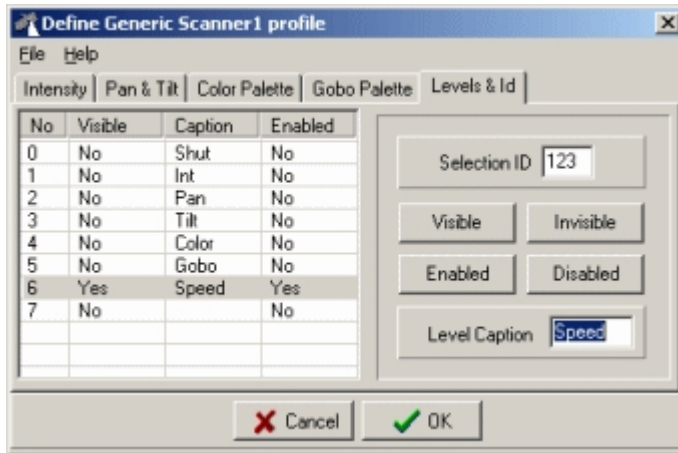
### The Gobo palette

To define Gobo palette entries first highlight the appropriate Gobo palette line. Then select the Gobo bitmap for the palette button by clicking **get bitmap**. Set the corresponding DMX value by entering the value in the Palette DMX value field and click **Set Value**. Clear palette entries by highlighting the lines and click **Clear Entry**. A DMX value of -1 indicates that the palette button is unused. Note that when selecting a bitmap file for the palette button, the selected file must be present in the Windows folder that is selected by default.

Only palette buttons with defined values will appear on the gobo control.

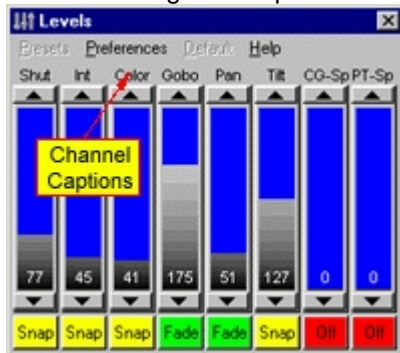
See also [defining the Scanner 1 profile](#)<sup>[248]</sup>, [creating custom bitmaps for palette controls](#)<sup>[278]</sup>

## 19.2.7 Defining Scanner 1 level control



Scanner 1 profile - levels & Id tab

Use this dialog to set up the level control definitions and Id for the Scanner 1 profile.



Scanner 1 level control

### Notes

The Scanner 1 profile level control implements up to 8 channels of 8-bit DMX control. Channels may specifically be allocated to intensity functions, pan and tilt, color and gobo Controls. All other fixture functions must be programmed via the level control.

### Configuring the Channel Control

It is possible to label each of the levels with an individual Caption. Highlight the line(s) in the channel table and type the new caption in the level caption field.

#### Reducing the number of required DMX channels.

By default the Scanner 1 level control has all 8 DMX levels enabled and visible. If the actual fixture uses less than 8 control channels, disabling the unused channels will free them to be used by other fixtures. To disable the unused channels, highlight the channels in the channel table click **disable**, the disabled channels will now be available for other fixtures when setting DMX addresses in the [fixture configuration](#) <sup>[66]</sup> dialog. Note that channels that are marked as unused this way are not detected by the auto-address feature.

#### Selection Id

The selection Id is a small optional 'tag' that allows LightJockey to distinguish between different 'flavors' of user-defined scanner 1 profiles - the tag is a 4-character user definable value. Use this tag to ensure that values are not sent to selected fixtures that are not compatible with the currently selected [master fixture](#) <sup>[80]</sup> by entering a different Id for different Scanner 1 fixtures (same fixture type should have the same Id).

Note that intensity and pan/tilt position controls per definition are cross fixture compatible and will always work across different fixture types.

See also [defining the Scanner 1 profile](#)<sup>[248]</sup>, [generic DMX controls](#)<sup>[84]</sup>

## 19.3 Color Scroller 1

### 19.3.1 User Definable Fixtures - Color Scroller 1

The color scroller profile is a special case of the generic DMX control that allows a light source with mounted color scroller to be programmed as one unit. It also includes a palette function that allows the user to setup a color palette that matches the colors in the scroller. Often color scrollers are attachments to an individual light source (e.g.. a par can that is controlled through a dimmer pack). As a consequence of this the DMX address of the light source and the color scroller may not be contiguous as is normally the case with multi parameter fixtures.

#### Configuring the color scroller

To configure a color scroller fixture, select **Color Scroller 1** in the list of available fixtures in the [fixture configuration](#)<sup>[66]</sup> dialog. Note: when setting the DMX address of the fixture, **specify the DMX address of the Intensity control channel - not the DMX address of the color scroller**. Once the fixture color scroller icons are placed on the desktop, each fixture must be configured with a DMX address for the color scroller unit and (optionally) values for the color palette - see [defining the color scroller profile](#)<sup>[253]</sup>.



*Color scroller control*

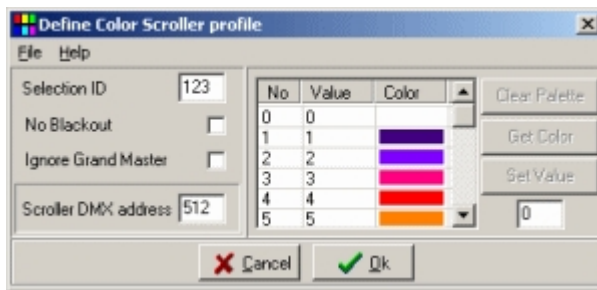


*Color scroller fixture icon*

Once the color scroller has been setup it can be programmed as any other fixture via the color scroller control. The control has a intensity control, and another drag bar for controlling the position of the color scroller. If the fixture has been setup with values for the color palette, colors can also be selected by clicking on the color palette buttons.

### 19.3.2 Defining the Color Scroller Profile

After [configuring](#)<sup>[66]</sup> a color scroller 1 fixture, open the Color scroller definition dialog by right-clicking on the fixture icon on the desktop and select **Define Fixture Profile** from the popup.



Color scroller definition dialog

**No Blackout** - by default the color scroller will [blackout](#)<sup>[195]</sup> by reducing the level of the intensity control to 0. Check to disable blackout.

**Ignore Grand Master** - by default the color scroller intensity is controlled by the [Grand Master](#)<sup>[195]</sup>. Check to disable.

**Scroller DMX address** - this is the DMX address of the color scroller unit. **Note** that LightJockey does not check if the address given is already allocated to other fixtures - it is entirely up to the end user to make sure that the address is correct. The allocated address is also **not** taken into account when using the Auto Address feature in the [Fixture Configuration](#)<sup>[66]</sup> - this may cause other fixtures to overwrite the DMX output values of the Color Scroller.

**Configuring the color palette** - the color scroller profile supports up to 20 color palette buttons (numbered 0-19). To set the DMX value and color for the individual buttons, highlight the line with the button number. Select the RGB color from the color dialog by clicking **Get Color**. Set the corresponding DMX values by entering the value in the field in the lower right hand corner and click **Set Value**. Palette entries may be cleared by highlighting the line(s) and clicking **Clear Palette**.

**Selection Id** - the selection Id is a small optional 'tag' that allows LightJockey to distinguish between different 'flavors' of color scrollers (e.g. scrollers with different gels) - the tag is a 4-character user definable value. Normally when setting the color with the color drag control or palette buttons, the value will be sent to all selected color scroller fixtures. By setting the id to different values for different flavours of scrollers only color scrollers with the same Id value as the [master fixture](#)<sup>[80]</sup> will be programmed.

### The File Menu

**Save Profile** - this will save the current profile to a file. The profile may then be loaded into other color scroller fixtures.

**Load Profile** - this will load a previously saved profile into the current color scroller fixture. Loading a profile does not change the scroller DMX address.

**Clear Profile** - this will clear the current profile.

LightJockey defaults the profiles files to the following folder <LightJockey Installation>\User\UserFixtures\

See also [color scroller 1](#)<sup>[254]</sup>

## 19.4 Generic fixture type 2 profile

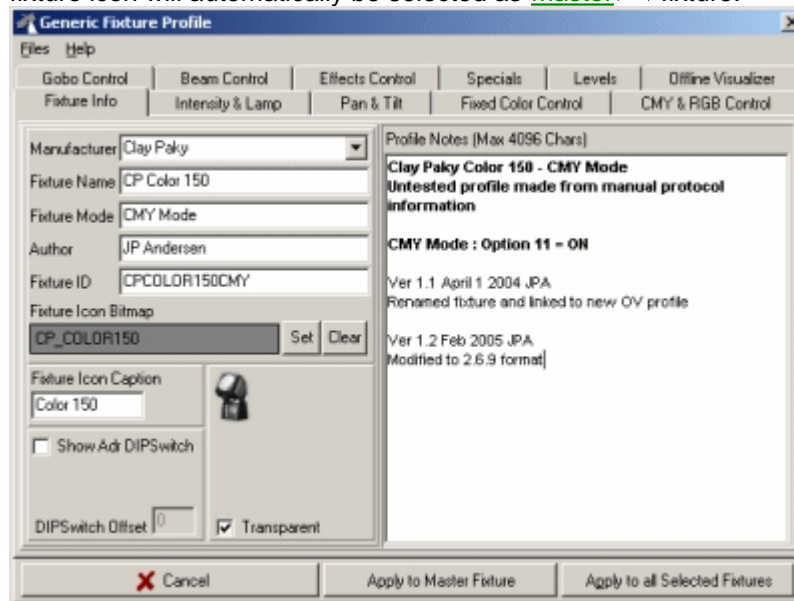
### 19.4.1 Defining the generic fixture 2 profile

A user-defined fixture profile contains definitions of a fixtures control channels, functions and optionally palette values. Defining a profile, unless it is a very simple fixture - usually requires a detailed knowledge of the fixture's DMX Protocol. Please make sure to read the help notes on the individual tabs before defining the first profile. The user definable fixture profile is limited to devices of a maximum of 32 DMX channels and supports optional 16 bit control on pan and tilt control. By default, a new profile only has [generic level control](#)<sup>[84]</sup> enabled (enabling 8 bit virtual fader control of all 32 channels). Additional functions must be defined using the profile dialog.

#### Defining or editing a profile

To define a new or edit an existing profile, configure a **generic fixture 2** in the [fixture configuration](#)<sup>[66]</sup>. Set a valid DMX address for the generic fixture. If a fixture is already connected to LightJockey, set the DMX address of the generic fixture to the fixtures DMX address. Make sure that the address does not overlap with other fixtures already configured in LightJockey and leave enough free addresses for all of the fixtures control channels. Defining a profile without giving the generic fixture a valid DMX address will not work properly.

Once the new fixture icon representing the fixture is placed on the desktop, open the fixture profile dialog by right-clicking on the fixture icon and select **Define Fixture Profile** from the popup menu. The fixture icon will automatically be selected as [master](#)<sup>[80]</sup> fixture.



*Define fixture profile dialog*

The dialog consists pages located on a number of tabs, each tab containing a group of specific fixture related functions (see below). Any changes in the fixture profile dialog must be applied (click any of the **Apply** buttons) to the profile before taking effect. Click **Apply to Master Fixture** to apply the new profile data to the [master](#)<sup>[80]</sup> fixture only; click as **Apply to all Selected Fixtures** brings up a [fixture selection dialog](#)<sup>[257]</sup> to apply the new profile data to all or some of the selected fixtures. Applying a profile to a fixture will change the available controls and functions for that fixture - so it is actually possible to test and program the profile while still defining it. This feature is very useful for testing the profile 'live' with a fixture connected.

### The File Menu

**Load Profile** - this will load a previously saved profile data file.

**Saving profiles** - saving profile data will apply and save the current profile to a named file. Note: updating and re-saving a profile will not automatically update other fixtures using the same (now different) profile.

**Save Profile** - This option will only be available if the profile data has been loaded from a previously saved file (and either loaded manually or configured via the fixture configuration). The file name suggested in the save file dialog is the same as the profile data was originally loaded or configured, making it simpler to modify and re-save a profile without knowing the original filename.

**Save profile as** - Opens the save dialog without suggesting the filename.

**WARNING!** - when using an already existing profile as basis for a new fixture profile or profile variation, be careful NOT to overwrite the original profile by using the filename suggested by the save option.

**Clear Profile** - clears the current profile data.

### Control types.



The generic profiles basically uses two types of controls :

The [dynamic](#) <sup>[259]</sup> controls allows the user to select between different values from an interval of values, usually via some kind of [drag control](#) <sup>[94]</sup> or palette on the fixture control. Some dynamic function may have an associated [palette](#) <sup>[259]</sup>.

The [static](#) <sup>[259]</sup> control type contains static values for one or more fixture control channels and is usually used to select more specialized functions such as fixture reset or lamp on or off commands.

Using the [The fixture info tab](#) <sup>[262]</sup>

Using the [The intensity & lamp tab](#) <sup>[264]</sup>

Using the [The pan & tilt tab](#) <sup>[266]</sup>

Using the [The fixed color tab](#) <sup>[269]</sup>

Using the [The gobo tab](#) <sup>[271]</sup>

Using the [The beam tab](#) <sup>[272]</sup>

Using the [The effects tab](#) <sup>[273]</sup>

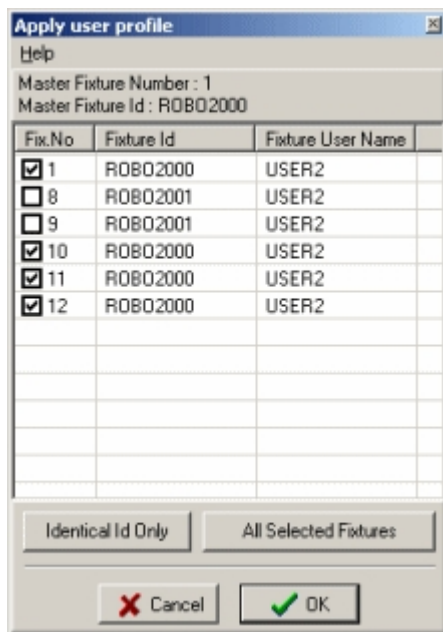
Using the [The special tab](#) <sup>[273]</sup>

Using the [The levels tab](#) <sup>[276]</sup>

Using the [The Offline Visualizer tab](#) <sup>[277]</sup>

See also [user definable palettes](#) <sup>[259]</sup>, [customizing palettes for built-in fixture profiles](#) <sup>[76]</sup>, [importing user defined fixture profiles](#) <sup>[279]</sup>, [exporting user defined fixture profiles](#) <sup>[280]</sup>

## 19.4.2 Applying profile data to multiple fixtures



Use this dialog to apply the user defined profile data to one or more of the [selected](#) <sup>[80]</sup> fixtures (after selecting **Apply to all Selected Fixtures** on the profile definition dialog). Click the fixture lines to check or uncheck fixtures.

Click **Identical Id Only** to uncheck fixtures with a [fixture Id](#) <sup>[262]</sup> different from the current Master fixture. Click **All Selected Fixtures** to check all selected fixtures.

Click **Ok** to apply the profile to all checked fixtures.

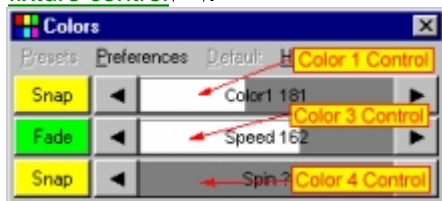
Click **Cancel** to return without applying the profile to any fixtures.

### 19.4.3 User definable dynamic functions

DMX Offset		Dmx Values					
<input checked="" type="checkbox"/> Enable Color 1 Control (Palette)	4	Min	128	Max	255		
<input type="checkbox"/> Enable Color 2 Control (Palette)	0	Min	0	Max	0		
<input checked="" type="checkbox"/> Enable Color 3 Control	5	Name	Speed	Min	0	Max	255
<input checked="" type="checkbox"/> Enable Color 4 Control	4	Name	Spin	Min	0	Max	127

*Dynamic function definition (example, color controls)*

Dynamic fixture functions work on one fixture DMX channel using 8-bit values from 0 to 255 or a defined interval. Usually, defining dynamic functions result in a corresponding [drag bar](#)<sup>[94]</sup> on the final [fixture control](#)<sup>[92]</sup>.



*Corresponding drag controls*

Most of the dynamic functions are named functions, examples are intensity, focus and iris. A majority of these named functions are [cross fixture-type compatible](#)<sup>[22]</sup> which means that they will work across different types of fixtures. Other functions are of a more generic nature, for example Beam 1 or Effects 2 and is not cross fixture compatible.

To define a dynamic function, check the relevant enable box and enter the address offset and minimum and maximum values. If no special minimum or maximum values are required, enter 0 for minimum and 255 for maximum.

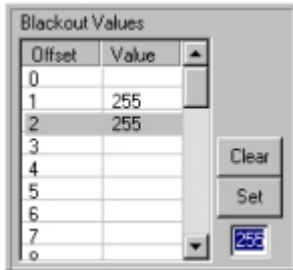
**IMPORTANT : Address offset values start at 0 not at 1 - this means that the first fixture control channel must be entered as 0.**

Entering minimum and maximum values do not impose a minimum or maximum constraint on the DMX output value (see [global patch](#)<sup>[20]</sup>), it just limits the 'active control interval' on the control to given interval. This means that two or more functions may 'share' the same fixture control channel using different value intervals. Functions that share control channel may even be allocated on different tabs (for example an iris function can share fixture control channel with a gobo function). It is not uncommon that fixtures have multiple functions allocated to the same control channel. On the fixture control, the drag control will show the current output value, either as decimal or percentage value. If the current output value is outside the legal range of the function, the drag bar displays a '?' as value indicator.

Some functions use limits other than min/max. For example the strobe function has entries for 'slow' and 'fast'. This is used for certain [cross fixture-type compatible](#)<sup>[22]</sup> functions to allocate the same 'amount' of effect to all selected fixtures, regardless of type.

Some functions have a name field - this may be used to enter a more specific name for the function of the control, e.g.. 'Speed' to indicate that this drag bar controls a speed parameter, or 'ColParm' to indicate that the drag bar controls a color parameter.

### 19.4.4 User definable static functions



*A static function (example blackout)*

The static functions are used to define functions that require specific static values to be sent to one or more fixture control channels. For example, a fixture command such as lamp off may require a specific DMX value sent on the last fixture control channel, while all other channels are set to 0. The static control allows different values to be defined for one or more of the fixtures possible 32 channels. To define values for the static function, highlight the line(s) corresponding to the DMX offset (note first offset is 0, not 1) and enter the value in the field to the bottom right and click **Set**. To clear the offset so that no specific value is sent to the control channel when the function is selected, highlight the line(s) and click **Clear**. When activating a particular function, for example a lamp on command, from a fixture control, the values entered for each offset will be sent to the relevant control channels - if no value has been defined no special value will be sent.

### 19.4.5 User definable palettes

The use of palettes allows the fixture controls to show individual buttons for specific control values (e.g. individual buttons for a specific gobos, colors or functions).



*Gobo control with palette buttons for gobo selection*

Palettes may be created for color, gobo and effect controls. The palettes are created by editing the palette definitions located on their respective tabs in the [generic fixture profile](#) <sup>[25b]</sup> dialog. Each control may contain up to two palettes, each palette is activated by checking the corresponding control - e.g. checking *Enable Gobo Control 1 (Palette)* on the gobo control tab, will activate the first palette on the gobo control. Each palette is limited to 20 entries (0-19). Two palettes may be combined to control features on the same control channel by setting identical offset values.

Effects 1 Palette		Effects 2 Palette					
No	Def	CW	CW	Idx	Shk	Color	Bitmap File
0	0						OPEN
1	10	115	120	125	130		BEAMSPLITTER
2	20	155	160	165	170		FUSEDICHRO001
3	40	175	180	185	190		FLOWERS
4	250						
5	255						
6							
7							
8							

*Palette definition list*

#### Defining the palette entries

Each palette button can be assigned a specific color or bitmap visualizing the effect of the button. Also,

each button can be assigned up to 5 different 'type' values.

### Selecting the palette functions

Note: if the fixture does not have multiple functions for individual palette entries it is not necessary to define the 'type' functions. Some of the more advanced fixtures may map different types of functions for the same effect (e.g. the same gobo) onto one DMX control channel. An example is fixture with rotating gobo where the 'function' (static, rotation, index etc..) of each individual gobo is selected via different values on the same control channel.

For example :

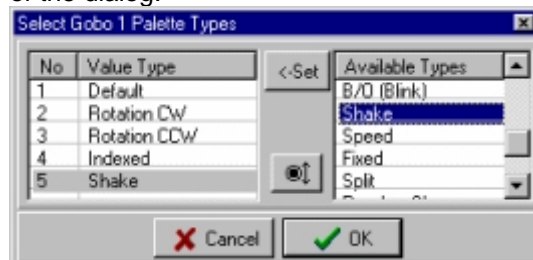
DMX Value for	Static	Rotating CW	Rotating CCW	Indexed	Gobo shake
Open gobo	0				110
Gobo 1	10	115	120	125	130
Gobo 2	20	135	140	145	150
Gobo 3	30	155	160	265	170

etc..

In order to be able to select the different functions for the same effect, the profile includes up to 5 different functions for each palette entry.



By default all 5 possible palette functions are defined as Def (for default). To select new functions or edit the current functions for the current palette, click **Palette Functions** in the lower right-hand corner of the dialog.



*Palette functions dialog*

Assign a function by high-lighting the function number (1-5) in the left hand list, then high-light the function in the available functions list on the right side and click **<-Set**. Alternatively. Note that the available functions are pre-defined and that it is not possible to define new functions.

### Defining simple palettes

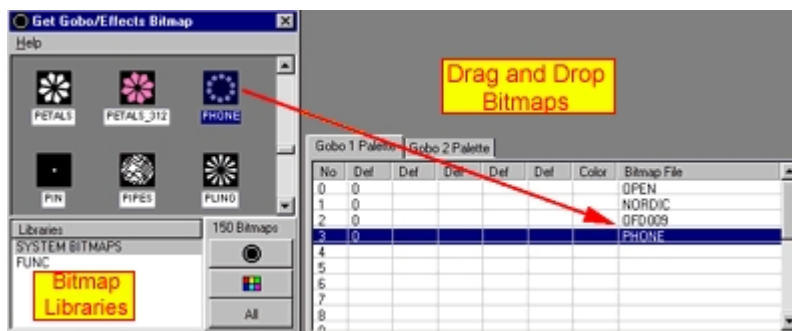
If the fixture does not have multiple functions it is not necessary to define the different palette value types. Enter the DMX values in the leftmost Def column using the first value field. If all DMX values are kept in the same column the different value type buttons will not show up on the fixture control at all.

### Selecting button color

Each palette button should have a color or a bitmap assigned (if no color or bitmap is assigned, the palette button will be black). To select a color, highlight the relevant line in the palette list then click **Color** on the right hand side of the dialog. Use the standard Windows Color dialog to select a suitable color. To save system resources assign colors to buttons that represent color functions, rather than using bitmaps.

### Selecting button bitmap

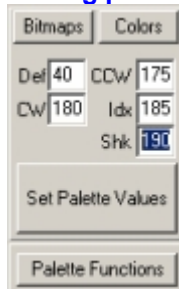
To select a bitmap, click **Bitmaps** on the right hand side of the dialog to open the [select bitmap dialog](#) <sup>[79]</sup>.



Select bitmap dialog

To assign a bitmap to a palette entry, simply drag and drop the bitmap from the bitmap dialog to the palette entry. Alternatively high-light the palette entry and double-click the bitmap. Note that it is not possible to assign color bitmaps to gobo/effect palettes, or gobo bitmaps to color palettes. Click the gobo or color buttons to change the view between gobo/effect and color bitmaps. LightJockey includes a number of bitmaps for colors, gobos and effects - it is however likely that when defining new profiles, the correct bitmaps will not be present. In this case it is possible to create custom bitmaps to use with the palette buttons - see [creating custom bitmaps for palette controls](#) <sup>[278]</sup>. Note that the bitmaps available for the color palettes and gobo/effects palettes are not the same - in order to use color bitmaps for gobos (or the other way around), the bitmap file must be copied into the correct folder.

### Editing palette DMX control values



Entering entry palette values

To set DMX control values for each palette button, highlight the entry in the palette definition list and enter the values in the value fields to the right of the palette list. Note that the labels describing each values corresponds to the value types defined for the palette and change dynamically with the value types selected. If a particular button does not have the same or all the functions of other buttons, e.g. if the open gobo does not have values for rotation or index just leave the field blank. Then, when selecting open gobo on the fixture control the rotation and index functions will not be available. When

the values have been entered, click **Set Palette Values**.

Right-click the palette list to access the palette popup menu:

**Insert** - inserts empty line (disabled if last palette entry is already used)

**Delete** - deletes the highlighted palette entries

**Clear** - clears the selected palette entries

**Clear all** - clears all palette entries

**Compact palette** - removes (deletes) 'empty' palette entries and compacts palette

**Copy palette to clipboard** - copies palette to clipboard

**Copy palette from clipboard** - copies the contents of a palette that has previously been copied to the clipboard.

Note : color palettes can only be copied from other color palettes while gobo and effect palettes may be copied from each other.

### 19.4.6 The fixture info tab

*The fixture info tab*

The fixture info tab contains general profile information, including the fixture manufacturer and model, profile author, different attributes and notes about the profile.

#### **Manufacturer**

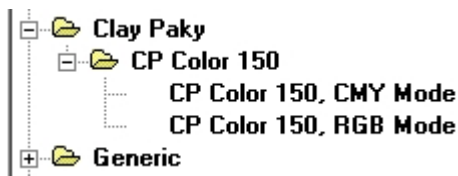
Select the manufacturer from the drop down list. If the manufacturer does not exist in the list simply type the name directly.

#### **Fixture name (model)**

Type the fixture model name here.

#### **Fixture mode**

Since a fixtures may often be controlled in one of several 'DMX Modes' use this field to specify the relevant 'DMX mode'. Profiles with identical manufacturer and fixture names but with different 'DMX Mode' entries will be listed as separate entries in a separate sub folder in the [fixture configuration dialog](#)<sup>[66]</sup>.



*Listing for same fixture in 2 different modes*

### Note

Profiles created LightJockey prior to version 2.6 build 9 contains Manufacturer, Fixture Name and Mode combined into one field (Fixture Mode) - these older profiles are listed as separate model entries in the fixture configuration, even if they are in fact same fixture model in different modes. To update an old format profile, simply edit the relevant fields and re-save the profile.

### Icon bitmap

To select a bitmap for the fixture icon, click **Set** and select the bitmap from the file dialog. If no bitmap is specified, a generic scanner bitmap will be used for the fixture button. In the quite likely event that a suitable bitmap is not supplied with LightJockey, it is possible to use custom bitmaps - see [creating custom bitmaps for fixture icons](#)<sup>[278]</sup>. Check the transparent check box to make the bitmap background color transparent.



*Fixture icon using default bitmap*

### Icon caption

Use the Icon caption field to specify the default caption on the fixture icon. Note that the caption for configured fixtures may be still be modified by changing the fixtures user name in the [fixture configuration](#)<sup>[66]</sup>.

### Fixture ID (IMPORTANT)

Since all fixtures configured as [generic fixture type 2](#)<sup>[247]</sup> are considered identical by LightJockey regardless of the actual profile, the fixture ID has been implemented to distinguish between different 'flavors' of profiles. While the [cross fixture compatibility](#)<sup>[22]</sup> is designed to let certain effects be compatible across fixture types, specific DMX values for effects such as color and gobo does normally not make sense when applied to different types of fixtures. When applying values to non-compatible effects, LightJockey uses the Fixture ID to distinguish between the different flavors of user profiles - for example values for example colors will only be applied to selected fixtures if the [master and slave](#)<sup>[80]</sup> fixtures have identical fixture IDs. When applying the ID it is usually a good idea to select a name that uniquely identifies the fixture type, e.g. "Roboscan 2000".

