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500ML Lighting Control Console

For OS Version 1.04 and Up

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500ML Lighting Control Console QuickStart Guide

IMPORTANT INFORMATION

Warnings and Notices

When using electrical equipment, basic safety precautions should always be followed including the following:

a. **READ AND FOLLOW ALL SAFETY INSTRUCTIONS**.

b. Do not use outdoors.

c. Do not mount near gas or electric heaters.

d. Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.

e. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.

f. Do not use this equipment for other than intended use.

g. Refer service to qualified personnel.

SAVE THESE INSTRUCTIONS.

WARNING: You must have access to a main circuit breaker or other power disconnect device before installing any wiring. Be sure that power is disconnected by removing fuses or turning the main circuit breaker off before installation. Installing the device with power on may expose you to dangerous voltages and damage the device. A qualified electrician must perform this installation.

WARNING: Refer to National Electrical Code® and local codes for cable specifications. Failure to use proper cable can result in damage to equipment or danger to personnel.

WARNING: This equipment is intended for installation in accordance with the National Electric Code® and local regulations. It is also intended for installation in indoor applications only. Before any electrical work is performed, disconnect power at the circuit breaker or remove the fuse to avoid shock or damage to the control. It is recommended that a qualified electrician perform this installation.

Additional Resources for DMX512

For more information on installing DMX512 control systems, the following publication is available for purchase from the United States Institute for Theatre Technology (USITT), "Recommended Practice for DMX512: A Guide for Users and Installers, 2nd edition" (ISBN: 9780955703522). USITT Contact Information:

> **USITT**
> **315 South Crouse Avenue, Suite 200**
> **Syracuse, NY 13210-1844**
> **Phone: 1.800.938.7488 or 1.315.463.6463**
> **www.usitt.org**

Philips Strand Lighting Limited Two-Year Warranty

Philips Strand Lighting offers a two-year limited warranty of its luminaires against defects in materials or workmanship from the date of delivery. A copy of Philips Strand Lighting two-year limited warranty containing specific terms and conditions can be obtained by contacting your local Philips Strand Lighting office.

Open Source Software

The Philips Strand Lighting 500ML Lighting Control Console contains Open Source Software code. Applicable license texts for this software and copies of the software can be found on the accompanying USB key marked, "OSS".

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PREFACE

1. About this Guide

The document provides experienced users with the necessary information to get up and running very quickly.

Refer to the on-line user manual for complete information regarding all console operations. The manual can be downloaded at www.strandlighting.com.

Text Conventions

The following styles and meanings are used throughout this guide:

Style	Meaning
[Button]	Front panel (faceplate) hard buttons or keys. Example: Press [Button] to operate or select.
Button	LCD display menu softkeys. These are buttons that appear on the LCD display touchscreen. Example: Press Button to operate or select.

2. About the 500ML Lighting Control Console

Building on our range of lighting control consoles, the new 500ML console from Philips Strand Lighting is designed to operate dimmers, LED fixtures and moving lights. The 500ML console is ideal for any event of any size – large or small.

The 8-inch TFT color touchscreen allows for fast set up. Backlit command buttons aide in the ease of use making the 500ML console and ideal control platform solution. If required, the unit has one external DVI port to add a touch monitor to give even more control.

In addition, the 500ML console provides you with 24 faders. Each may be used as a Master, Sub Master, or Playback. Equipped with backlit Play, Pause/Reverse, and Bump buttons they allow cue stacks to be triggered as required for those busking "moments".

Using industry standard methods of control, the user interface is quick to understand, allowing the operation to appeal both to the casual and professional operator alike. With a robust construction, the 500ML console provides you with a smart way to create and play back great lighting for all your important events.

3. Included Items

Each 500ML Lighting Control Console includes the following items:

• Lighting control console

• Console dust cover

• Integrated universal voltage power supply (100 - 240VAC)

• USB key drive

• LED desk lamp

• 500ML Lighting Control Console QuickStart Guide *(this document)*

When unpacking the 500ML Lighting Control Console, be sure that you have all included items. If you are missing any included item (as described above), please contact your Authorized Strand Lighting Dealer for assistance.

Note: Monitors, cables and other accessories are not included and are sold separately. For available accessories, please contact you local Authorized Strand Lighting Dealer. A list of Authorized Dealers is located on the Strand Lighting web site at www.strandlighting.com.

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CONSOLE OVERVIEW

1.   Control Features

Figure 1 is a quick overview of the 500ML Lighting Control Console controls.
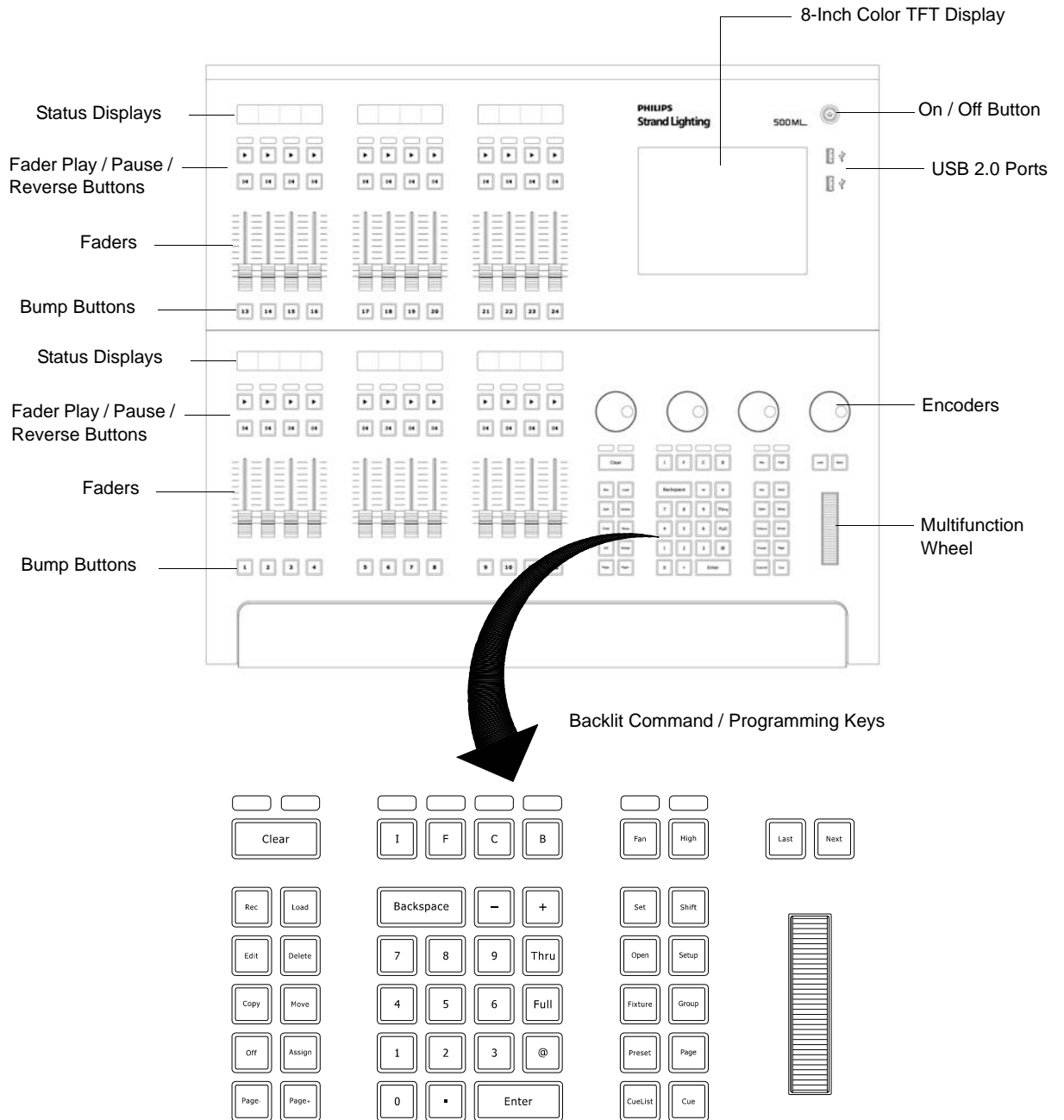
Figure 1: 500ML Lighting Control Console Control Features

Masters (Faders)

The 500ML Lighting Control Console consists of multiple master controls, each consisting of a fader and flash, go, pause/back buttons. Masters are grouped into blocks of four, whereas each group has a LCD screen to display the current fader's state.

8-Inch TFT Touchscreen

The 8-inch TFT touchscreen is one of the key elements used for user interaction with the console. It provides an easy-to-use and understand graphical user interface.

Command / Programming Keys

The 500ML Lighting Control Console command and programming keys correspond with the touchscreen interface. Such keys like **[Open]** is used to open windows, the **[Setup]** button and - most important - the **[Set]** key, which is used to directly alter data in many windows.

Note: Refer to "Text Conventions" on page 4 for additional information.

Example: To open up a "Fixture Pool" - window, push and hold the **[Open]** key and press the [**Fixture**] key at the same time. Most keys that alter memories (for example. **[Rec]**, [**Edit**], [**Delete**]) also open up a pool window if you keep pressing the button at the same time you are striking a key like [**Preset**] or [**Cuelist**].

Encoders

The 500ML Lighting Control Console is supplied with four encoders. These encoders rotate in either direction to quickly set desired values for different attributes during programming.

Multifunction Wheel

The console features a Multifunctional wheel which provides control of the intensity (dimming) level of the selected fixtures and options to Scroll in Screens and can be used to increment or decrement values shown in Keypad Dialogs.

USB 2.0 Ports - Faceplate

The USB 2.0 ports on the 500ML Lighting Control Console allow users to load and save show files to a USB key (supplied with unit). Users can also connect personal devices for charging. Additionally, the USB ports are compatible with standard USB hubs.

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2.   Rear Panel - External Connections

Figure 1 is a quick overview of the 500ML Lighting Control Console rear panel connections.
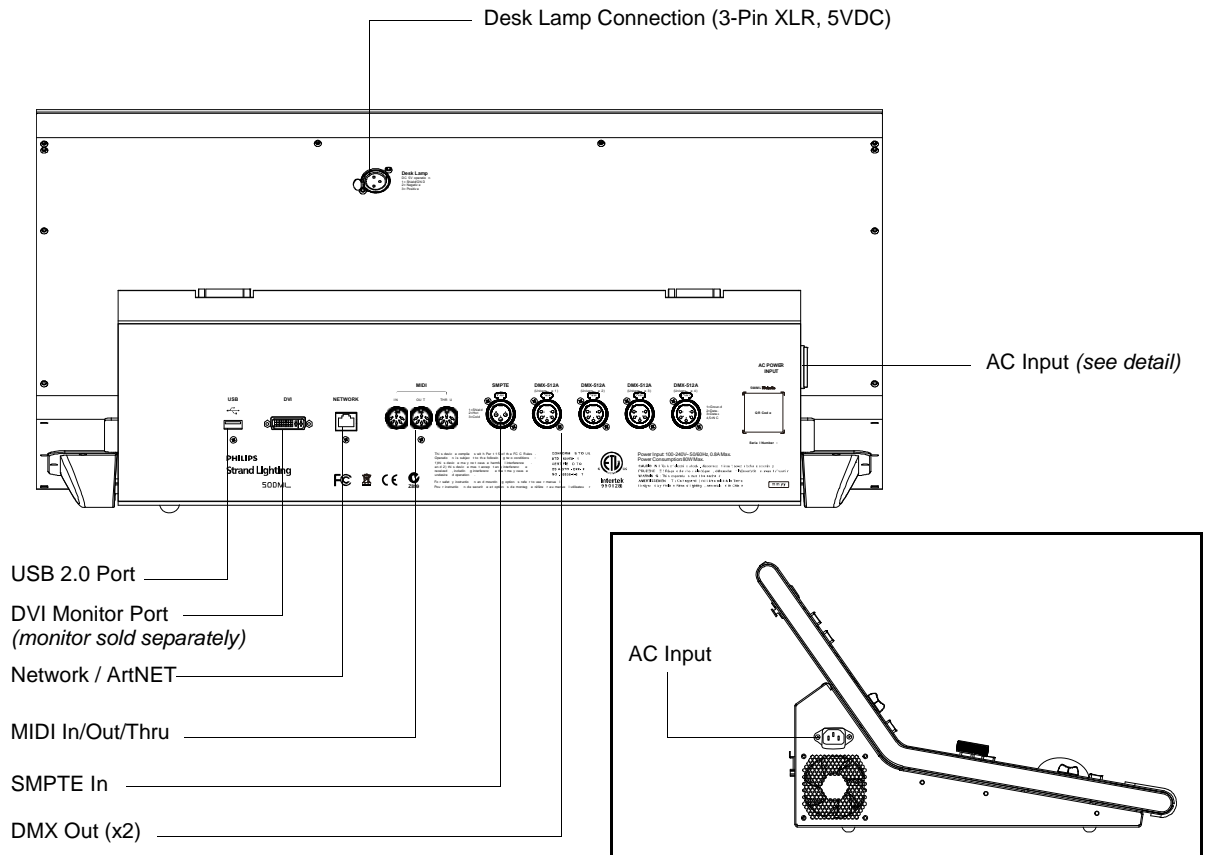
Figure 2: Rear Panel Connections

USB 2.0 Ports - Rear Panel

The USB 2.0 ports on the 500ML Lighting Control Console allow users to load and save show files to a USB key (supplied with unit). Users can also connect personal devices for charging. Additionally, the USB ports are compatible with standard USB hubs.

Network Port

The network port is driven by a 10/100/1000M Ethernet controller with automatic crossover detection, removing the need for cross-over cables should you wish to directly connect a Network Node to the console. The console outputs ArtNet and Shownet.

DVI Port

The DVI Port is a DVI-D Single Link port and supports resolutions of up to 1920 x 1200; the console will automatically detect the display resolution as well as refresh rate and will automatically enable the external screen. DVI to HDMI adapters may be used to convert the signal to HDMI, however compatibility of the adapter, display, and console should be checked prior to the show.

BASICS

1.   The Fixture Library Concept

The consoles Fixture Library is divided into three parts: A System Library, a User Library and the Show Library. Fixture Types may easily transferred between Libraries. If a fixture type is modified within the Show Library and those changes should be available for later show files, it makes sense to transfer the fixture from the Show Library to the User Library.

System Library

The System Library gets replaced with every Software Update. It contains around 6700 Fixtures and is maintained by Strand Lighting. It is not editable by the user.

User Library

The User Library is fully editable by the user and is not replaced or deleted during software updates. It is stored on the flash-disk of the console and its fixture types are available to all existing or new shows.

Show Library

The show library resides within the Showfile. Before a fixture can be patched, it needs to be added to the Show Library. The Show Library is stored within the Showfile and hence will be exported with the Showfile if a backup to a USB Key is made. Fixtures within the Show Library are not available to other Shows. To make the Fixture Types in the Show Library available to other shows, they need to be transferred to the User Library first.

2.   Screens

The console shows context sensitive screens for each step of the show creation. This way it only shows functionality you need for a specific task. As an example, the "Cuelist View" Window (Figure 3) will only show information that is necessary to understand and read your cuelist, whereas the "Programmer Window" (Figure 4 on page 9) will only show information needed for value entry.

Figure 3: Cuelist View
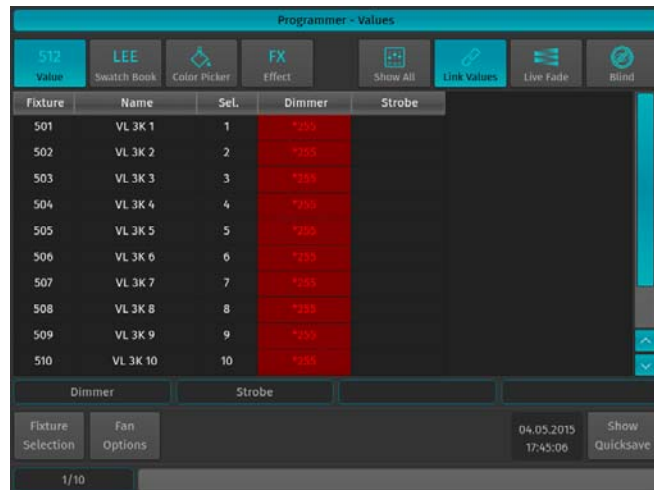
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Figure 4: Programmer Window

Opening Screens and Dialogs

The 500ML console provides easy and logical ways to open the context sensitive screens. As an example, pressing [SETUP] will show the Setup Screen, which is used for general configuration of the console, such as adding Fixtures to the Show or setting the IP Address of the Network Interface.

All of the Pool Windows containing Fixtures, Groups, Presets or Cuelists as well as the Fader Page Directory may be opened by issuing a long press on the [Open] key, followed by the key of the Pool Window you would like to open:

- [OPEN] + [FIXTURE] will open the Fixture Pool Window

- [OPEN] + [GROUP] will open the Group Pool Window

- [OPEN] + [PRESET] will open the All Preset Pool Window

- [OPEN] + [I] will open the All Preset Pool Window

- [OPEN] + [F] will open the "Intensity" Preset Pool Window

- [OPEN] + [C] will open the Color Preset Pool Window

- [OPEN] + [B] will open the Beam Preset Pool Window

- [OPEN] + [CUELIST] will open the Cuelist Pool Window

- [OPEN] + [PAGE] will open the Fader Page Directory Window

Pressing the [OPEN] key provides you with the Open Toolbar, which may also used to open the different Pool Windows. Additionally the Open Toolbar may be used to open the Output Window, indicating the currently output values.

Figure 5: Open Toolbar

In addition to that, the Command keys found on the Keypad like [RECORD], [LOAD], [EDIT], [DELETE], [COPY], [MOVE], [OFF] and [ASSIGN] will, in a similar fashion to the [OPEN] button open up Pool Windows as well if they are pressed while striking any of the Object keys, whilst keeping the initial command in the command line. This is very useful to quickly navigate around the console during programming. As an example: Holding [RECORD] while pressing the [GROUP] button opens up the Group Pool and keeps the Record Keyword in the command line, allowing to directly record the Group.

Command Line Syntax

In general the Command Line Syntax needs to be entered in "Action - Source - Target" form. When no Action is specified, the source Item will be selected. See Table 1, "Command Line Syntax," on page 10 for more information.

Action	Source	Target
[RECORD]	[PRESET] [5]	
	[PRESET] [5]	
[COPY]	[PRESET] [5]	[PRESET] [8]
[MOVE]	[PRESET] [5]	[PRESET] [8]
[ASSIGN]	[CUELIST] [2]	[GO] or [PAUSE / BACK]

Table 1: Command Line Syntax

Commands interacting with a visual object (such as a Pool Item or a Faders Pause/Back Button) will be executed automatically once they are syntactically correct. However, commands that do not interact with visual elements need to be executed by pressing the [ENTER] key.