### Addressing DIP Switch

If the fixture uses a standard DIP switch addressing scheme, enable the Adr-DIP switch to show the address setting in the fixture configuration. It is possible to add a constant to the DIP switch setting to offset the DIP switch by a constant value, for example -1 to set DMX address 1 = all DIPs off, or 512 to always set DIP switch 10 on.



### Profile notes

Use the notes to pass usable information to other users. Notes should include details about specific fixture settings or missing functions or features.

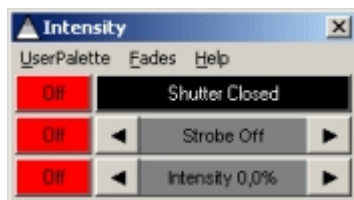
Hint: cut and paste from a word processor like Microsoft Word enables the use of features such as different colors or text sizes and use of attributes such as bold or italics.

See also [defining the generic fixture 2 profile](#) <sup>[255]</sup>

## 19.4.7 The intensity & lamp tab

This tab defines intensity and lamp related functions.

*Intensity & lamp tab*



*Fixture Intensity control*

### Shutter function (semi dynamic function)

Enabling the shutter function results in a shutter button on the intensity control. The function requires two values. One for shutter closed and one for shutter open. Note that the shutter button will only reflect the shutter open state if the current output value has exactly the same value as the shutter open command; most fixtures actually opens the shutter on a large value interval on the control channel. This function may also be used to switch the lamp on and off for fixtures equipped with a halogen lamp.

### Strobe function (dynamic function)

The strobe function requires a value for slowest strobe, a value for fastest strobe and a value for strobe off. The **strobe off** value is sent when the strobe control is dragged all the way back to 0%.

### Intensity function (dynamic function)

Enables intensity control. The values required are the minimum/maximum DMX values used in the control interval (not values for intensity min and max, see inverting values below).

### Enable Grand Master/Intensity

The intensity function may be linked to the Grand Master or sub-masters by checking the **Enable Grand Master/Intensity** box.

**Blackout when Grand Master at 0**



If the fixture does not have intensity control, it is possible, by checking **Blackout when Grand Master at 0**, to have the fixture blackout when the Grand Master reaches 0 (assuming blackout values are entered into the blackout values list - see below).

Note that it is not possible to link both intensity and Blackout to the Grand Master at the same time.

#### **Invert entire Intensity Channel**

If the fixture implements max intensity at DMX value 0 and minimum intensity at DMX value 255 check this option to invert the DMX values for the control channel before transmitting. Output values are calculated as 255-value. This function affects the entire control channel used for intensity control. This function is included mainly for backwards compatibility (see updated functions below).

#### **Invert Intensity value range (\*)**

This function inverts the DMX values as soon as the value is within the range specified in intensity min/max values. Use this switch when the fixture implements maximum intensity at lowest DMX value and minimum intensity at highest DMX value. Note, this function inverts the DMX value as soon as it is within the intensity control range regardless of actual source of the value. This includes sources such as [default DMX values](#) <sup>[278]</sup> - to set a default DMX value to intensity off for a fixture with inverted intensity, type the DMX value for maximum intensity into the default DMX values list (the value is automatically inverted to minimum intensity before being transmitted). Note with this option AND grand master control both enabled make sure to check *Limit GM to intensity range* as well, otherwise the Grand Master may produce unwanted results.

#### **Limit Grand Master (GM) to intensity range (\*)**

This option limits the Grand Master (and sub masters) 'working range' - they will only take effect when the DMX value is within the given intensity interval. Use this function to stop the GM affecting other functions on the intensity channel (such as shutter or strobe commands). If the action of the GM is not limited, it will affect the whole Intensity control channel.

(\*) Note - these options are new to version 2.5 build 6 - they will be ignored if the profile is used on an earlier LightJockey version.

Examples:

*Single function Intensity channels*

Example 1 (single function command channel)

DMX 0-255 : Intensity 0-100%.

Set Intensity Min/Max to 0 and 255 respectively and enable *GM/Intensity control*.

Example 2 (single function command channel)

DMX 0-127 : Intensity 0-100%, DMX 128-255 : no function.

Set Intensity Min/Max to 0 and 127 respectively and enable *GM/Intensity control*.

Example 3 (single function command channel, inverted)

DMX 0-255 : Intensity 100%-0%,

Set Intensity Min/Max to 0 and 255 respectively. Enable *GM/Intensity control* and check *Invert Intensity value range* (or entire intensity channel for backwards compatibility)

Example 4 (single function command channel, inverted)

DMX 0-127 : Intensity 100%-0%, DMX 128-255 : N/A.

Set Intensity Min/Max to 0 and 128 respectively. Enable *GM/Intensity control* and check *Limit GM to intensity range*

Examples:

*Multi function Intensity channels*

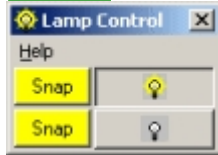
Example 5 (Multi function command channel)

DMX 0-127 : Intensity 0-100%, DMX 127-255 : strobe (or whatever)  
Set Intensity Min/Max to 0 and 127 respectively and enable GM. Also check Limit GM to intensity range (unless the GM should affect the whole channel).

Example 6 (Multi function command channel, Intensity inverted)  
DMX 0-99 : strobe (or whatever), DMX 100-200 : Intensity 100%-0%, DMX 201-255 : strobe (or whatever)  
Set Intensity Min/Max to 100 and 200 respectively and enable *GM/Intensity control*. Also check *Invert Intensity Value Range* as well as *Limit GM to intensity range*.

### Blackout values (static function)

Fill out this [static function](#)<sup>[259]</sup> to enable LightJockey to blackout the fixture. The values are sent when [Blackout](#)<sup>[195]</sup> is enabled directly or via the Blackout when Grand Master at 0 function.



*Fixture lamp control*

### Lamp On Values (static function)

Enable the lamp on function and fill out the static values to enable LightJockey to send a lamp on command to the fixture.

### Auto LampOn Time

Some fixtures may require a lamp on command to be held for a minimum time before activating. To ensure that the [auto lamp on](#)<sup>[52]</sup> function holds the command for the required duration, enter the required minimum time in this field (in milliseconds).

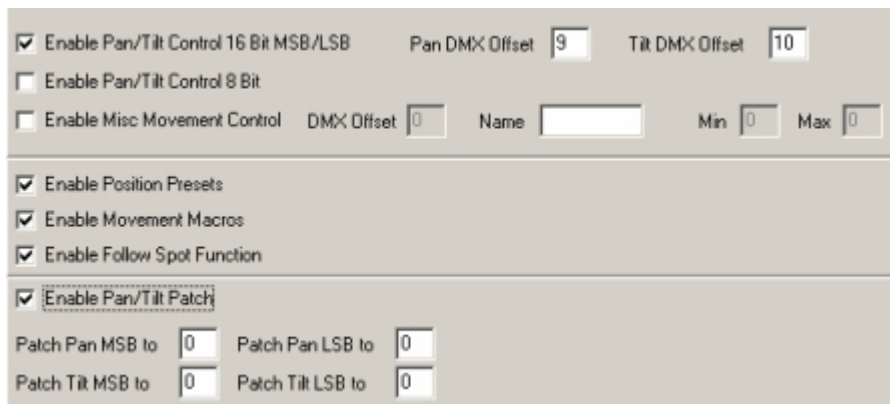
### Lamp Off Values (static function)

Enable the lamp off function and fill out the static values to enable LightJockey to send a lamp off command to the fixture.

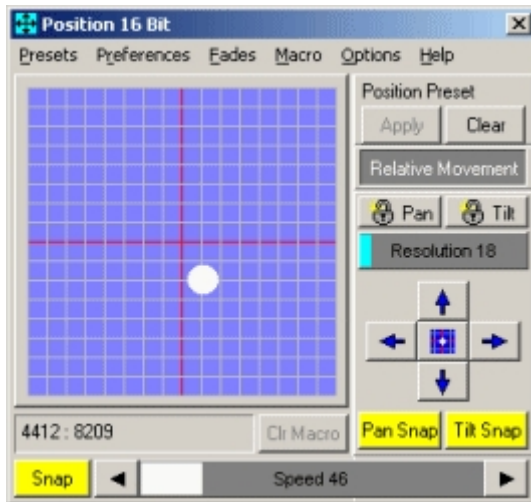
Both lamp on and lamp off commands are available from the fixtures lamp control. Note that these commands are intended to be used with fixtures that are equipped with discharge lamps that requires a certain cool down time before the lamp can be re-struck. Profiles for fixtures equipped with halogen lamps should use the normal intensity/shutter commands for lamp control.

See also [defining the generic fixture 2 profile](#)<sup>[255]</sup>, [dynamic functions](#)<sup>[258]</sup>, [static functions](#)<sup>[259]</sup>

## 19.4.8 The pan & tilt tab



*The pan & tilt tab*



*Fixture pan/tilt control*

The pan/tilt control supports 8- or 16-bit pan and tilt control in any combination of control channels.

### Defining 8-bit pan/tilt

Defining pan and tilt controls with 8 bit resolution is pretty straight forward. Check the **Enable Pan/Tilt Control 8-bit** box and enter the relevant offsets in the **pan and tilt DMX offset** respectively (note offsets start at 0 not 1)

### Defining 16-bit pan/tilt

To enable 16 bit Pan/tilt control, check the **Enable Pan/Tilt Control 16-bit** box. If the fixture uses pan and tilt MSB/LSB control on adjacent channels simply enter the relevant offsets in the **pan and tilt offset** respectively (note offsets start at 0 not 1), otherwise please read through the **Pan/Tilt patching** section below.

**Misc Movement Control (dynamic function)** - Check to enable a [drag bar](#)<sup>[94]</sup> control below the main pan/tilt grid. This control may, for example, be used to control a speed attribute linked to the fixtures pan/tilt.

**Enable Position Presets** - check to enable [position presets](#)<sup>[106]</sup> for the profile.

**Enable Movement Macros** - check this option to enable [movement macros](#)<sup>[98]</sup> for the profile.

**Enable Follow Spot Function** - check to enable the [follow spot function](#)<sup>[198]</sup> for the profile.

### Patching the 16 bit Pan and Tilt channels

This option is only available when 16 bit pan/tilt control has been selected. In order to perform the internal calculations (for example fades or movement macros) LightJockey requires the pan and tilt values to be present in an **adjacent MSB/LSB format** (the pan and tilt control channels themselves do not have to be adjacent). MSB and LSB are also often referred to as coarse and fine channels. Since not all fixture protocols follow this format for 16 bit pan/tilt control it may be necessary to patch the output of the pan and tilt values to the correct control channels after the relevant calculations have been performed.

#### Example 1

Fixture control channels offsets (offset at 0):

Pan MSB(coarse)	10
Pan LSB(fine)	11
Tilt MSB(coarse)	15
Tilt LSB(fine)	16

Since the fixture has adjacent MSB/LSB control channels no patching is necessary.

Pan DMX Offset	10
----------------	----

Tilt DMX Offset            15

**Example 2**

Fixture control channels offsets (offset at 0)

Pan LSB(fine)            10  
 Pan MSB(coarse)        11  
 Tilt LSB (fine)         15  
 Tilt MSB(coarse)       16

The fixture has adjacent pan/tilt MSB/LSB control channels, but the MSB/LSB format is reversed (LSB is first) - so in this case it is necessary to patch the Pan and Tilt values.

Pan DMX Offset            10  
 Tilt DMX Offset         15

Pan Patch MSB to        11  
 Pan Patch LSB to        10  
 Tilt Patch MSB to       16  
 Tilt Patch LSB to        15

**Example 3**

Fixture control channels offsets (offset at 0)

Pan MSB(coarse)        4  
 Tilt MSB(coarse)       5  
 Pan LSB(fine)           13  
 Tilt LSB (fine)         14

The fixture has non adjacent pan and tilt control channels, but since it has two control channels in adjacent pairs it is still possible to use the control channels to perform the calculations and then patch them afterwards:

Pan DMX Offset            4  
 Tilt DMX Offset         13

Pan patch MSB to        4  
 Pan Patch LSB to        13  
 Tilt Patch MSB to       5  
 Tilt Patch LSB to        14

**Example 4**

Pan MSB(coarse)        4  
 Tilt MSB(coarse)       7  
 Pan LSB(fine)           13  
 Tilt LSB (fine)         16

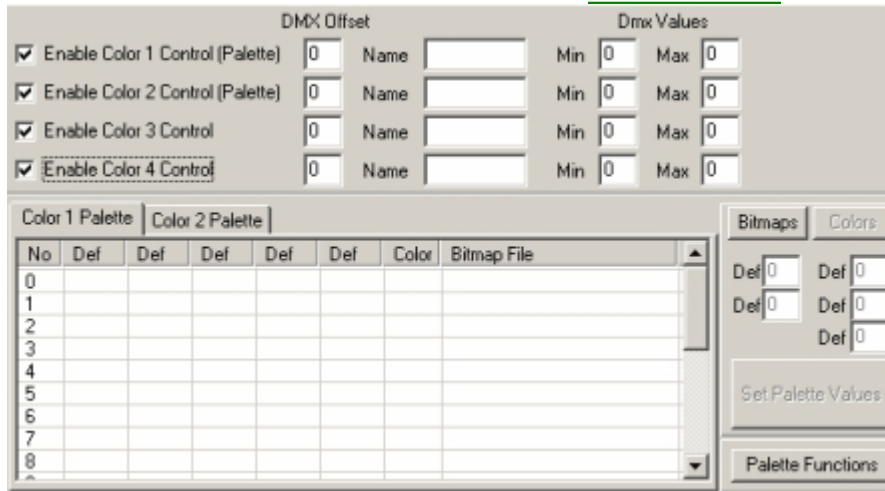
In this case there are no pairs of two adjacent channels that LightJockey needs to perform the calculations so it is necessary to perform the calculations in channels that are not used for other purposes. This means reserving 4 extra control channels, effectively using 4 channels extra pr fixture and limits the profile to a total of 28 useful DMX channels. So for example, if the fixtures last used offset is 20 enter the following values:

Pan DMX Offset            21  
 Tilt DMX Offset         23

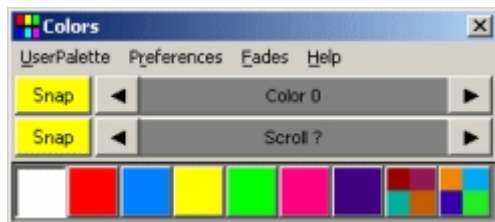
Pan patch MSB to        4  
 Pan Patch LSB to        13  
 Tilt Patch MSB to       7  
 Tilt Patch LSB to        16

### 19.4.9 The fixed color tab

The functions on this tab define the profiles fixed color controls (e.g. colors mounted on a color wheel). CMY and RGB functions must be defined via the [CMY & RGB tab](#) <sup>[269]</sup>.



The fixed color control tab



Fixture color control

#### Color 1 and Color 2 (dynamic functions)

The color 1 and 2 function is intended to be used with selection of colors. Both have the option of having an associated [palette](#) <sup>[259]</sup>.

#### Color 3 & 4 (dynamic functions)

The primary purpose of the color 3 and color 4 functions are to control color related functions other than direct color selection. The functions do not have an associated palettes.

Some fixtures may have combined functions on one control channel, for example fixed color selection and continuous color rotation on one channel. In this case it is possible to 'share' the same control channel between 2 controls. For example :

Fixture has color control channel offset at 4. Color selection is from DMX value 0 to 200 and values over 200 sets continuous color wheel rotation.

Enable the color 1 control and set the DMX offset to 4 and set min and max values to 0 and 200 respectively (and create the palette).

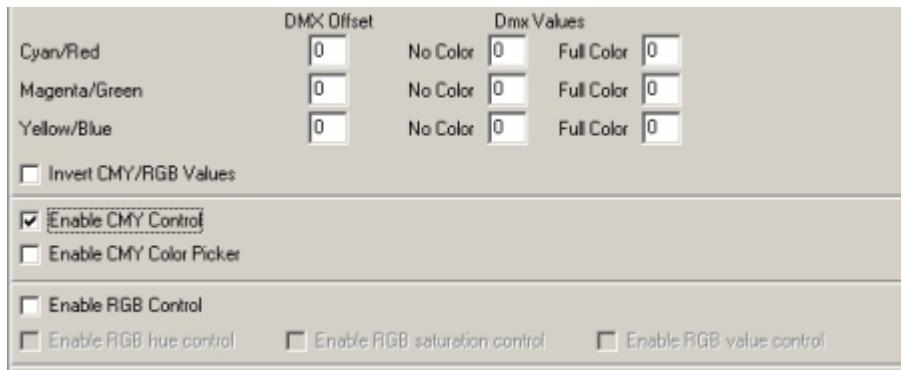
Also assign color control 3 to offset 4 and set min and max values to 201 and 255 respectively.

The two controls now shares the same control channel, but since color control 3 control is limited to the high interval it will control color wheel rotation only.

See also [defining the generic fixture 2 profile](#) <sup>[255]</sup>, [dynamic functions](#) <sup>[258]</sup>, [user definable palettes](#) <sup>[259]</sup>

### 19.4.10 The CMY & RGB tab

The functions on this tab define the profiles CMY and RGB color functions. To define other color functions use functions on the [fixed color tab](#) <sup>[269]</sup>.

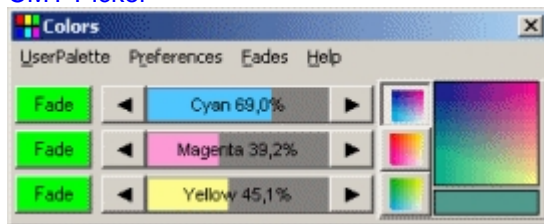


*The CMY & RGB control tab*

### CMY and RGB (dynamic functions)

The profile implements specific functions for CMY and RGB control. Besides the drag bars for each individual color, the CMY function implements a CMY color picker and RGB control implements HSV controls. For fixtures that invert the CMY or RGB values (full saturation at 0 value, no color at 255) use the Invert CMY/RGB values option to automatically invert the values before transmitting to the fixture.

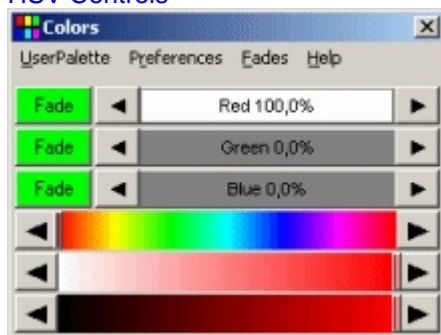
### CMY Picker



*Fixture CMY Control (part of color control)*

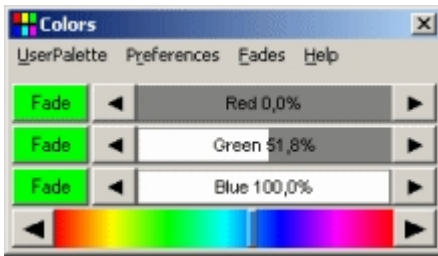
The CMY color picker is only available if each CMY control channel use the full 0-255 value range.

### HSV Controls



*Color control with RGB and HSV controls*

HSV controls modifies RGB levels via Hue, Saturation and Value drag bars respectively. Note that saturation and value bars are only useful for fixtures that integrate intensity control into the RGB control channels (e.g. LED fixtures with no separate intensity control). For fixtures with separate RGB and intensity control, only the hue control bar should be enabled. Note that Hue control is required to enable either Value and Saturation controls.

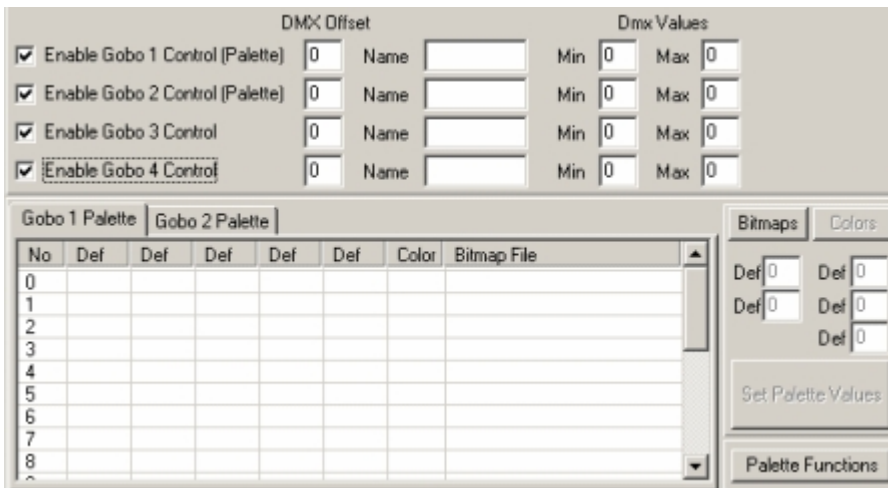


Color control with RGB and Hue control

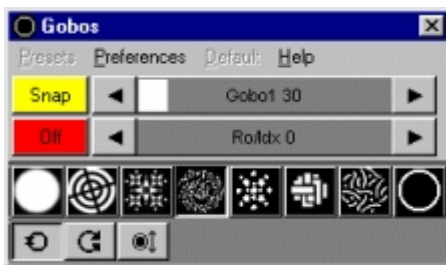
HSV controls are only available if each RGB control channel use the full 0-255 value range.

See also [defining the generic fixture 2 profile](#)<sup>[255]</sup>, [dynamic functions](#)<sup>[258]</sup>

### 19.4.11 The gobo tab



The gobo control tab



Fixture Gobo Control

#### Gobo 1 and Gobo 2 (dynamic functions)

The gobo 1 and 2 function is intended to be used in connection with selection of gobos. Both have the possibility of having an associated [palette](#)<sup>[259]</sup>.

#### Gobo 3 & 4 (dynamic functions)

The primary purpose of the gobo 3 and 4 functions are to control gobo related functions other than direct gobo selection, such as gobo rotation and indexing. The functions do not have associated palettes.

Some fixtures have combined functions on one control channel, for example gobo selection and continuous gobo wheel rotation on one channel. In this case it is possible to 'share' the same control

channel between 2 controls. For example :

Fixture has gobo control channel offset at 4. Gobo selection is from DMX value 0 to 200 and values over 200 sets continuous gobo wheel rotation.

Enable the gobo 1 control and set the DMX offset to 4 and set min and max values to 0 and 200 respectively (and create the palette).

Also assign gobo control 3 to offset 4 and set min and max values to 201 and 255 respectively.

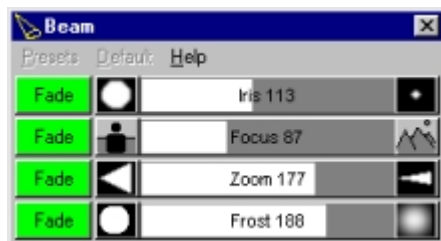
The two controls now shares the same control channel, but color control 3 is limited to the high interval it will be much easier to select the right value for gobo wheel rotation.

See also [defining the generic fixture 2 profile](#)<sup>[255]</sup>, [dynamic functions](#)<sup>[258]</sup>, [user definable palettes](#)<sup>[259]</sup>

### 19.4.12 The beam tab

	DMX Offset		Dmx Values	
<input checked="" type="checkbox"/> Enable Iris Control	<input type="text" value="0"/>		Open <input type="text" value="0"/>	Closed <input type="text" value="0"/>
<input checked="" type="checkbox"/> Enable Focus Control	<input type="text" value="0"/>		Near <input type="text" value="0"/>	Far <input type="text" value="0"/>
<input checked="" type="checkbox"/> Enable Zoom Control	<input type="text" value="0"/>		Wide <input type="text" value="0"/>	Narrow <input type="text" value="0"/>
<input checked="" type="checkbox"/> Enable Frost Control	<input type="text" value="0"/>		Off <input type="text" value="0"/>	On <input type="text" value="0"/>
<input checked="" type="checkbox"/> Enable Beam 1 Control	<input type="text" value="0"/>	Name <input type="text"/>	Min <input type="text" value="0"/>	Max <input type="text" value="0"/>
<input checked="" type="checkbox"/> Enable Beam 2 Control	<input type="text" value="0"/>	Name <input type="text"/>	Min <input type="text" value="0"/>	Max <input type="text" value="0"/>

The beam tab



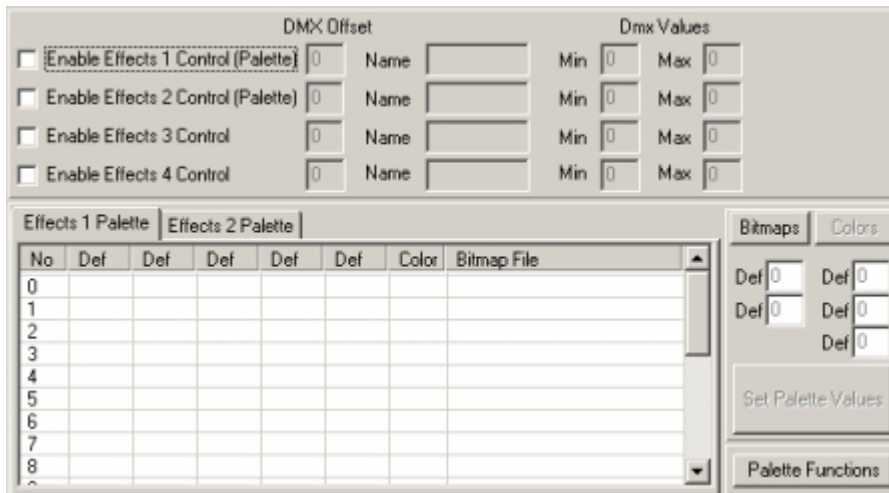
Fixture beam control

The profile supports 4 named dynamic 'beam' functions, namely Iris, Focus, Zoom and (variable) frost or wash. These functions are all [cross fixture type compatible](#)<sup>[221]</sup>. In order for the cross fixture compatibility to work properly make sure to fill in the correct values in the appropriate fields (such as the correct values for wide and narrow zoom). In addition, it is possible to define 2 'unspecified' beam controls for other beam related functions. These functions are not compatible across fixture types.

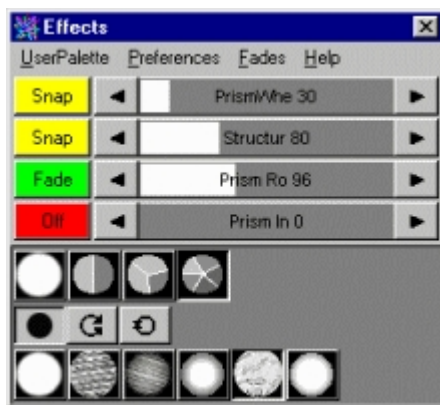
See also [defining the generic fixture 2 profile](#)<sup>[255]</sup>, [dynamic functions](#)<sup>[258]</sup>



### 19.4.13 The effects tab



The effects tab



Fixture effects control

#### Effects 1 and 2 (dynamic functions)

The effects 1 function is intended to be used with selection of effects (e.g. prism effect). Each of the effects controls may use an associated [palette](#)<sup>[259]</sup>.


#### Effects 3 & 4 (dynamic functions)

The primary purpose of the effects 3 and 4 functions are to control effect related functions other than direct selection via the palette, such as rotation, indexing or speed selection. The functions do not have an associated palette.

See also [defining the generic fixture 2 profile](#)<sup>[255]</sup>, [dynamic functions](#)<sup>[258]</sup>, [user definable palettes](#)<sup>[259]</sup>

### 19.4.14 The special tab

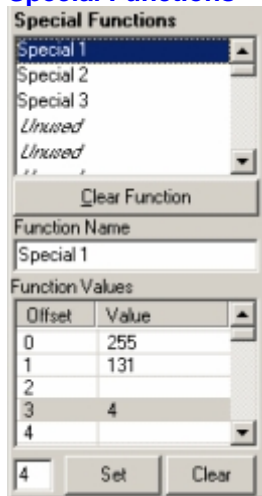
#### Fixture Reset

The special control tab contains an entry for the [fixture reset command](#)<sup>[120]</sup> - the reset command is sent to selected fixtures when clicking  located on the [fixture tool bar](#)<sup>[57]</sup>.