External Monitor

If an external monitor (sold separately) is connected, the monitor provides enhanced overview over your show file. It consists of 6 different views that show Fixture, Group, Preset and Cuelist Pools, as well as fader labels. Pool Items may either be selected or deselected by using a standard USB Mouse or a touchscreen. Fader labels also provide you with a quick overview of assigned Masters. Additionally, the current date and time and incoming Timecode is shown and the Timecode input may be enabled or disabled.
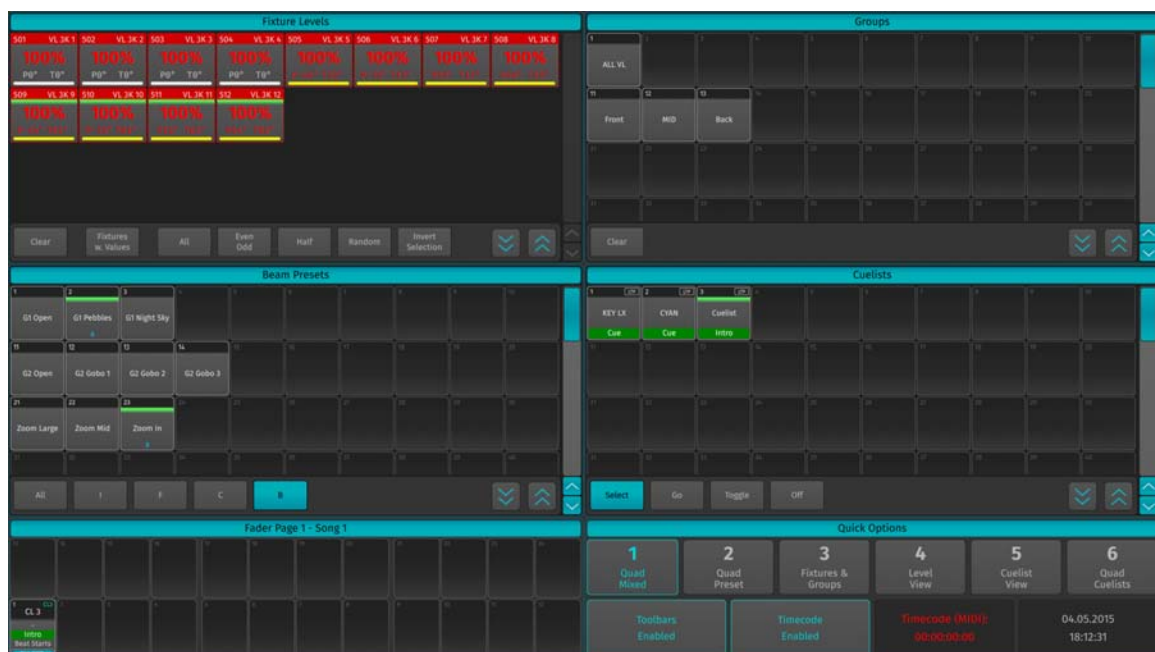
Figure 6: External Monitor Screen

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OPERATION

1. To Begin Using the Console

Unpack Console and Accessories

Before you can use the console, unpack it and its accessories from the shipping carton. For a complete list of included items, refer to "Included Items" on page 4.

Connect Console to Any Accessories and Power

Note: Before connecting any accessories to the 500ML Lighting Control Console, the console must be located on a sturdy and flat surface in a dry, dust free environment.

Connect all optional accessories such as USB keyboard, mouse, touchscreen, etc. to the console.

Connect DMX cables to the console's DMX output ports.

If you are using ArtNet for data output, also connect the network cable to the consoles network port.

Use the supplied AC power cable to connect the console to a grounded, AC power source. The console operates on an AC voltage of 100 to 240VAC.

Refer to Figure 2 on page 7 for console connections.

Boot the Console

After making all the necessary connections to the DMX control and/or ArtNET networks, external peripherals, etc. the console is ready for use.

- To begin using the console, press the power button on the right hand side next to the touchscreen (refer to Figure 1 on page 5).

- The console will now start to boot. Additionally, the boot menu offers some test and maintenance utilities. The 500ML Lighting Control Console will perform a system check during boot up. Once the system is ready to use, the Welcome screen will appear (Figure 7).
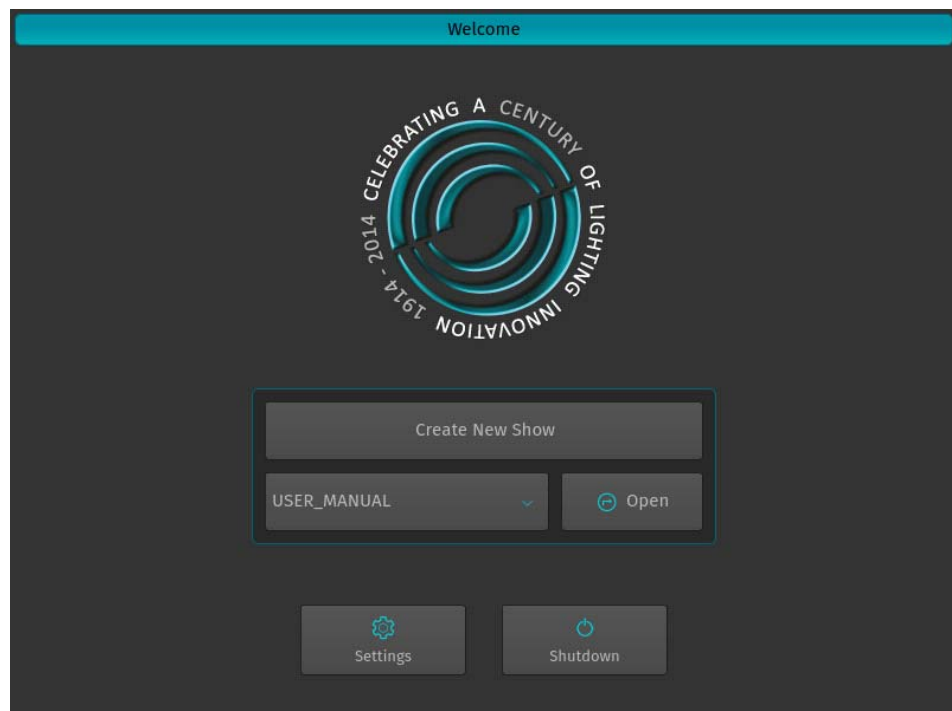
Figure 7: Welcome Screen

Once the Welcome Screen appears, you may either start creating a new show file or load an existing one.

2.   Working with Shows

Show files contain all of your show related settings like fixture schedule and patching, input settings, groups, presets, cues, master assignments, etc. Multiple shows may reside on the console and the amount of shows is only limited by hard disk memory. However it is advised to regularly backup old shows to a USB key and delete them off the consoles memory.

3.   To Create or Load a Show

When the Welcome screen appears, you are given two options:

• Create a New Show *or,*

• Load an Existing Show (via a saved showfile*)

Note: *Showfiles contain all of your show related settings like fixture schedule and patching, input settings, groups, presets, cues, master assignments, etc.

Creating a New Show

On the console's 8-inch TFT touchscreen display, hit the `Create New Show` button on the Welcome Screen (refer to Figure 8).

Press to create a new show

Dropdown menu to load an existing show
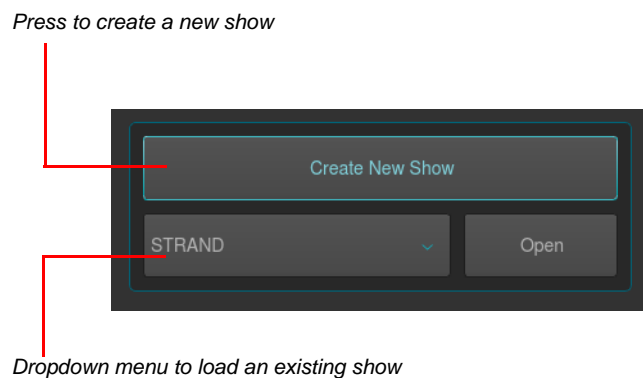
Figure 8: Create New Show Option

This will open up a virtual keyboard on the console screen, as illustrated in Figure 9 on page 13, to enter the name of the show to be created.

You may also enter values by using an external USB keyboard (by others, sold separately) anytime the keyboard dialog is shown. As soon as you hit the `Enter` button a show file with a name given is created.

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Showfile Name Field

Figure 9: Touchscreen Keyboard & Showfile Name Field

Loading an Existing Show

To be able to open a show, you first need to close any open shows. Do this by pressing [SETUP] and hitting the Close Show button on the Setup Toolbar. As soon as all shows are closed, the console will return to the Welcome Screen as shown in Figure 8 on page 12.

After selecting the show file name from the drop down menu (refer to Figure 8 on page 12) a, hit the Open button the console's 8-inch TFT touchscreen display.

Note: Shows stored on a USB Key need to be imported into the console memory before they can be opened.

Importing Shows from a USB Key

From the Welcome Screen hit the Settings button as shown in Figure 7 on page 11. Or, you can open the Setup Dialog by selecting the [SETUP] key on the front panel instead.

Once the Setup Menu is shown, switch to the USB tab and hit the Show Import button as illustrated in Figure 10.
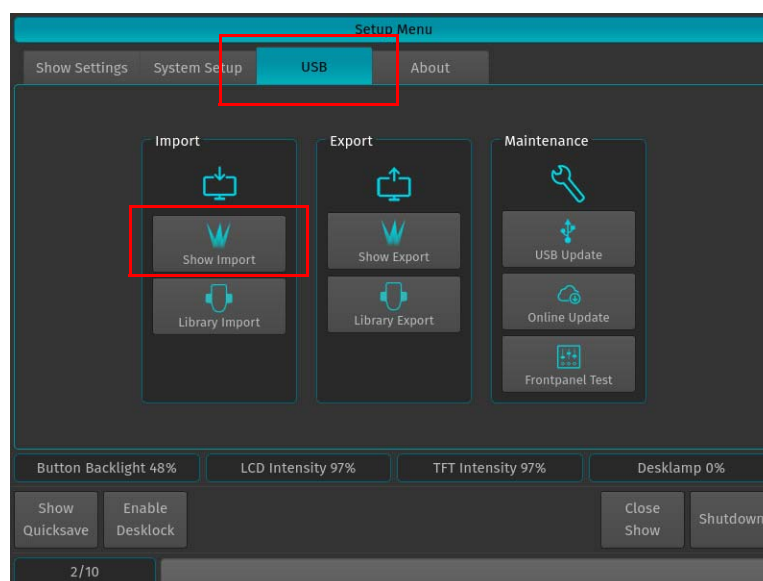
Figure 10: Setup Menu - USB Tab - Show Import

A list of shows will appear. Select the show or shows you would like to import and hit the Import button on the touchscreen display.
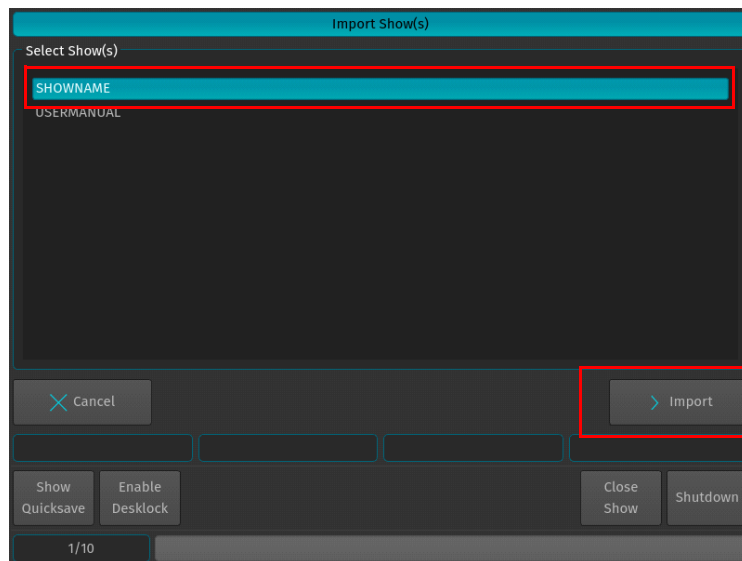
Figure 11: Select Show to Import

A confirmation screen will appear with a brief summary of the show or shows to be imported as displayed in Figure 12. Click on Import button to start the process of loading the show(s).
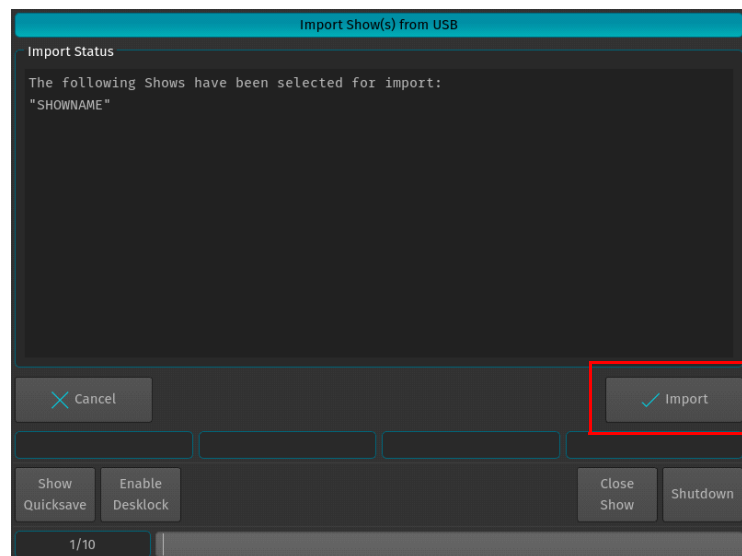
Figure 12: Import Show(s) from USB - Import Status of Selected Shows

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After the loading process begins, the Import Status box will now display the import process. After the process finished, click on the Close button.
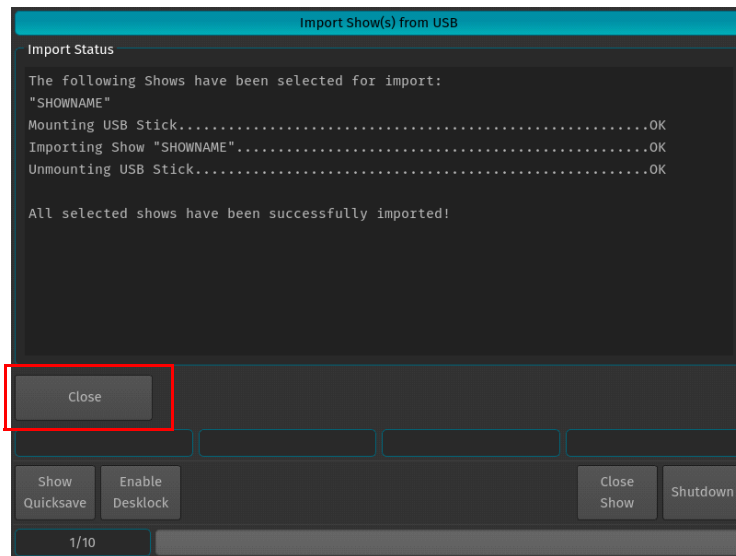
Figure 13: Import Show(s) from USB - Import Status of Selected Shows - Completed

Saving Show Files

We recommend to save your show frequently to insure information is not lost in case of a power loss, interruption, etc. You may do this by pressing [SETUP] and hitting the Show Quicksave button on the Setup Toolbar.

Figure 14: Setup Toolbar - Show Quicksave

Exporting a Show to USB Key

At the Welcome Screen, hit the Settings button. Should you already be running a show, open the Setup Dialog by pressing the [SETUP] key on the front panel instead.

Once the Setup Menu is shown, switch to the USB tab and hit the Export Show button as illustrated in Figure 15.
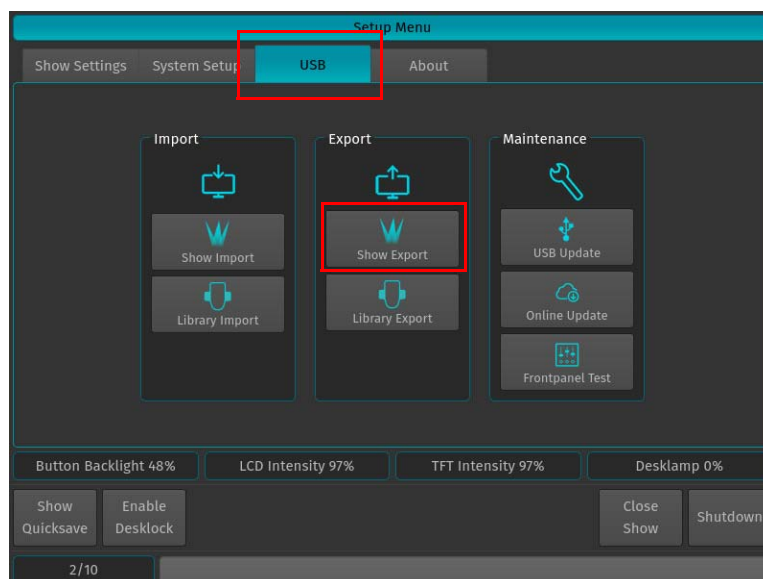
Figure 15: Setup Menu - USB Tab - Show Export

The next screen will display a list of shows in the console's memory. Select the show or shows you would like to export (copy) to the USB key. Then, hit the Export button on the touchscreen display to export them to the USB key.
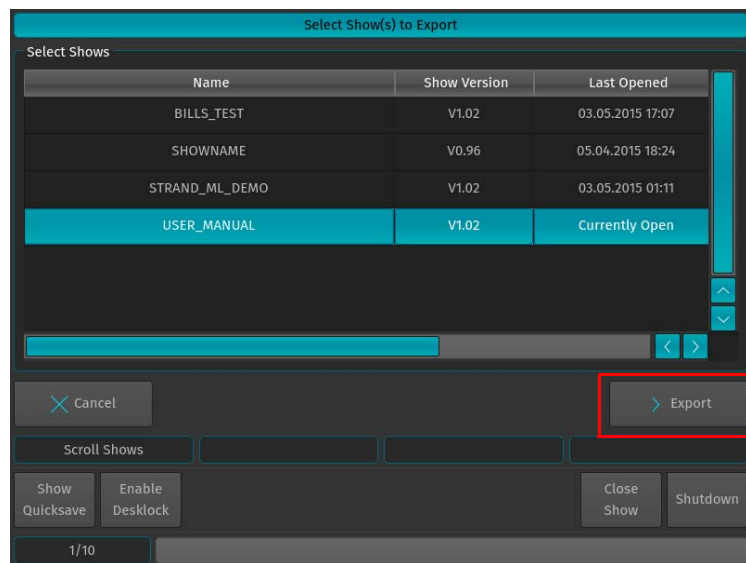
Figure 16: Select Show(s) to Export Screen - Exporting Shows to USB Key