#### Minimum Reset Time

Some fixtures may require the reset command to be held for a minimum amount of time. To ensure that the reset command is held for the required duration, enter the required minimum time in this field (in milliseconds).

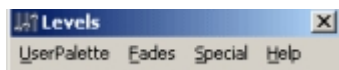
### Special Functions




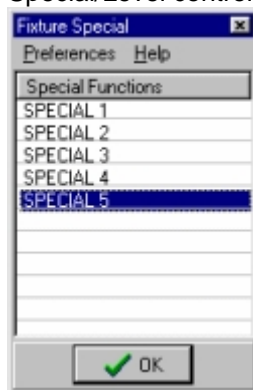
The profile also contains the option to define up to 32 individual static functions that are not already pre-defined in LightJockey. Since the special functions are not defined, LightJockey does not indicate that a special function has been selected, other than showing the values in the fixture controls if the control channels used accidentally coincides with the channels used for the special command. As a consequence of this, there is also no way of removing a special command, short of clearing the scene or defining another special command that counters the first. Also note that the special commands are not presets - changing the contents of a special command does not alter already programmed scenes. All parameters contained in a special command are snapped by default unless another control is sets the channel to fade.

### Defining special functions

To define or edit a special function highlight the line in the special functions list (*unused* describes currently undefined function) and enter the special function values DMX values. Finally, give the function a name in the 'Function name' field.



Once a special function is defined it available in a list from the Special Control menu. To get the Special/Level control click the  icon on the [fixture tool bar](#)<sup>[57]</sup>.

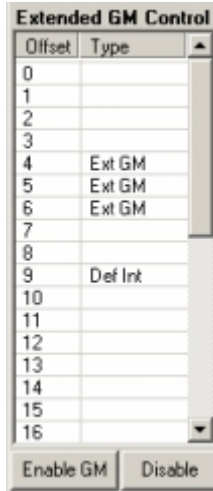


Selecting a fixture special function from the special functions list

Apply the special command by selecting it from the list and click Ok, or double-click the line in the list.

### Extending Grand Master control

By default the [Grand Master](#)<sup>[195]</sup> only affects the dedicated intensity control channel as defined on the [Intensity tab](#)<sup>[264]</sup>. As some fixtures may not implement a dedicated intensity control channel or may feature multiple intensity control channels (e.g. RGB control fixtures without a dedicated intensity control channel), use the **Extended GM Control** settings to extend Grand master control to other control channels than the default intensity control channel.



(Ext GM = Extended GM control)  
(Def Int = Default Intensity control channel)

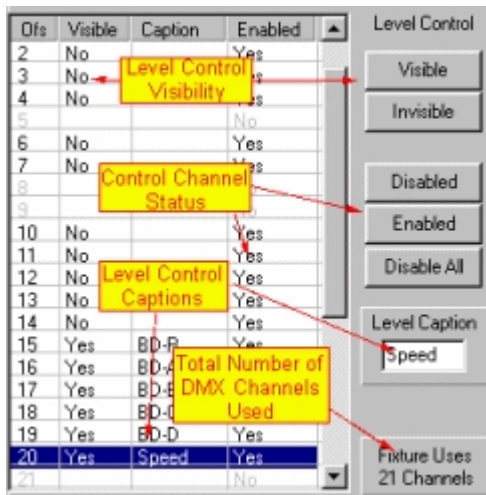
Note that it is only possible to define 'standard GM behaviour' to other channels than the dedicated intensity channel, standard means that the DMX output value is 'scaled' by the GM/sub master value, and that GM settings for the dedicated intensity control channel always overrides extended GM control settings for the same control channel. The ability to extend GM control to other channels than the dedicated intensity control channel is only available from LightJockey version 2.6 build 7. Older versions of LightJockey will ignore the extended GM control if included in the profile data.

### Default DMX Values

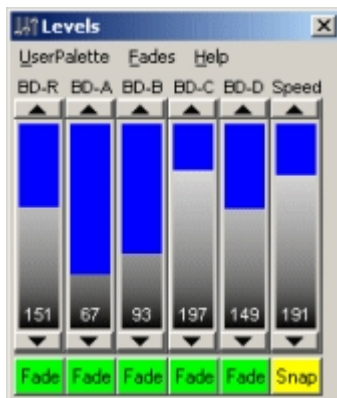
Normally LightJockey assumes 0 as default DMX output value for all controls channels for a newly configured fixture. However some fixtures may exhibit unwanted side effects when receiving 0 on a control channel (such as shutting off a discharge lamp). In this case make sure to specify a suitable default DMX value for critical control channels. The specified values are applied to the current [default DMX output values](#)<sup>[53]</sup> when the profile data is applied and stored with the profile definition when saved.

See also [defining the generic fixture 2 profile](#)<sup>[255]</sup>, [static functions](#)<sup>[259]</sup>

### 19.4.15 The levels tab



The levels tab implements up to 32 generic 8 bit level controls as virtual faders. These may be used to define any dynamic functions that is cannot be defined in the normal function context or takes up too many control channels to fit inside the profile (e.g. barn-doors or extra color or gobo functions).



*Fixture extended/level control*

**Enabled status** By default, the generic fixture has all 32 DMX control channels enabled and visible in the level control. LightJockey uses the status of each of the channels to determine if the fixture has a valid control for that particular offset, so by default all 32 channels are available for control from the level control.

If a control channel is disabled, LightJockey will not send any values to that offset. Normally a fixture profile will use much less than the default 32 DMX channels. To disable the unused channels high-light the line(s) and click **Disable**, or click **Disable All** and then apply the profile (which will re-enable all channels used by the profile). Before saving the profile it is a good idea to verify that the last offsets enabled matches the total DMX channels used by the fixtures DMX protocol.

#### Visible status

The 'visible' status of each offset determines if that particular control channel has a corresponding 'fader' in the level control.

When applying a profile to a fixture, LightJockey will automatically evaluate all [dynamic](#)<sup>[258]</sup> and [static](#)<sup>[259]</sup> functions and enable channel control for the offsets used in the various functions. To avoid having control channels allocated to named functions (for example Intensity) show up in level control, LightJockey also sets the visible status to off. To change the visibility of the individual offsets in the fixtures level control, high-light the line(s) and click **Visible** or **Invisible**.

To assign one or more channels to level control, high-light the offset line(s) and click **Enable** or **Visible**

if the offset is already enabled.

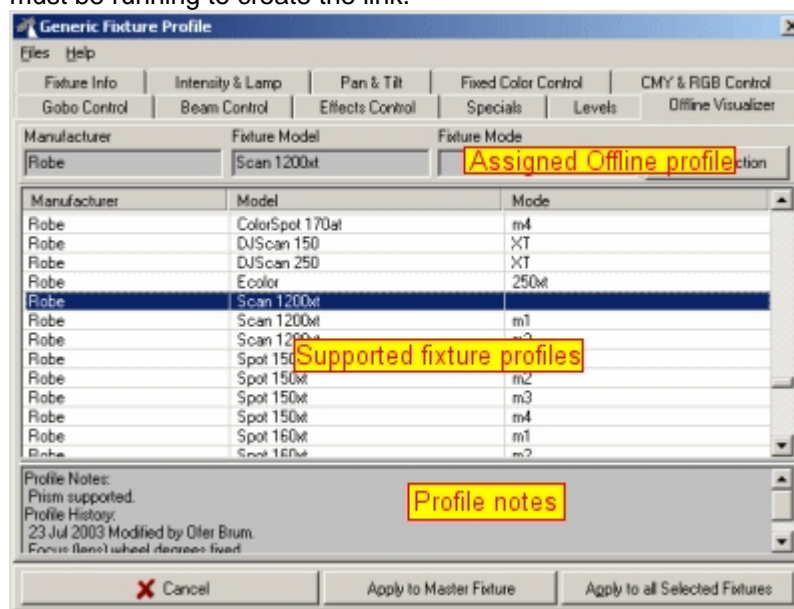
### Level caption

Add a caption to each offset line that identifies the function of the individual level controls. The caption is used to identify the channel on the level control as well as the control channel function in for example the [global patch](#)<sup>[201]</sup> or [generic DMX macro](#)<sup>[156]</sup> dialogs.

See also [defining the generic fixture 2 profile](#)<sup>[255]</sup>, [dynamic functions](#)<sup>[258]</sup>

## 19.4.16 The Offline Visualizer tab

In order to make a fixture appear in the Offline Visualizer, an Offline Visualizer profile for the particular fixture must be linked to the LightJockey fixture profile (LightJockey and Offline Visualizer profiles are two different things) - use the Offline Visualizer tab to link the profile. Note that the Offline Visualizer must be running to create the link.



The Offline Visualizer tab

### Assigning an Offline Visualizer profile to the profile

LightJockey will automatically request a list of supported fixtures from the Offline Visualizer application. The entire list of supported fixtures are shown in the list. Select the profile to link to the LightJockey profile from the list. If a suitable profile does not appear in the list, the Offline Visualizer does not support the fixture.

### Profile Notes

Offline version 4.6+ implements a function to extract notes embedded in the Offline Visualizer profiles - notes and profile history is shown below the list. Not all profiles include notes and history.

### Updating Offline profiles

The complete LightJockey installation package and some update versions ship with a number of Offline Visualizer . New and updated profiles may be found at the Martin Website at [www.martin.com/service/software/controller/lj/Userprofiles.htm](http://www.martin.com/service/software/controller/lj/Userprofiles.htm). The latest official library with offline Visualizer profiles may be downloaded directly from the manufacturer's of the Offline Visualizer at [www.lighthouse.nl](http://www.lighthouse.nl), download area. Follow on-site instructions on how to update the Offline Visualizer fixture library.

### 19.4.17 Creating custom bitmaps for palette controls

The bitmap files must be standard Windows BMP files, and must not be RLE encoded. The size of the bitmap should be exact 31x30 pixels and the color depth should be either monochrome(black/white) or 256 colors (other formats can be used but may not work correctly in all installations). The filename of the bitmap file must not exceed 30 characters in length excluding the .BMP extension and folder name (see later). Note that the scanner1 profile only allows 15 characters in total .

It is possible to use one of the already existing bitmaps as model when creating new custom bitmaps - however be sure to leave the original bitmap intact when saving the new modified bitmap.

The bitmap files for color palette buttons are located in the following folder structure:

<installationfolder>\Source-Images\Colors\<folder name>

The bitmap files for gobo and effects palette buttons are located in the following folder structure:

<installationfolder>\Source-Images\Gobos\<folder name>

User-defined bitmaps must be placed into the same folders - take care not to overwrite the original bitmaps.

Note that LightJockey will not refresh the contents of the bitmap folders as long as the profile definition dialog is open - if new bitmaps are added with the dialog open, click refresh (menu) to update the contents of the dialog with the new bitmap files.

#### Bitmap folders

To organize the bitmaps it is possible to create folders containing the individual bitmaps. The folders are created standard sub-folders under either the \Colors or \Gobos folder. For example

<installationfolder>\Source-Images\Colors\MyColors will enable the folder MyColors. See

[user definable palettes](#)<sup>[259]</sup>.

Since updated versions of LightJockey is likely to contain new bitmaps for gobos and colors, it is advisable to use filenames that are unlikely to be used by LightJockey in the future - e.g.:

Peters\_Cone.Bmp.

### 19.4.18 Creating custom bitmaps for fixture icons

The bitmap files must be standard Windows BMP files, and must not be RLE encoded. The height of the bitmap should not exceed 50 pixels to fit the fixed size icon size. The filename of the bitmap file must not exceed 25 characters in length exclusive the .BMP extension. It is possible to use one of the already existing bitmaps as model when creating new custom bitmaps - however be sure to leave the original bitmap intact when saving the new bitmap.

The bitmap files for fixture icons are located in the following folder structure:

<installationfolder>\Source-Images\fixtures\

User-defined bitmaps must be placed into the same folder - take care not to overwrite the original bitmaps.

#### Transparent background bitmaps



*Fixture bitmap as non-transparent and transparent*

For user defined profiles check **Transparent** on the [Fixture info tab](#)<sup>[262]</sup> in order to make the bitmap background color transparent (assume the color of the 'surface' the bitmap is imposed on). Note that for bitmaps the background color is defined as the color of the pixel in the lower left hand corner of the bitmap.

## 19.5 Importing and exporting profiles

### 19.5.1 Importing user defined fixture profiles

Use the Import profile function to import user defined profiles that has previously been created on and exported from other installations.

To import a profile, open the [fixture configuration](#) <sup>66</sup> and select **Import -> Import Profile** from the menu. Use the standard Windows file dialog to select which file to import.

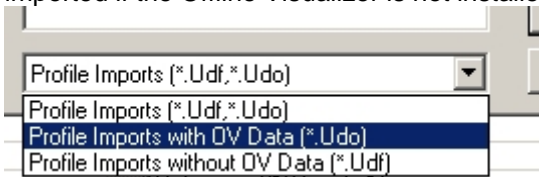
**Note:**

Import/Export files exists in two formats:

**.udo files** - this format includes Offline Visualizer support files as well as the LightJockey profile. There are also .udo files for built in fixture profiles; these contain Offline Visualizer files only. .udo files can only be imported in LightJockey version 2.6 build 5 or higher.

**.udf files** - this format includes the LightJockey profile only.

Use the file dialog filter to list either or one of the two formats. Offline Visualizer support files will not be imported if the Offline Visualizer is not installed.

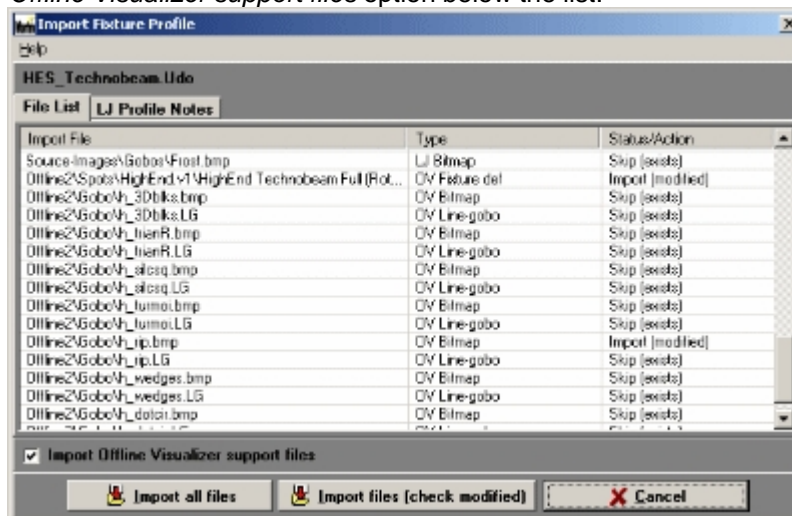


#### Filtering file types

Select a file and click Open to start the profile import.

#### The Import File List

Before copying any files to the installation, LightJockey checks all files contained in the import file to see if the individual file already exists in the installation or if a file with the same file name but a different contents, for example a bitmap file with a different picture of a gobo, is already present in an installation. All files contained in the export file will be listed in the File Import List. If the export file contains Offline Visualizer support files, import of these files may be disabled by unchecking the *Import Offline Visualizer support files* option below the list.



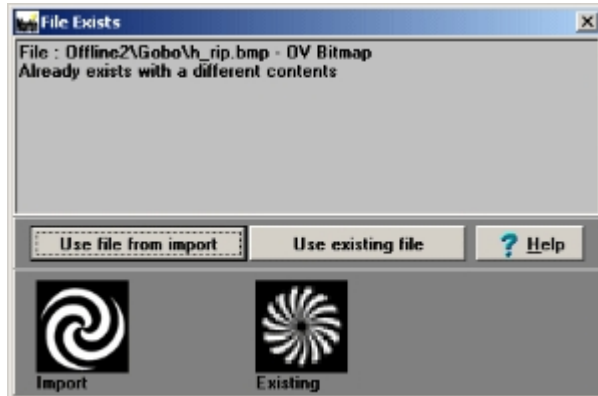
#### Import File List

- If the file does not already exist it will be imported - Import(new).
- If the file already exists and has the same contents it will not be imported - Skip (exists)
- If a file with the same name already exists but has a different contents, new dialog will appear to

decide what action to take - Import (modified)

Click **Import All Files** to import all new and modified files from the profile export file.

Click **Import Files (check modified)** to import all new files and prompt for an action for each file that already exists but with a different contents. The filename is shown together with a small description of the purpose of the file. In case of bitmap files (.bmp) the dialog displays both bitmap versions, both from the import and the already existing bitmap file - note that the bitmaps may not be displayed in their 'natural' size.



*File Exists Dialog*

**Use file from import** - This option will overwrite the existing file with the new file from the import. For profile definition files (.gs2,spt files), this means that the existing profile (LightJockey and/or Offline Visualizer profiles) will be overwritten by the new one. For bitmap files, any fixture already using the old bitmap (e.g. a gobo bitmap) will now use the new bitmap since the file is being replaced.

**Use existing file** - This option will keep the existing file and skip the new one. If the skipped file is a profile definition file, the new profile will not be imported. If the file is a bitmap the new profile will automatically use the existing bitmap in place of the one contained in the import file.

See also [exporting user defined fixture profiles](#)<sup>[280]</sup>

## 19.5.2 Exporting user defined fixture profiles

Use the export function to create a single file containing the fixture profile and bitmaps used, including any custom bitmaps created for the profile as well as Offline Visualizer support files. Once an export file has been created and saved it can be distributed and imported to another LightJockey installation. To export a profile, first make sure to save the profile data in the [profile definition dialog](#)<sup>[255]</sup> file menu. Once the profile has been saved, open the [fixture configuration dialog](#)<sup>[66]</sup> and locate the profile in the available fixture profiles list.

Since version 2.6 build 5 LightJockey can include Offline Visualizer data files in the profile export file.

**Note - when including offline data files the profile is saved in a different format (\*.udo files) and cannot be imported into LightJockey installations lower than version 2.6 build 5.**

### Exporting without Offline Visualizer data

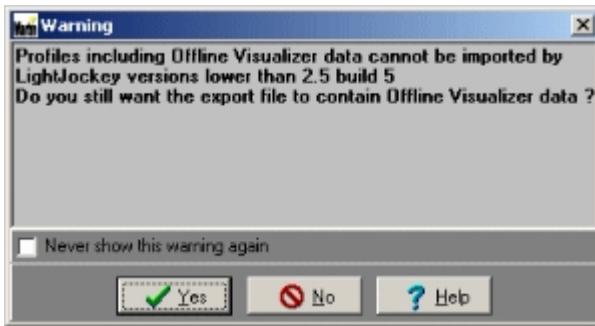
Locate and right-click the profile in the available profiles list and select **Create Export File without Offline Visualizer data**

### Exporting with Offline Visualizer data

**This option is only available if the profile is linked to an existing Offline Visualizer profile and the Offline Visualizer is running.**

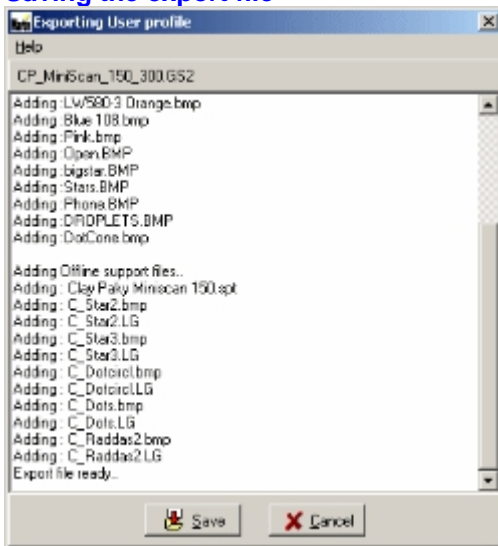
Locate and right-click the profile in the available profiles list and select **Create Export File including Offline Visualizer data**





A confirmation dialog will appear (if not disabled) prompting to verify that the profile should be created including Offline Visualizer data.

### Saving the export file



#### Export file list

The contents of the profile export is now displayed in a list. To save the final export file click **Save** and save the file using the standard Windows file dialog. LightJockey defaults the folder to "<LJ installation>\Exports\". Export files that contain Offline Visualizer support data files are saved as .udo files - export files without Offline Visualizer support files are saved as .udf files.

The saved file may now be moved or copied to another LightJockey installation and imported via the [import profile](#) <sup>[279]</sup> function.

Profiles may be submitted to the LightJockey fixture library through the [LightJockey end user forum](#) here: [Link to topic](#)

See also [importing user defined fixture profiles](#) <sup>[279]</sup>

## 19.6 External application/device profile plug in

The External Application/Device profile is a specialized profile that enables communication from LJ to a 'plug in' type application rather than a DMX device. The plug in application may in turn control other applications or external devices. The profile acts like a regular fixture profile - this means that the external application or device can be controlled and programmed in the same contexts as a regular DMX fixture (e.g. programmed in scenes/sequences/cues, statics etc).

An example of an eternal plug in application is **LJ-RS232Send** that allows control of RS-232 devices from LightJockey - LJ-RS232Send can be found in <Main LJ Folder>\LJ-RS232Send\, please see LJ-

RS232Send help file for more documentation.

### Capabilities

The capabilities of the External application/device link depends entirely on the external application itself - the following section lists the possible options, which may or may not be implemented in the external application.

### String based interface

The external application link implements a string based interface where commands strings are sent from LightJockey to the external application. Command strings may contain ASCII characters from CHR(32) to CHR(127) with a length not exceeding 32 characters pr command (scene). If the external application is controlling an external device, it is up to the external application to transfer the command strings into something meaningful for the device.

### DMX out & in channels

Besides the commands string, the external application link may transfer the value of up to 4 user configurable DMX output channels and 4 user configurable DMX input channels pr profile. Note, there is a maximum limit of a total of 8 DMX output channels unless the selected output channels are within the addressing space of configured DMX transmitter hardware.

### Configuring an external application link

To setup a link to an external application, first [configure](#)<sup>66</sup> an '**External Application/Device**' profile located under the 'Other' manufacturer.

The profile requires a valid DMX address and needs a total of 32 DMX channels. Since it is normally not required that the command data is sent out to the DMX link, the profile does not need to be addressed in the DMX address space covered by DMX hardware (see below).

### Addressing outside the hardware supported DMX address space

If the installed DMX hardware does not support all available DMX out addresses (link 1-4), the external application/device profile may be addressed on an unused link. In order to be able to access links not covered by DMX transmitter hardware, re-configure LJ to no DMX hardware to allow access to the full addressing space. Set the DMX address for the profile to an unused link - then finally, reconfigure LJ with the DMX transmitter hardware. Note that subsequent modifications to the fixture configuration will give a warning that the profile does not have a valid DMX address - in this case, the warning may be ignored.

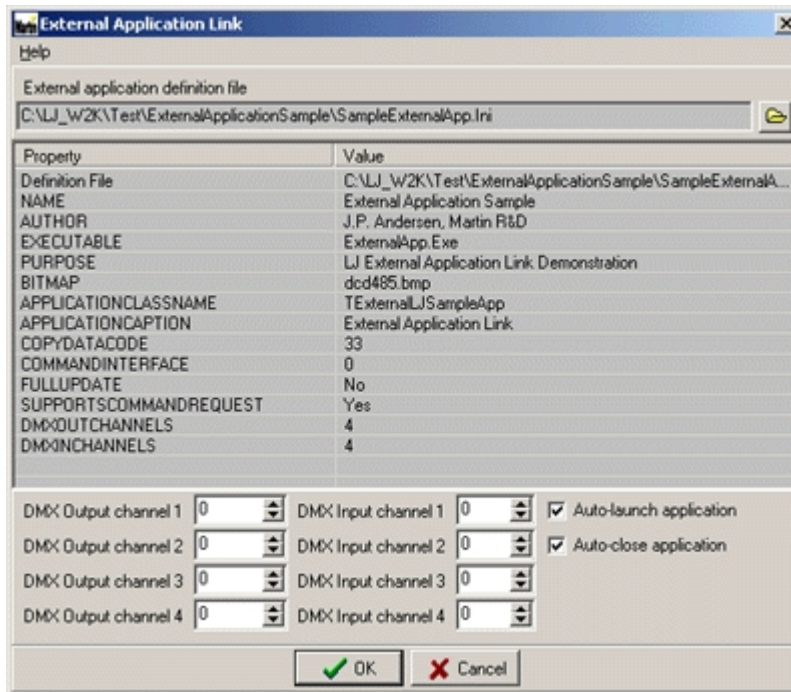
### Application link setup

Once the profile has been setup, it will appear on the LightJockey desktop as an 'unlinked' external application link.



'Unlinked' external link

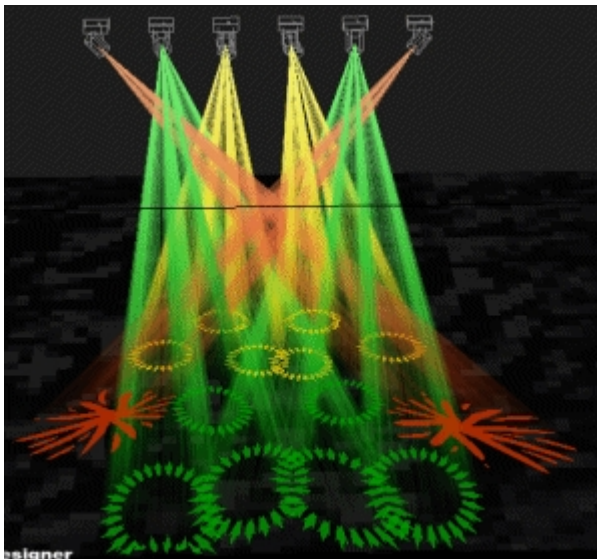
Right-Click the fixture icon, and select **Define Application Link**. Click the folder icon (top right) to browse for the .ini file associated with the external application (see application documentation). If the external application uses DMX output/input values (see application documentation) specify the relevant source channels. Check Auto-launch and Auto-close to have the external application automatically start and close down with LightJockey.



*External application setup dialog*

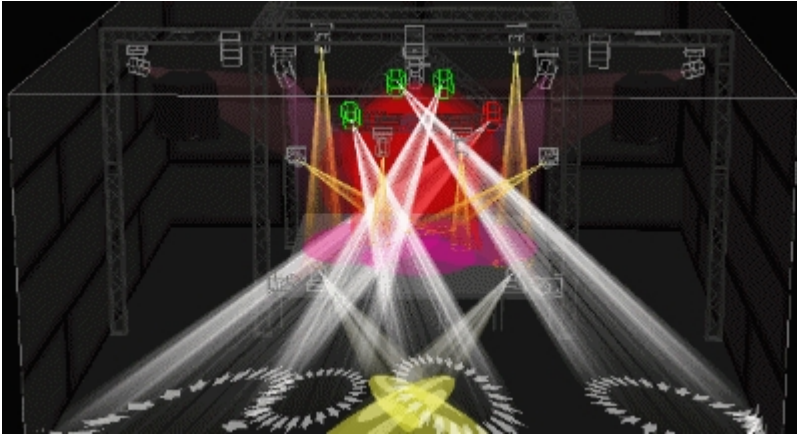
## 20 Real time visualizing

### 20.1 The Offline Visualizer



*The Offline Visualizer*

The Offline Visualizer is a scaled down version of the offline module from Martin Show Designer (MSD) which is integrated into the LightJockey package. The Offline Visualizer is an independent program that is used to create real-time rendering of the lights programmed with LightJockey. The integration means as both programs are running on the same PC, no hardware, special drivers or dongles are needed to enable communication between the two programs.



*The Offline Visualizer using a scene built with MSD*

### Offline Visualizer help

The Offline Visualizer has its own built-in help file. Click help, then contents on the Offline Visualizer window to access.

### Available Offline Visualizer fixture profiles

The fixture profiles used by LightJockey and the Offline Visualizer are not the same - the fact that a fixture has a profile in LightJockey does not necessarily mean that the fixture is also has a corresponding Offline Visualizer profile. LightJockey releases will always contain the Offline Visualizer profiles available at release time but it may be necessary to obtain supplemental Offline Visualizer profiles to use the Offline Visualizer with certain fixtures (if available). The LightJockey online fixture profile library ([www.martin.com/service/Software/controller/LJ/list.asp](http://www.martin.com/service/Software/controller/LJ/list.asp)) updated with the latest available Offline Visualizer fixture profiles.