A confirmation screen will appear confirming your selection(s) to be exported as shown in Figure 17. Click the Export button to export the show(s) to the USB Key. The Export Status field will now display the export process.
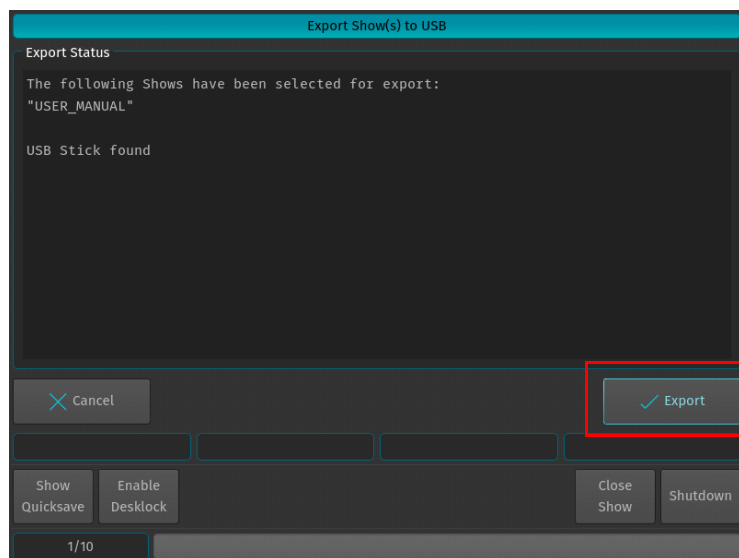
Figure 17: Export Show(s) to USB Screen - Confirmation Screen

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When the process finished successfully, click on the Close button as indicated in Figure 18.
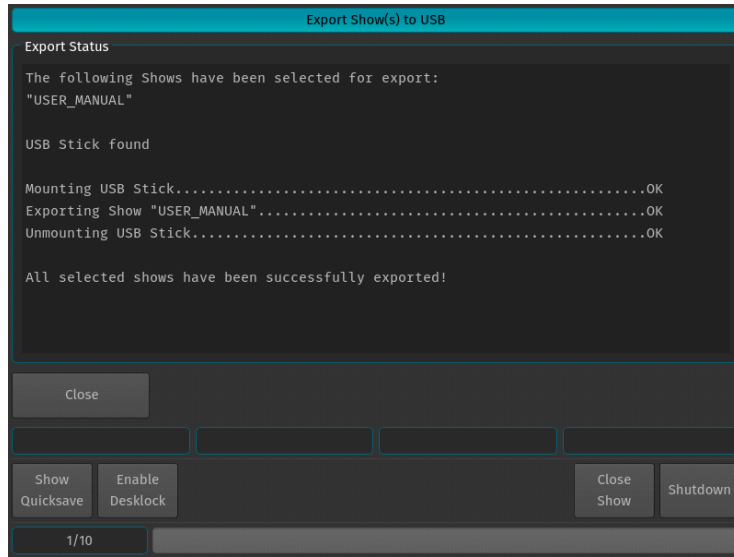
Figure 18: Export Show(s) to USB Screen - Export Completed

Closing a Show

To load a show (as described in "Loading an Existing Show" on page 13), you must close any open shows. Do this by pressing [SETUP] and then pressing the Close Show button on the Setup Toolbar (Figure 19).

Figure 19: Setup Toolbar - Closing a Show

Note: If there are no shows loaded, the 500ML Lighting Control Console will not output DMX.

PROGRAMMING

1.   Fixture Setup

Adding Fixtures to a Show

In order to add and patch fixtures, please press the [Setup] key on the consoles front panel. A menu will appear on the touchscreen display, presenting you several options. Choose Add Fixtures in the Setup Menu screen (Figure 20).
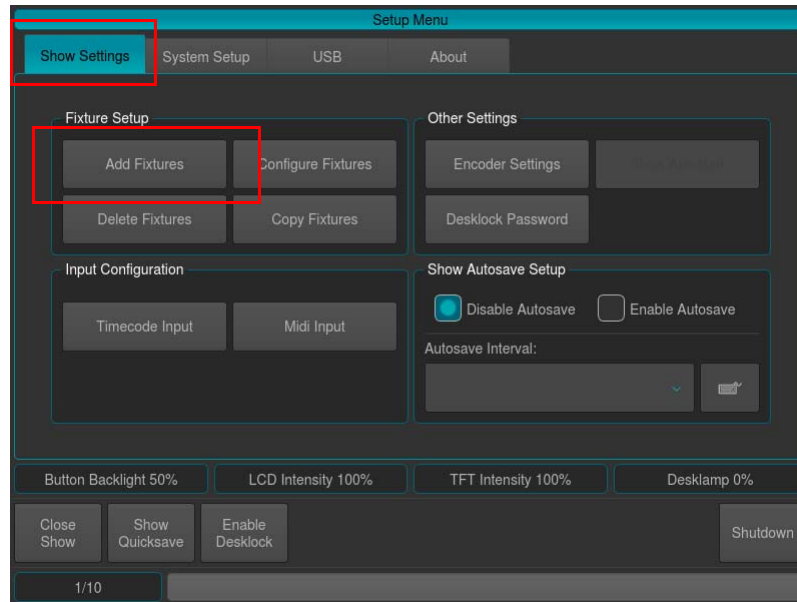
Figure 20: Setup Menu

The Select Fixture from Show Library screen (Figure 21) will appear allowing you to pick the fixture type from the show library.

- If the show library does not yet contain the fixture of the choice, click on Add Library to add fixtures from the System or User Library to the Show.

- If the list already contains the desired fixture type, select it and click on Next, which will skip the next two steps.
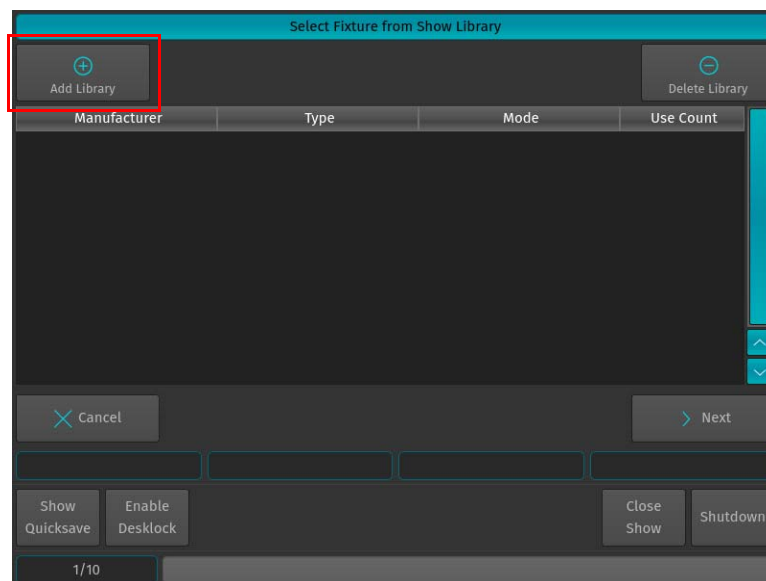
Figure 21: Select Fixture from Show Library Screen

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A library selection screen will appear (Figure 22) allowing you to select where to select and import fixtures.

- If you would like to add a predefined Fixture Type, select on Factory Library.

- If you would like to add a User created or User modified fixture, select User Library. Click on Next when done.
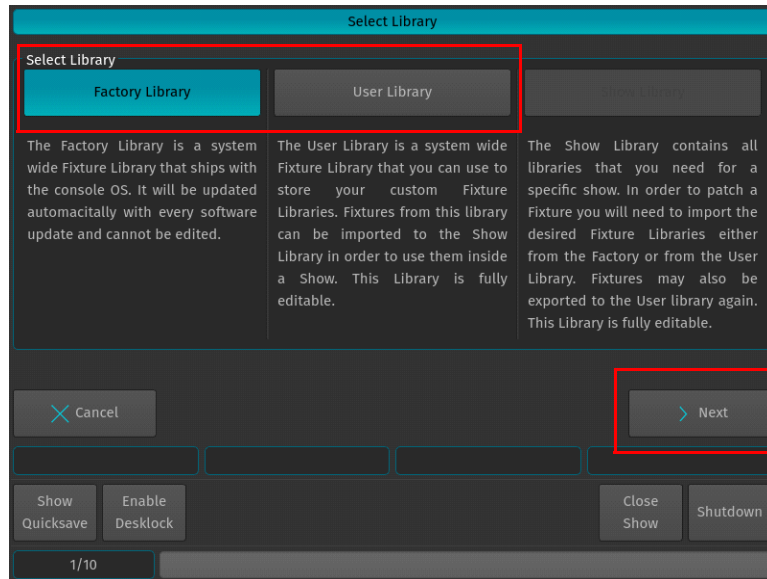
Figure 22: Select Library Screen - Library Choices to Add Fixtures

After clicking Next for the Factory Library selection, a fixture selection screen as shown in FIG will appear allowing you to select a predefined fixture.

- You may search for fixtures using the search field shown in the top part of the screen. In order to complete the examples shown in this guide, search for "vari 3000" and select the Philips Vari-Lite VL3000 Spot from the list. To clear your search, click the Reset Filter button. After selection, click on the Next button.

- Alternatively, you may select the fixture by using the Manufacturer, Type and Mode fields.
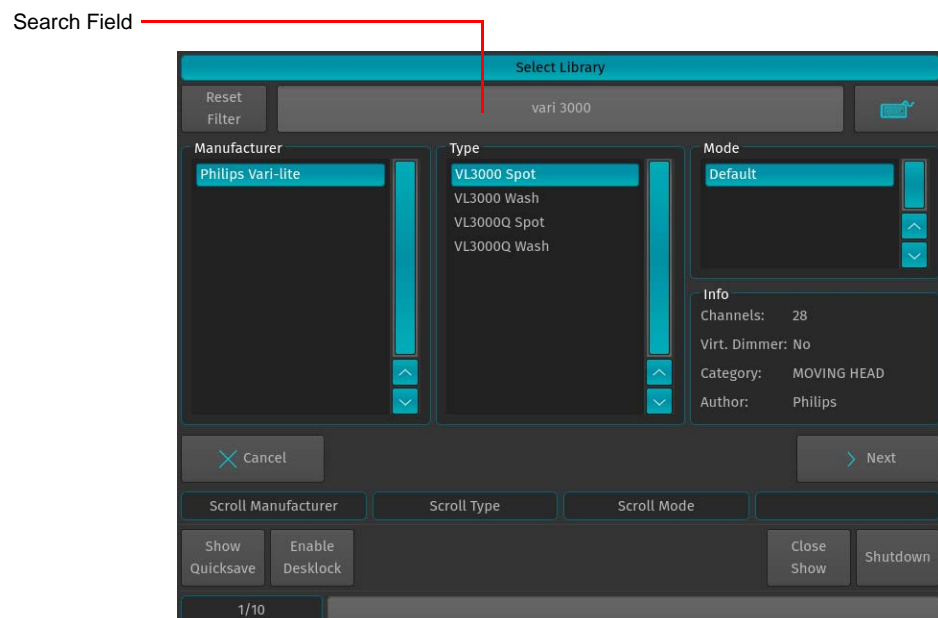
Figure 23: Select Library - Fixture Search and Selection Screen

After selecting a fixture for your show, a new screen (Figure 24 on page 20) will appear confirming your fixture selection. In this screen, you will be required to enter the following information:

- Fixture Count - The number of this type of fixture being added to the show.

- Set User Numbers - Starting DMX Address for the fixtures.

- Default Fixture Settings - You can select Invert Pan, Invert Tilt or React to Master (react to Grandmaster).

In this example 12 fixtures will be added, with User Number starting at 501. After setting these parameters, click Next.
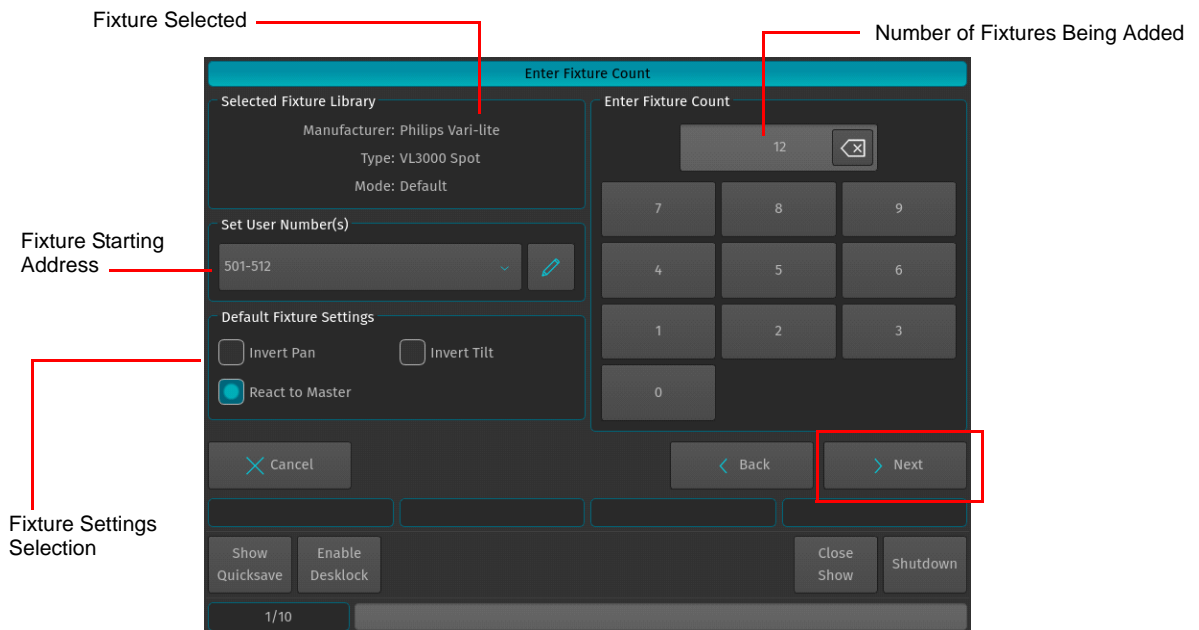
Figure 24: Enter Fixture Count Screen

Patching Fixtures

As shown in Figure 25, this window is used to patch (assign) fixtures to the DMX Universes. There are three different patch options available to choose from:

- No Patch - The fixtures will be added but not patched.

- Manual Patch - The fixtures will be added and patched to the address and universe user specified

- Auto Patch - The fixtures will be patched at the next free address of the selected universe automatically.

For this exercise, choose "Manual Patch", select Universe 1 and set the start address to 1 and click on Finish.
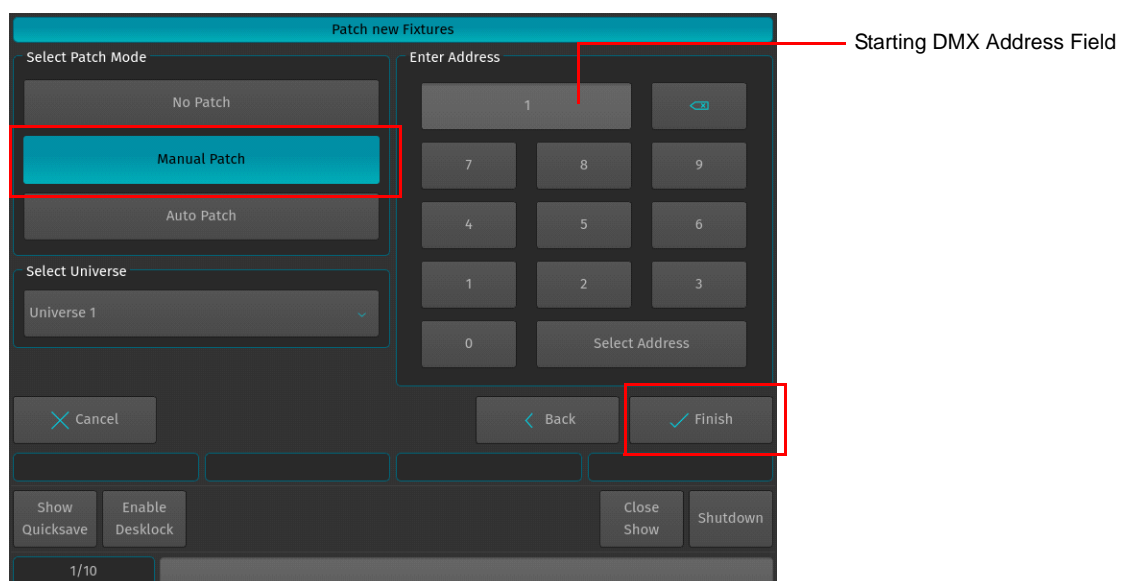
Figure 25: Patch new Fixtures Screen

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2. Working with Fixtures

Selecting Fixtures

Before you can start altering any values or programming, you need to select the fixtures you would like to work with. There are four different ways to select your fixtures.

Selection Order

The order in which you select fixtures determines how sub-selection and fanning are applied to them. For example, applying a fanned value or an odd sub-selection to them after selecting fixtures 501 thru 505 will appear different than if you selected fixtures 501 + 503 + 502 + 505 + 504.

The selection order matters during programming and is recorded as part of groups, but is not recorded in presets or cues.

Note: Because the 500ML console records the selection order as part of groups, you can select the group and use the Next and Back keys to sub-select each fixture in a particular order. By controlling the selection order when you record the group, you can work through a series of fixtures in the order they are physically positioned in the rig, instead of in numerical order. If used in a controlled manner, this can be a very powerful way to generate very nice effects as well.

Selecting Fixtures Using Keypad / Command Line
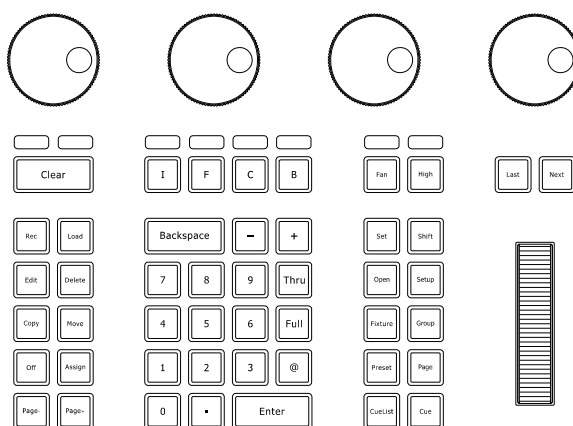
Figure 26: 500ML Console - Command / Programming Keys

To select fixtures using the command/programming keys, simply do so by typing their user numbers as assigned in "Adding Fixtures to a Show" on page 18. You may use the [THRU], [+] and [-] keys to further extend your selection to include some or all fixtures.

Figure 27: Command Line Interface - Fixture Selection

Fixture selection examples:

- [501] [THRU] [ENTER] will select all fixtures following fixture 501 until a different fixture type starts, or a gap in the numbering scheme is detected.
- [501] [+] [502] [ENTER] will select fixtures 501 and 502.
- [501] [THRU] [510] [ENTER] will select all fixtures from fixture 501 to 510.
- [501] [THRU] [510] [-] [503] [ENTER] will select all fixtures from fixture 501 to 510 except 503.

Note: You do not need to press the [Fixture] key prior to the fixture numbers, as the console assumes you will select a fixture when entering numbers. To deselect all fixtures, just type [0] [ENTER] on the keypad.

The keypad does also have special functions for extended fixture sub-selection which can be applied on your current selection. Refer to "Fixture Sub-Selection" for more information.

Selecting / Deselecting Fixtures Using Fixture Pool Window

Press and hold the [OPEN] key and press the [FIXTURE] button. The Fixture Pool window will open up (Figure 28). You may now select or deselect fixtures by simply clicking on them.

Figure 28: Fixture Pool Window

Selecting Fixtures Using a Previously Recorded Group
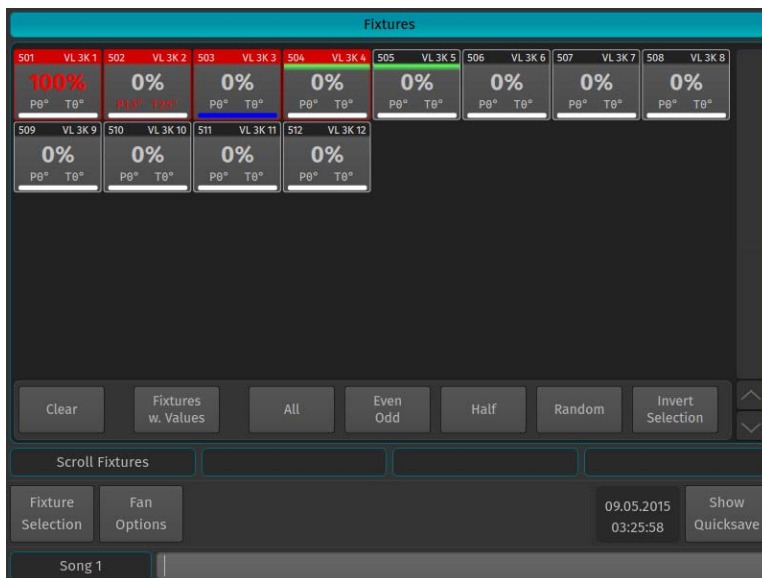
Press and hold the [OPEN] key and press the [GROUP] button. The Group Pool window will open up. In this window, you can select and deselect fixture groups by clicking on them. You may also select a Group from within the Group Pool shown on the external monitor.

You can also select a Group using the Command Line Interface: [GROUP] [1] [ENTER].

Note: "Working with Groups" on page 24 for more information about working with Group Pools.

Fixture Sub-Selection

Fixture Sub-Selection provides additional fixture selection features based on your current fixture selection set. This means that all sub-selection functions are applied to your current fixture selection. If you do not have fixtures selected, the Fixture Sub-Selection will be applied to all fixtures instead. If you select any of the sub-selection functions, the console will remember the full selection that you made using the keypad and apply all functions to Fixture Sub-Selection memory.

Most sub-selection functions are easily accessed by using the Selection Toolbar (Figure 29). To open the Selection Toolbar, click on the first button that reads Fixture Selection from within the Main Toolbar. Clicking on Close will close the Selection Toolbar. However, some sub selection functions are accessed directly by hard keys on the console or the keypad.
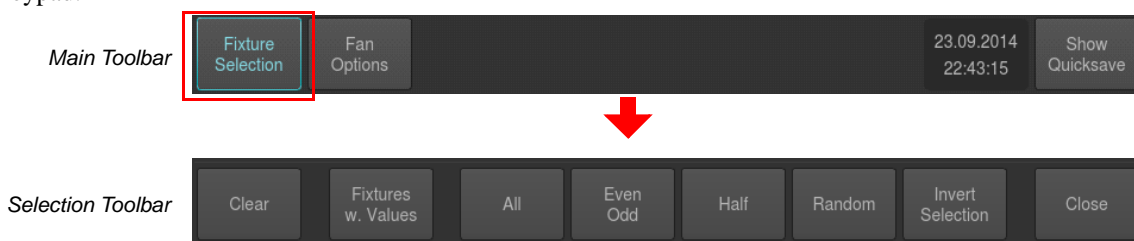

Figure 29: Main Toolbar to Selection Toolbar

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Selecting Fixture X out of Y

The console offers a built in modulo sub-selection function that allows the selection of every Xth fixture out of Y.

The syntax is uses [.] [.] for the "out of" portion of the command.

In the following example, we are going to select every first fixture out of every three fixtures:

1) To select fixtures 501 to 512:

2) Type [1][.] [.] [3] [ENTER] on the keypad.

3) To select every second fixture out of three, type [2][.] [.] [3] [ENTER]

4) To select every third fixture out of three, type [3][.] [.] [3] [ENTER]

Please note you may also combine the modulo function with more advanced functions:

1) Select fixtures 501 to 512

2) Type [1] [+] [2] [.] [.] [3] [ENTER] on the keypad translates into "Select each first and second fixture out of three".

Or:

1) Select fixtures 501 to 512

2) Typing [1] [THRU] [3] [+] [5] [.] [.] [5] [ENTER] on the keypad translates into "Select each first through third and fifth fixture out of five fixtures".

Assigning Names to Fixtures

You may decide between different ways should you wish to rename your fixtures to make them more identifiable within the Fixture Pool, programmer and fixture configuration dialogs:

• Simultaneously press the [FIXTURE] and [ASSIGN] keys. The Fixture Pool window will open.

• The command line will still read Assign.

• Press the [ASSIGN] key again. The command line will read Name.

• Select the fixture you wish to rename from within the Fixture Pool Window (see "Selecting / Deselecting Fixtures Using Fixture Pool Window" on page 22).

• Enter Fixture Name window with keyboard will appear as shown in Figure 30.
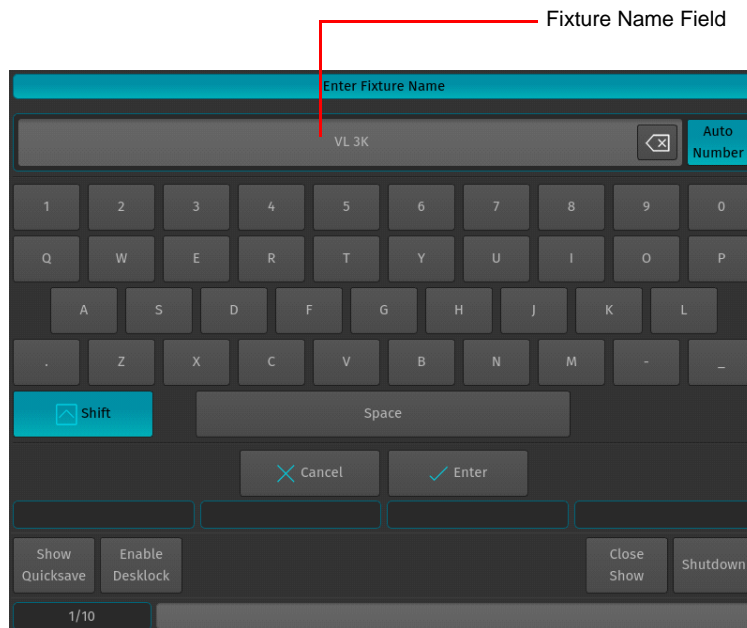
Figure 30: Entering / Changing a Fixture Name

3.   Working with Groups

About Groups

Groups are meant as a programming aid and are a quick way to access specific groups of fixtures. As opposed to the theatrical term "Group" they do not store any values. They only store information about fixture selection and selection order.

Creating a Group

To record your first group, start out by selecting fixtures 501 through 512 by using the Keypad (refer to ""Selecting Fixtures" on page 21 for more information).

Once fixtures are selected to be a Group, press and hold the [REC] button and then press the [GROUP] button. The Groups pool window (Figure 31) will appear. Select any empty slot (an empty box with a number in the corner) to store a new Fixture Group.

Note: You may also hit the [REC] key only, and select an empty Group Item in the External Monitors Group Pool Window.
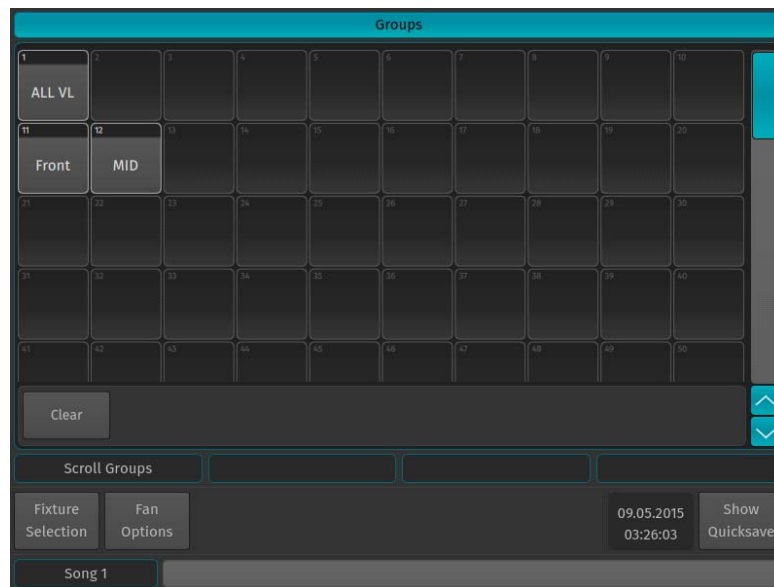
Figure 31: Groups (Pool) Window

Note: You may label any item by pressing [ASSIGN] keypad button twice. The command line will read "Label". Now select the Item you would like to label and type in the name.

Updating Groups

To update a group, you must first select the fixtures you would like to remove or add to a group. See "Selecting Fixtures" on page 21 for more information.

Press and hold the [REC] key and then press the [GROUP] button. The Groups pool window (Figure 31) will appear. Select the Group you would like to update.

If you did not select an option from the Record Toolbar, a dialog window will open (Figure 32) asking you what you wish to do. Select the desired action by click the appropriate button on the screen.
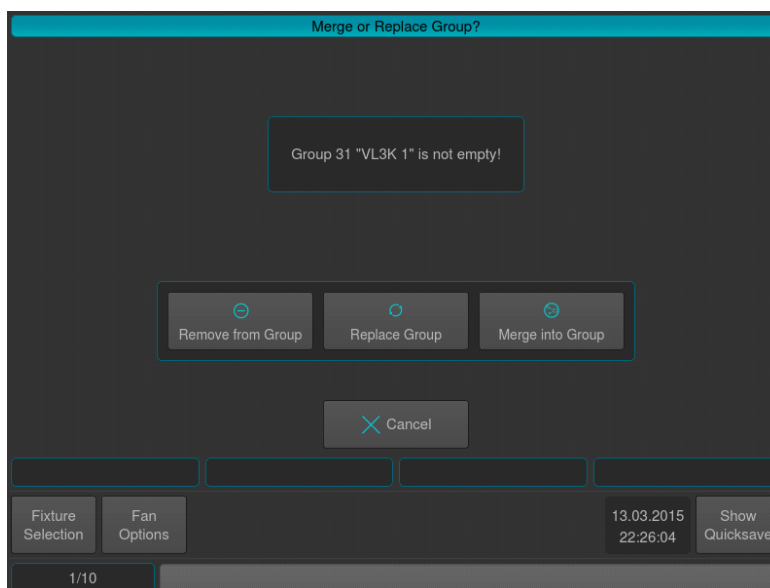

Figure 32: Merge or Replace Group Inquiry Window

Selecting and Deselecting Groups

Press and hold the [OPEN] key and then press the [GROUP] button. The Groups pool window (Figure 31 on page 24) will open. You can select and deselect fixture groups by clicking on them. You may also select a Group on the external monitor (if connected). To learn how to create a Fixture Group, see "Creating a Group" on page 24.

4. Working with Values

The console follows the popular "Programmer" concept. This section will explain the concept in detail.

Figure 33: Programmer - Values Screen

What is the Programmer?

The "Programmer" is the place where all of the programming happens. As soon as you modify a fixture's attribute values by using any of the input methods for values, it will be displayed in the programmer.

The programmer always takes precedence over cuelists, this way you can, at any point in a show, modify the look on stage. For a more in-depth look on how priorities are managed in the console, have a look at "Error! Reference source not found.".

Fixture Attribute Values

Without Values

Figure 34 shows how the programmer appears when fixtures are selected without values assigned in the programmer. They are still outputting values set by cuelists or their default values set in the library.

Fixture	Name	Sel.	Dimmer	Strobe
501	VL 3K 1	1		
502	VL 3K 2	2		
503	VL 3K 3	3		
504	VL 3K 4	4		
505	VL 3K 5	5		
506	VL 3K 6	6		

Figure 34: Programmer Without Values

With Values

Figure 34 illustrates how the programmer appears when fixtures are selected with values assigned in the programmer. The programmer takes precedence over cuelist output for the attributes with values in the programmer. However, these values would not be recorded.

Fixture	Name	Sel.	Dimmer	Strobe
501	VL 3K 1	1	255	
502	VL 3K 2	2	255	
503	VL 3K 3	3	161	
504	VL 3K 4	4	161	
505	VL 3K 5	5	161	
506	VL 3K 6	6	161	

Figure 35: Programmer With Values

Modified (Touched) Values

Figure 34 shows how the programmer appears when attribute values are modified (touched) in the programmer. The programmer takes precedence over cuelist output for all attributes with values in the programmer. As soon as values are "touched" (indicated by red background color of the corresponding cell) they can be recorded.

Fixture	Name	Sel.	Dimmer	Strobe
501	VL 3K 1	1	*255	
502	VL 3K 2	2	*255	
503	VL 3K 3	3	*161	
504	VL 3K 4	4	*161	
505	VL 3K 5	5	*161	
506	VL 3K 6	6	*161	
507	VL 3K 7	7	*161	
508	VL 3K 8	8	*161	

Figure 36: Programmer with Modified (Touched) Values

Emptying the Programmers "Content"

In order for all playbacks to re-gain control over the fixture attributes contained in the programmer, the programmer needs to be cleared out. This happens in three steps with each press of the [CLEAR] key.

The first press of the [CLEAR] key will un-touch all values, however they are still in the programmer overriding the playback. The second press of the [CLEAR] button will remove all values from the programmer and playback values will be output again. The third and last press will unselect all fixtures that were selected.

Note: In case you accidentally cleared your programmer content, press [SHIFT] and [CLEAR] simultaneously to revert to the previous values.

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The LEDs above the [CLEAR] and the [I], [F], [C] and [B] buttons indicate the current state of the values:

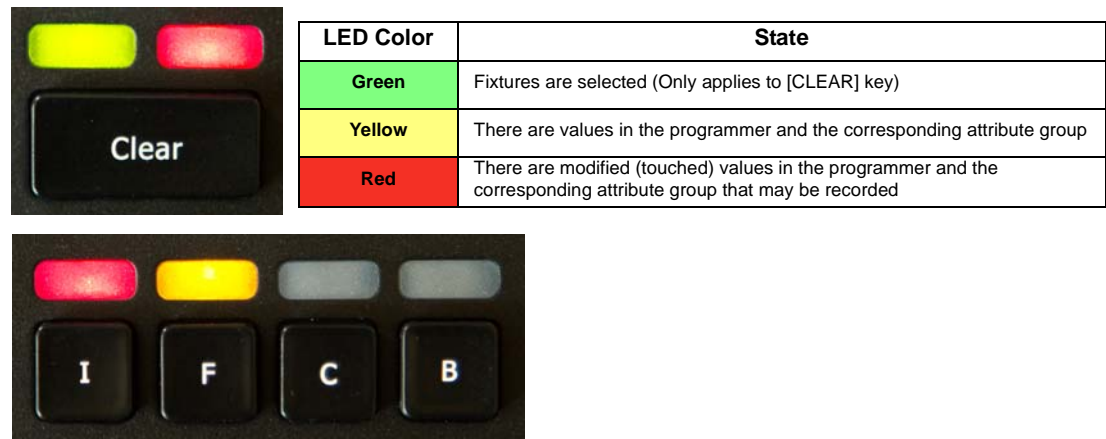| LED Color	State
Green	Fixtures are selected (Only applies to [CLEAR] key)
Yellow	There are values in the programmer and the corresponding attribute group
Red	There are modified (touched) values in the programmer and the corresponding attribute group that may be recorded

Figure 37: Clear and IFCB Buttons

Assigning Values to Fixture Attributes

500ML Lighting Control Console segregates common fixture parameters into four groups:

- [I] - Intensity Parameter (Dimmer, strobe, duration, etc.)

- [F] - Focus Parameters (Pan / Tilt position)

- [C] - Color Parameters

- [B] - Beam Parameters (Gobos, Zoom, Focus, etc)

Note: Remember, the programmer takes precedence over the underlying playback. Press the [CLEAR] key three times to empty the programmer contents.

Altering Intensity (Dimmer Values) Using Multifunction Wheel

The Multifunction (dimmer) wheel on the right hand side of the console faceplate (as indicated in Figure 1 on page 5) can be used to increment up or decrement down the dimmer values of the selected fixtures.

Altering Intensity (Dimmer Values) Using Keypad

Numerical dimmer values (levels) may be applied directly to selected fixtures using the command line interface by typing [@] followed by either [FULL] or the intensity value (in percent) followed the [ENTER] key.