### First time setup - LightJockey configuration

Before the Offline Visualizer can be used LightJockey must be configured to launch it. This is done via the Setup/Preferences/System menu - External Links tab. Note that in newer releases the Offline Visualizer is enabled by default and this section can be skipped. Check **Enable Offline Visualizer** to enable the communication between LightJockey and the Offline Visualizer. If the check box is grayed out it means that LightJockey could not find the Offline Visualizer installed so possibly an update has been installed rather than the full version. Click Ok and restart LightJockey.

### Starting the Offline Visualizer

Once the link to the Offline Visualizer has been configured there will be a new item in the main desktop menu: **Off-line** and a new tool bar for quick access to some of the Offline Visualizer functions. Note: The Offline Visualizer tool bar may be disabled - Check **Offline Toolbar** in the **View -> Toolbars** menu to enable. Start the Offline Visualizer by selecting **launch**, either from the Off-line menu or via the tool bar.

### Auto startup

To automatically launch the offline whenever LightJockey starts up, check **Auto Launch on Startup** option in the **Off-line/preferences** menu.

### O/V disable/enable

Once the Visualizer is running it is possible to **enable** or **disable** it via tool bar button or keyboard [hotkey](#)<sup>[205]</sup>. In disabled state, the Visualizer is minimized and uses virtually no CPU resources but will restore and resume instantly when enabled.

### Single monitor systems

If the Offline Visualizer shares monitor with the LightJockey desktop (single monitor setups), make sure to check the **Always on top** option in the Settings menu (in the Offline Visualizer) otherwise it will

just disappear behind the LightJockey desktop when ever LightJockey takes the Windows focus. Make sure to check **Auto Minimize on dialogs** in the LightJockey Off-Line/preferences menu to automatically minimize the Offline Visualizer when LightJockey displays a dialog or error message that requires user response to continue.

#### Multi-monitor systems

If LightJockey runs on a multi-monitor system it is usually a good idea to leave LightJockey and the Offline Visualizer running on each their own monitor. However, since multi-monitor video systems have different performance on individual monitors (often 3D accelerated programs such as the Offline Visualizer runs much faster and smoother on the primary monitor) - running the Offline Visualizer on the primary monitor usually gives the best overall system performance.

#### LightJockey: Offline Visualizer preferences

Most settings for the Offline Visualizer is done within the Offline Visualizer itself. LightJockey itself has a few preference settings relating to the Offline Visualizer. These are located in preferences section of the **Off-Line** menu on the main LightJockey desktop.

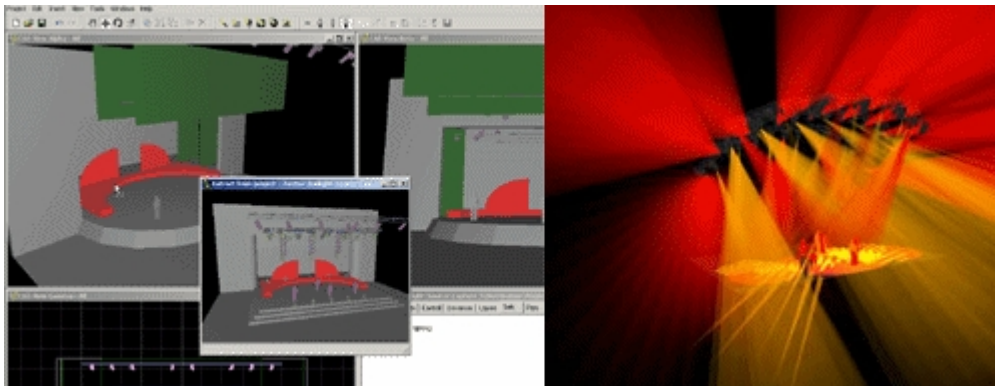
**Auto Launch on Startup** - Automatically launches the Offline Visualizer when LightJockey starts up.

**Autoload last used scene file** - When checked, the Offline Visualizer automatically loads the last used (and saved) scene file on startup.

**Enable Fixture Selection** - Enables LightJockey fixture selection from the Offline Visualizer. Fixture selection is disabled when LightJockey fixture definition or configuration dialogs are active.

**Auto Minimize on dialogs** - Automatically minimizes the Offline Visualizer when certain LightJockey dialogs are shown - typically confirmation dialogs that require user input or error messages. On single monitor systems, such dialogs could easily hide behind the Offline Visualizer window when the Offline Visualizer is set to Always on top. To avoid the Offline Visualizer hiding dialogs on single monitor systems enable this option. On multi-monitor systems where the Offline Visualizer window is located on a different monitor than the LightJockey desktop, disable this option to avoid the Offline Visualizer being automatically minimized.

## 20.2 Interfacing with Capture



*Capture screen shots*

Capture is an application for lighting designers and programmers which includes real time, virtual visualization of lighting designs in on a PC. Capture is developed and supported through Capture Sweden [www.capturesweden.com](http://www.capturesweden.com). LightJockey is capable of interfacing with Capture through CITP (*Capture Interface Transport Protocol*) and a special LightJockey interface module distributed with Capture. The fact that the communication interface is based on network protocols means that the two applications can run on the same PC or on two different PCs connected through a standard network. Interfacing requires Capture version 3.0.16 or higher and LightJockey version 2.6 build 6 or higher.

## Features

The current LightJockey/Capture interface supports bi-directional transfer of DMX data between the two applications. Lighting programs made with LightJockey can be visualized in real-time Capture, and data from Capture, such as setting fixture pan/tilt positions in the 3D view may be used to program LightJockey scenes.

## Requirements

Capture must be installed on the same PC as LightJockey even if the connection is made between different PCs.

## Network requirements

- The computer(s) used must have TCP/IP protocol installed.
- All involved computers on a network must be part of the same subnet.

## Firewall issues

Since the communication between LJ and Capture is based on a network protocol, it may be necessary to allow communication through certain security applications or devices such as firewalls or routers, even if the two applications are running on the same PC. Specifically, port 4810 must be opened for UDP traffic, and port 4811 must be open for TCP traffic.

## Interface Setup

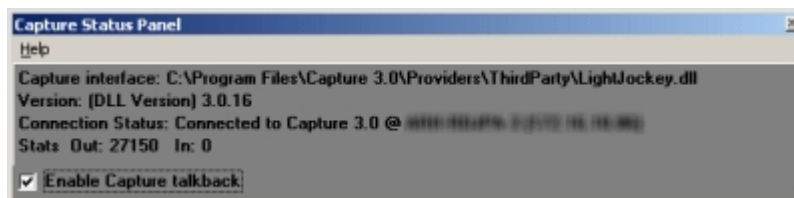
Please refer to Capture documentation for system requirements and instructions for configuring Capture to use CIP and how use LightJockey as data provider (the current version of Capture requires that LightJockey has an active connection before it can be selected as data provider).

## LightJockey Setup

Since the all interfacing software is distributed with Capture, this means that Capture should be installed on the same PC as LightJockey, even if the actual connection is made through network on two different PCs. The Capture interface option will not be available unless LightJockey can find the interface module on the local PC.

## Configuring LightJockey

The Capture interface is enabled by checking "Enable link to Capture" on the External Links tab in the System Preferences dialog (main menu/Setup/System Preferences). As soon as the link is enabled, the interface will start looking for Capture application through the network connection (which includes the local PC) and the Capture status panel will be available through the Capture menu (from the main menu).



### Capture connection status

The connection status shows:

**Capture Interface:** the location of the interface module

**Version:** Version of the Interface module

**Connection Status:** status of connection (disconnected, connection IP)

**Stats:** DMX data packages sent and DMX data packages received through talk back (see below).

Note that the number of DMX data packages sent represents the number of packages sent to the interface module and not necessarily the number of packages that has reached Capture (it will still increase even if disconnected).

### Talk back

The bi-directional communication means that Capture may be used to program LightJockey scenes - DMX data from Capture is used to program the current scene. To enable talk back, check "Enable Capture talkback" on the Capture Status panel.

**Note:** talk back may not work properly if the fixture is configured with different addresses in Capture and LightJockey - especially:

- Fixture has pan or tilt inverted or pan/tilt swapped and the DMX output is patched through the global patch dialog (e.g. fixture with inverted pan has DMX address 1 in LightJockey and 100 in Capture)
- Fixture DMX protocol implements 16 bit pan/tilt different from MSB/LSB pairs and output is re-patched through the global patch dialog.
- Nested patching through the global patch dialog (e.g. DMX channel 1 takes the output from channel 2 which takes the output from channel 3).

Talk back also requires 'receiving' fixtures in LightJockey - programming fixtures that are only configured in Capture will not work properly.

## 21 LJ Manager

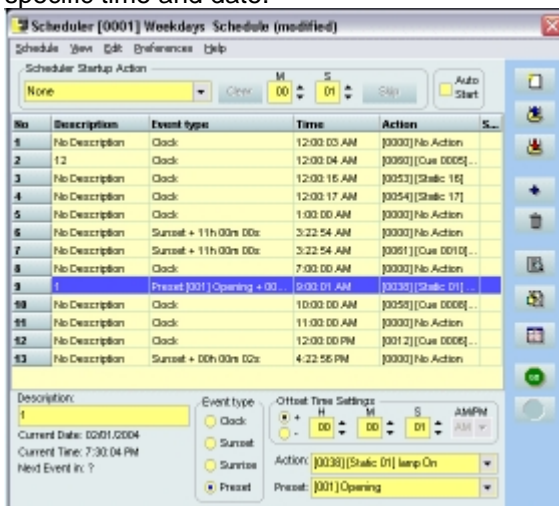
### 21.1 LJ Manager plugin



LJ Manager logo

LJ Manager is a separate plug-in application that works together with LightJockey to greatly expand the capabilities of a LightJockey installation. The current version of LJ Manager includes two separate modules:

The Scheduler module which can be used to automate an installation so certain events happen at a specific time and date.



Scheduler

The Touch Panel module which allows a wealth of functions and commands to be structured and used with a touch screen (or mouse).

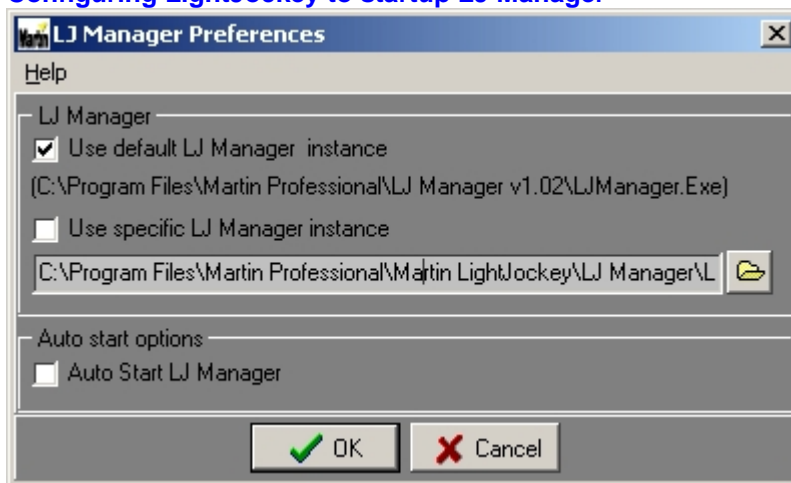


*Touch panel*

Nightclubs, Live Shows or a Remote Control Screen for architectural installations are only a few examples of where LJ manager can be used.

LJ Manager must be installed as a separate application and it's functions are documented in a separate help file and on-line manual.

### Configuring LightJockey to startup LJ Manager



*LJ manager preferences dialog*

Although LJ Manager can be started as a separate application, it may be more practical to have it launched automatically by LightJockey.

To do so, click *LJ Manager* on the main menu and open the preferences dialog. Make sure *Use default LJ Manager instance* is checked and also check *Auto Start LJ manager*. LJ manager will now be automatically launched as soon as LightJockey has initialized after startup.

### LJ Manager user data


LJ Manager saves it's user data in the current [user library](#)<sup>[62]</sup> of LightJockey. This means that data saved from LJ manager is included in the regular LightJockey [backup option and restore files](#)<sup>[64]</sup>.

### Multiple installations issues

When LJ Manager is installed it registers itself as the 'default instance' in Windows registry. If LJ is setup to launch the default instance it will always use the latest installed instance. To maintain a system with several instances of LightJockey and/or LJ manager installed there are a few issues that



should be considered.

A specific installation (which can be different from the default instance) of LJ manager can be used by checking *Use specific LJ Manager instance* and locate the LJManager.exe through the file dialog (click  to open file dialog). However, do be aware that since LJ Manager stores data in the current LightJockey user library, different LJ Manager instances should be used from different LJ user libraries or even different LJ installations - otherwise different LJ manager instances may actually use the same data which can be a problematic if the instances are of different versions.

## 22 The 2510 playback controller

### 22.1 Using the 2510 playback controller with LightJockey

The Martin 2510 Playback controller is a device used to playback sequences that has been created by another device or application. It is not possible to create any programs just using the 2510 itself. Originally the 2510 controller was developed to playback sequences from the Martin 3032 PC controller (using Martin protocol to control fixtures), but has since been upgraded to allow playback of sequences programmed on the LightJockey using DMX protocol. Note that in order to work with LightJockey the 2510 must have firmware **version 2.0** or higher installed. The latest revision of the manual for the 2510 can be downloaded from support section of the Martin Website at [www.martin.com](http://www.martin.com)

The sequences programmed in LightJockey are downloaded to the 2510 controller's non-volatile memory via RS-232 and does not require any special hardware other than a serial cable and an available serial port on the PC. Once sequences are transferred to the memory of the 2510, the LightJockey connection is no longer needed to playback the sequences from the 2510.

#### Programming restrictions

When programming sequences for the 2510 on the LightJockey the following must be observed:

- The 2510 will control any DMX compatible fixture; it is not restricted to Martin fixtures.
- There is no restriction on how many fixtures can be programmed (except for the limit of LightJockey), but since the 2510 only supports one DMX link (512 channels) all fixtures must be addressed on the same DMX link in the LightJockey configuration.
- The 2510 cannot playback cues - only sequences.
- The 2510 can contain a maximum of 99 sequence entries. The number of possible scenes in the sequences depends on how many DMX channels the configured fixtures take up. If all 512 channels are used no more than 247 scenes in total can be programmed. If only 1 DMX channel is used the 2510 may hold as many as 42325 scenes.
- The 2510 cannot use fade times. The only way to program slow transitions into individual scenes is to use speed control that may be provided with the fixture profile. Most of the built in Martin fixtures offer one speed control for pan/tilt and one for effects. It may be necessary to change to a different LightJockey personality/mode to access speed controls via DMX - usually that means changing the DMX mode on the fixture itself as well (e.g. a Roboscan 812 needs to run in DMX mode 2 for access to speed controls) please refer to the technical documentation for the fixtures. Fixtures from other manufacturers may or may not offer speed controls, please refer to the fixtures technical documentation.
- The 2510 cannot use Movement Macros; Pan/Tilt movements must be programmed as static positions using the Pan/Tilt control.

The 2510 uses Martin pin-out on the 3-pin XLR - this means that the signal on pins 2 & 3 are swapped compared to the output of the LightJockey. To use the 2510 with fixtures with 5 pin XLR or 3 pin XLR with DMX pin-out, construct a converter cable (see below).

Although the 2510 does not support fade times or macros, it is possible to create sequences containing multiple scenes to emulate fade times and macros. The easiest way to do this is by using the real-time recording function - see [snapshot and recording from DMX out<sup>\[130\]</sup>](#). **Be aware that emulating fades and macros this way may quickly use up the 2510's scene memory.**

### Cable connections

5-pin to 3-pin Adaptor		3-pin to 5-pin Adaptor		3-pin to 3-pin Phase-Reversing Adaptor	
Male	Female	Male	Female	Male	Female
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	2	3
4			4	3	2
5			5		3
P/N 309160		Construct		P/N 309158	

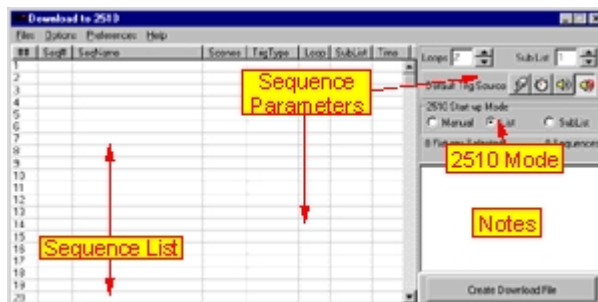
DMX cable converter configurations

25 pin PC output	9 pin PC output	2510 RS-232 input
pin 2	pin 3	pin 3
pin 7	pin 5	pin 5

2510 RS-232 cable configurations

See [creating a sequence list for the 2510 Controller](#)<sup>[290]</sup>, [using the 2510 after download](#)<sup>[294]</sup>, [binary 2510 files](#)<sup>[296]</sup>, [2510 memory test](#)<sup>[296]</sup>

## 22.2 Creating a sequence list for the 2510 controller



2510 download list dialog (empty)

### Creating the 2510 Download File

Before downloading sequences to the 2510 a download file must be created. The download file is a binary image that contains the complete information that is needed for the 2510 to playback the sequences. Use the 2510 download list dialog to create a list containing references to the sequences and various settings to be included in the download file.

To access the dialog select **Download -> Martin 2510 Controller** from the main desktop menu. The list contains 99 lines, each containing a sequence entry with sequence number and associated sequence attributes (see below). Once a 2510 download list has been created, click **Create Download File** to [generate a download file](#)<sup>[293]</sup>.

### Selecting fixtures to be included in download

[Select the fixtures](#)<sup>[301]</sup> that are to be controlled by the 2510 on the desktop. Note that all selected fixtures **MUST** be addressed on the same DMX output link - it is not possible to download data for fixtures on different links.

8 Fixtures Selected      24 Sequences  
258 Scenes of 1476

#### Fixture selection and memory status

Due to the 2510's limited memory capacity the amount of data that can be downloaded is limited.

#### Total number of scenes affecting total capacity

The memory space used various settings in the 2510 has a fixed size, so the number of sequences downloaded does not affect the capacity of the 2510, only the total number of scenes in the sequences.

#### Fixture addressing affecting total capacity

Since the 2510 needs scene data from DMX channel no 1 to the last DMX channel in used by the selected fixtures, the scene capacity depends on the last DMX address used.

LightJockey continuously keeps track of the actual and maximum scene count (if the scene count is not visible it is either because no fixtures have been selected or fixtures on different links have been selected). The capacity ranges from a total of 42325 scenes if only DMX channel 1 is used to 247 scenes in total if all 512 DMX channels are used.

#### 2510 Sequence List

##	Seq#	SeqName	Scenes	TrigType	Loop	SubList	Time
1							

2510 list columns

**##** - Indicates the number of the sequence entry (also the number the sequence will have once downloaded into the 2510).

**Seq#** - Indicates the LightJockey sequence number.

**SeqName** - The LightJockey sequence name.

**Scenes** - The number of scenes in the sequence.

**TrigType** - The default trig type of the sequence once downloaded into the 2510 (see below)

**Loop** - The number of times a sequence should loop when the 2510 is running in list or sub-list mode (see below)

**SubList** - The sub-list number assigned to the sequence (see below)

**Time** - The time it takes for the sequence to perform all its loops in list or sub-list mode (only calculated for sequences in auto-trig mode)

The 2510 can hold a maximum of 99 sequences (98 if a special startup sequence is used).

To assign sequences to the 2510 download list, simply drag sequences from the [list of sequences](#)<sup>[127]</sup> to the 2510 list (note: sequence list must be in drag mode). Alternatively, right-click on the sequence in the list of sequences and select *add to 2510 list* from the popup menu to add the sequence to the first empty line in the 2510 list (requires that the 2510 download list window is opened). Once sequences are placed in the 2510 download list, several attributes such as trig mode or loop count can be set for each individual sequence.

To insert an entry before or delete a sequence entry right-click the line and select the action from the popup menu.

#### 2510 start-up modes

The download file assigns one of three different 2510 startup modes:

2510 Start-up Mode

Manual    List    Sub-List

2510 start up mode

**Manual** - each sequence in the list loops continuously until a new sequence is selected.

**List** - each sequence loops the number of times indicated by the sequence loop value. After the last loop the next sequence in the list is automatically started.

**Sub-List** - in Sub-list mode the 2510 works similar to the list mode, except it only runs sequences belonging to a given sub-list (e.g. all sequences in sub-list 1). A sequence can only be assigned to one sub-list. The actual sub-list may be selected on the 2510 after start up. The 2510 always start up using the sub-list with the lowest number.

### Sequence Attributes

#### Sequence Trig Types

The sequences downloaded to the 2510 must be assigned a default trig mode. The default trig mode is automatically selected after 2510 power up or when re-entering list or sub list mode. If the 2510 is to be used for automated purposes without user interaction it is important to set the right trig mode before creating the download file.



The default trig mode is assigned by highlighting one or more sequences in the 2510 download list and clicking one of trig mode icons on the right hand side.

**Manual Trig** - the sequence is only triggered by the [Manual] button on the 2510.

**Auto Trig** - the sequence is automatically triggered using the programmed scene time

**Music Trig** - the sequence is triggered using the microphone built into the 2510.

**Music Trig/Random** - the sequence is triggered using the microphone built into the 2510. If the sequence contains more than 2 scenes a random scene in the sequence is selected.

**Loops** - Indicates how many times a sequence loops before the next sequence is loaded. Loops are only used in list and sub-list mode.

**Sub-List** - Indicates to which sub-list the sequence is assigned.

### File Menu

**New 2510 list** - clears the current 2510 download list.

**Save 2510 List - Load 2510 List** - It is possible to save and re-load 2510 files from the **File** menu of the 2510 download list. Be aware that saving the file does **not** save the actual contents of the sequences in the download file or the actual fixture configuration. It only saves references to the sequences (sequence number), sequence attributes and selected fixture. This means that if the fixture configuration or included sequences are modified, the contents of the 2510 download file is no longer the same as before the modification.

It is also possible to save a binary image of the contents of the download file for download later, binary files contain all needed data and is not affected by modifications. See [binary 2510 files](#) <sup>[296]</sup>.

### Options

**Compress List** - before the 2510 download list can be made into a download file, it must be 'compressed' removing any empty lines. This is done automatically when the download file is created. Use the command to compress 'manually'.

### Preferences

**Auto Apply Fixture Selection** - when this option is checked the last used fixture section will automatically be applied when the file is re-loaded.

**Force DBO** - used for generating blackout values to be sent when the blackout button is pressed on the 2510. If not checked, the 2510 download file will contain blackout values based on the selected fixture profiles. If Force DBO is checked, 0 values will be sent on all DMX channels when the blackout button is pressed on the 2510.

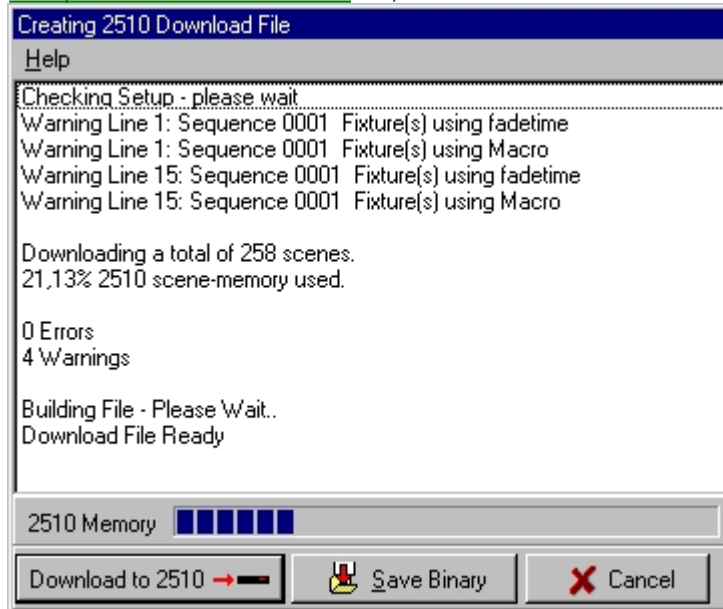
**Set first Sequence as Startup Sequence Only** - check this to assign the first sequence in the list to be startup sequence only. If a dedicated startup sequence is assigned the 2510 list will designate the first sequence as "SU" rather than "01". Subsequent lines are numbered "01" to "98" leaving room for 98 further sequences.

As a dedicated startup sequence, the sequence is loaded and executed right after the 2510 starts up. The sequence will loop the number of times given by the loop count attribute. After startup the sequence is no longer accessible on the 2510. Use a dedicated startup sequence to for example strike

discharge lamps in fixtures with lamp-on commands. Make sure that the sequence runs at least as long as it takes fixtures to power on and be ready to receive the lamp on command (use scene time and loops).

## 22.3 Generating the 2510 download file

Setup the 2510 download file [\[290\]](#), then create the download file by clicking **Create Download File**.



Create 2510 download file dialog (note, warnings were generated)

Before creating the actual binary file, the validity of the list and the sequences used are checked. LightJockey checks for the following:

### Errors:

- [Selected fixtures addressed on different links](#) - generates an error and the file is not created.
- [Download file too large for 2510 Memory](#) - generates an error and the file is not created.
- [Sequence does not exist](#) (a sequence has been deleted after the list was made) - generates an error and the file is not created.

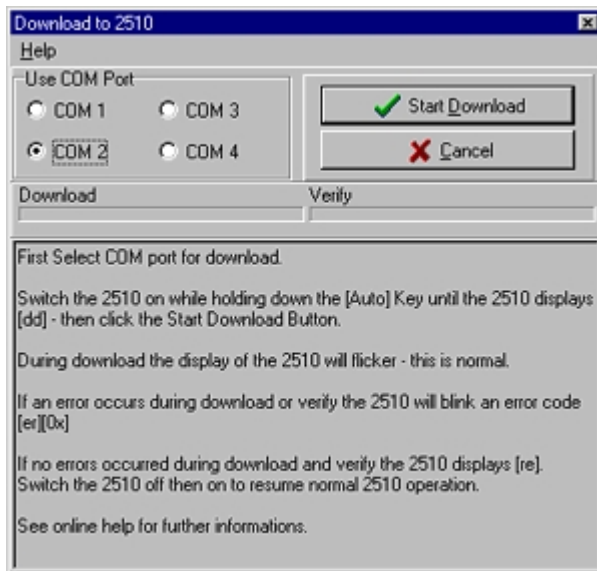
### Warnings:

- [DMX Channel #xxx is Patched](#) - The DMX channel used by the fixture is patched from another source (DMX in or out). Since the data file to the 2510 is generated from the DMX output values and these values may be influenced by patches, the patched output channels may not contain the values programmed into the sequence. Remove the patch using the [global patch dialog](#) [\[201\]](#).
- [Movement macros used](#) - If any of the selected fixtures uses movement macros, a warning is issued. The file will be generated but the 2510 file does not include the macro information.
- [Fadetime used](#) - If any of the fixtures uses fade times a warning is issued. Any effects programmed with fade time will automatically be converted to be snapped by the 2510.

When the file has been created, [download](#) [\[294\]](#) the file directly to the 2510 by clicking the **Download to 2510** or save a binary file for later download by clicking **Save Binary**.

See also [2510 playback controller](#) [\[289\]](#), [using the 2510 after download](#) [\[294\]](#), [binary 2510 files](#) [\[296\]](#)

## 22.4 Downloading the 2510 download file



*2510 download dialog*

This dialog is used to download data to the 2510. Make sure to select the right COM port and follow the on screen instructions to download the data. If the access to comport fails (error accessing COM port) it may be that another LightJockey device is currently configured to the same COM port (such as a 2532 direct access or 2518 controller in RS232 mode). Use the [hardware setup](#) <sup>[22]</sup> dialog to disable the configured device, then, if necessary re-configure the COM port once the data has been downloaded.