Keypad Syntax

Table 2: Keypad Value Syntax Entry

Keypad Entry	Meaning
[@] [FULL]	Will set the selected fixtures to 100%
[@] [@]	Will set the selected fixtures to 100%
[@] [.] [VALUE]	Will set the selected fixtures Intensity DMX Value to [VALUE]
[VALUE A] [THRU] [VALUE B]	Will fan the Intensity for selected fixtures from [VALUE A] to [VALUE B] *For Example: [0] [THRU] [100] with 3 selected fixtures will set fixture 1 to 0%, fixture 2 to 50% and fixture 3 to 100%.*
[VALUE A] [THRU] [THRU] [VALUE B]	Will fan the Intensity for selected fixtures from [VALUE A] to [VALUE B] and back to [VALUE A]. *For Example: [0] [THRU] [THRU] [100] with 5 selected fixtures will set fixture 1 and 5 to 0%, fixture 2 and 4 to 50% and fixture 3 to 100%.*

Altering Parameters Using Encoders

To change fixture parameters, select either a fixture or group of fixtures (see "Selecting Fixtures" on page 21). Select the parameter group of the parameter to be changed - [I], [F], [C], or [B]. Repeatedly press the [I], [F], [C], or [B] button until the toolbar indicates the desired parameters. Alternatively, just click on one of the buttons shown in the toolbar. Using encoders (as indicated in Figure 1 on page 5), change the parameters as desired. Make sure the Programmer Window is set to Value mode as shown in Figure 38.
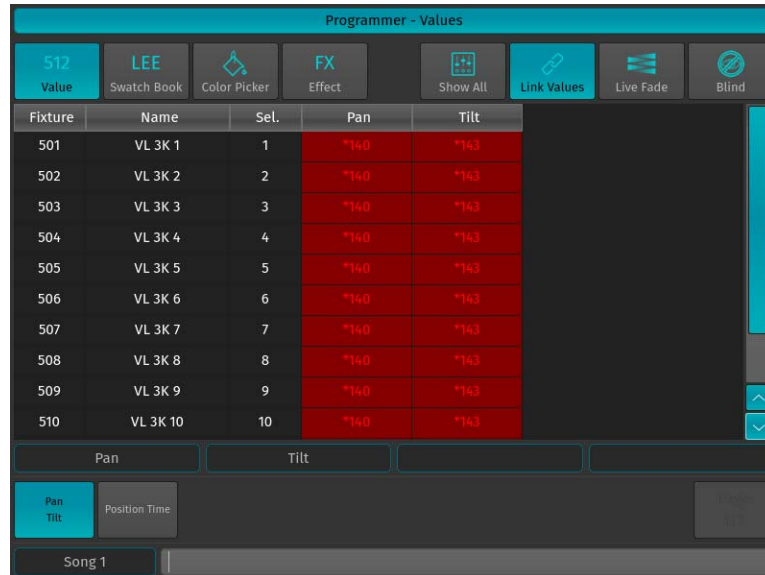

Figure 38: Programmer - Values Window

Example:

• To change the pan and tilt parameters for Fixture Group 1, select Fixture Group 1.

• Press the [F] (focus parameter) key. The Programmer window will appear and the encoder labels will now read the selected features of pan and tilt.

• To cycle through the available feature groups (i.e., from Position to Pan/Tilt speed), simply press the feature button again or press the appropriate button on the IFCB Toolbar.

Note: To quickly toggle through values in 25% steps, just press on the Encoder knob, or touch the Encoder label on the screen. To alter the attribute values in a finer manner, hold the [SHIFT] key pressed while turning the Encoders.

Altering Color Values Using Swatch Book

Another option to set colors is via the internal color swatch book. To open up the Swatch Book, press the Swatch Book button found in the programmer window. Remember, to open the programmer just press either of the Attribute Keys [I], [F], [C] or [B]. Once the Swatch book window (Figure 39) opens, simply select the color you desire.
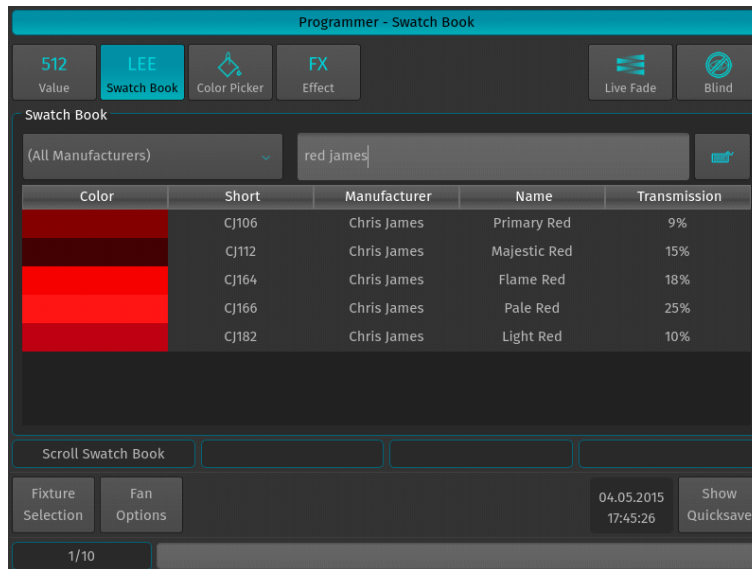

Figure 39: Programmer - Swatch Book

Filter Gels by Manufacturer

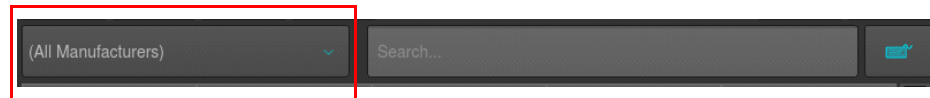Within the Programmer - Swatch Book window, use the filter drop down menu to display filter gels by manufacturer.

Figure 40: Swatch Book - Filters by Manufacturers Drop Down Menu

Filter Gels by Search Function

Another option to look for colors is the integrated text search field. Just type what you are searching for into the search field. If you do not have a USB Keyboard attached, click on the keyboard button to open up the on-screen keyboard.
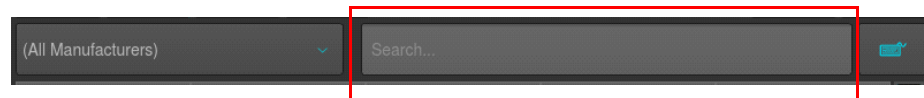

Figure 41: Swatch Book - Filters by Search Function

Note: You can combine full text searches with the manufacturer drop down menu. For example, entering "Amber" into the search field and setting the manufacturer filter to LEE will only show amber gels (with amber in their description) manufactured by LEE.

Altering Color Values Using Color Picker

To open up the color picker, press the Color Picker button found in the programmer window as indicated in Figure 42.

The center triangle sets the Saturation and brightness, whereas the outer circle sets the colors Hue. As opposed to other consoles, the 500ML does not store HSB color information in Cues, hence cues will cross fade in RGB or CMY color space.
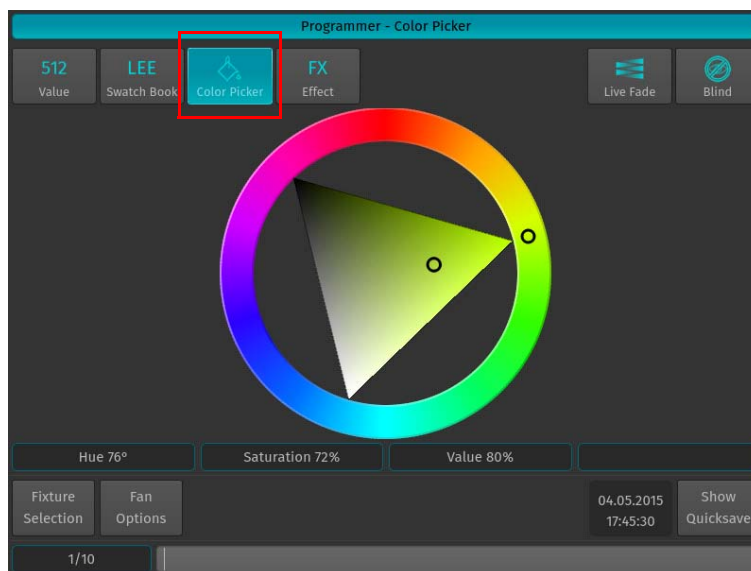

Figure 42: Programmer - Color Picker

Fanning (Spreading) Values Across Fixtures

Fanning is a very useful function used to spread values across a range of fixtures. A quick way to fan intensity values is described in "Altering Intensity (Dimmer Values) Using Keypad" on page 27. The fanning engine of the 500ML console does not stop there.

Fanning of values may be applied to any fixture attribute, and to effect offsets, size, speed, and duty cycle. The default Fan Settings should have most situations covered, but they may be changed using the Fan Options toolbar.

To activate fanning of attributes, press the [FAN] key on the consoles faceplate. The LED above the [FAN] button will light up to indicate the fan functions status. The fan function will remain active until you press the button again. However, if you keep holding the [FAN] button for a longer amount of time, the Fan Function will only be turned on while maintaining a button press.

Bear in mind that the fixture selection order is important when fanning. For more information please see "Selection Order".

Note: Take care when choosing the initial base value for the fan, as the attribute values can neither go below 0%, nor higher than 100%. Make sure there is enough of the value range left for the value to fan.

5.   Presets

Working with Presets

Presets aid to simplify the programming process by allowing user-defined 'elements' to be created and then used as a toolkit to build your cues. Once you created a Preset, such as a couple of moving lights pointing at a particular position on stage, you may recall those settings at any point, and record them into cues.

The biggest advantage of using Presets is that they are only stored into cues as a reference, rather than the parameter values that the Preset contains. If you later decide to change the Preset, all cues that have been recorded using this Preset are also changed. This is especially useful if, in example, the position of a set-piece on stage is moved, and moving lights have been programmed to light it. The preset can be updated once to accommodate the change, rather than reprogramming the change in every cue lighting the set-piece.

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This is a very powerful feature that allows you to make global changes to the show very simply and quickly, rather than having to re-program every cue individually.

Presets allow intensity, focus (position attributes), color, and beam parameters to be recorded to be easily accessible during programming and live operation.

- Presets are stored in Preset pools, which are divided into Sub Pools: All, Intensity, Focus, Color & Beam.
- Each Pool type will filter attributes stored into the presets by its equivalent type.
- An All Preset Pool will store all attributes, whereas a Color Preset Pool will only store color attributes.

Presets are only applicable to fixtures that had values set while storing the preset, but may be recalled by some of the fixtures only.

For example, you have recorded a preset containing only Pan and Tilt for Fixtures 501 through 510. This preset is not applicable to Fixtures 511 and 512. However this preset may also be recalled by fixture 501 and 504 only.

For more information on recalling presets, please see section "Recalling a Preset as a Reference" on page 32.

If you wish to use a Preset as a programming tool, where later changes to the Preset will not cause cues to be updated, please read section "Recalling a Preset as a Hard Value" on page 32.

Storing a Preset

Once you created a look you would like to store as a preset, press and hold the [REC] key and simultaneously press the [PRESET] key. The Preset Pool (Figure 43) window will open. Select the Preset Pool type using the Preset Pools toolbar and select any empty pool item to store the preset - i.e., Preset 1.

You may select different record options from the Record toolbar after pressing the [REC] button.
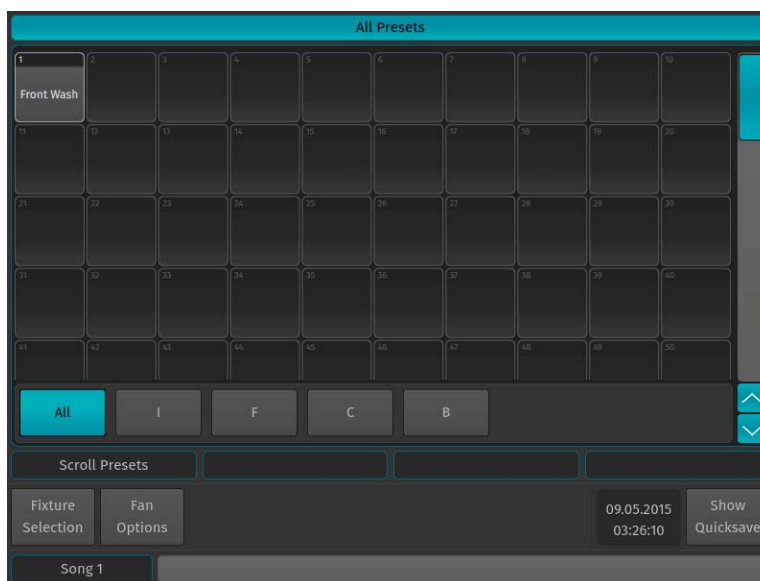
Figure 43: Preset Pool Window - All Presets

Note: You may label any item by pressing [ASSIGN] button twice. The command line will read "Label". Now select the Item you would like to label and type in the name.

Updating Preset Contents

Sometimes it is necessary to update the contents of a Preset.

Touch the attributes you would like to merge or remove in or from a previously stored preset. Press and hold the [REC] key and simultaneously press the [PRESET] key. The Preset Pool window will open. Select the Preset Pool type using the Preset Pool toolbar and select the preset you would like to remove values from within the pool window - i.e., Preset 1.

A window will appear asking you what to do. Select the appropriate option.
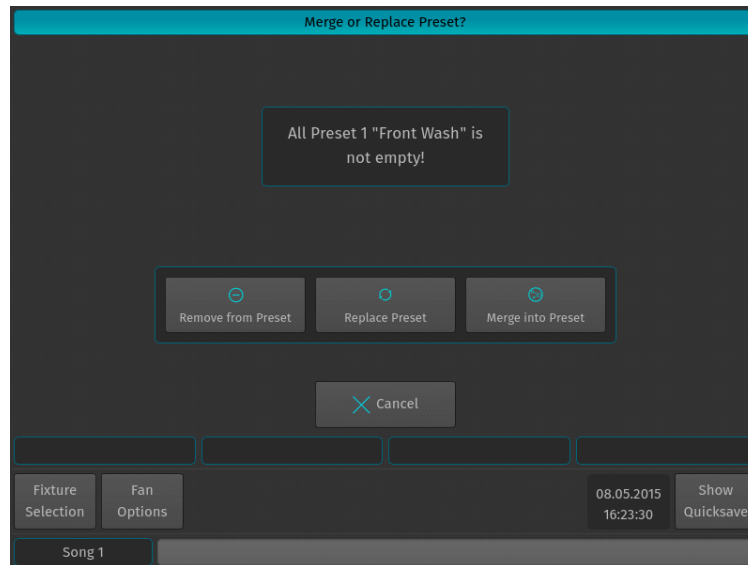
Figure 44: Merge or Replace Preset Window - Options

Recalling a Preset as a Reference

If you select presets this way, they will be recorded into cues as a reference, rather than the value.

Press and hold the [OPEN] key and press the [PRESET] button. The Preset Pool window (Figure 43 on page 31) will open. Select the appropriate Preset Pool type using the Preset Pool toolbar. From here, you can select and deselect presets by clicking on them.

Alternatively, you may select any Preset using the external monitor's Preset Pool.

Recalling a Preset as a Hard Value

If you select presets this way, they will be recorded into cues as a 'hard' value, rather than being referenced by the cue.

Press and hold the [OPEN] key and press the [PRESET] button. The Preset Pool window (Figure 43 on page 31) will open. Now, hold down the [SHIFT] key while selecting and deselecting presets by clicking on them to load their values into the programmer.

Alternatively, you may select any preset using the external monitor's Preset Pool. However, the [SHIFT] Key acts as a modifier and will cause the preset to be loaded as values, rather than the preset reference.

6. Cuelists

What is a Cuelist?

A cuelist consists of multiple cues, whereas each cue stores the attribute values or preset references for each touched attribute of fixtures that had touched values. Each cue has its own next time (the time after which the next cue will automatically be triggered) and fade / snap time.

Each cuelist has its own settings that define the behavior of the Cuelist, i.e. the trigger mode (Auto for Next Times, Timecode, Master Speed, etc) or if a cuelist is tracking or not.

Storing Cues in a Cuelist

Remember, only values that are touched and active will be recorded. This state is indicated by the background color of the value in the programmer. See "Fixture Attribute Values" on page 26 for more information.


Note: Sometimes it might be desirable to modify or touch all attributes for selected fixtures prior to recording a cue. This may be used to create a "Blocking" cue. To do so, press [SHIFT] and [LOAD] at the same time.

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Storing a Cuelist to a Master

After setting up a look, press the **[Rec]** key followed by the either a master's Play [▶] or Pause / Back Key [▮▮◀]. If you store a cuelist that way, it will be stored in the next available slot in the Cuelist Pool and will be automatically assigned to a master.

Note: While the Record Toolbar is shown the encoders may be used to set the Next, Fade and Snap Time prior to recording the cue.
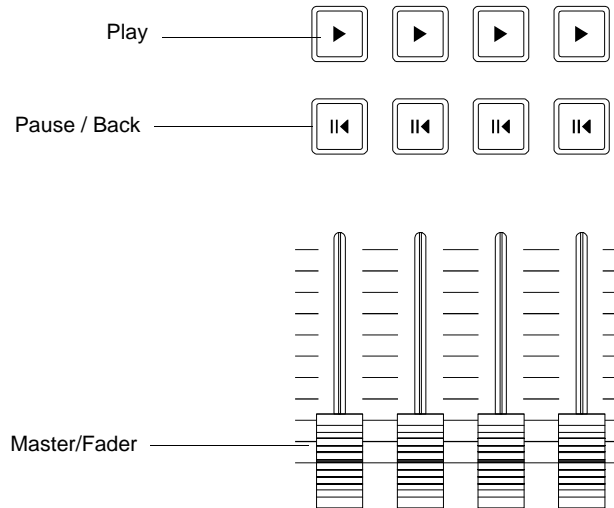
Figure 45: Master / Fader

Note: You may label any item by pressing the [ASSIGN] button twice. The command line will read "Label". Now select the item you would like to label and type in the name.