The download procedure consists of a data download part and a verify part. The communication from the PC to the 2510 is one-way only so the LightJockey cannot directly verify the download, or indeed, even if a 2510 is connected at all. The download is automatically verified by downloading the data to the 2510 a second time and letting the 2510 compare with the stored data. To check that the download has been performed correctly check the result after download in the 2510 display. If the downloaded data verifies correctly the 2510 will display **[rd]**, if there was an error during download or during verify the 2510 will flash **[er]** and **[xx]** where **xx** indicates an error code.

Error codes 02 and 03	download failed, but the contents of 2510 has not been changed.
Other error codes	download failed, and the contents of 2510 has been compromised.

After a successful download, the 2510 must be switched off then on again to start the playback.

See also [2510 playback controller](#) <sup>[289]</sup>, [using the 2510 after download](#) <sup>[294]</sup>, [binary 2510 files](#) <sup>[296]</sup>

## 22.5 Using the 2510 for playback

Once programs have been downloaded to the 2510, it must be switched off and on again to initialize correctly.

### 2510 Startup

During startup the 2510 flashes **[25][10]**, then the firmware revision **[X.X]**, then the download host application (**[LJ]** for LightJockey). Finally, the number of downloaded sequences is flashed 3 times. If a dedicated startup sequence has been setup, the 2510 will start running this sequence while flashing **[SU]** in the display. The startup sequence may be aborted at any time by pressing any key on the 2510. If no startup sequence has been assigned or after the startup sequence has finished, the 2510 will start to playback the downloaded sequences in the default 2510 Startup Mode selected in the

[2510 list dialog](#)<sup>[290]</sup>.

### Manual Mode

The 2510 will start executing sequence #1 in the default trig mode. Use [up] and [down] buttons on the 2510 to select different sequences and load the new sequence by pressing [Enter]. The trig mode of the sequence may be changed at any point, see later.

### Sub-List Mode

The 2510 will start executing the first sequence in sub-list with the lowest number. The 2510 indicates the current sub-list number by displaying [-X] where X indicates the sub-list number.

Use [up] and [down] buttons on the 2510 to select a different sub-list, and start the sub-list by pressing [Enter].

### List Mode

The 2510 will start by executing the first sequence in the list, followed by the rest of the sequences in sequential order. When all sequences have been executed the list starts from top.

### Changing list mode

The 2510 mode may be changed at any point in the following cycle: Manual -> Sub-list -> List -> Manual

From Manual mode to sub-list mode: press and hold the [Enter] button until the 2510 displays [-X] where X indicates a sub-list number, then release [Enter]. To change directly to list mode hold down the [Enter] button until the display briefly displays [--].

From Sub-List mode, hold down the [Enter] button until the display shows [--] to enter list mode.

From list mode, press the [Enter] button briefly until the display shows [--] to enter manual mode.

Note that when entering Sub-list or List mode, the sequence trig modes are reset to the default trig modes and scene times programmed in the 2510 list.

### Trig modes

The 2510 has 4 different trig modes, each of the sequences are assigned a default-trig mode in the [2510 list](#)<sup>[290]</sup>.

The actual trig mode may be changed on the 2510 at any time using the [Manual], [Auto] and [Music] buttons. The actual trig mode will remain active and override the default trig mode until the 2510 is switched back into Sub-list or List mode.

**Manual** - Sequences are only triggered when pressing the [Manual] button.

**Auto** - Sequences are triggered by the internal clock, either using the scene time originally programmed in the LightJockey sequences or using the override time provided by the user. To set an override auto-trig time, press the [Auto] button continuously until the desired auto-rate is set. To restore to the pre-programmed auto time, press and hold the [Auto] button for more than 0.5 seconds.

**Music** - Press the [Music] button to switch to music trig mode. The 2510 will now trig the sequences via the built-in microphone.

**Music Random** - To enter the Music random mode, press and hold the [Music] button for more than 0.5 seconds. In Music Random mode, sequences with more than 2 scenes, when triggered by the microphone will select a random scene in the sequence rather than selecting scenes sequentially.

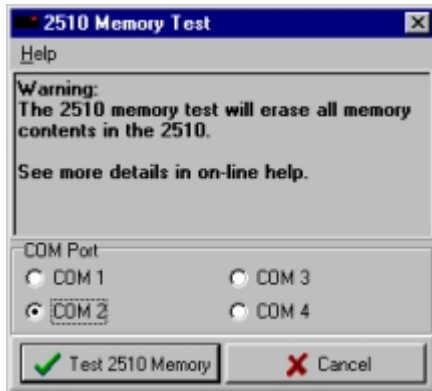
### Blackout

Use the [Blackout] button to blackout the fixtures. Press the [Blackout] button again to restore the light output. Unless the *Force DBO* switch has been set in the [2510 list dialog](#)<sup>[290]</sup>, black out will be performed according to the blackout command defined in the relevant LightJockey fixture profiles. This means that all effects not related to fixture intensity will not be affected, allowing a more graceful restore from a blackout.

See also [2510 playback controller](#)<sup>[289]</sup>, [using the 2510 after download](#)<sup>[294]</sup>, [binary 2510 files](#)<sup>[296]</sup>

## 22.6 2510 memory test

**Warning:** The 2510 memory test is a destructive test - it completely erases the memory contents of the 2510 controller. The test is used to check the flash memory chip mounted on the 2510 PCB. The memory test is accessible from *Options* menu of the [2510 list dialog](#)<sup>[290]</sup>.



*2510 Memory test dialog*

Switch on the 2510 while holding down the [Auto] key until the 2510 displays [dd]. Select the COM port on the 2510 Memory test dialog and click **Test 2510 Memory** to start the memory test. During the test, the display of the 2510 will flicker a lot - this is normal. At the end of the test the 2510 displays [rd] if the memory test is Ok, a flashing [er] [xx] indicates a problem with the 2510 flash chip.

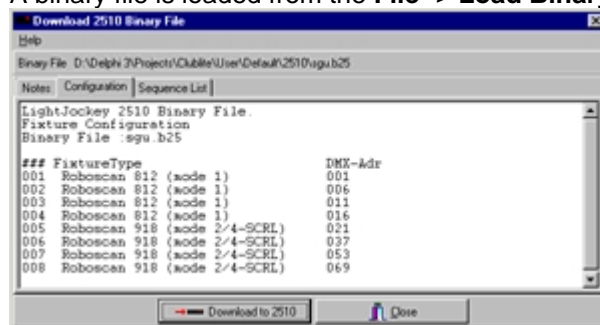
## 22.7 Binary 2510 files

In contrast to the files saved from the 2510 list dialog which are basically just 'reference' files, the binary 2510 file contains the complete binary image of the 2510 download file. The binary file may be saved right after the download file has been [created](#)<sup>[293]</sup>. When the binary file is saved, the notes, a list containing the fixture configuration with DMX addresses and a list of sequences are all embedded in the binary file. The notes and lists may be viewed when re-loading the binary file. It is not possible to re-construct the original fixture configuration or sequences from the binary file. If it is necessary to maintain 2510 file lists for different fixture configurations use different user libraries for each configuration.

Since the binary file contains all data for download and documentation for the fixture setup and sequences it is a useful format for storing or distributing a 2510 download file for a known configuration. Make sure to include useful information about special fixture settings etc. in the notes on the 2510 list dialog before saving the binary file.

### Loading a binary 2510 file

A binary file is loaded from the **File -> Load Binary 2510 file** menu entry in the [2510 list dialog](#)<sup>[290]</sup>.



*Load Binary 2510 file dialog*



Use the standard Windows file dialog to locate and select the 2510 binary file. Once the file has been loaded, click **Download to 2510** to download the data to the 2510. The notes and lists attached to the binary file may be viewed on the different tabs. While it is not possible to print the information directly from the dialog, the content may be moved by simple cut and paste to any application such as MS Word or Windows Notepad in order to make a printout.

See also [generating the 2510 download file](#)<sup>[293]</sup>

## 23 Creating download files for the 2518 controller

LightJockey may be used to create sequences that may be compiled and later downloaded to the Martin 2518 DMX controller. It is not possible to download data directly from LightJockey to the 2518 controller. After creating a download file (.mem file) it must be downloaded to the memory of a 2518 controller via a special 2518 upload/download utility. The upload/download utility may be downloaded from the support section of the Martin Website at [www.martin.com](http://www.martin.com)

### Download Restrictions

The 2518 controller imposes a number of restrictions on what be downloaded.

**Sequences must contain exactly 6 scenes.** If a sequence contains less than 6 scenes the remaining scenes are patched with all 0 values. If a sequence contains more than 6 scenes only the first 6 scenes are used.

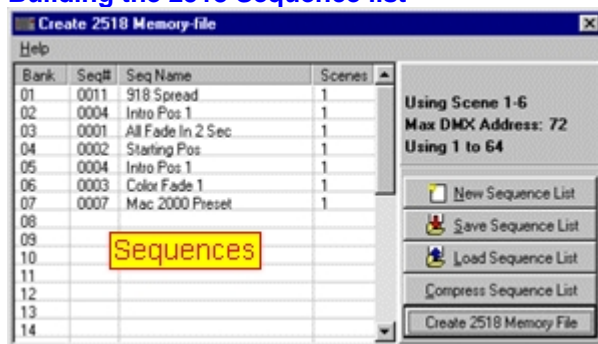
**No more than 30 sequences consisting of 6 scenes each can be downloaded.**

**Only fixtures assigned DMX addresses 1-70 on link 1 can be included in the download.** It is not possible to include fixtures that use DMX addresses above 70 or is addressed to a different link.

**The 2518 does not support fade times, scene times or movement macros** - while it is possible to download sequences containing fade times or movement macros, these are ignored by the 2518. Slow transitions must be programmed using speed controls.

LightJockey will automatically resolve pan/tilt inversion settings and [position presets](#)<sup>[106]</sup> when generating the download file. The [default DMX output](#)<sup>[53]</sup> will also be applied to all non-programmed DMX channels in each scene.

### Building the 2518 Sequence list



2518 sequence list

To build a list of sequences for the 2518, select **Download -> Martin 2518 (.Mem file)** from the desktop main menu. This opens the 2518 sequence list. To add a sequence to the list, drag the sequence from the [list of sequences](#)<sup>[127]</sup> to a line in the list. The 30 lines in the list each corresponds to a 2518 bank. Clear the sequence for a specific bank by right-clicking the line and select **Clear Bank** from the popup menu..

**New Sequence List** Clears the current 2518 sequence list.

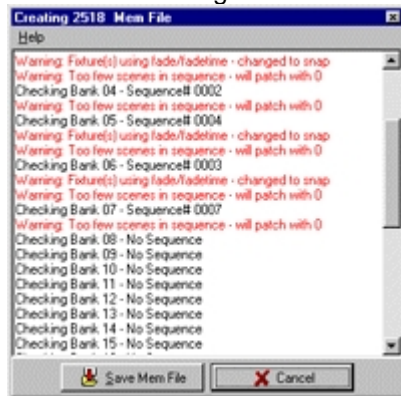
**Save Sequence List** Saves the current 2518 sequence list to hard disk for later retrieval (note only the

sequence numbers are saved, not the actual contents of the sequences)

[Load Sequence List](#) Loads a previously saved 2518 sequence list.

[Compress sequence list](#) compresses the list by moving sequences up in the list to eliminate empty banks.

Once the 2518 sequence list has been set up, make sure to select the fixtures to include in the download by selecting them on the desktop. Then click **Create 2518 Memory File**. Each sequence will be checked before the download file is created and the results are shown in a list, displaying the total number of warnings and errors at the bottom of the list.



*Memory file list*

The following issues generates warnings:

**Fixture(s) using macros:** One or more fixtures have been programmed with a movement macro. The macro is ignored.

**Fixture(s) using fade/fadetime - changed to snap :** one or more fixtures have been programmed with fade times. Fade times are ignored.

**Too few scenes in sequence - will patch with 0 :** there are less than 6 scenes in the sequence, the remaining scenes are patched with 0.

**Too many scenes in sequence - scenes 1- 6 will be used :** there are more than 6 scenes in the sequence, only scene 1 through 6 are used.

The only situation that will generate errors is if a sequence has been assigned to a 2518 bank and then deleted before the .mem file is generated.

If the sequence list contains no errors, the memory file may be saved to disk by clicking **Save Mem File**. Please refer to the documentation on the upload/download utility and the 2518 controller (all available from [www.martin.com](http://www.martin.com) - support section) for information on how to download the Memory file to the 2518 controller and how to use the 2518 controller for playback and programming.

## 24 Release notes

The following pages contain release notes for the individual LightJockey releases.

[Version 1.01 Notes](#) 332

[Version 1.03 Notes](#) 331

[Version 1.04 Notes](#) 330

[Version 1.05 Notes](#) 329

[Version 1.06 Notes](#) 324

[Version 1.07 Notes](#) 319

[Version 1.08 Notes](#) 316

[Version 2.0 Notes](#) 315

[Version 2.1 Notes](#) 312

<a href="#">Version 2.2 Notes</a>	311
<a href="#">Version 2.3 Notes</a>	310
<a href="#">Version 2.5 Notes</a>	307
<a href="#">Version 2.6 Notes</a>	301
<a href="#">Version 2.7 Notes</a>	300
<a href="#">Version 2.8 Notes</a>	299
<a href="#">Version 2.9 Notes</a>	299

## 24.1 Version 2.9

### Fixture personalities added/changed

#### Build 1

Added built-in profile for Martin MAC III Profile, Basic 16.bit

Added built-in profiles for Martin Extube single segment with HSI, HSIC and RGBW control.

Added built-in profiles for 16-bit control of RBG fixtures (includes profile for one 16-bit RGB unit and four 16-bit RGB units).

### Features added

#### Misc. Changes

##### Build 1

- LightJockey will now recognize Windows Vista (32-bit only) as operating system and allow for Universal USB/DMX interface configuration and use when running under Windows Vista. Note that the Universal USB/DMX interface is the only DMX transmitter hardware that will detect and run under Windows Vista.
- The driver for the Universal USB/DMX interface has been [updated](#)<sup>[26]</sup>. Users of the interface will be reminded to update the driver each time LightJockey starts up until the drivers have been updated. Universal USB/DMX users are urged to update the driver as soon as possible.

#### Bug fixes

##### Build 1

- A bug causing the programmed fade times on intensity channels to be affected (increased on fade out) when the master intensity was lowered below 100% has been located and fixed.

### Offline Visualizer updates

## 24.2 Version 2.8

### Fixture personalities added/changed

#### Build 1

- Added built-in profiles for Martin MAC 2000 Wash XB in regular mode (second color wheel installed) and Studio mode (dimmer wheel installed)
- Added built in profiles for Martin Alien LED Downlight, HSI and RGBW modes

### Features added

#### Misc. Changes

##### Build 1

- Help file format has been changed from the old Winhelp format to the newer HTML help (chm) format. Note that due to default browser security settings a HTML help file may not open correctly if the file is not located on a local drive (e.g. if LightJockey is installed to a network drive). Also note that Windows 95 does not by default support HTML help files. HTML help support is automatically installed together with newer versions of Internet explorer or can be installed separately via the HTML Help redistributable from Microsoft ([MS download link valid at time of writing](#)).
- Several of the external applications, such as [Audio analyzer](#)<sup>[192]</sup> or [LJ-MidiIn](#)<sup>[239]</sup> now redirects help

file requests to a running instance of LightJockey. As a consequence of these changes, accessing on-line help from these applications will not be available unless LightJockey is running.

### Bug fixes

#### Build 1

- Fixed bug with intensity snap/fade for built in smartMAC profile.
- Enabled userpalette function for Exterior 200 LED, HSI profile

### Offline Visualizer updates

## 24.3 Version 2.7

### Fixture personalities added/changed

#### Build 1

- Added built-in profile for Mania EFX 600, Mania SCX 700, Exterior 1200 Wash

#### Build 2

- Added built-in profile for MAC 700 Wash and Mania EFX 700

#### Build 3

- Added built-in profile for Martin MAC TW1, Martin GRB Laser 1.6 (Basic mode), Martin Mania EFX 800 and Martin Stagebar 54.

#### Build 5

- Added built-in profile for Martin Mania SCX 700 in intensity mode and Martin Exterior 1200 Image Projector.

#### Build 6

- Added built-in profile for Martin Mania SCX 800, mode 2 intensity

#### Build 7

- Modified extended controls for Martin Exterior 1200 wash to add shortcut options introduced with fixture firmware version 1.2.

#### Build 8

- Added built in profile for Martin MAC 575 Krypton
- Added built in profile for Martin smartMAC
- Added built in profiles for Martin Exterior 200 LED in RGBAW, HSI and HSIC modes.

### Features added:

#### Build 1

- Added support for the [Universal USB/DMX interface](#)<sup>[24]</sup>

### Misc. Changes:

#### Build 1

- Added a progress window to the Setup/Fixture Configuration dialog.

#### Build 3

- Updated driver and system files for [Universal USB/DMX](#)<sup>[24]</sup> interface for compliance with interface hardware revision B. New driver is backwards compatible with hardware revision A. There is no need to update unless a revision A interface is replaced by a revision B interface. Driver installation procedures are unchanged.

#### Build 5

- Changed naming and ID's used to link to the offline Visualizer by Martin Stagebar fixtures. Existing scene files containing stagebars will have to be re-linked either through "Read fixture list" in the O/V or by rightclicking the fixture icon, then selecting Customize Fixture to select the proper O/V profile.

#### Build 7

- Added compatibility with capture 2005

**Build 9**

- Added smartMAC channel descriptions

**Bug fixes:****Build 1**

- Fixed EFX 500 rotation/shake speed fade button
- Fixed Acrobat intensity control

**Build 3**

- Added master and blackout control to built-in profiles for MAC 700 Wash and Exerior 1200 Wash

**Build 4**

- Added Generic Macro capabilities to Martin Stagebar 54 profiles.
- The Online/Offline function now works with the Universal USB/DMX interface

**Build 6**

- Fixed autostrike and gobo palette position issues for Mania SCX 700

**Build 7**

- Fixed missing link between Mania SCX 700 shutter and grandmaster

**Build 9**

- Fixed transfer of pan value from OV for smartMAC profile

**Offline Visualizer updates:****Build 1**

- Updated Visualizer application. (Version 4.7.6.1)
- Library updated. (23.12.2005 update from [www.lighthouse.nl](http://www.lighthouse.nl))

**Build 3**

- Updated Visualizer application. (Version 4.8.0.2)

**Build 4**

- Updated Visualizer application. (Version 4.8.0.3).
- Fixes problem with fixture selection from the O/V and prism selection in double head fixtures

**Build 6**

- Updated Visualizer application. (Version 4.8.2).
- The Offline Visualizer now features it's own help system - relevant content removed from this help file.

## 24.4 Version 2.6

**Fixture personalities added/changed****Build 1**

- Added built-in profiles for Martin Imager Gobo and Imager Gobo+Scanner attachment.
- Added built-in profiles for Imager Rotating GoboWheel and Imager Rotating GoboWheel + Scanner attachment.
- Modified Martin Wizard profiles to include auto lamp strike command.
- Swapped prism CW/CCW rotation direction in MAC250 Krypton, MAC250, MAC250+ and MX10 profiles to match protocol specifications (this does not affect scenes already programmed).
- Added built-in profile for Martin CYCLO 04 DMX
- Fixed several bugs in bug in MAC 250 Krypton profile. Effect speed control not working, gobo shake control not allowing gobo# 6 to shake, and bugs in focus, prism and pan/tilt speed not being included in user palettes. Made a few cosmetic changes to color and gobo controls.

**Build 3**

- Swapped gobo rotation directions (CW and CCW) on Imagers without scanner attachments (does not affect already programmed sequences).

- Added built-in profiles for MAC 250 Entour and MAC 550 Profile.

#### Build 3

- Swapped gobo rotation directions (CW and CCW) on Imagers without AND without scanner attachments- again. Hopefully this time they are correct.

#### Build 4

- Added profiles for Atomic Color (combined Atomic+Color scroller profile) and separate Atomic Color-scroller.

#### Build 5

- Modified Fibersource CMY 150 Offline Visualizer link to match OV Profile.
- Modified MAC 2000 gobo and effects palettes
- Added built-in profile for MAC 2000 Wash Studio mode
- Added built-in profile for CYCLO 03 DMX
- Fixed bug in CYCLO 04 DMX color control
- Added built-in profile for Martin CX-10.

#### Build 7

- Added built-in profiles for Martin Ego-X4, Ego-X5 and Ego-X6
- Added built in profile for Martin Mania SCX 500
- Added built-in profiles for Martin Inground CI and CMYI

#### Build 8

- Added built-in profiles for Martin Magnum Hazer, Martin Magnum 2000
- Added built-in profiles for Jem ZR24/7 Hazer, Jem Roadie X-trem, Jem ZR12-DMX
- Added built-in profile for Martin Mac 250 Wash

#### Build 9

- Modified Mac 250 Wash implementation to match production DMX protocol
- Added built-in profile for Martin Stage Cyclo

#### Build 10

- Added built-in profile RGB pack x 4 with a different RGB pannel layout (RGB x 4 B)
- Added built-in profile for Martin MAC 700 profile

#### Build 11

- Added built-in profile Mania EFX 500, Mania SCX 600

### Features added:

#### Build 1

- Added hotkey hooks for [Offline/Online switch functions](#)<sup>[198]</sup>
- Added [hotkey functions](#)<sup>[205]</sup> for Generic Macro enable/disable and Marco Engine enable/disable
- Added [hotkey functions](#)<sup>[205]</sup> for Master intensity full/off, +/- 1 and +/-10.
- Added option to automatically activate a static entry when activating a [follow spot setting](#)<sup>[198]</sup>.
- Added [Hotkey function](#)<sup>[205]</sup> for Offline Visualizer enable/disable
- Support for [Fingers for LightJockey](#)<sup>[210]</sup> implemented. The implementation includes a functional virtual model of Fingers.

#### Build 2

- Added hotkey function to show the Virtual Fingers (doesn't toggle Virtual Fingers)
- Added *stop* to userdefined fixtures palette functions.

#### Build 4

- Added alternative [DMX-in function](#)<sup>[237]</sup> *Cuelist Go (Alt)*, which implements Go commands using a single DMX-in value transition.
- Added Restore LJ desktop on startup option to [System Preferences](#)<sup>[50]</sup>.
- Added Flash Sequence option to [Cuelist commands](#)<sup>[177]</sup>
- Added Sequence Intensity + on/off to [Fingers Fader functions](#)<sup>[220]</sup>
- Added DMX-in emulation of channels 13-24, 25-36, 37-48 to [Fingers Fader functions](#)<sup>[220]</sup>
- Added combined Freeze+B/O function to [hotkey functions](#)<sup>[205]</sup>.
- Added Statics latch and Statics level control to [2518 fader functions](#)<sup>[242]</sup>

- Added Inverted versions of Macro amplitude and speed control via [DMX in](#)<sup>[231]</sup> and [Fingers Jogwheel functions](#)<sup>[223]</sup>

#### Build 5

- The [fixture configuration](#)<sup>[66]</sup> dialog has been modified considerably. Fixture profiles are now listed according to manufacturer.
- Added extraction of Offline Visualizer notes to the [Fixture Configuration dialog](#)<sup>[66]</sup> as well as the [Offline Visualizer tab](#)<sup>[277]</sup> in the Generic Fixture Profile dialog.
- Added a new, optional [fixture profile export format](#)<sup>[280]</sup> - the new format includes support data files for the offline visualizer (if present). As a consequence of the new format, bitmap files can no longer be renamed during profile import. **Note: the new import file format cannot be imported in versions lower than 2.6 build 5.**
- Added [Use Global Chase Rate](#)<sup>[144]</sup> to Cue control. The new option forces all manually triggered sequences to follow the a 'global' chase, even when a new cue is loaded.
- Added function to [disable Fingers automatically selecting cueslots](#)<sup>[211]</sup> when a function or multi-selection is activated. Fader functions changed so that only functions with relevance to cueslots may select cueslots. Flash button functions now included in cue slot selection.
- Added [option](#)<sup>[203]</sup> to have HTP groups affected by the the intensity Master and submasters - by default HTP groups are not affected by intensity masters.
- Added [option](#)<sup>[283]</sup> to disable automatic minimizing of the Offline Visualizer when certain dialogs are shown.

#### Build 6

- Added support for linking up with [Capture](#)<sup>[285]</sup>
- Added [hotkey functions](#)<sup>[205]</sup> for [Sequence Playback](#)<sup>[124]</sup> control (forwards, reverse and stop).
- Although still a separate application (and installation), [LJ Manager](#)<sup>[287]</sup> is now an officially supported plug-in for LightJockey.
- Top row of Fingers Cue slot buttons may now be configured with cue slot functions. Added button LED feedback to Slot On/Off function when assigned to top row.
- Added [Wait PC Date-Change](#) to [cuelist commands](#)<sup>[177]</sup> for PC clocked cuelists crossing midnight

#### Build 7

- Added shortcut button for Generic fixture profiles in [fixture configuration](#)<sup>[66]</sup>.
- Added [Cue Slot On Solo](#)<sup>[219]</sup> function for Fingers
- Added option to extend GM control to several control channels for individual fixtures to [user defined fixture profiles](#)<sup>[273]</sup>. The function is mainly useful for fixture profiles with multiple intensity control channels or fixtures without dedicated intensity control channel (e.g. RGB based LED Fixtures).
- Added [DMX in translation tables](#)<sup>[236]</sup> for translating DMX in values to other values. Useful when overwriting specific fixture control channels via DMX in.
- Added option in manual cue lists to jump directly to a different line (rightclick the line and select jump to from the popup)
- Added [Slot Solo On](#), [Slot Solo On Flash](#), and [Slot On Flash](#) functions to [Fingers cueslot button functions](#)<sup>[219]</sup>.
- Added hotkey for list of generic macros toggle.
- Added custom unit captions, HSV control and RGB palette to the generic [RGB pack control](#)<sup>[89]</sup>. Changed the way the control is used slightly.
- Added the option of HSV (hue, saturation, value) control bars to [user defined profiles with RGB control](#)<sup>[269]</sup>.
- Added refresh option to the bitmap picker used when creating user defined profiles.

#### Build 8

- Added option to modify O/V profile link for built in fixtures through the [customize fixture dialog](#)<sup>[76]</sup>.
- Added replace matrix to [static control](#)<sup>[189]</sup> for limiting replacing statics replace individual static entries
- Added export option to the print fixture configuration in the fixture configuration dialog. The export option will export the configuration to a standard text file and includes DIP switch settings.
- Added [hotkey functions](#)<sup>[205]</sup> for cuelist select previous, next and start.
- Added Sequence Time (Inv) fader function for [Fingers](#)<sup>[220]</sup>.

#### Build 9

- [Static entries](#)<sup>[189]</sup> are now using individual fade times when enabled.