To store another cue into the same Cuelist, simply press the [REC] key again, followed by the Cuelist you would like to add the cue to. If the Cuelist only contains one cue, a window (Figure 46) will pop up asking you what to do. Select, Append As New Cue.
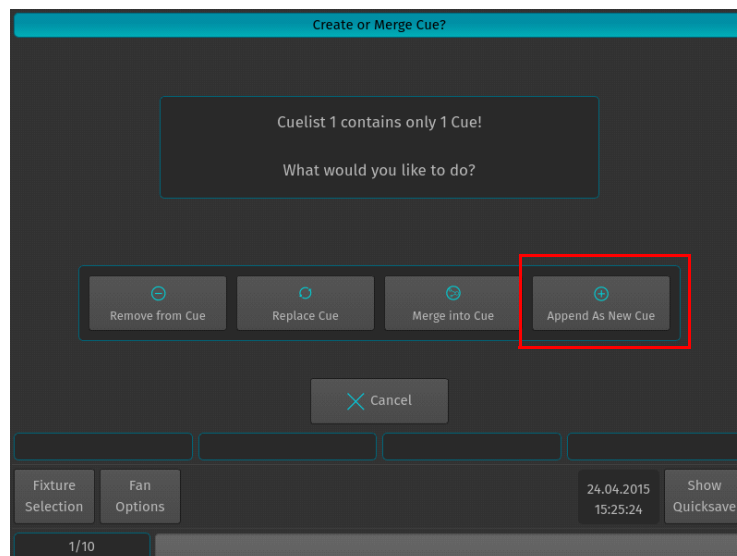
Figure 46: Create or Merge Cue? - Options Window

Storing Cues in Cuelists Using Cuelist Pool Window

Once you created a look and wish to store it as a cue, press and hold the [REC] key and simultaneously press the [CUELIST] key. The Cuelist Pool window (Figure 47) will open. Select a cuelist to store the cue.
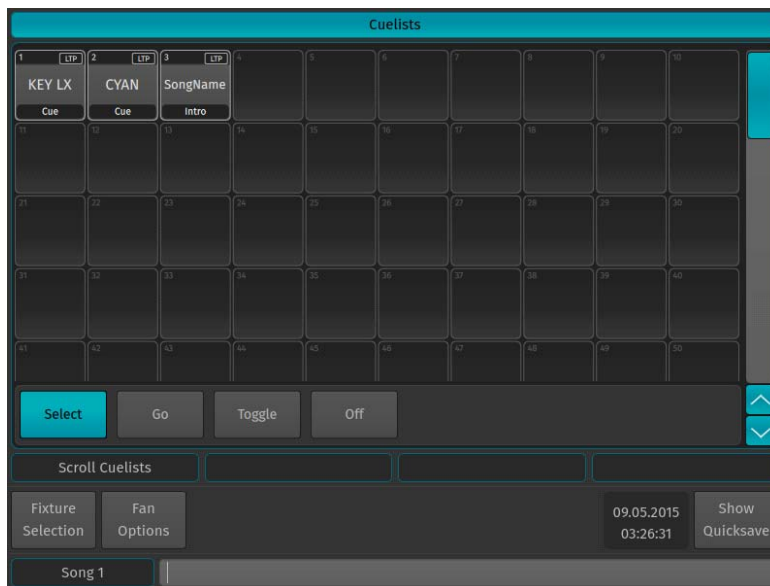
Figure 47: Cuelists Pool Window

Alternatively, with an external monitor attached, you may directly record to a cuelist in a cuelist pool on the external monitor by pressing [REC] followed by the desired cuelist in a Cuelist Pool window.

Cuelist View (Cue Sheet) Window

To change cuelist timing or cue names, you need to do so in a Cuelist window. Cuelist View (Figure 48) may also be used as a Cue Sheet, indicating the current, previous, and next cues.
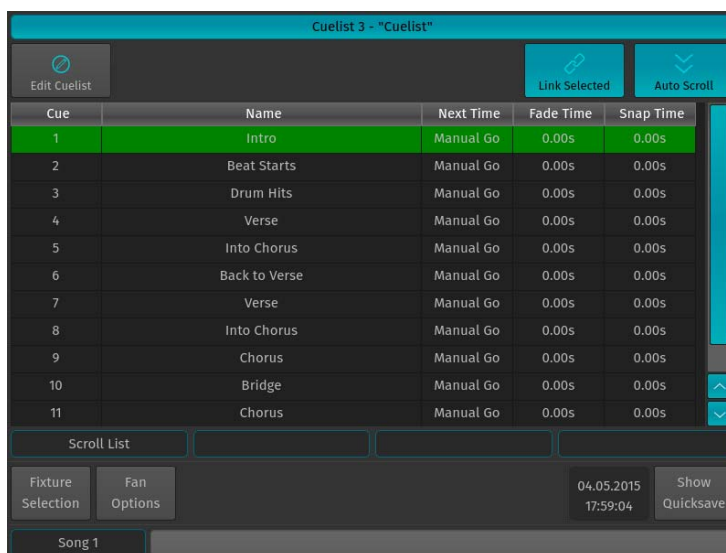
Figure 48: Cuelist View (Cue Sheet) Window

Press and hold the [OPEN] key and press the [CUELIST] key. The Cuelist Pool window will open up. Now press and release the [OPEN] key again - the Command Line Interface will now read Open. Select a cuelist from within the Cuelist Pool Window.

To open the cuelist window for a Cuelist that is assigned to a Master, press [OPEN] followed by the Play [▶] or Pause / Back Key [❚❚◀] on a Master.

Cuelist View Window - Top Row Buttons
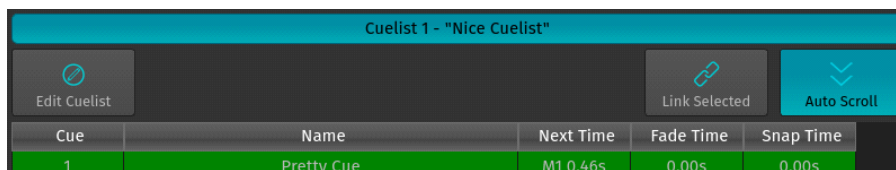
Figure 49: Cuelist View Window - Top Row Buttons

As shown in Figure 49, the buttons shown are:

- **Edit Cuelist** - used to open the Edit Cuelist Window of the selected cuelist in the cuelist view.

- **Link Selected** - links the cuelist shown in the cuelist view to the selected cuelist.

- **Auto Scroll** - automatically scrolls the windows contents if the current cue is advancing the end of the active display area.

Cuelist View Window - Background Colors Meanings

The Cuelist View uses background colors to emphasize the state of a Cue:

Background Color	State
Grey	This is the cue that will be run when the cuelist is activated.
Green	This is the current cue and this cue is active and running.
Red	This is the current cue, but the cuelist is paused.
Magenta	This is the next cue that will be run when the cuelist is in "Learn Timing" state.
Yellow	This Cue is currently in outfading state because the cuelist has been switched off.

Changing Cue Names and Timings

To change Cue Names and Timings, you first need to open up a Cuelist Window as described previously. As soon as the Cuelist View (Figure 48) for the appropriate cuelist has been opened up, select the cell with the value you would like to change. Press the [SET] key and enter the desired timing value.

- **Cue** - This column indicates the Cue number, which may not be changed.

- **Name** - This is the Name of the Cue, which may be modified to provide a brief description of the Cue.

- **Next Time** - This is the time that needs to pass until the next cue will be started.

- **Fade Time** - This is the duration of the crossfade that happens when fading into this cue. It also defines the Outfade time from the previous Cue.

- **Snap Time** - This is the time after all parameters that are set to be a "Snap-Channel" (in the fixture library) will snap to their new value.

Note: A Next Time of 0 (zero) sets the cuelist to wait for a "Manual Go" command if the Run Mode is set to Auto, Timecode, or if a Master Speed Fader controls cuelist timings.

Edit Cuelist Window

To open the Edit Cuelist Window as shown on Figure 50 on page 36, type [EDIT] [CUELIST], followed by the ID of the cuelist you would like to edit the options of - i.e., [1]. Finish the command by pressing [ENTER].

Alternatively, you may use the Cuelist Pool window to select the cuelist by pressing the [CUELIST] key while holding down the [EDIT] key. Select the cuelist you would like to edit or just press [EDIT] and select the appropriate cuelist on the external monitor.
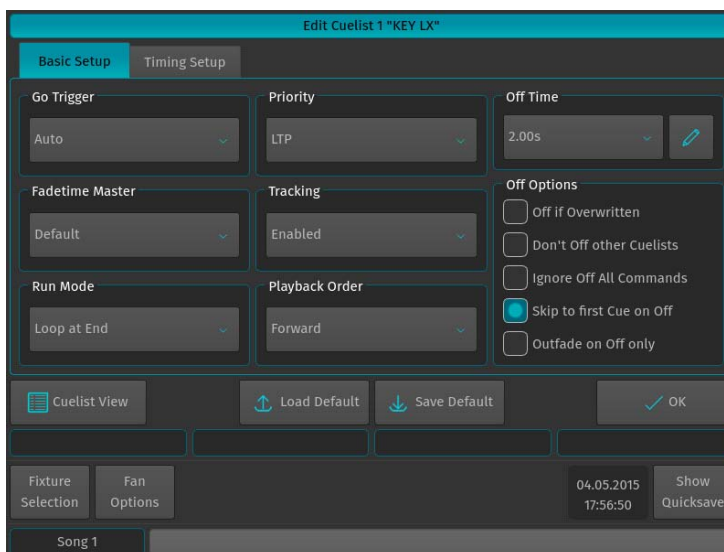
Figure 50: Edit Cuelist Window Example

The Edit Cuelist window consists of two different tabs - Basic and Timing Setup. The Basic tab contains all cuelist configuration options. The Timing Setup tab contains cue timing options.

Note: All options in the Edit Cuelist window will be applied directly without pressing the OK Button.

Saving Options as Default

Specified options may be saved as default for new cuelists by pressing the Save Default button.

Loading Options from Default

Cuelist options may be loaded from the default state by clicking the Load Default button.

Show Cuelist Button

The Show Cuelist button may be used to open up the Cuelist View window for this cuelist.

7.   Working with Masters

Master Basics

Masters work like remote controls - you may assign different objects to masters and configure them independently in terms of button and fader configuration. These assignments are stored for each master and are not linked to the object the master is connected to. That means you may assign the same single cuelist to multiple masters and configure each master differently.

Assigning a Grandmaster

The Grandmaster provides an overall inhibitive fader for all fixture Intensities.

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To assign a fader to act as the Grandmaster, press the [ASSIGN] key, followed by the [GO], or [PAUSE/BACK] key of the fader that should act as the Grandmaster. The Assign Master Fader window (Figure 51) will open, asking you what to assign to this master. Select Grandmaster.
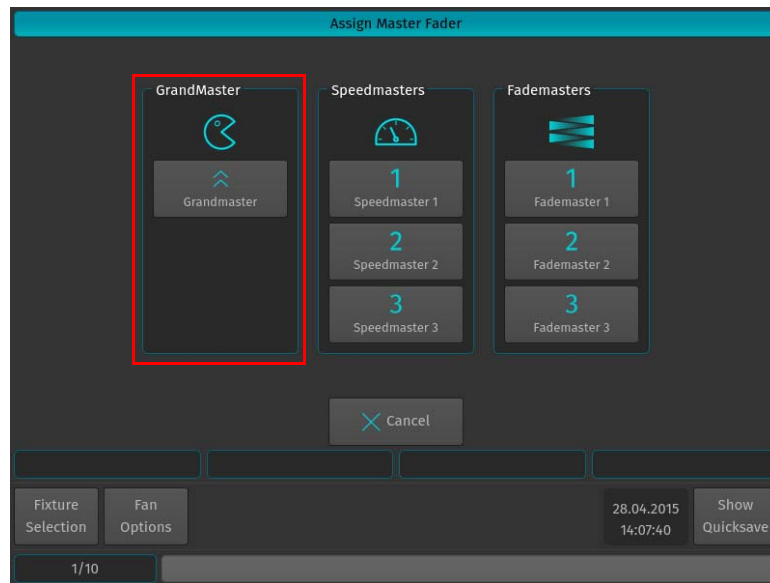

Figure 51: Assign Master Fader Window - Grandmaster

Assigning Fixtures to Masters (Creating an Inhibitive Master)

Fixture Dimmer Masters are compared HTP, so the highest master will take precedence.

Hit the [FIXTURE] key while striking the [ASSIGN] key. The Fixture Pool window will be shown. Now select the fixture from within the pool window followed by the [GO], or [PAUSE/BACK] key of the fader that should act as the Dimmer Master.

Assigning Groups to Masters (Creating an Inhibitive Groupmaster)

Group and Dimmer Masters are compared HTP, so the highest master will take precedence.

Press and hold the [GROUP] key and press the [ASSIGN] key. The Group Pool window will be shown. Now select the group from within the pool window followed by the [GO], or [PAUSE/BACK] key of the fader that should act as the Dimmer Master.

Assigning Cuelists to Masters

To assign a cuelist (in the Cuelist Pool) to a master, press and hold the [OPEN] key and press the [CUELIST] key on the keypad. The Cuelist Pool window will open (Figure 47 on page 34). Now press the [ASSIGN] key, tap on the Cuelist you would like to assign to the master followed by the either a master's Play [▶] or Pause / Back Key [❚❚◀].

Assigning a Speedmaster

Press the [ASSIGN] key, followed by the [GO], or [PAUSE/BACK] key of the fader that should act as the Speedmaster. A window will open, asking you what to assign to this master. Select one of the three different Speedmasters.
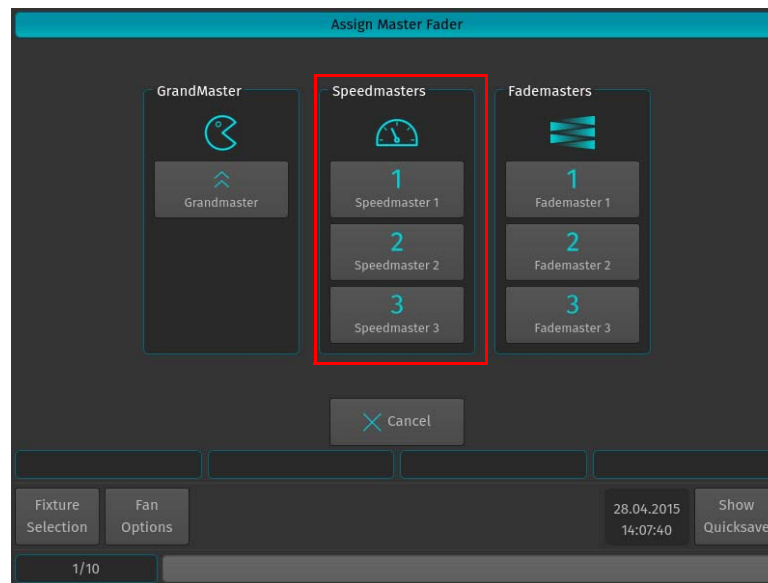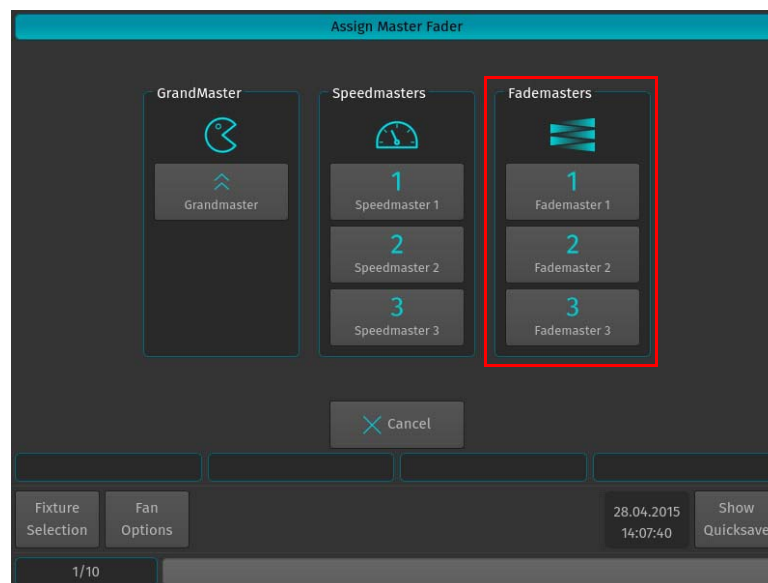

Figure 52: Assign Master Fader Window - Speedmasters

Assigning a Fademaster

Press the [ASSIGN] key, followed by the [GO], or [PAUSE/BACK] key of the fader that should act as the Fademaster. A window will open, asking you what to assign to this master. Select one of the three different Fademasters.

Figure 53: Assign Master Fader Window - Fademasters

Configuring Fader and Button Functions

Each fader and button function may be customized on a per master basis in order to provide maximum flexibility when it comes to operating a show.

To edit a masters Go, Pause / Back and fader function, press [EDIT] followed by the [GO], or [PAUSE/BACK] key of the master you would like to customize. A window allowing you to adjust each function will be shown.

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Many Fader and Button options allow for customization by using drop down boxes as shown in Figure 54. These drop down menus allow users to specify individual options like the flash value or multiplications of timings (for Speedmasters).
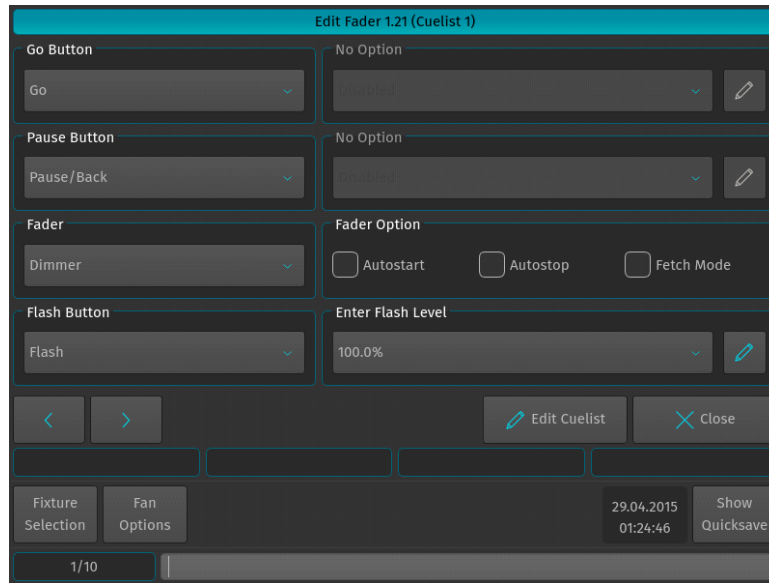
Figure 54: Edit Fader Functions Window

8. Working with Fader Pages

Fader Pages store all assignments of cuelists, fixture and group masters, to enable them to be quickly be recalled at a later time. Fader Pages do not store levels of the faders and cuelist states.