#### Build 11

- Added support for the [Universal USB/DMX interface](#)<sup>[24]</sup>

#### Misc. Changes:

##### Build 1

- Modified [2532 function list](#)<sup>[226]</sup> so page selections are now assignable to matrix buttons.
- [Hotkey function](#)<sup>[205]</sup> trig sequence default now also trigs sequences in audio trig mode.
- Changed *LTP* designation to *LoTP* in [sequence intensity](#)<sup>[150]</sup> settings to avoid confusion with the usual meaning of LTP (latest takes precedence)

##### Build 5

- Applying a user defined profile from the [definition dialog](#)<sup>[273]</sup> now includes the specified default DMX values to the current default DMX output.
- Modified **Save** and added **Save as** function for user defined profiles. **Save as** works 'as usual' - **Save** will suggest the original profile data filename (if any) making it easier to modify and re-save a profile without hunting down the original filename. Note that the save option is not be available for fixtures configured in earlier versions.
- Modified [Disable Hotkeys in Dialogs](#)<sup>[203]</sup> function for more consistency.
- Removed *Disable Hotkeys when Active* option from [the Generic DMX control](#)<sup>[86]</sup>. Keys assigned as hotkeys now perform assigned actions.
- Removed *Disable Hotkeys in Cue# Entry* option from the [list of cues](#)<sup>[137]</sup>. Keys assigned as hotkeys now perform assigned actions.
- Added COM5 through COM9 options to [Fingers setup](#)<sup>[211]</sup>, 2518 connection through RS-232.
- Modified timings on RS-232 connection to 2518 in mode 2.
- Doubleclicking a bitmap in the [Select Bitmaps](#)<sup>[79]</sup> dialog now automatically advance the list by one item until the last item is reached.
- Modified Fingers pan/tilt jogwheel functions so initial pan/tilt values are captured from the current output values if the current scene does not have any pan/tilt values (fadestate is off)

##### Build 6

- Fixture selection from the Offline Visualizer now disabled when individual fixture definition or configuration dialogs are open.
- Several Fingers [jogwheel](#)<sup>[223]</sup> functions now display the actual value of the function controlled on the status pannel rather than the relative value change (e.g. smoke level is now shown as absolute value) - names of several functions changed slightly. [Snapshot and recording from DMX Output](#)<sup>[130]</sup> (previously known as Sequence Snapshot) is back, now supports multi-scene recording of real-time DMX output to sequences
- Removed the pan/tilt cycle time display option from the pan/tilt macro control. The cycle times are now shown directly on the drag bars (which has been renamed from speed bars to cycle time bars). There are no changes in the function of the drag bars.
- Sequence slots in chase mode (manual trig mode, chase enabled) now retains the loop direction with witch they were saved rather than defaulting to forward.
- Sequence loop direction can now be set for sequences in chase mode through the [loop options](#)<sup>[145]</sup>
- Individual [position options](#)<sup>[98]</sup> are now disabled if functions are not supported by fixture profile.
- CMY Control color picker now refreshes when the 'hidden' color is modified.
- Added Hotkey disable in dialogs filter to [Cue Time control](#)<sup>[147]</sup>
- The top row row of Fingers cue slot buttons are no longer reserved for multi selection mode, but may now be configured with cue slot functions. The multi select function (which is unaltered) may now be disabled from the [setup dialog](#)<sup>[211]</sup>. Since the buttons can contain functions they will no longer select a fader for relative adjustment via jog-wheel. To select the fader value to be adjusted, use the deactivated state (hold square button) before pressing the button (or move the fader) to select which fader to adjust.
- Fingers cue slot buttons now updates cue slot selection in cue control even when Fingers is in inactive state.

##### Build 7

- The on-line help file has been restructured. Help file contents page and search option is now available



directly from the [Windows help menu](#)<sup>[10]</sup> and help browse function has been enabled.

- Fixture group dialog now creates individual system groups for user defined fixture profiles.
- Enable solo function moved from preferences menu to [system preferences dialog](#)<sup>[50]</sup>.
- Expanded hotkeys for fixture groups selection to group 1-20
- Modified active cuelist line indication. The active line (the last line to execute) is now highlighted in gray, while the next line (the next line waiting to execute) is highlighted in blue.

#### Build 9

- Starting a cuelist from an external application (such as LJ manager) no longer modifies the name on the LJ taskbar icon.
- The 'Fixture name' field for [user defined profiles](#)<sup>[262]</sup> has been split into separate entries for manufacturer, model and DMX mode. If several profiles for the same fixture model exists (e.g. 8- and 16-bit DMX modes) these may now be listed separately under a single product model in list of available profiles in the [fixture configuration dialog](#)<sup>[66]</sup>. Profiles created with previous versions of LightJockey are still compatible but will not include the new extended features (edit and resave to update format).
- Fixtures configured using user defined profiles now create system groups in the [Fixture Group list](#)<sup>[83]</sup> according to model name (rather than list as a generic USER2 fixture)
- Added option to list fixtures by either either profile name or user name in the [Fixture Group list](#)<sup>[83]</sup>
- The ID function on the [Fixture Info popup](#)<sup>[59]</sup> has been removed - the popup now shows DIP switch address settings for profiles that contain relevant information.

#### Build 10

- All included user defined fixture profiles have been converted to the new format containing separate information for manufacturer, model and mode.
- LJCommand is now version 1.1 (documentation corrections, no functional changes)
- LJ-RS232Send now version 1.1 (COM port selection extended to COM 1-9)

### Bug fixes:

#### Build 1

- Fixed bug in 2532 dialog - tab names now refresh properly after loading a setup file.
- Fixed a couple of bugs in [RS-232-in](#)<sup>[245]</sup> program. MSB data bytes now correctly calculated as 128\*value (not 127). Clear Cue command (Cue #0) now works. RS-232-in application is now version 1.3.
- Fixed problem that would cause various errors if data files containing user defined fixture profiles is tagged as read-only (read-only tag is cleared).
- Fixed bug executing Hotkey commands in cuelists when in manual advance mode (when the list itself has focus).
- Any channel type (not just only intensity channel types) may now be assigned to one or more HTP groups without ignoring the DMX value generated by LightJockey programs.

#### Build 2

- Fixed pan/tilt control size problem with built in 16-bit fixtures under large fonts.
- Fixed size problem with Fingers setup dialog and large fonts.
- Fixed Fingers bug refreshing F1-F10 button contents on Status Panel with shiftlock disabled
- Fixed Fingers bug on status panel showing strings with & character as keyboard accelerator character (&key would become key)
- Fixed missing help file link from Virtual Fingers
- Fixed bugs that could cause blackout and freeze warnings to occasionally reset their positions to default.
- Fixed bug that would cause sequences with start- and end-scene limited by cue loop options to start incorrectly at scene 1 when *restore sequence enabled state* was set in cue preferences

#### Build 3

- Fixed bug in Fingers DMX-in emulation function (flash wouldn't release properly)

#### Build 4

- Fixed bug that could cause automatic launching of Virtual Fingers to launch applications included in startup options twice.
- More fixes on sequence loop options - added Trig on Load option to the

[Sequence Slot Loop Options](#)<sup>[145]</sup> dialog.

- Invalid bitmap formats no longer stops palette gobo bitmap selections from building (added error message)
- Fixed Global patch bug where assigning a DMX in or DMX out sequence could cause an already patched source to reset to channel 1.

#### Build 5

- Fixed relative pan bug for MAC 250 Entour and Krypton
- Fixed bug where different fixture selection options would not always update solo states.
- Using [sequence intensities](#)<sup>[150]</sup> (through DMX in or Fingers) no longer affects fade times programmed with the sequences.

#### Build 6

- Fixed Fingers statics levels bug (output from statics not correctly updating)
- Fixed problem with DMX output monitor value overwrite function messing with DMX overwrite values from external applications.
- Fixed problem that could cause LJ to stop calculating DMX output values after creating a 2510 or 2518 download file.
- Fixed bug that could cause the cuecontrol to incorrectly indicate chase state for sequences switched from chase mode to auto or music trig.
- In exclusive fixtureselection mode fixture group hotkeys no longer de-selects fixtures unless the new fixture group actually exists (it is still possible to create and select an empty fixture group for quick deselection of all fixtures).

#### Build 7

- Fixed bug in [Fingers cue slot state LED feedback](#)<sup>[219]</sup>. Empty slots no longer causes the LED to blink when the slot is switched off.
- The main list of the cuelist control has been excluded from the 'disable hotkeys in dialogs' list of dialogs. Dialog disabled hotkeys will now work again when the main has focus.
- Fixed bug that would cause LJ to lock up if a [freeze] and [freeze+B/O] hotkey command was executed.
- Fixed bug that would cause 2518 faders to latch the static entry corresponding to the fader number regardless of assigned static entry.
- Fixed bug that could cause cuelist to stall if a goto line command specified last line (or an invalid line number)
- Added hidden focus field to [cue time control](#)<sup>[147]</sup> to disable active hotkey filtering due to one of the numerical time entries having focus when the control is opened.
- Fixed bug in profile import function that would miss imports of OV support files if the offline folder name were created with name in capitals (\OFFLINE2\)
- Fixed bug in manual cuelist back function
- Fixed bug that could cause save buttons to be hidden in save sequence dialog when "show add to cueslot" was disabled.
- Fixed DMX value for MAC550 Gobowheel macro

#### Build 8

- Fixed value display bug in intensity control for profiles with inverted intensity control values
- Fixed zoom control problem for MAC 550

#### Build 9

- Fixture configuration export no longer shows wrong end-addresses for userdefined profiles.
- Fixed bug that would cause color,gobo and effects control for userdefined profiles to allocate vertical space for palettes even if no palette is defined.
- Fixed missing last gobo in MAC 550 custom rotating gobo configuration
- Fixed bug using alternate palette values for entry nr 20 in user defined profiles.
- Status bar will now recover when showing garbage information

#### Build 10

- Fixed fixture number offset error in RGB pack definition dialog.
- Sorting order in available profile list is no longer case sensitive
- Fixed bug where auto strike would fail if no built-in profiles were configured.

**Build 11**

- DMX in translation tables now also includes DMX in values emulated via Fingers.
- Modified gobo-strobe interval for SCX 500
- Fixed Wizard Extended music standalone feature.

**Offline Visualizer updates:****Build 1**

- Offline visualizer updated to version 4.5.0. build 2. This release supports visualization of continuous color scroll and removes 'black' beams (when colors or gobos are specified as black). Note that some offline fixture profiles may need to be updated in order to show continuous color scroll.

**Build 5**

Offline visualizer updated to version 4.6.2 (build 4).

- Supports extraction of notes from Offline Visualizer profiles
- Supports exports of Offline visualizer support files through LightJockey.
- Supports new "solid beams projection" display-mode.
- Supports fixture position editing via fixturelist.

**Build 6**

Offline visualizer updated to version 4.6.4 (build 6)

- Adds support for animation wheels
- Fixes bug in initial startup folder selection
- Fixes arrow pointer (fixture direction) bug

**Build 7**

Offline visualizer updated to version 4.6.6

**Build 8**

Offline visualizer updated to version 4.6.6 (build 1)

**Build 9**

Offline visualizer updated to version 4.7.1 which introduces new visual styles.

## 24.5 Version 2.5

**Fixture personalities added/changed****Build 1**

- Added profile for Martin MX-10
- Added profiles for generic [DMX switch packs](#)<sup>[84]</sup> (1,2,4,6,8,12,16,24,30,32 channels)

**Build 5**

- Modified gobo controls for: MAC250+, MX-10, MAC500 (SCRL), RS-918 (SCRL). Gobo rotation may now be stopped by clicking the active rotation direction (CW or CCW).

**Build 6**

- Added built in profiles for Martin CYCLO 02,03 and 04.

**Build 7**

- Added built-in profile for Martin MAC 250 Krypton
- Note: Martin Minimac Maestro and Image scan has been moved to 'Imagers' section in the [built-in profiles list](#)<sup>[66]</sup>.

**Features added:****Build 1**

- Implemented support for up to 4 USB DMX-out interfaces, as well as support for DMX-in via dedicated USB DMX-in interface. This means that configuration and use of the USB/DMX interface has changed - please see [USB hardware installation notes](#)<sup>[27]</sup>. Note the USB DMX-in interface has not yet been released.
- [The Generic DMX Macro](#)<sup>[153]</sup> now implements 16 bit DMX macros for 16-bit DMX control channels, making it much more suitable for use with 16-bit pan & tilt and other 16-bit control channels. It is no longer possible to assign macros or macro parameters to 16-bit LSB control channels - macros and parameters assigned to LSB channels in previous LJ versions will no longer work - macros and parameters assigned to MSB channels will run unaffected.

- Added new 'Stepped Ellipse' macro type to the [movement macro engine](#)<sup>[102]</sup>.

**Build 5**

- Added [hotkey](#)<sup>[205]</sup> for 'Toggle list of cuelists'
- Added ability to execute [hotkey commands](#)<sup>[205]</sup> from a [cuelist](#)<sup>[177]</sup>.

**Build 6**

- Added a few commands to the [RS232 remote interface](#)<sup>[245]</sup>

**Build 7**

- Added mode for using touch devices (rather than a mouse) in the [position control](#)<sup>[98]</sup>.
- Profile for [External Application/Device plug in](#)<sup>[281]</sup> implemented. The profile implements a link between LJ and an external application that can be used to control various external devices or applications.

**Misc. Changes:****Build 1**

- The state of various options in the save sequence dialog is now preserved between sessions.
- Added BMP readout to the [sequence control](#)<sup>[124]</sup>. Added option to display scene time as BPM on the [cue control](#)<sup>[132]</sup>
- Added Cue value 512 to the DMX in cue latch function
- Added 'Auto load last used scene' switch to Offline/Preferences on the LightJockey main menu. If unchecked - the Offline Visualizer will no longer automatically load the last used scene.
- Added driver files for PCMCIA card, hardware revision 3.

**Build 2**

- Fan Out and Movement options windows now automatically close when the position control closes.
- Import fixture definition file dialog will now create and default to an 'exports' folder rather than defaulting to 'my documents' if an exports folder doesn't exist.
- The [DMX output monitor](#)<sup>[60]</sup> has received a major overhaul. It now includes functions such as being able to modify DMX output values directly as well as a 'search channel' function.

**Build 3**

- Changes to [LJ Media player](#)<sup>[185]</sup> (now version 1.3) - it is now possible to launch multiple instances of the LJ media player from the cuelist to playback multiple simultaneous media files. Also a loop playback option has been implemented to loop playback of a media clip indefinitely.
- Cuelist Time code log window now retains last opened position.
- Added "Load Cue on double click" option to [Cuelist preferences menu](#)<sup>[169]</sup>.
- Added "Run to line" in the Cuelist Popup Menu - using "Run to" will update the cue control with any cues (including transparent cues) that are loaded previously in the cuelist, giving an 'up to date' content of the cuelist corresponding with the contents that is loaded to the cue control when the cuelist is running. The Run to line function only updates the cue control contents and ignores time/time code, media and other types of commands.
- Added remaining cuelist hotkey functions to 2532 and 2518/Rs232 command set.

**Build 5**

- Added new 'Color' palette function to Generic Fixture Profile dialog. Note that profiles using this palette function will show another default function on earlier LJ releases.
- Added view 'Fixture Notes' to right-click popup menu in the Configured Fixtures list in the Fixture Configuration dialog - note that the function is not enabled for modified fixtures unless the configuration has been saved first.
- Added new functions to [edit palette values](#)<sup>[259]</sup> in the 'Generic Fixture Function' dialog. New functions include the ability to cut and paste entire palettes, as well as value insert and delete functions.
- Changed *LTP* designation to *LoTP* in the Global Patch dialog to avoid confusion.

**Build 5**

- Save cue control now retains 'save as transparent' and 'save macro control values' states between sessions.

**Build 6**

- Added new options to the [Intensity definition](#)<sup>[264]</sup> for user defined fixtures. Please note that users will need to run at least LightJockey version 2.5 build 6 in order for the new options to take effect (earlier versions just ignores the new options).

- Added Clear after Save option to the [Save Cue Dialog](#)<sup>[136]</sup>
- Added 'Clear Cue Stack' and 'Clear All Sequences' hotkey functions for the [Cue builder](#)<sup>[150]</sup>.
- Added option to hide the top status panel on the large size 2532 control.
- Blackout and freeze warning dialogs now retains their positions on screen between sessions.
- Changed pan/tilt maximum resolution factor for built-in 16 bit fixtures from 128 to 256.

#### Build 7

- Sequence control snapshot function temporarily disabled until further bugs are fixed!**

#### Bug fixes:

##### Build 1

- Fixed bug restoring cue sequence slot names and other cue control properties from backup file. Fixed problem restoring cue page names and other load cue control properties from backup.
- Fixture information now rebuilds properly when replacing user defined fixture profiles with built in fixture profiles without starting LightJockey.
- Replacing a userdefined profile with the generic user definable fixture 2 now correctly updates the fixture user name.
- Selecting between fixtures with different user defined profiles would not update the channel list in the [Generic Macro editor](#)<sup>[156]</sup>. This is now fixed.
- In previous versions the [Generic DMX Macro editor](#)<sup>[156]</sup> display the wrong pan/tilt channels for user defined fixtures that patches pan and tilt parameters differently from the default MSB/LSB format. The editor now shows the channel allocation correctly according to the 'internal' control channel representation - which may not be the same as the final allocation if MSB/LSB parameters are patched.
- Previous versions of LightJockey would correctly identify the presence of user defined Generic Macros in individual user libraries, but still attempt to load the macros from the main LightJockey installation folder. This has now been fixed - the macros are now correctly loaded from the individual user library.
- Fixture Group window now restores position correctly.
- Startup options are now properly restored when restoring a backup to the active user library.
- Added code to compensate for small, accumulating timing errors in the sequence and cue timings which would cause the sequences and cues to 'slide' over time.

##### Build 2

- Fixed bug that would cause the cursor to disappear if the pan/tilt control was closed with a hotkey while in right-click lock cursor mode.
- The bug fix in 2.5 build 1 concerning wrong display of patched pan/tilt parameters in the generic DMX macro unfortunately affected the display in the global patch dialog so that it would display wrong channel information. This has now been fixed.
- A bug that would cause LJ to attempt a printout when saving 2510 binary files has been fixed.

##### Build 3

- Fixed bug that would cause the cuelist time code log to return "Wait DA" commands rather than "Wait MP" when "Enable Cue Logging" is enabled.
- Bug fix "Autosave cuelist on exit" option in the cuelist preferences may now be disabled.
- Changed timeout value that could cause the media player to not start playing the media clip when using the "Run from Line" command in the cuelist.
- Fixed bug that could cause certain Windows (e.g. cue control ) to reset their "stay on top" state if other programs using stay on top was launched through the auto launch program function (auto start).

##### Build 5

- Reloading a custom fixture selection in the fan out control now correctly re-loads the fixture selection order as well as the fixture selection status.
- Fixed bug that could crash LightJockey if a sequence was saved at the same time as being active as a flash sequence.
- Fixed bug in scene snapshot function that would cause pan/tilt inverted fixtures to be inverted twice.
- Fixed bug that would cause an access violation error when pressing enter after modifying channel description for channel 32 in the Generic Fixture Profile dialog.

- Fixed bug that would cause subsequent library restore operations to fail if a restore was previously performed from a write protected file (typically copied or restored from a read-only media such as a CD-ROM).
- Bug fix: Clear Fixture/Clear Selected fixtures from the fixture icon popup now properly clears pan/tilt macro parameters.
- Rewrote function requiring the presence of SHLWAPI.DLL which is not part of the original Windows 95.

**Build 6**

- Problem with certain windows and controls such as the sequence- or cue-control disappearing behind the desktop is now fixed.
- Fixed built-in profiles for Wizard and MiniMacs in Intensity Mode so that DMX-in Sequence Intensity only affects DMX values within the intensity value interval.
- Fixed a potential timing issue with functions from LightJockey's external function list called from other applications (such as LJ touch).

**Offline Visualizer updates:****Build 7**

- LightJockey now ships with Offline Visualizer version 4.5.

## 24.6 Version 2.3

**Features added:****Build 1**

- Added **Trig all manual default** and **Emulate Audio Trig** functions to [DMX-in](#)<sup>[231]</sup>.

**Misc. Changes:****Build 1**

- Modified timer resolution of the sequence chase function in the cue from 0.05 to 0.001 seconds - resulting in a much better 'tab' synchronization.

**Bug fixes:****Build 1**

- Fixed bug that would cause access violations when an RGB fixture doesn't have a DMX address assigned.
- Fixed help file entry on [Freeze Output function](#)<sup>[198]</sup>.

**Offline Visualizer updates****Build 3**

The Offline Visualizer has been updated to version 4.4 rev 2.

The new version includes support for prism and frost effects - note that the prism effect does not model the prism effect realistically but it does provide a suitable visual feedback when prisms and related effects such as rotation are applied.

The new version is compatible with scene files created with older versions of the OV - however some of the new features such as prism emulation may not be properly enabled until the scene file format is updated. To update the scene file format, clear the current scene (new) - then re-open the scene file with **Open and Update** from the files menu. Make sure to re-save the scene file with the updated format.

MSD line gobo version 2 format is now supported making the OV compatible with the latest version of MSD fixture profiles.

The Offline Visualizer will now automatically create line gobo files for bitmaps used for gobos that are not already present - the automatic process works best for black and white bitmaps that are not too small.

The scene update frequency may now be set by a priority timer rather than running on idle process time (Settings/Preferences/Max framerate).

## 24.7 Version 2.2

### Fixture personalities added/changed

#### Build 4

- Added profile for AlienO2

#### Build 6

- Added profile for MAC 2000 Wash

### Features added:

#### Build 1

- Added Pan/Tilt Macro Freeze option to the [Cue Macro Control](#)<sup>[148]</sup>
- Added MTC timeout ignore option to the [cuelist](#)<sup>[182]</sup>
- Added a warning dialog if the [USB](#)<sup>[27]</sup> interface gets disconnected when in use. The interface now gets properly reinitialized when re-attached. Note - the warning and subsequent re-initialization only occurs if there are modifications in the DMX output values while the interface is disconnected.
- New USB driver available** - the new driver no longer crashes the PC when powering down from software in Windows 2000/XP.
- Added [hotkeys](#)<sup>[205]</sup> for individual cue control slot selection toggle (selection on/off).

#### Build 2

- Added hotkey function to load selected Background Cue from the [Select Background Cue list](#)<sup>[167]</sup>

#### Build 4

- Added new [HTP channel](#)<sup>[201]</sup> groups, primarily for patching multiple single channel fixtures (e.g. par cans through dimmer packs, or on/off fixtures via switch packs) through DMX-in using HTP (highest takes precedence) from the DMX-in values combined with values generated by LJ.
- Due to popular demand the Sequence Playback buttons will no longer be disabled when loading a static sequence (sequence with only one scene)

#### Build 5

- Added [Hotkey function](#)<sup>[205]</sup> to emulate a music trig from the sound analyzer.
- Added [Hotkey functions](#)<sup>[205]</sup> to set/clear DMX in Enable.
- Added [System Preferences](#)<sup>[50]</sup> option to force LightJockey to start on the secondary monitor in a multi-monitor system.
- Added [System Preferences](#)<sup>[50]</sup> option to confine positions of controls within the Windows desktop (option default on)

### Misc. Changes:

#### Build 1

- Modified names of cue macro (hotkey) functions from 'cue macro, <function>' to 'Pan/Tilt Macro, <Function>'.
- The [CD control](#)<sup>[40]</sup> has been re-written to cope better with different CD-ROM setups (including CD-ROM using digital playback). A number of options has been added for better CD\_ROM performance.

#### Build 3

- Limited the number of [Cue Pages](#)<sup>[140]</sup> in the [List of Cues](#)<sup>[137]</sup> to 255.
- Modified the version check on the PCI/ISA driver so that it will no longer refuse to work with newer driver versions installed by other applications.
- Disable hotkeys in dialogs now set as default in new installations.

#### Build 4

- The [Global Patch dialog](#)<sup>[201]</sup> has been rewritten to include fixture/channel information and setup for the new HTP Channel Groups.

#### Build 5

- The [autolaunch file dialog](#)<sup>[52]</sup> will now accept any file type.

- Modified the [Audio CD control](#)<sup>[40]</sup> slightly and added minimum polling time (users of audio CDs should read notes)

**Build 6**

- Added odd/even fixture filter to the [group selection dialog](#)<sup>[83]</sup>.
- Added de-selection of odd/even fixtures to the [main desktop popupmenu](#)<sup>[45]</sup>

**Bug fixes:****Build 1**

- Fixed bug that could lead to access violation or crash when browsing color and gobo bitmaps for user defined fixtures.
- Fixed problem that could cause the movement macro control to display garbage on the main desktop on Windows 9X systems.

**Build 3**

- Added a check for invalid cue page files that could cause LJ to crash on startup.
- Fixed bug that would not display desktop tabs correctly after restoring a backup to the current user library.
- CMY and RGB values for user defined fixtures now gets saved in user palettes.

**Build 4**

- Fixed bug where channels patched from another DMX output source would not react to blackout commands.
- Fixed bug in MIDI in module - 'Release Seq on note Off' option is now saved between sessions.
- Fixed bug where Windows file dialogs would cause user defined fixtures to display the default fixture icon.
- Hotkey settings loaded from the hotkey menu now loads properly.
- Problem with synchronizing shift button status and popup menu when adding channels to groups in the generic DMX control fixed.
- Loading a transparent cue no longer resets sequence on/off states for non affected sequence slots.
- 'Smoke button use level' setting in smoke control now works correctly.
- Fixed bug in pan 360deg function for built in moving head profiles.
- User Palettes will now save the correct fade state when the effect is 'off'.
- Wrong value for Lamp Off command for Roboscan 1220CMYR,RPR,XR fixed
- Show Programmed Fixtures function rewritten and should cause no more random fatal crashes.
- Fixed bug in LJ Media Player (now version 1.1), returning from full to default screen size now allows normal movement of the control.
- Backing up a user library will no longer mess with LightJockey's ability to find the correct icons and bitmap files.
- Trigging chased manual sequences with the bounce hotkey no longer resets chase direction to fwd or rev.

**Build 7**

- Fixed resize problems under Windows XP on Statics Windows and Sequence Slot Names Window.

**Offline Visualizer updates**

## 24.8 Version 2.1

**Fixture personalities added/changed****Build 1**

- Built-in profiles for Mac 250 and Mac 250 now programs color, effect and extended controls when both types are selected.
- Built-in profiles for MiniMac Profile and MiniMac Wash now programs extended control functions when both types are selected.

**Build 8**



- Added profile for MAC 2000 Performance

**Build 12**

- Added profile for Alien O5

**Build 13**

- Added speed control for the RoboColor I/II via DMX interface to the specials control.

**Build 14**

- Fixed the number of configurable gobos on Mini Mac profiles. It is now possible to customize the last gobo as well.

**Build 16**

- Corrected the number of DMX channels used by the MAC600NT profile to 15.
- Modified the MAC2000 Performance profile to fit version 1.0 (production version) of the DMX protocol.
- Modified AlienO5 profile to include reset command according final fixture protocol.

**Build 20**

- Added programming compatibility between MAC500 and Roboscan 918. It is now possible to select colors/gobos/effect simultaneously for these fixtures (fixed gobo only on fixtures in identical SCRL/non-SCRL modes)
- Removed random gobo buttons from Maestro profile (was never implemented in fixture).

**Features added:****Build 3**

- Added Import Cuelist option to the cuelist control. Drag the cuelist to import from the list of cuelists to the line where the cuelist should be imported to (below the last line to add the cuelist). Then from the Link or Import dialog select Import.

**Build 6**

- Finalized support for the [PCI 512 and PCI 2048](#)<sup>[23]</sup> interface cards.

**Build 8**

- Fixture selection mode (exclusive/inclusive) is now saved and restored when LJ is restarted.
- Added 'Add to Cuepage' option to the [save cue dialog](#)<sup>[136]</sup>.
- Added MTC sync frames to the Cuelist [MIDI time code](#)<sup>[182]</sup> options.
- Added 'Select all programmed' to [desktop popup menu](#)<sup>[45]</sup> - also as [hotkey command](#)<sup>[205]</sup>
- Added 'Select fixture like Master' as [hotkey command](#)<sup>[205]</sup>
- Added 'Select All programmed of this type' to the [Fixture Icon popup](#)<sup>[59]</sup> menu - also as [hotkey command](#)<sup>[205]</sup>
- Added 'key press pass to LJ' to the Audio Analyzer - LJ hotkeys may now be used even if the Sound Analyzer has the Windows focus.

**Build 12**

- The [Master Intensity control](#)<sup>[195]</sup> can now be opened by double clicking the Master Intensity field in the [status bar](#)<sup>[58]</sup>
- Added display of pan/tilt cycle time to the [Movement Macro Control](#)<sup>[102]</sup>.
- Added [hotkeys](#)<sup>[205]</sup> for assigning position presets 1-10 to selected fixtures.
- Added the option of patching the value of a [Master Intensity](#)<sup>[195]</sup> sub master from a DMX out channel.
- Added the [LightJockey Media Player](#)<sup>[183]</sup> for playback and time code synchronization of digital media files (including digital video files).

**Build 14**

- Added option to disable functions controlled by DMX-in in the [DMX-in dialog](#)<sup>[231]</sup>
- Added [Hotkey](#)<sup>[205]</sup> for Cue control 'Chase Man' function

**Build 16**

- Added [Generic DMX Macros](#)<sup>[153]</sup> as a new type of programming elements. Generic DMX macros allows programming of macros on any DMX control channel. Added one macro slot to the cue control to hold a generic macro to be launched together with the cue.
- Added a [Sequence Snapshot](#)<sup>[130]</sup> option to the sequence control to 'record' the current DMX output values to the current scene.
- Added a couple of buttons to the [Cue Control](#)<sup>[132]</sup> for quicker access to the [Background Cue Control](#)<sup>[167]</sup> and [List of Background cues](#)<sup>[169]</sup>.

**Build 17**

- Added sorting by column to the [list of cuelists](#)<sup>[176]</sup>.
- Added functions to automatically select function when using mouse emulation in the [2532 control](#)<sup>[231]</sup> and the virtual button only contains one function (latch or flash).

**Build 19**

- Added option to abort [data restore process](#)<sup>[48]</sup> if the restore file is corrupted.

**Build 20**

- Added function to ensure that only one instance of the same LightJockey installation can be running - it is no longer possible to start a second instance of the same LightJockey.exe. To run multiple instances of LightJockey at the same time make sure to install and run the individual instances from different installations.
- Added option to startup LightJockey in a specific user library [using a command line parameter](#)<sup>[64]</sup>.
- Added [Hotkey functions](#)<sup>[205]</sup> to stop and start individual sequences in the cue.
- Added option to set random delay by fixture rather than by offset in the [Generic DMX Macro Control](#)<sup>[163]</sup>

**Misc. Changes:****Build 3**

- The cuelist now maintains focus on inserted lines after cut & paste operations.
- The cuelist control now gives a warning when trying to run a modified cuelist containing a link to another cuelist.

**Build 6**

- Modified setup timing on ISA club and DJ cards. This should fix remaining problems with cards that seems to initialize correctly, but doesn't transmit DMX.

**Build 8**

- Windows9X USB drivers located in the <LJPath>\HardwareDrivers\USB\ folder will automatically be deleted when LightJockey is updated and started.

**Build 12**

- Warnings (freeze, blackout and offline) now appears centered on the main LJ desktop.

**Bug fixes:****Build 1**

- Fixed bug that disabled 'open on LightJockey Desktop' for the List of Cues view.
- LJ will no longer shut down Winamp unless it Winamp was originally launched by LJ.
- Fixed control value refresh bug when using clicking up/down buttons on the cue macro control.

**Build 2**

- The auto lamp on command no longer sends a zero value to the first channel of a 4 channel generic DMX fixture.
- The smoke button on the smoke control no longer stays active if the cursor moved out of the smoke button before the (mouse) button is released.

**Build 8**

- Another fix for ISA Club cards that did not initialize correctly (no DMX output)

**Build 12**

- Fixed bug in Cue and Sequence times controlled from the 2518 via RS232.
- The Off-line entry in the main menu that disappeared a couple of releases ago is now back in place.
- Fixed MAC2000 Performance shutter rotation angle fade button bug.
- Added explanation and a partial fix for [Winamp time code inconsistencies](#)<sup>[187]</sup>.
- Fixed bug associated with the auto start of external executables.
- Fixed bug related to auto lamp function and user defined fixture profiles.

**Build 14**

- Fixed bugs with various up/down buttons getting stuck in auto-repeat.
- Fixture Home hotkey function will now actually home the fixtures.

**Build 16**

- Fixed problem with the [Sequence Control](#)<sup>[124]</sup> in [blind mode](#)<sup>[129]</sup>. The 'Keep contents when entering

*blind mode option* now also works when loading a sequence in blind mode.

#### Build 17

- Fixed a User Library restore from floppy diskette Windows 9X bug (again).
- Fixed problem when fixtures are set to invert pan/tilt or pan/tilt-swap and using the focus beam function in the Offline Visualizer.
- Fixed problem where LJ would starve the Offline Visualizer for CPU resources when multiple fixtures were positioned using the focus beam function.

#### Build 19

- Fixed DMX offline problem when using the USB interface.

#### Build 20

- Fixed desktop grid resize bug.
- Fixed problem when setting pan/tilt or effect speeds with multiple fixture types selected.

### Offline Visualizer updates

#### Build 3

- Added a new calibration option to help positioning fixtures in the 3D room. The calibration feature only works when the fixtures are physically connected to LJ.

## 24.9 Version 2.0

### Fixture personalities added/changed

#### Build 1

- Added personality for Martin FiberSource CMY150.

#### Build 3

- Fixed bug In Roboscan 1220II Rotating gobo function.

### Misc. Changes:

#### Build 1

- Changed driver implementation for Windows 2000 ISA card driver so that it is now useable under Windows 2000 when not logged in as administrator. **To make updates of previous versions work in non-administrator login under Windows 2000, [the driver must be re-installed](#)**<sup>[23]</sup>.

Note that the location of the new installer program has changed to  
<LightJockeyInstallation>\HardwareDrivers\PCI\_ISA.

### Bug fixes:

#### Build 1

- Fixed fixture ID function for a number of built-in fixture profiles.
- Fixed bug in Clear Fixture functions on the fixture popup menu. The clear command would in certain circumstances overlap to first channel of the next fixture.
- Fixed bug that could cause the cue-builder to appear in multiple invalid copies.

#### Build 2

- Fixed bug in smoke control with smoke button on duration toggle, and duration < 1 second.

#### Build 4

- Fixed bug that would cause the Static Use Fadetime option to reset after LJ restart.

### Misc. Changes:

#### Build 3

- The Set Current Cue command now appears on the command panel in the cuelist after use.

### Offline Visualizer updates

#### Build 2

- Added the option to pass keyboard actions to LightJockey from the Offline Visualizer (OV Settings

Menu) - LightJockey hotkeys will now work even if the Visualizer has the Windows focus.

- Focus beam on non-moving fixtures (e.g. Par Cans or RoboColors) now focuses the selected fixtures in real time.

### Build 3

- Added proper profile for Roboscan 1220IIR

## 24.10 Version 1.08

The LightJockey end user forum on the Martin Website has moved - the new URL is <http://www.martin.com/forum/> - [click to link](#)

**Fixture personalities added/changed:**

### Build 1

- Added personality for Martin Exterior 200
- Added Blackout and Master Intensity functionality to RGB fixtures

### Build 2

- Added personality for Martin Atomic 3000

### Build 4

- Added personalities for Martin Wizard

**Features added:**

### Build 2

- Added Max Delay value to the [Auto Delay Control](#)<sup>[104]</sup>. Decrement Max Delay for 'follow the leader/Snake' effects in movement macros.
- Added [Select Background Cue list](#)<sup>[169]</sup> to select background cues from a separate list rather than from the drop down list. Background cues may now also be dragged and dropped from this list ([Cuelist](#)<sup>[169]</sup>, [DMX-in](#)<sup>[231]</sup>, [2532](#)<sup>[226]</sup> and [MC-X](#)<sup>[244]</sup> configuration).
- Added [Hotkeys](#)<sup>[205]</sup> and [2532 Functions](#)<sup>[226]</sup> for Background Cue sequence toggle (individual slots, and all on/off).
- Added [Hotkeys](#)<sup>[205]</sup> to switch all cue slots on and off respectively.
- Added fixture profile notes to the [Fixture Icon popup](#)<sup>[59]</sup> menu.
- Added Auto lamp on command time for [user definable fixture profiles](#)<sup>[264]</sup>.
- Added Reset Command time for [user definable fixture profiles](#)<sup>[273]</sup>
- Added paste latch/flash only in the [2532 configuration](#)<sup>[226]</sup>
- Added the option to launch [Background Cues](#)<sup>[167]</sup> from [MIDI](#)<sup>[239]</sup>.
- Added the option to [create 2518 .mem](#)<sup>[297]</sup> files that may be downloaded to a 2518 controller.
- Added Hotkey for [Cue builder](#)<sup>[150]</sup> Get Cue, and hotkeys to reset macro amplitude and speed in the [Cue Macro Control](#)<sup>[148]</sup>
- Added the option to Customize the tab size on the [2532 dialog](#)<sup>[226]</sup> (for touch screen use)
- Increased the number of DMX channels for the DJ ISA card (to 512 out+512 in) and the USB interface (512 Out). The restriction of the number of controllable fixtures for those two packages has also been increased to 100.
- [New cuelist implementation](#)<sup>[169]</sup>. Includes the option to synchronizing to digital audio file formats using Winamp for playback (including MP3 files)
- The [Cue Control](#)<sup>[132]</sup> has been slightly redesigned.
- The ability to latch [Background cues](#)<sup>[167]</sup> from the Cue has been added.
- Specific Cue Macro Control settings for a Cue may now be [saved](#)<sup>[136]</sup> and restored when reloading the cue.

- Added [Default DMX values](#)<sup>[273]</sup> to the user defined fixtures (type 2 only), and the option to [apply the default DMX values](#)<sup>[74]</sup> when saving a modified configuration.

#### Build 4

- Implemented Windows 2000 compatibility. Note that new [hardware drivers](#)<sup>[23]</sup> are required to run the DMX transmitter hardware under Windows 2000.
- The implementation for the DMXADP interface has been changed. The external ADPDriver.exe application is no longer used or required.
- Increased the number of follow spot presets to 10. The [follow spot](#)<sup>[198]</sup> function has been slightly modified.
- The sync buttons on the [Master intensity control](#)<sup>[195]</sup> now also synchronizes Bump commands.
- Increased the number of entries in the [Statics Control](#)<sup>[189]</sup> from 10 to 20.
- Added the option to restore sequence slot on/off status in the [Background Cue](#)<sup>[167]</sup> (optional)
- Added option to show the notes on [start up](#)<sup>[52]</sup>
- Added optional bitmap transparency to user [defined fixture profiles](#)<sup>[262]</sup>.

#### Build 6

- Added integrated [backup and restore](#)<sup>[64]</sup> of user libraries.

### Misc. Changes:

#### Build 4

- A lot of controls and dialogs have been redesigned slightly for better resizing when using different Windows fonts.
- The [BGCue button](#)<sup>[167]</sup> and [Statics button](#)<sup>[189]</sup> on the toolbar have been redesigned - active BG cues or statics are now indicated with a green 'LED'.
- It is no longer necessary to allocate a serial port to use the 2532 in 'virtual' mode (using the control without actually connecting the 2532). The control is now always enabled, even if no 2532 is configured. For existing installations it is recommended to disable the 2532 hardware connection (select disabled in the [hardware setup dialog](#)<sup>[22]</sup>) since 'noise' on an un-connected RS232 port may cause unpredictable behavior.
- Added bitmap background transparency to various buttons and built in fixtures icon bitmaps (almost all fixture icon bitmaps have been updated)

### Bug fixes:

#### Build 1

- Sequences in the Background Cue no longer advance when in 'off' mode.
- Hotkeys for Macro auto delays no longer sets sequence changed state
- Clear Cue option on Cue Stack now works.

#### Build 2

- Flash sequences activated via keyboard hotkeys are no longer continuously restarted due to keyboard repetition.
- Setting on/off states of individual sequences in the Background Cue now updates the Background Cue output immediately.
- The memory load indicated in the Status Bar now updates correctly (once every second). The %-value and color interpretation has also changed. See [Status Bar](#)<sup>[58]</sup>.
- Launching external programs (e.g. the Offline Visualizer) and restarting LightJockey now works correctly when the install path exceeds 60 characters.
- The problem with the Sound Analyzer locking up when exiting in Windows 2000 has been fixed
- A bug in the manual sequence trig that could cause overlapping scenes or 'no-trigs' has been fixed.
- The Get Cue function in the [Cue-builder](#)<sup>[150]</sup> now also reads the sequence slot on/off state in the cue control.
- Sequence time overrides via DMX in bug fixed - it is no longer necessary to override cue time via DMX in as well.
- Fixed bug on CX-4 gobo strobe fade button.
- Fixed bug that would create an access violation if the special commands control was open when a different type of user defined fixture was selected.

- Fixed bug in smoke control so that the smoke timer always uses programmed level regardless of 'Smoke Button use Level' state.
- Position presets can now be used in follow spot settings.

#### Build 4

- Fixed bug that would crash LightJockey if the 2532 toggle command was applied to a 2532 button and then used to close the 2532 control.
- Added a check on data files marked for read-only. Read-only file attributes will now be cleared on startup, rather than crashing the application.
- A running Cuelist (started with a startup command) no longer stops the first time the cuelist control is opened
- Fixed 'Toggle Group View' hotkey bug
- Fixed a Windows 2000 related bug concerning the fixture CMY controls.
- Fixed bug causing instability and crashes related to unaddressed fixtures and the 'show programmed fixtures' option.
- Fixed bug concerning the 'Follow active BG cue' in the Select BG cue list.
- Fixed bug concerning export of bitmaps for the second effects palette when exporting user defined fixture profiles.
- Fixed bug that prevented the 'Open Controls on LightJockey Desktop' option to work correctly with the 2532 Control.

#### Build 6

- Fixed bug in Wizard movement control (missing update)
- Fixed timing problem in initialization of PCMCIA interface
- Fixed timing problem in initialization of ISA Club interface
- Fixed problem with updating installations using ADP interface - Version 1.08 build 4 ADP installations will need re-configuration of the ADP to work.
- Fixed bug related to double click processing in the movement-preset list.
- New Windows 2000 driver for LightJockey PCMCIA card. The new driver fixes problems in installations where the old driver wouldn't work after reboot - if the existing driver works fine, there is no need to update.

To update the driver in existing installations first install the LightJockey update - then right click *my computer* on the Windows desktop. From the popup menu select *Properties*, and then from the *Hardware* tab select *Device Manager*. Locate the DMX Card under *Other Devices* in the hardware list. Right Click the DMX Card entry and select *Properties* from the popup. On the *Driver* tab select *Update Driver* to start the *Upgrade Device Driver Wizard*. Select the *Search for suitable driver* option, then select *specify a location* and click next. Use the Browse function to locate updated driver in <LightJockey Installation>\HardwareDrivers\PCMCIA\W2K - select the *dmxcard.inf* file located in the directory and click *Open*, then *Ok*. Once Windows has examined the new driver, click *next* to update the installation with the new driver.

#### Build 7

- Another initialization bug of the ISA Club interface fixed - the bug could cause the ISA card to pass initial tests, but not initialize correctly (no DMX output).
- Fixed problem in Windows 9X installations when restoring user data library if the restore file was placed in the root directory of the media.

### Offline Visualizer updates

#### Build 1

- The old version of the Offline Visualizer is no longer distributed with update files or installation CDs. Existing installations that rely on the old version will still be able to use it, but it is no longer possible to select it from [system preferences](#)<sup>50</sup>. References to the old version of the Offline Visualizer have been removed from the help file.

#### Build 4

- Added Acrobat (mirror drum rotation not emulated)
- Added Profile for CX-4
- Added Profile for Exterior 200
- Added Profile for SynchroZap (mirror rotation not emulated)

The following non-Martin Fixtures now have partial support in the OV

### **Clay Paky**

Golden Scan HPE  
Mini Scan 150/300  
Mini Scan HPE  
Pin Scan  
Stage Scan  
Stage Color 300  
Stage Color 575  
Stage Color 1000  
Stage Color 1200  
Stage Light 300  
Stage Zoom 1200  
Super Scan Zoom  
Tiger Scan

### **HES**

AF 1000  
Color Pro HX/FX/HX-I  
Cyberlight CL/SV  
Cyberlight CX  
EC-1  
ES-1  
Intellabeam (13 ch, 8ch)  
Studiobeam PC (std/puremix)  
Studio Color 250  
Studio Color 575  
Studio Spot 250  
Studio Spot 575 CMY  
Technobeam  
Technobeam (Iris)  
Trackspot (lo/hi res)

## **24.11 Version 1.07**

**Note, the URL for the LightJockey forum has changed.**

**The new URL is**

<http://www.martin.com/service/forums/ForumViewData.asp?ForumID=1>

### **Fixture personalities added/changed:**

#### **Build 2**

- Personality for Acrobat, extended DMX mode added
- Personality for MX1, extended DMX mode added
- Personality for MX4, extended DMX mode added
- Personality for MiniMac Profile and Wash in intensity mode added. Note that sequences made with the non-intensity profile must have intensity levels re-programmed.
- Color selection for MiniMac Profile and Wash are now compatible, meaning that selecting a color on MiniMac profile fixtures will also select the same color on MiniMac Wash fixtures.

#### **Build 5**

- Personality for MAC 600 NT added

#### Build 9

- Personality for MAC 2000 added. Color, Gobo and Effect palettes may be customized by right-clicking the fixture icon and selecting [Customize Fixture](#)<sup>[76]</sup>.
- Added [customizable color/gobo and effect palettes](#)<sup>[76]</sup> for MAC 500 and Roboscan 918.

#### Build 10

- Added [customizable effect palettes](#)<sup>[76]</sup> to MiniMAC Profile and Wash and Roboscan 518.

#### Build 11

- Personality for MiniMac Maestro added. Use [customizable palettes](#)<sup>[76]</sup> to configure the gobo palette.

#### •Build 12

- Added [customizable Color palette](#)<sup>[76]</sup> to FiberSource QFX.

#### •Build 13

- Added [customizable Color palette](#)<sup>[76]</sup> to MAC300, MAC 600, Exterior 600 and MAC 600 NT.
- The gobo controls for MAC 500/ Roboscan 918 has been re-written to allow separation of gobo selection and gobo rotation parameters.

#### Build 14

- Added [customizable Color, Gobo and Effects palettes](#)<sup>[76]</sup> to MAC250/250+
- The gobo control for MAC 250+ has been re-written to allow separation of gobo selection and gobo rotation parameters.
- Added access to the built-in Gobo/Prism macros on the MAC 250/250+ : Effects control - preferences - show special.
- Added [customizable Color, Gobo and Effects palettes](#)<sup>[76]</sup> to Roboscan 1220XR and Roboscan 1220 CMYR. The gobo control was re-written to allow separation of gobo selection and gobo rotation parameters
- Added [customizable Color, Gobo and Effects palettes](#)<sup>[76]</sup> to Roboscan 1220RPR. The gobo and effect controls were re-written to allow separation of gobo/effect selection and rotation parameters.
- Added [customizable Color, Gobo palettes](#)<sup>[76]</sup> to PAL 1200. The gobo and control was re-written to allow separation of gobo/effect selection and rotation parameters.
- Added [customizable Gobo palettes](#)<sup>[76]</sup> to PAL 1200 FX. The gobo and control was re-written to allow separation of gobo/effect selection and rotation parameters. Use Color 1 palette values for first gobo control (uses color wheel).
- The effect control for MAC 2000 profile has been re-written to allow separation of effect selection and effect rotation parameters.
- The gobo control for the Imagescan has been re-written.

#### Build 17

- Added personalities for 30,12,6 and 2 channel generic DMX fixtures.
- Color/Gobo music trig buttons for MX/CX series has been replaced by a fixture trig button.
- Added personality for Martin CX-4 extended DMX mode (profile not yet supported by the Offline Visualizer)

#### Build 18

- Changed gobo default for CX4 from DotCone to Holes3 (default palette to update configured fixtures).

#### Build 19

- Added personalities for controlling packs of [RGB fixtures](#)<sup>[89]</sup>.

### Features added:

#### Build 2

- Added [hotkey](#)<sup>[203]</sup> options for the [movement options](#)<sup>[98]</sup>.
- Added a hotkey option for the [smoke control](#)<sup>[122]</sup> smoke timer button.
- Added a [Statics Control](#)<sup>[189]</sup> for faster control of various types of 'static' fixtures, e.g. strobes or fixtures controlled through dimmer- or switch-packs.
- Added a an optional switch to the [cue control](#)<sup>[132]</sup> to automatically release the current sequence when a new cue is loaded.
- Added a Show Programmed Fixtures option to the [Desktop popup menu](#)<sup>[45]</sup>. This option will mark fixtures programmed in the current scene/sequence.



- Added an option to the [System Preferences](#)<sup>[50]</sup> dialog that forces controls to open within the boundaries of the LightJockey desktop.
- Added a Clear Macro button to the [pan/tilt position controls](#)<sup>[98]</sup>.
- Added a mouse right-click to open single fixture controls from the [fixture tool bar](#)<sup>[57]</sup>.

#### Build 3

- Added a new option to the right-click function of the mouse in the pan/tilt [position grid](#)<sup>[98]</sup>. A right-click may now lock the mouse to the grid until another mouse click is made.
- Added the option of naming the 2532 pages.
- Added new DMX in options to the [Global Patch](#)<sup>[20]</sup>.
- Added the possibility to assign programs (sequences, cues, cuelists and BG Cues) to hotkeys.

#### Build 4

- Added *Cuelist Go*, *Cuelist Back*, *Cuelist Stop* And *Cuelist Stop and Clear* commands to [hotkey](#)<sup>[20]</sup> functions and [DMX-in](#)<sup>[23]</sup> commands.
- Added the possibility to flash sequences via [DMX-in](#)<sup>[23]</sup>.
- Added [Hotkey functions](#)<sup>[20]</sup> for sequence trig default (programmed) and bounce loop mode.
- Added right click popup menu to clear multiple key combos and set or clear the scroll lock attribute in the [hotkeys setup](#)<sup>[20]</sup>.
- Added an option to put a [label](#)<sup>[14]</sup> in the sequence slots in the [cue control](#)<sup>[13]</sup>.
- The internal cuelist engine has been re-written to ensure better program flow when the cuelist is active (running) - there are no functional changes in the cuelist itself.
- Added a new [2518 via RS-232](#)<sup>[24]</sup> mode. The new mode requires firmware version 2.0 or higher present in the 2518.
- The [global patch](#)<sup>[20]</sup> now supports simultaneous patching from DMX in and DMX out. A couple of new options added.
- Added a pan/tilt fan-out function to the [position controls](#)<sup>[98]</sup> options menu.

#### Build 5

- Added value inversion on RGB control for the user definable Generic Fixture 2.
- Added selection/de-selection of all fixtures of a given type to the [Fixture Icon popup](#)<sup>[59]</sup> menu.

#### Build 6

- Added support for [PCMCIA DMX Interfaces](#)<sup>[22]</sup>.
- The [2532 Direct Access](#)<sup>[22]</sup> implementation has been rewritten. The 2532 may now be used to latch cuelists and background cues and trig hotkey functions. Use the File/Import menu entry on the 2532 control to import and convert setups made with previous implementations.
- Added a bunch of new [hotkey functions](#)<sup>[20]</sup> including Clear Sequence Slots, New Cue, De-select All Fixtures, Pan/Tilt relative and timed fade out and fade in. A number of functions have been renamed for a clearer description.
- Added a search help option to the main help menu.
- Added Sub-Master synchronize buttons to the [Master Intensity control](#)<sup>[19]</sup>.
- Added a [DIP Switch](#)<sup>[26]</sup> option to the user definable type 2 fixture.
- Added Latch Cuelist, Latch Background Cue and Enable Static to the [DMX in commands](#)<sup>[23]</sup>.
- Added an automatic prompt to clear data for new fixtures in the [Fixture Configuration](#)<sup>[66]</sup>.
- Implemented an [offline/online switch](#)<sup>[19]</sup>. In offline mode the physical DMX output is blocked (frozen) - output is still routed to the Offline Visualizer making it possible to utilize the Visualizer to program blind, while maintaining different a (static) DMX output to the connected fixtures.

#### Build 7

- Added a 4th (non palette) [effects control](#)<sup>[27]</sup> to the user definable fixture type 2. Note that the 4th control will not be useable if the profile is used in installations with software below this version.
- Added *Home Selected Fixtures* [Hotkey function](#)<sup>[20]</sup>.
- Added a Call Cue by Number option to the [List of Cues](#)<sup>[13]</sup>.
- Added a new [Generic DMX control](#)<sup>[86]</sup> with keyboard command line interface.
- Added the an option to the [Cue Control](#)<sup>[13]</sup> so that hotkey trigs also changes the programmed sequence direction.

#### Build 9

- Added Hotkey for Master Intensity Control toggle.

- Added Hotkey for User Palettes and Position Preset toggle.
- Added Hotkey for View Notes.
- Added the option of assigning background colors to the [on-screen 2532](#)<sup>[226]</sup> matrix (*Font Properties / Color Scheme*)
- Added a Link to Cuelist to the Cuelist commands so one cuelist may link to another cuelist.
- Added Custom Palette options to Built-in fixtures. Not all fixtures are yet supported. Note that changes to palettes does not reflect in the Offline Visualizer.

#### Build 13

- Added master intensity status to the [status bar](#)<sup>[58]</sup>.

#### Build 14

- The [list of cues](#)<sup>[137]</sup> has been completely rewritten. The new version offers improved functionality including cue pages and new hotkeys and DMX in commands.
- Added mouse latch/flash toggle button to the [2532 control](#)<sup>[237]</sup> (mouse emulation).
- Added a Latch Flash Sequences option to the [cue control](#)<sup>[132]</sup>.
- Added LightJockey hotkey functions to the [MIDI in](#)<sup>[239]</sup> program.

#### Build 15

- Finalized USB support. The USB interface is only supported from this build.
- Added lots of help notes to the [new Offline Visualizer](#)<sup>[283]</sup>.
- Added a DMX refresh-rate switch to the hardware setup (4064 cards only)

#### Build 17

- Added the possibility to backup and restore data from a single user library. This option is primarily useful when inexperienced users needs to restore LJ to a working order. See [Using the Data Restore Option](#)<sup>[48]</sup>.
- Added the possibility to override cue times with DMX in or the 2518 on RS232, see [DMX in](#)<sup>[237]</sup>, [2518/RS232](#)<sup>[242]</sup> and [Cue Time control](#)<sup>[147]</sup>.
- Added MIDI time code interface to the Cuelist. See [Hardware Setup](#)<sup>[22]</sup>, [Cuelist control](#)<sup>[169]</sup> and MIDI/SMPTE time code driven cuelists.

#### Build 18

- Added 'Auto strike Lamp' and 'toggle Background Cue control' to hotkey functions (and 2532).
- Added the option to control audio gain and noise threshold setting on the audio analyzer via [DMX in](#)<sup>[237]</sup>.
- Increased the capacity of the [background cue](#)<sup>[167]</sup> to 5 sequences, and added modes for cue transparency and audio-triggered and 1-shot sequences
- Added 'Scenes/Trig' and 'Audio-Trigs/Trig' options to the [sequence slot loop options](#)<sup>[145]</sup>.
- Added Windows accelerator keys to the [global patch](#)<sup>[201]</sup> to ease the entering of patch information. The [Enter] key now works as hotkey for the **Set Values** button, the selected address is automatically advanced by one and focus is automatically returned to the last edit field after pressing [Enter]. Hope you like it Jimmy :)
- Added level control capability to the [statics control](#)<sup>[189]</sup>.
- Added a '[Cue Builder](#)<sup>[150]</sup>' with a cue-preset and cue-stack for building cues on-the-fly.

### Misc. Changes:

#### Build 3

- The resolution parameter in the position controls is now saved between sessions, one value for 16 bit controls, and one value for 8 bit controls.

#### Build 4

- Renamed the [Movement options](#)<sup>[98]</sup> dialog to position options and moved it to a submenu in the position control options menu.

#### Build 5

- List of sequence and list of cue now opens with the same top line they had when they were closed.

#### Build 6

- Changed Destroyer gobo selection to match production version.
- Changed the [Statics Control](#)<sup>[189]</sup> to use true LTP evaluation (Latest Takes Precedence).

- Renamed the blind mode to [Freeze Output](#)<sup>[198]</sup> to make the function clearer.

**Build 7**

- The Offline Visualizer is now by default enabled for new installations.

**Build 14**

- Increased the number of user defined [fixture groups](#)<sup>[83]</sup> to 99.

**Bug fixes:****Build 2**

- Fixed a bug that sometimes would throw access violation errors when closing fixture controls.

**Build 3**

- Fixed MiniMac Wash fade bug.
- Fixed potential bug in cuelist introduced in 1.07 build 2 (sluggish cuelist)

**Build 5**

- Fixed Audio in function that broke in 1.07, build 4.

**Build 6**

- Fixed bug that would connect the 2518 controller via COM 1 regardless of the COM port setting in the hardware setup.
- Fixed bug that would sometime lock a cuelist using CD time code commands if the CD control was not visible.
- Fixed split color bug on SynchroZap Color control.