To open up the Fader Page Directory window as illustrated in Figure 55, press and hold the [OPEN] key on the keypad while striking the [PAGE] key.
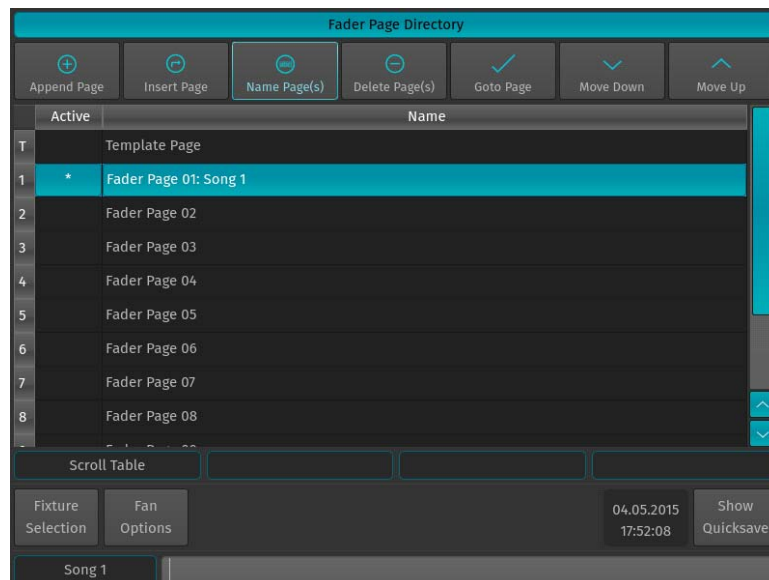
Figure 55: Fader Page Directory Window

Changing Fader Pages

Fader Pages may be changed at any time by pressing the [NEXT PAGE], or [LAST PAGE] buttons on the front panel of the console or from within the Fader Page Directory window by selecting the page you would like to change to and pressing the Goto Page button as indicated in Figure 56.
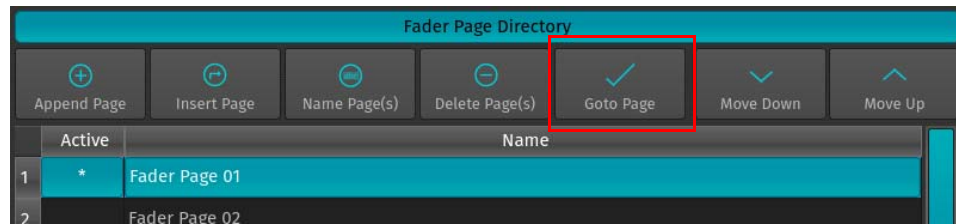
Figure 56: Fader Page Directory - Goto Page Button

Template Page

Assignments on the Template Page will show on all other pages. This is especially helpful if you want to have the same assignment on every page for some cuelists or group masters. Key or audience lighting is a good use case for this function.

To be able to set your page to the template for setup purposes, please open up the Cuelist Directory window and select Template Page from the list of pages and press the Goto Page button.

9.   ArtNET and Shownet Output Setup

DMX Output Setup

To set up DMX output over Ethernet, open the Setup Menu by pressing the [SETUP] key, go to Show Settings tab and select DMX Output from the Input / Output settings.

All DMX Output settings are stored inside the Showfile.
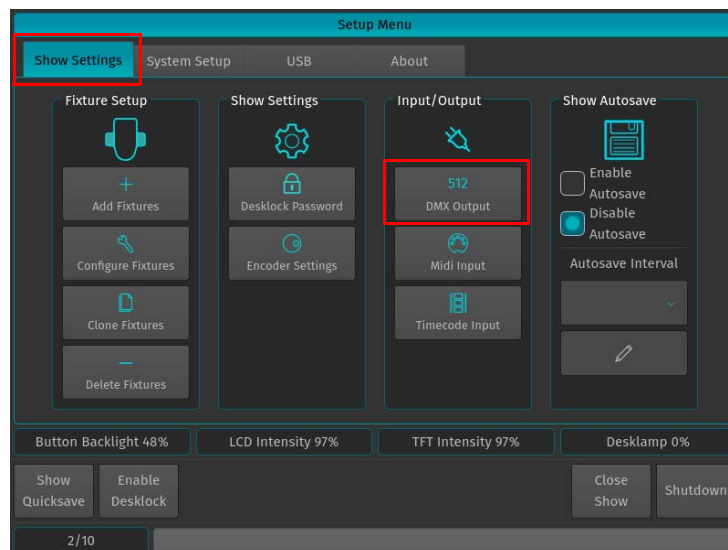
Figure 57: Setup Menu - DMX Output Setting

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ArtNet Setup

To enable ArtNet Output, tick the Enable ArtNet checkbox as shown in Figure 58. To configure each Universe, select it from the List and press the [SET] key. A new screen allowing to enable or disable the ArtNet Output, as well as to configure the ArtNet Universe for this Universe will be shown.
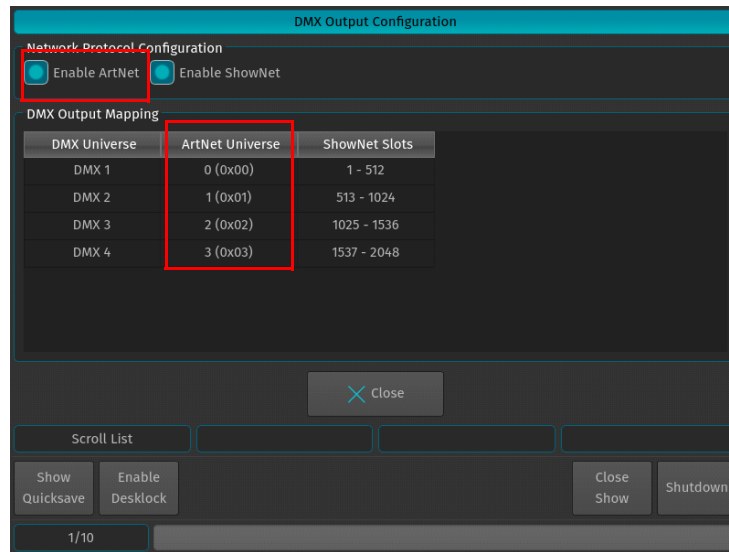
Figure 58: DMX Output Configuration Window - Enable ArtNet

ShowNet Setup

To enable ShowNet Output, tick the Enable ShowNet checkbox. To configure each Universe, select it from the list and press the [SET] key. A new screen allowing to enable or disable ShowNet Output, as well as to set the start Slot for this universe will be shown.
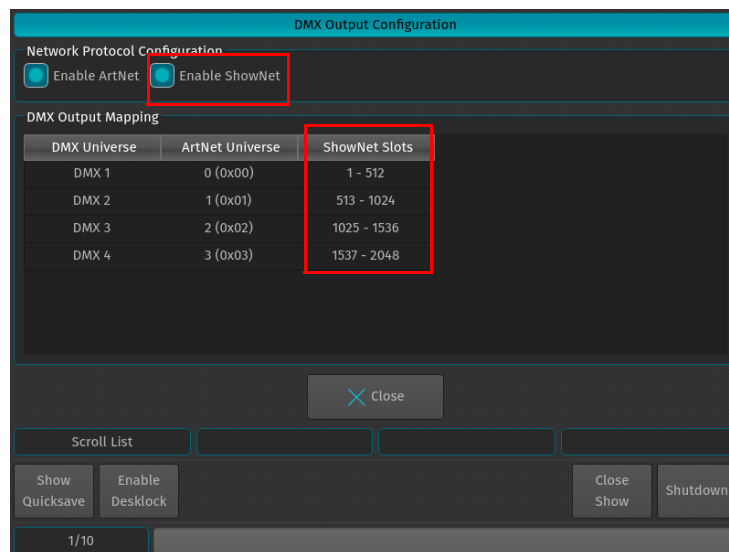
Figure 59: DMX Output Configuration Window - Enable ShowNet

MAINTENANCE

1. Importing and Exporting Fixture Libraries

Exporting Fixture Libraries

Connect USB key to console. From the Welcome Screen hit the Settings button as illustrated in Figure 60. Should a show be open and running, open the Setup Dialog by striking the [SETUP] key on the console's front panel instead.

Once the Setup Menu is shown, switch to the USB tab and hit the Library Export button.
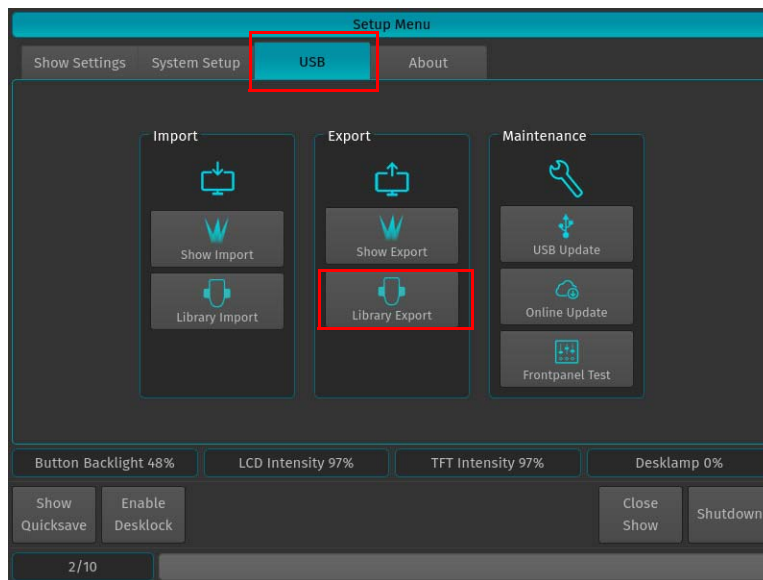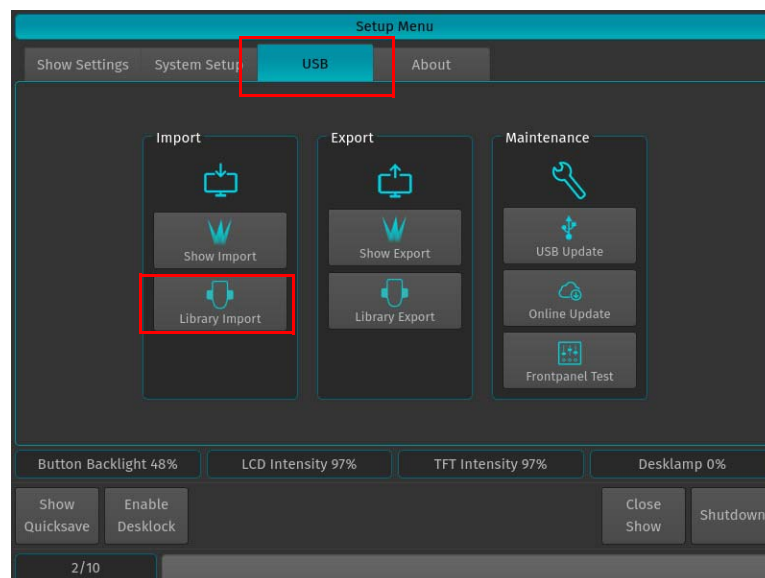

Figure 60: Setup Menu - Library Export

You will now be presented with a list of libraries as shown in Figure 61. Select the Library Type you would like to copy to the USB key and hit the Next button on the touchscreen display.
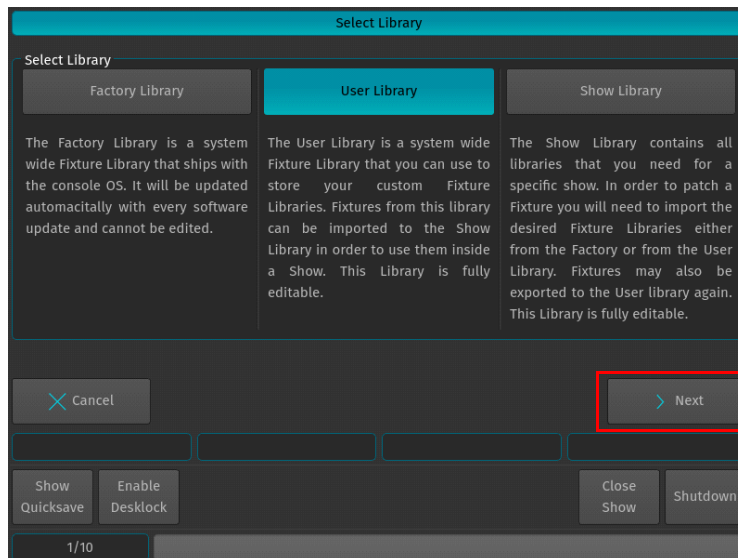
Figure 61: Select Library Window

The Export Library window (Figure 62) will appear to allow you to specify which or all Libraries to be exported. After making your selection, click on Export button to copy the selected Libraries onto the USB Key.
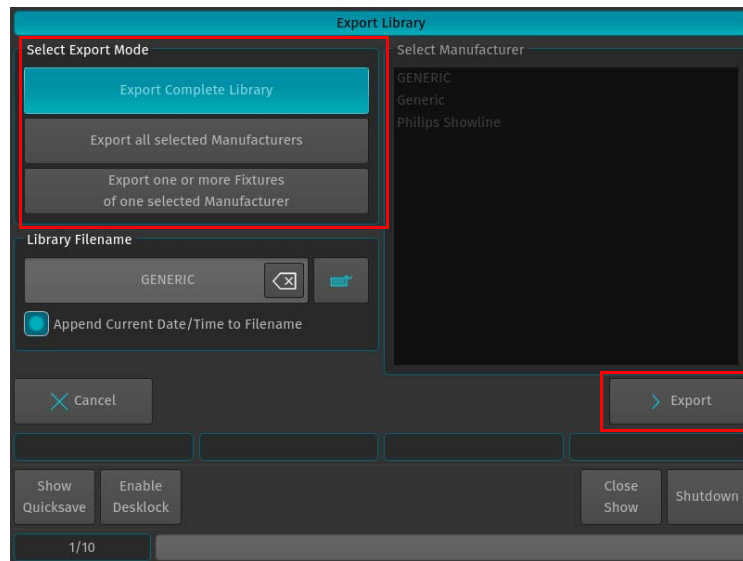
Figure 62: Export Library Window

A confirmation window will be shown with a brief summary of the Library or Libraries that will be exported. Click on Export to copy the Library file onto the USB Key. The Export Status box will now display the export progress.
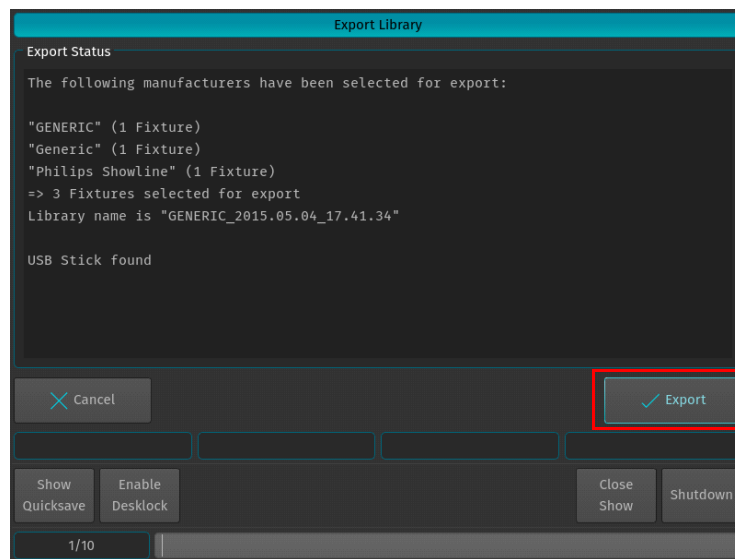
Figure 63: Export Library Window - Export Status

When the process has successfully finished, click on the Close button.
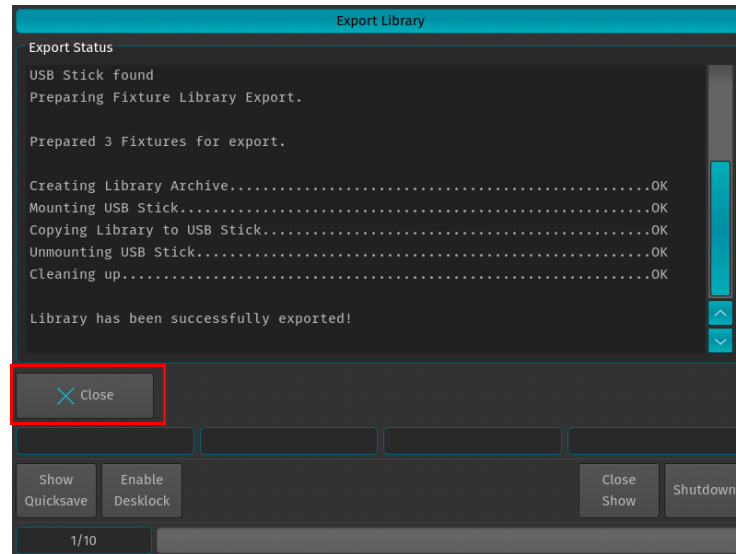
Importing Fixture Libraries

Connect USB key to console with the library fixture file loaded. From the Welcome Screen hit the Settings button as illustrated in Figure 64. Should a show be open and running, open the Setup Dialog by striking the [SETUP] key on the console's front panel instead.

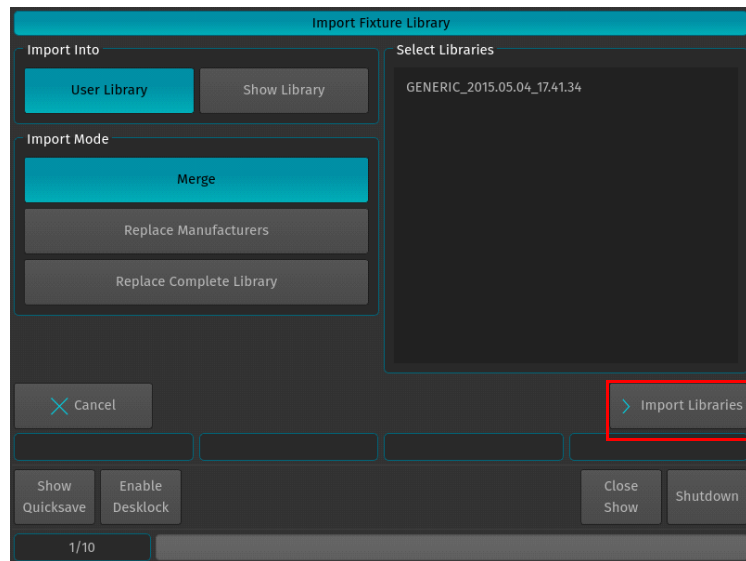Once the Setup Menu is shown, switch to the USB tab and hit the Library Import button.

Figure 64: Setup Menu - Library Import

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You will now be presented with a screen (Figure 65) allowing to specify how the library should be imported. After setting the desired options, hit the Import button on the touchscreen display.y.