**Build 7**

- Fixed hotkey *clear sequence #* bug that would not clear the sequence when the cue consisted of static sequences only.
- Added *Show Offline Warning* switch to the [system preferences](#)<sup>[50]</sup>.
- Fixed inconsistency in the find hotkey function.
- Fixed a bug that would lock a CD time code cuelist if no CD-ROM was configured.

**Build 8**

- Fixed the 'cannot execute CD time code Commands'-error bug on cuelists not containing CD time code commands

**Build 9**

- Fixed a bug that would likely cause instability or even crash the application if the "show programmed fixtures" feature was enabled and fixtures were configured without DMX address.
- Swapped captions 'Near' and 'Far' for zoom in the beam section of the Generic Fixture Profile
- Fixed bug that would lead to repeated 'flashes' when using keyboard emulation of the 2532 (hope no-one is using it as a feature).

**Build 11**

- Fixed bug that would cause position presets and user palettes to fail on the Mini MAC profile.
- Fixed level/special hotkey toggle bug.

**Build 11**

- Fixed bug that would show *No Control Functions* Controls when using show all controls.

**Build 13**

- Fixed MAC 2000 color wheel scroll DMX values
- Fixed bug restoring from frozen mode after loading cues.

**Build 14**

- Fixed bug displaying MAC500/RS918 gobo control without palette.
- Fixed bug that could cause an access violation when opening a list of cues.
- Fixed FID speed fade button bug in 1220-IIR intensity control.
- Fixed bug in MC-X configuration that wouldn't allow drag and drop configuration and removal of cues.
- Fixed Bug that might hinder saving of MIDI setups if not in default user library.

**Build 15**

- Fixed bug that would make 8 bit pan/tilt fixtures very 'twitchy' when overlaying fading pan/tilt movements with movement macros.

**Build 16**

- The first cue in the global list of cues no longer automatically loads when LJ starts up if Browse Cue

mode is enabled.

- Fixed critical bug that could cause the to stop loading from the global cue window.

#### **Build 17**

- Fixed bug that would reset the hotkey dialog disable option when LightJockey was restarted.
- Fixed bug that would save color schemes for the 2532 control incorrectly.
- Fixed bug that would print 2532 latch text incorrectly (or not at all) unless always split matrix buttons was selected.
- Fixed bug in Mac 250+ gobo control that would affect the focus fade parameters as well.
- Fixed bug that could cause an access violation when selecting an 'empty' channel output channel in the generics control.
- Fixed bug so the effect control for fixtures now resizes properly with 10 or more palette buttons.
- Fixed bug in Static Control so when statics are using fade times they should now work as intended.

#### **Build 18**

- Cue/Sequence times now reset correctly when replacing sequences in the cue.
- Fixed bug in MAC 2000 effect rotation control.
- Fixed bug that would sometimes quick save an existing cue as a new cue.

### **Offline Visualizer updates**

#### **Build 5**

Support for the following fixture modes added:

- MX-4 Extended DMX
  - Roboscan 218, mode 2 (\*)
  - Roboscan 518, mode 2 (\*)
  - MiniMac Profile, Intensity mode
  - MiniMac Wash, Intensity mode
  - RoboColor Pro 400, mode 2 (\*)
  - RoboColor II, mode 2 (\*)
  - RoboColor III, mode 2 (\*)
- (\*) Speed parameters are not emulated.

#### **Build 6**

- Fixed problems with direction markers on MAC 250/300/500/600

#### **Build 14**

- Introduced new Offline Visualizer version (4.3). The old version will no longer be updated with new fixtures.

#### **Build 15**

- Fixed bug visualizing the 4 channel generic DMX fixture.
- Added 3D beam positioning to OV/LightJockey.

#### **Build 17**

- Added support for 30,12,6 and 2 channel generic DMX fixtures.

## **24.12 Version 1.06**

### **Fixture personalities added/changed:**

#### **Build 15**

- Personality for Martin Acrobat added

#### **Build 16**

- Personality for Martin MAC 250+ added

#### **Build 19**

- Implemented P/T speed for the MX-1

**Build 22**

- Personality for the Martin CX2 color changer added
- Personality for the Martin QFX Fibersource added
- Personality for the Martin Exterior 600 Compact added
- Personality for Roboscan 812, mode 2 added
- Added Fixture Stand Alone modes for Roboscan 518, Roboscan 218-II and the RoboColor 400
- Added speed controls for 1220CMYR,1220RPR and 1220XR

**Build 23**

- Added personality for Martin MX-4
- Personality for 4 channel Generic DMX control added
- Added Speed Controls to MAC 500 and Roboscan 918 in Fixed Gobo mode
- Added personalities for Roboscan 218 and Roboscan 512 in mode 2 (8 bit pan/tilt - tracking/speed)
- Added personalities for Robocolor II and II, mode 2 (speed control)

**Build 24**

- Added Pan/Tilt Speed Control to ImageScan
- Added Personality for RoboColor 400, mode 2 (speed control)

**Build 25**

- Added Personality for Martin MiniMacs, Profile and Wash.
- Added Speed Controls to PAL and PAL-FX
- Added Speed Controls to MAC 1200
- Added Speed Control to Exterior 600
- Added Speed Control to Mac 250, Mac 250+, Mac 300 and Mac 600
- Added Intensity Control and pan speed control to Acrobat

**Features added:**

- The [Global Patch Tool](#)<sup>[201]</sup> now implements minimum and maximum settings for DMX output as well as inverting the DMX value. Note that nesting patches is no longer possible.
- A new [User-Definable Fixture](#)<sup>[247]</sup> personality has been added. The new fixture profile supports 16-bit Pan and Tilt and a maximum of 32 DMX control channels.
- Added [MIDI in](#)<sup>[239]</sup> as remote control option.
- Added the possibility to align fixture icons on the desktop. The alignment menu is available from the [Fixture Icon Popup](#)<sup>[59]</sup>
- The possibility of inverting and swapping pan and tilt has been added to the [fixture configuration](#)<sup>[66]</sup>
- The [Fixture Configuration](#)<sup>[66]</sup> has been rewritten. User defined profiles (type 2 only) are now available for direct selection and configuration.

**Build 15**

- The PC keyboard [Hotkey](#)<sup>[203]</sup> implementation has been completely re-written. Hot keys and are now user assignable to pre-defined functions.

**Build 16**

- added more functions and a *disable in save dialogs* option to the [Hotkeys](#)<sup>[203]</sup>
- added save cue as # to the [Save Cue Dialog](#)<sup>[136]</sup>
- added user fixture profile [Export](#)<sup>[280]</sup> and [Import](#)<sup>[279]</sup> functions.
- added bump function to the [Master Intensity Control](#)<sup>[195]</sup>

**Build 17**

- The [2532 Direct Access](#)<sup>[225]</sup> Interface has been re-written to include resizing of control, font selection and print out.
- A *Place All* option has been added to the unassigned list. This option places all unassigned fixtures on the current desktop.
- A [Follow spot](#)<sup>[198]</sup> function has been added.
- [Fixture Solo](#)<sup>[200]</sup> function added.
- [Next/Previous Fixture](#)<sup>[81]</sup> function added.
- Audio-input for synchronizing cues to music has been implemented. See [Using Audio-in](#)<sup>[192]</sup> and [Triggering Sequences in the Cue](#)<sup>[144]</sup>

**Build 18**

- Added *Ignore Blackout* and *Ignore Grand Master* to the [Fixture Configuration](#)<sup>[66]</sup>.

**Build 19**

- Added chase mode to manually triggered sequences in the cue. See [Cue Control](#)<sup>[132]</sup> and [Triggering Sequences in the Cue](#)<sup>[144]</sup>
- Added check sequences to the Delete Sequences dialog, see [Deleting Multiple Data files](#)<sup>[48]</sup>
- Added printer setup dialog to the [2532 printout dialog](#)<sup>[231]</sup>.
- Added 'latch' functions to the [Master Intensity Control](#)<sup>[195]</sup> bump buttons.
- Added support for the [MC-X Controller](#)<sup>[244]</sup> to be used as external control option.
- Added a [Background Cue](#)<sup>[167]</sup> to control house lights or similar functions.
- Added a [Transparent Cue](#)<sup>[149]</sup> mode.
- Implemented individual [User Libraries](#)<sup>[62]</sup>.
- Added [Sequence intensities](#)<sup>[150]</sup> (DMX in only) for overriding intensities in individual sequences.

**Build 22**

- Added relative movement to the [position control](#)<sup>[98]</sup>.
- Added a couple of movement options including mirror, swap and pan 360° to the [position control](#)<sup>[98]</sup>.
- Added a list of user cameras to the Offline Toolbar. [Hotkeys](#)<sup>[203]</sup> for quick access to user camera views added.
- Added a save to cue slot option to the [save sequence dialog](#)<sup>[125]</sup>
- Added a second palette to the user definable fixtures [effects control](#)<sup>[273]</sup>.
- Added a switch to disable fade times for sequences in [chase mode](#)<sup>[144]</sup> in the cue.
- Added a [Cue macro control](#)<sup>[148]</sup> to scale and disable/enable active movement macros in the cue.
- Added [diagnostics messages](#)<sup>[33]</sup> to help trouble shooting problems with the 4064 card.
- Added [2518 via RS-232](#)<sup>[242]</sup> as remote control option.
- Added [Blind mode](#)<sup>[198]</sup>.

**Build 23**

- Added [Sequence Blind Mode](#)<sup>[129]</sup>
- Added [Sequence Fade](#)<sup>[132]</sup> control.
- Added [Copy from Fixture](#)<sup>[72]</sup> option to the [fixture configuration](#)<sup>[66]</sup>.
- Added [Clear Fixture Data](#)<sup>[73]</sup> to the [fixture configuration](#)<sup>[66]</sup>.
- Added New Sequence and Trig All Manual Sequences as [hotkey functions](#)<sup>[203]</sup> Also added Trig all manual fwd as [2532 user function](#)<sup>[226]</sup>.

**Build 25**

- Added a *Trace Selected Fixtures* option to the mealtime view of [Movement Macros](#)<sup>[102]</sup>

**Build 27**

- Added emulation mode to the [2532 Control](#)<sup>[231]</sup>
- Added an optional link between the master intensity control and strobe for selected Martin products. This function may be enabled in the [fixture configuration](#)<sup>[66]</sup>

**Build 28**

- Added support for download to [2510 playback controller](#)<sup>[289]</sup>.
- Added Clear Fixture options to [fixture right click pop-up menu](#)<sup>[59]</sup>.
- Added 'Add to BG Cue' to [sequence list](#)<sup>[127]</sup> right click pop-up
- Added dedicated load selected cue and flash selected sequence [hotkeys](#)<sup>[203]</sup> These will work even if the cue and sequence lists no longer has focus.
- Added an auto-launch feature for external support programs to the [Startup options dialog](#)<sup>[52]</sup>.
- Added an external support program for [remote control by RS-232](#)<sup>[245]</sup>
- Added a print option to the [Fixture Configuration](#)<sup>[66]</sup>

**Build 29**

- New fixtures added to the Offline Visualizer

**Misc. Changes:**

- The [DMX in Configuration](#)<sup>[231]</sup> is now always available, even if no hardware is present. This allows clearing any functions allocated to DMX in control, even if DMX in is not enabled.

- The DMX input override DMX output function has been moved to the [Global Patch](#)<sup>[201]</sup>. Using the Global Patch allows assigning multiple outputs to a single input without having to nest the patches. It also enables the [Enable DMX Override](#)<sup>[231]</sup> switch to work when multiple outputs are patched to a single input.
- The driver for the Parallel port has been updated again. The new driver consists of a new DMXPLUS.DLL (version 8.06) and a new ADPDriver.exe (version 2.5)
- Some of the bitmaps used for the fixture icons has been resized. This means that if fixture icons are displayed in 'Image Size', icons for certain fixture types will change their size slightly.
- Added fan control to the 518 fixture. The fan control is located on the lamp control.
- It no longer possible to reach the scanner1 and color Scroller profile definitions from the level control. Right-click the fixture icon and select Define Fixture Profile.

#### Build 14

- Added a 5 second reset hold to the MX1 personality required by the final version of the fixture software.
- Added personality for the DJ Acrobat fixture.
- Added Sequence On/Off to the [DMX in](#)<sup>[231]</sup> options.

#### Build 16

- Added a skip first wait to the Cuelist Preferences - when checked the first real-time wait will be skipped (only on Run). The flag is not saved.
- Moved profile setup for [Generic DMX Fixtures](#)<sup>[84]</sup>, Martin 6 Channel Switch and [Color Scroller](#)<sup>[254]</sup> to the fixture icon right-click menu.
- A delete shapes has been added to the *Bézier Shapes* menu on the [Movement Macro Control](#)<sup>[102]</sup>
- Added Enable Follow spot Function to the User [Fixture Pan & Tilt definition](#)<sup>[266]</sup> (user fixture 2 only).

#### Build 16

- Buttons for external controls (MIDI,DMX in,2532) has been moved to the [Cuelist toolbar](#)<sup>[56]</sup>.

#### Build 19

- The audio trig information is now duplicated on the [status bar](#)<sup>[58]</sup>
- Added a **restart** option to the [Main System Menu](#)<sup>[47]</sup>.
- Added a **Quicksave use Save Options** switch to the [Save Sequence dialog](#)<sup>[125]</sup>.

#### Build 22

- The test button in Hardware Setup for testing the RS-232 connection to the 2532 has been removed.
- Flashed sequences are now shown on the title bar of the [Cue Control](#)<sup>[132]</sup>.
- The driver for the ADP interface has been re-written (now version 3.0). The new driver is needed to work with the forthcoming release of firmware revision 1.13 for the ADP interface. It also introduces a new, more efficient method of communication with the LightJockey application.
- Added Blackout and Fadeout as flash functions to the [Keyboard Hotkeys](#)<sup>[203]</sup> and [2532 user key functions](#)<sup>[226]</sup>.

#### Build 23

- [Blind mode](#)<sup>[198]</sup> (s) is now disabled by default.

#### Build 25

- Added [hotkeys](#)<sup>[203]</sup> for [List of Sequences](#)<sup>[127]</sup>, [List of Cues](#)<sup>[137]</sup> and [DMX Output Monitor](#)<sup>[60]</sup>
- Added [hotkeys](#)<sup>[203]</sup> for [fixture group selection](#)<sup>[83]</sup> and [fixture selection](#)<sup>[80]</sup> mode (inclusive/exclusive).

#### Build 27

- Added an *Audio In* item to the main desktop menu to allow restart of the Audio Analyzer if the audio analyzer for some reason has been closed down. The menu item is only visible if audio in has been enabled.

#### Build 28

- Added a switch in the preferences menu to disable the color coding of lines in the [Cue Control](#)<sup>[132]</sup>
- Added Strobe to Grand master link to the Roboscan 218 personalities.

#### Bug fixes:

- Last used [Help file Selection](#)<sup>[10]</sup> is now saved for the next session.
- Problems in previous 1.06 releases with the intensity control of the Color Scroller personality have been fixed.

- Fixed the Clear Cue on 0 bug in the DMX in cue latch function.
- Right-clicking a fixture icon after saving the configuration would sometimes throw a Windows system error message - this has been fixed.

**Build 17**

- Fixed protocol error in the implementation of the RoboZap via DMX interface.
- Fixed corrupted Master Intensity Control when *Show Master Only* is enabled.
- Fixed bug that would sometimes crash LightJockey when closing down the sound module

**Build 18**

- Fixed 2532 'Edit selected flash' bug.
- Fixtures no longer use fade times when restoring from the solo function.

**Build 19**

- Fixed Destroyer Parabola rotation values.
- Fixed bug that would display wrong pan/tilt values when channels were inverted or pan/tilt swapped (thanks to Derrick Markotter for spotting that one).
- Fixed Printer selection bug in the [2532 Printout Function](#)<sup>[231]</sup>.

**Build 22**

- Fixed Punisher Parabola rotation values.
- The [Auto Lamp on](#)<sup>[52]</sup> now also works for user-definable fixtures.
- The Preserve sequence enabled switch in the [Cue Control](#)<sup>[132]</sup> now works again.
- Fixed bug where LJ would freeze up if the Close All hotkey was used when a modal dialog (e.g. Close LJ dialog) was active.

**Build 23**

- The right DMX values for *lamp off* and *fan lo* are now being sent to 1220CMYR,1220XR and 1220 RPR.
- Fixed wrong size for Exterior 600 Compact Color control.
- Fixed numerous bugs related to relative pan/tilt movement.

**Build 24**

- Fixed Acrobat pan bug introduced in build 23
- Modified 4064 initialization routines that would report error on some cards.

**Build 27**

- Fixed a bug that wouldn't allow the offline user cameras to update properly in the offline toolbar.

**Build 28**

- Fixed a bug in the *browse to* function of the sequence list.
- Fixed disappearing *launch* item in the off-line menu, if the Visualizer was closed down manually

**Build 30**

- Fix for potential problem with download to 2510 (err 6 and err 7 during download).

**Build 31**

- Loading a transparent cue no longer resets the internal elapsed scene times on sequences already present in the cue
- Loading a transparent cue no longer resets the current scene to 1 on already present sequences stopped by a loop limit.
- A fix has been provided for the situations where the ADP interface fails to transmit the correct DMX start byte. The fix is supplied as a separate installation file. Please read the readme.txt file found in the Adpfix folder.

**Offline Visualizer updates**

- The Visualizer now automatically loads the last used \*.ofs file when launching.
- The complete Visualizer setup is now contained in the \*.ofs files. This means that different setups are no longer constrained to the room dimensions entered in the room preferences. \*.Ofs files created with earlier versions of the Visualizer will take the room dimensions from the current user preferences - but once re-saved with the new version, the Visualizer will automatically update the file to the new format.
- The Hidden file type bug is now fixed - it is no longer necessary to disable 'hide known file types' in the



Windows setup.

**Version 4.0, rev 2** (shipped with LJ version 1.06 build 19).

- Added 2D functionality to cameras, default cameras (front, back, top, bottom, left and right are now 2D) so zooming in, will no longer rotate the camera
- Beam visibility on solid room walls is 100%, and on the scene it is improved. In previous version, the lines of the beam were sometimes obscured by the walls of the room.
- The MX-1 fixture is now supported.
- There is a list with all fixtures that are used in the scene and there is an indication in the list whether the fixture is supported or not. The list is available from the view/spot list menu.

**Version 4, Rev 2** (shipped with LJ version 1.06 build 23)

- MAC 250+, CX-2, Exterior 600 Compact and Roboscan 812 mode 2 (no speed emulation) are now supported.

**Version 4, Rev 2** (shipped with LJ version 1.06 build 29)

- MiniMAC Profile and MiniMAC Wash. Martin MX-4 now supported.

## 24.13 Version 1.05

**Offline Visualizer from MSD integrated** Several features has been updated.

**Note :** to move fixtures in the Visualizer hold down the [alt] key on the keyboard.

**German on-line help file is now available** See details [here](#)<sup>[10]</sup>

**Fixture personalities added:**

- Personality for Mac 300 has been added.
- Personality for Martin DJ Scan has been added (fixture working title).
- Personality for a [user-definable DMX color scroller](#)<sup>[254]</sup> has been added.
- Personality for an [8-bit small user-definable scanner](#)<sup>[247]</sup> with user-definable palettes has been added.
- Personalities for 24 and 32 channel [Generic DMX](#)<sup>[84]</sup> has been added.
- Personalities for [DMX Smoke Machines and Hazers](#)<sup>[121]</sup> added.
- [Smoke control](#)<sup>[122]</sup> for DMX Smoke Machines and Hazers added.

The following fixture personalities has been added for control through the Martin DMX interface:

- Roboscan 805 - this personality will also work with Roboscan 804.
- Roboscan 218 (the old model)
- Roboscan 1220 II R.
- RoboZap MSR 1200.
- RoboZap 250.
- Martin CenterPiece.
- RoboColor I.
- RoboColor II (the old model)

Notes on controlling fixtures through the DMX interface [here](#)<sup>[74]</sup>

**Features added:**

- [Master Intensity](#)<sup>[195]</sup> control has been rewritten. It now supports a Grand Master and 8 sub-masters.
- [DMX In](#)<sup>[231]</sup> capability has been added. DMX in can be utilized to 'remote' control various features in the Light Jockey from any other DMX source.
- A [global patch](#)<sup>[201]</sup> tool has been implemented. The Patch tool allows the patching of one DMX

channel value to several other channels.

- Auto fade-in and out with specific timing has been added to the [2532 user key functions](#)<sup>[226]</sup>.
- Added Fixture stand-alone to selected fixtures. The function will be available on the [extended control](#)<sup>[117]</sup>.
- Added Grand Master Control toggle for individual channels on the [Generic DMX fixtures](#)<sup>[84]</sup>
- User definable [default output values](#)<sup>[53]</sup> as been implemented.
- Added global patch option to fixture icon right-click popup. This aligns the global patch view with the fixtures DMX address.
- Added [Smoke Control](#)<sup>[122]</sup> for integration of DMX controllable Smoke Machines and Hazers.

#### Bugs fixed:

- Random color selection now works with the Exterior 600.
- Moving icons with selection in exclusive mode didn't work. This is now patched.
- A bug would cause movement presets to fail when fade was disabled in the sequence control. This is now fixed.
- A problem with selecting a cue to link in the "link to cue" loop option in the cue control has been found and fixed.
- [Hotkeys](#)<sup>[203]</sup> F1-F12 had been disabled in certain controls by mistake (notably the cue time control). This has been fixed. Note that the hotkeys will still not work when dedicated keyboard input fields has focus (such as sequence name in the [Save Sequence Dialog](#)<sup>[125]</sup>).
- A much needed shutter-button has been added to the MAC1200 personality.
- Fixed problem with locking sequence times in the [Cue Time Control](#)<sup>[147]</sup>.
- Fixed random strobe that didn't work on the Exterior 600.
- The GO option in the cuelist didn't work properly - it is now fixed.
- Fixed problem with Imagescan gobo rotation control.
- Fixed problem with intensity master and sub masters and fixtures with intensity status off.
- The gobo control bug that caused a resource leak when bitmap-caching was enabled has been fixed.

#### Misc. Changes:

- Changed caption on movement "delta" to "Resolution" on the Pan/Tilt control. The function is unaltered.
- The blackout warning has been changed slightly so that it no longer grabs the focus when forced in the foreground (quite annoying when using menus and other controls).
- It is no longer possible to disable the [Master Intensity](#)<sup>[195]</sup> and [Blackout](#)<sup>[195]</sup>. Both controls are now always present on the fixture toolbar.
- Position presets can now be assigned by double-clicking on the line in the [preset list](#)<sup>[106]</sup>.
- Added [Control]+"rubber banding" to [Hotkeys](#)<sup>[203]</sup>.
- Changed ADP driver (ADPDriver.exe) for the Parallel port version - now version 2.03

## 24.14 Version 1.04

#### Fixture personality added:

- The Imagescan fixture has been implemented.
- Controls for the PAL profile shutters has been implemented.
- Personalities for MAC500 and Roboscan 918 with scrollable gobo wheel has been added.

#### Features added:

- A couple of new mouse+keyboard combinations has been implemented for fixture selections. See [Hotkeys](#)<sup>[203]</sup>

- A programmable fixture reset has been added. See [Extended controls](#)<sup>[117]</sup>
- Position Presets has been implemented. See [Position Presets](#)<sup>[106]</sup>
- A save button has been added to the confirm (overwrite/new etc.) dialogs. Clicking this button will bring up the relevant save dialog. If the sequence, cue or cuelist was previously saved, it will be re-saved without the save dialog appearing (quick save).
- A couple of buttons has been added to the fixture toolbar :
  - All** : this will select all fixtures
  - None** : this deselects all fixtures
  - Inclusive / exclusive** toggle button : When in exclusive mode, selecting fixtures with the mouse is different. A left-click on a fixture icon will select that fixture as master and deselect all other fixtures (solo select), this is identical to the [Control]+left-click combination.A rubber-band selection will de-select all other fixtures before selecting the fixtures that are rubber-banded.

#### Bugs fixed:

- A bug that disabled the auto detect of the parallel port adapter has been found. Version 1.03 would often fail to auto detect the adapter. This is now fixed.
- The bug fix regarding fading pan and tilt after a movement macro from version 1.03 now also works when restoring from macros with separate pan and tilt speeds.
- A bug that would cause the cue to 'forget' fixture values in some of the sequences has been found and fixed - the bug would strike periodically and only under certain circumstances.
- On the Punisher, it was not possible to assign effects shake if the parabola rotation was already set - this is now fixed.
- After 'testing' an already configured 2532 DA controller in the hardware setup- the 2532 would no longer work until LightJockey was restarted. This is now fixed.
- Using the lamp auto strike feature would sometimes leave one fixture to 'hanging' with the lamp strike command active, and no control over functions on DMX address 1. This has now been fixed.
- A bug that would cause the cue modified warning to appear even though the cue was not modified has been found and fixed. This bug was especially annoying when playing back cue lists.
- Selecting a startup cuelist with the select cuelist window already open would lead to a freeze up. This is now fixed.
- Error message when trying to run a cuelist with CD commands and CD ROM not configured.

Finally, we have now started a discussion forum dedicated to the LightJockey hosted on the Martin Website.

This forum can be accessed through the *service and support* entry on the Martin website or directly from here: [www.martin.com/forum](http://www.martin.com/forum)

## 24.15 Version 1.03

### File Format Change

- The sequence file format has been changed. Sequence files of an older format will automatically be updated to version 1.03 at startup. This update is irreversible.

### Features added:

- To make sequence editing faster, a fade enable/disable toggle menu has been added to the sequence control. When fade is disabled via this menu, all fades in the current scene will be evaluated as snap. The scenes will still be saved with the programmed fade status.
- A "Follow Cue" menu option has been added to the select cue view when enabled the currently active cue will be highlighted in the list, even if selected via cuelist or 2532 Direct Access Controller.

### Bugs fixed:

- A bit more work was needed on the freeze on start up bug. A timeout has been added to the hardware validation routine.
- Previous versions could have a problem when setting sequence scene and fade times. The problem would occur when Windows regional settings would define the decimal point as a '.' (full stop). LightJockey will now accept '.' as well as ',' as decimal points.
- A bug concerning fading pan and tilt values after running a macro has been found and fixed. In previous versions fading pan and tilt to a static position from a movement macro would move pan and tilt with a seemingly random speed to the new position. Pan and tilt is now moved with the correct speed according to the actual fade time.
- The "Get Sequence" button on the sequence control is now properly synchronized with the button on the Sequence /Cue Toolbar.
- The save sequence control no longer updates the sequence name and type when sequence is triggered or scenes deleted or inserted (quite annoying when trying to rename a sequence with playback active)
- Sequence "Quick Save" function now considers the save options set (clear, add to cue etc.)
- The field for the current time in the status bar as been widened to fit a 12 hour time setting.
- When editing a sequence, changing the current fade-time in a scene would take immediate effect. This has now been fixed.

#### Notes on demo version:

- It is now possible to enable [CD-ROM](#)<sup>[40]</sup> in the demo version.

## 24.16 Version 1.01

#### Implemented :

- Support for the [2532 Direct Access](#)<sup>[225]</sup> is now implemented.

#### Features added :

- A "clear command"- command has been added to the "command" popup-menu of the cuelist.
- Double-clicking on a sequence slot in a cue now loads the sequence (if any). This feature may be disabled from the preferences menu.
- A "Close LightJockey" confirmation dialog as been added when Light Jockey is closed. This dialog might be disabled from the [System Preferences](#)<sup>[50]</sup> menu.

#### Bugs fixed:

- A major bug that would cause LightJockey to freeze on startup has been fixed. This bug would often strike when re-starting after configuring the 4064 Club version card.
- Loading an empty cue does not update the DMX output accordingly - this is now fixed.
- Using the "Select All" function from the [group selection](#)<sup>[83]</sup>
- no longer causes an access error, when no fixture is configured as fixture number one.
- Improper resizing of the Cue-control when using "Default view" has now been fixed.
- Sequence hotkeys now works when the select cuelist control has focus.
- Cuelist now updates cue information when cues are re-saved with a different name or deleted.