Figure 65: Import Fixture Library Window

A screen asking for confirmation will be shown with a brief summary of the Library or Libraries to be imported. Click on Import button as indicated in Figure 65 to start the process that imports the selected Libraries to the console. The Import Status box will now display the import process.
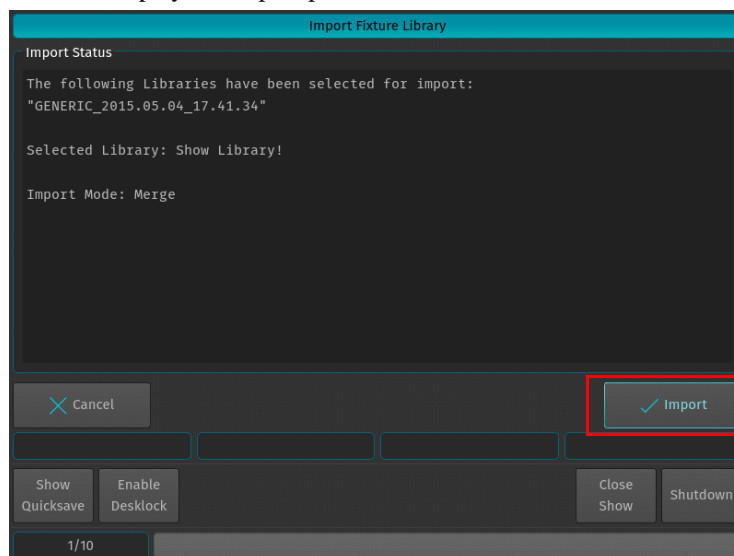
Figure 66: Import Library Window - Import Status

After the process finished, click on the Close button.
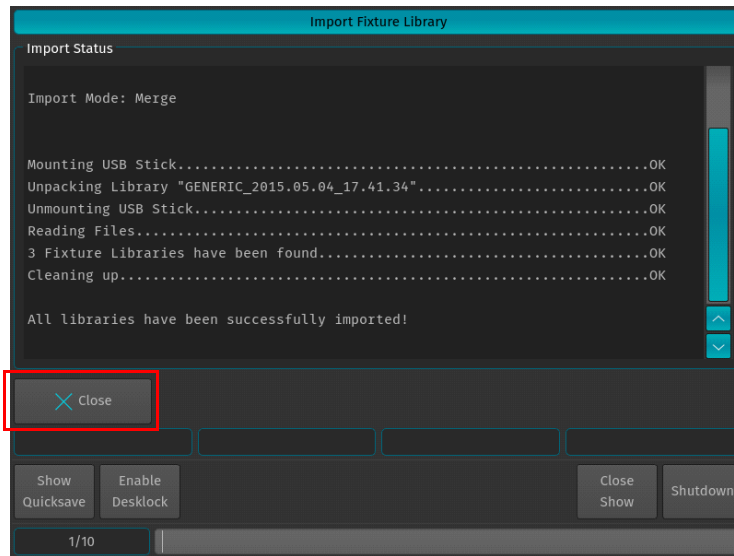
Figure 67: Import Fixture Library Window - Import Completed

2. Updating Console Software

Updating Console Software via USB Key

⚠️ **CAUTION:** Before updating the console software, make sure you have made backups of all important show and library files!

In order to update the software on the console, make sure you have downloaded the appropriate software from the Strand Lighting website. Copy the downloaded file (with the file extension .swu) to the "\strandml\software_update" folder on the USB key supplied with the console.
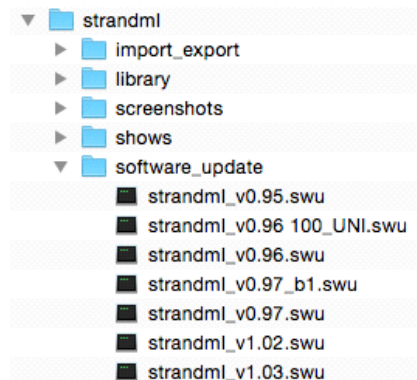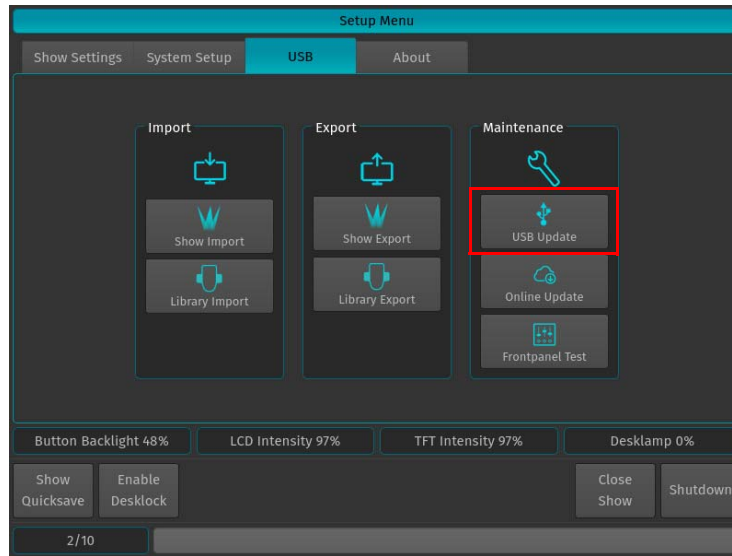

Figure 68: 500ML Console USB Key Folder Structure

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Connect the USB key into one of the console's USB Ports (refer to Figure 1 on page 5 or Figure 2 on page 7) and navigate to the Setup Menu by pressing [SETUP] and selecting the USB Tab. Click on USB Update in the Maintenance section.


Figure 69: Setup Menu Window - Updating Console Software via USB

**Note:** You must reboot / restart the console in order for the new software to take effect.

⚠ **WARNING!** During the update process, DO NOT disconnect power OR switch off the console. This may render the console un-bootable! Allow the process to finish completely.

The console's screen will present you with a list (if applicable) of available software updates found on your USB Key. Select the appropriate file and click on Select.
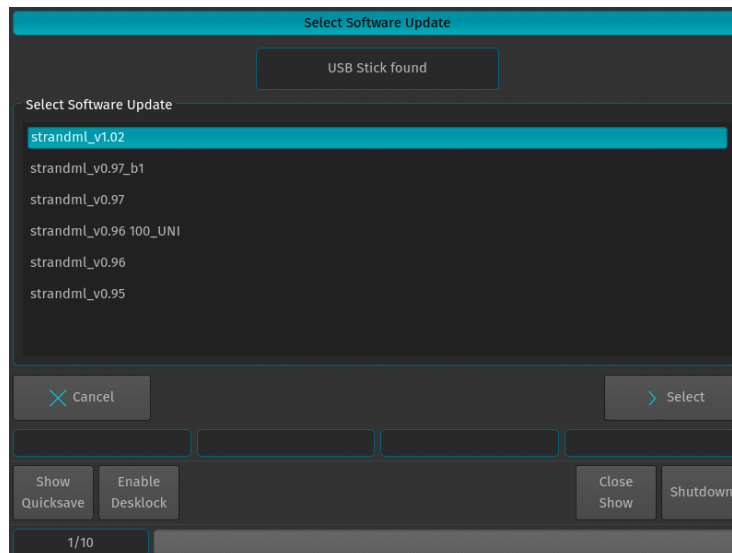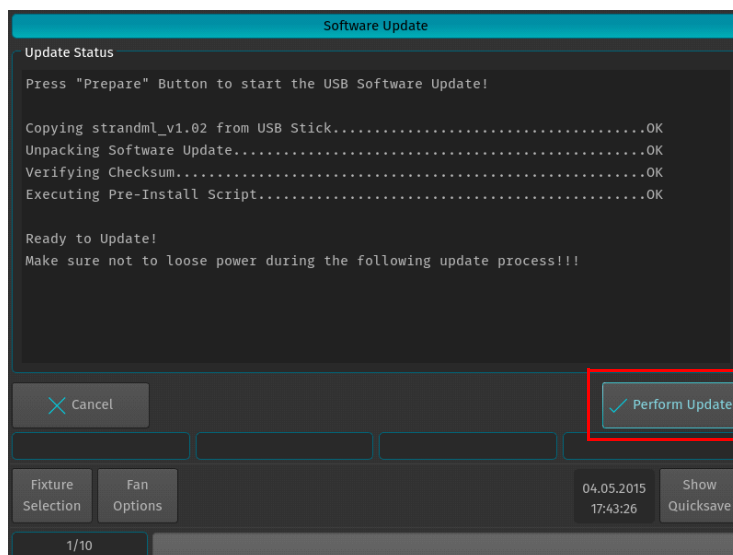

Figure 70: Select Software Update Window - Software Selection Example

A wizard will lead you through a few steps as shown in Figure 71 and Figure 72.
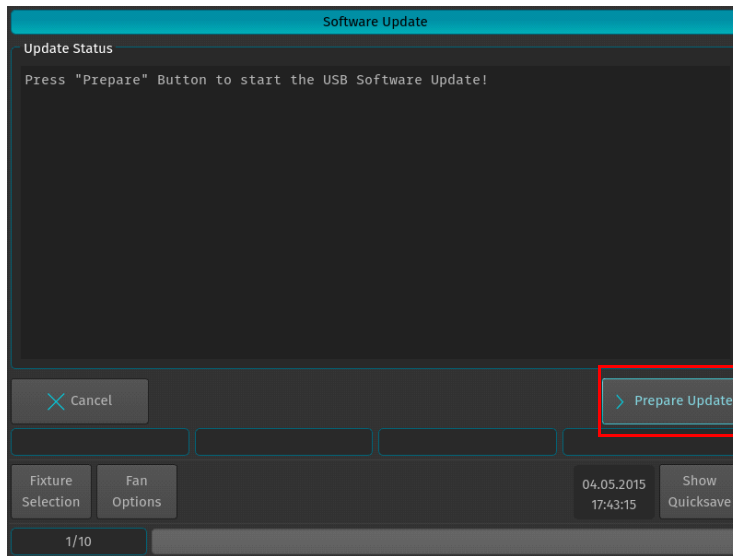
Figure 71: Software Update Window - Software Update Confirmation

Figure 72: Software Update Window - Perform Update Confirmation

Once the process is completed, you will be prompted to reboot the console. Click the Reboot Now! button as shown in Figure 73.
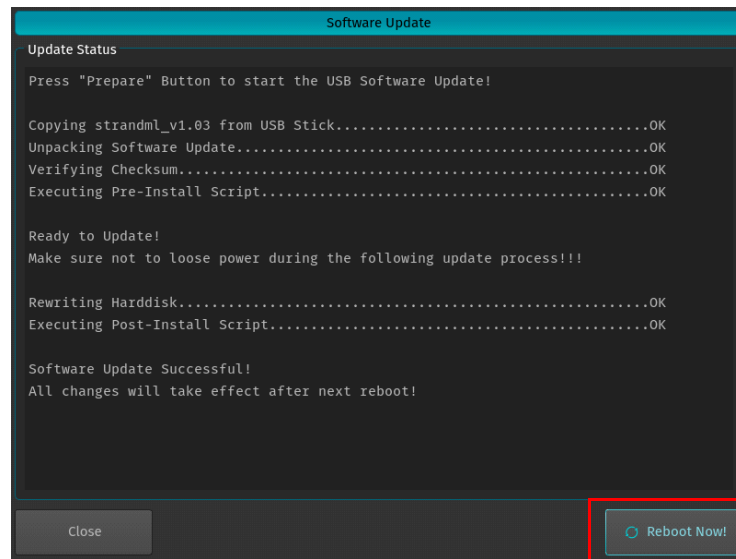

Figure 73: Software Update Window - Reboot Now

Updating Console Software via Internet Connection

⚠️ **CAUTION:** Before updating the console software, make sure you have made backups of all important show and library files!

In order to update the software on the console using an Internet connection, make sure the console network interface is properly configured and that the console has Internet access.

Navigate to the Setup Menu by pressing [SETUP] and select the USB tab. Click on Online Update in the Maintenance section.
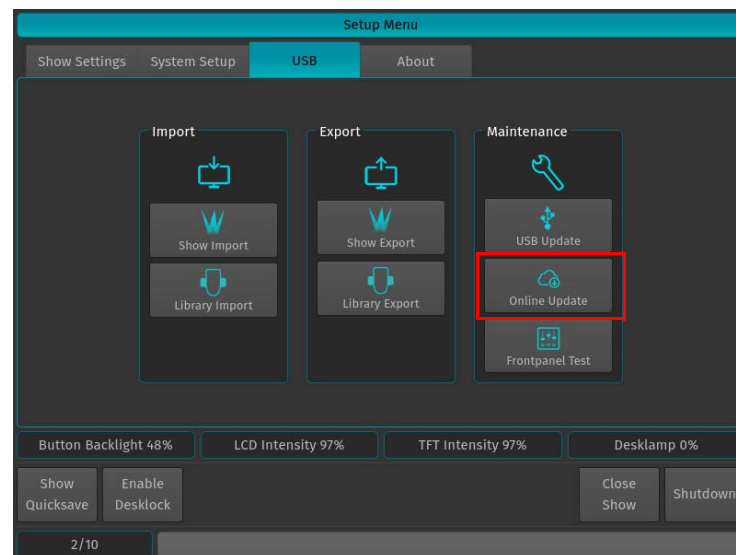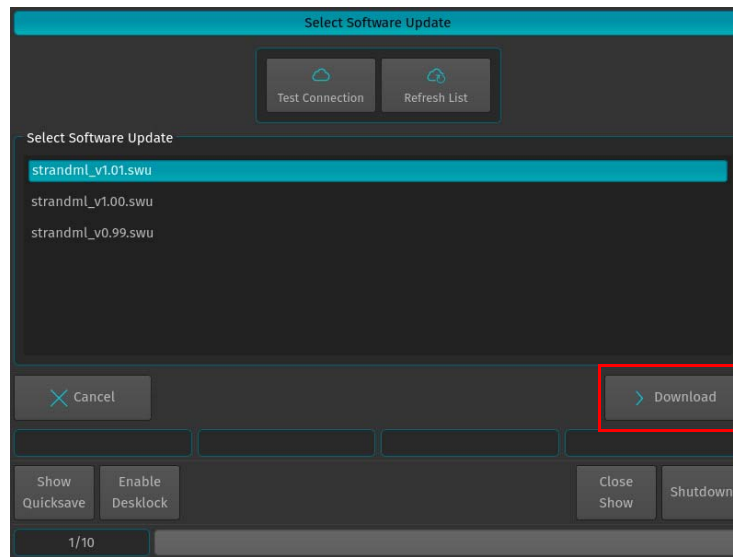

Figure 74: Setup Menu Window - Updating Console Software via Internet

The Console will present you with a list of available software updates found on the Internet. Select the appropriate file and click on Download as shown in Figure 75.


Figure 75: Select Software Update Window - Downloading Online Software

**Note:** You must reboot / restart the console in order for the new software to take effect.

⚠ **WARNING!** During the update process, DO NOT disconnect power OR switch off the console. This may render the console un-bootable! Allow the process to finish completely.

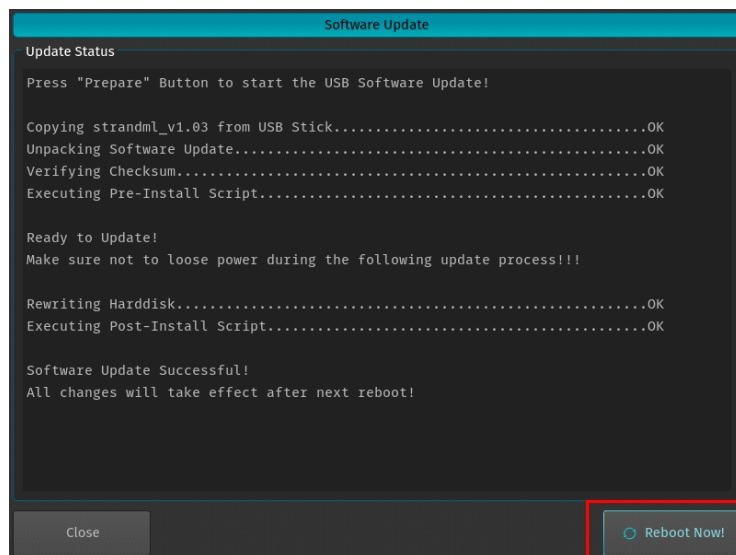A wizard will lead you through a few steps to load the new software as shown in Figure 76 and Figure 77 on page 51.
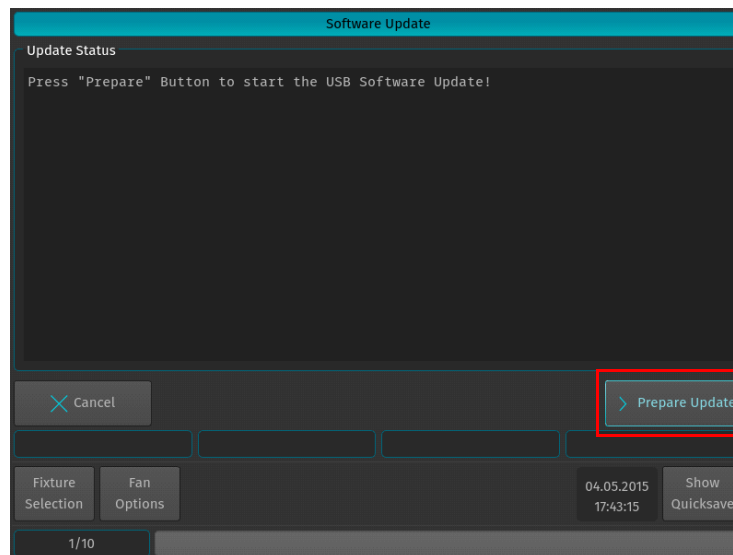
Figure 76: Software Update Window - Prepare Update

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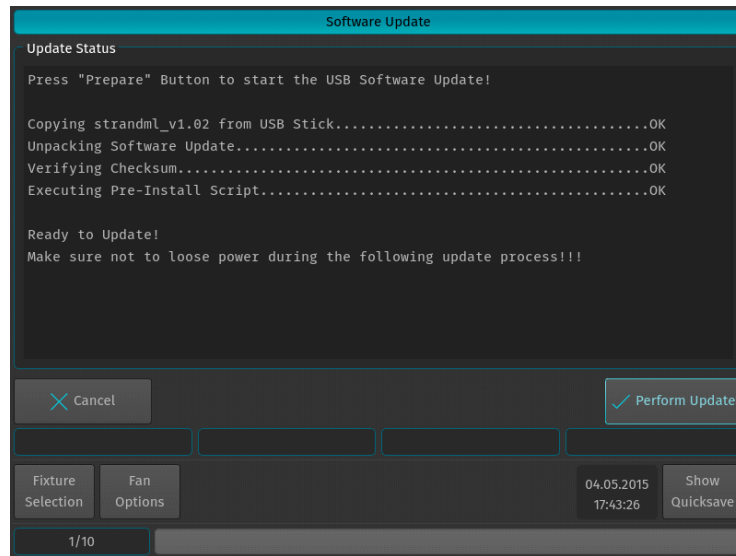
Figure 77: Software Update Window - Preform Update

Once the process is completed, you will be prompted to reboot the console. Click the Reboot Now! button as shown in Figure 78.

Figure 78: Software Update Window - Reboot Now

3.   Calibrating Touchscreens
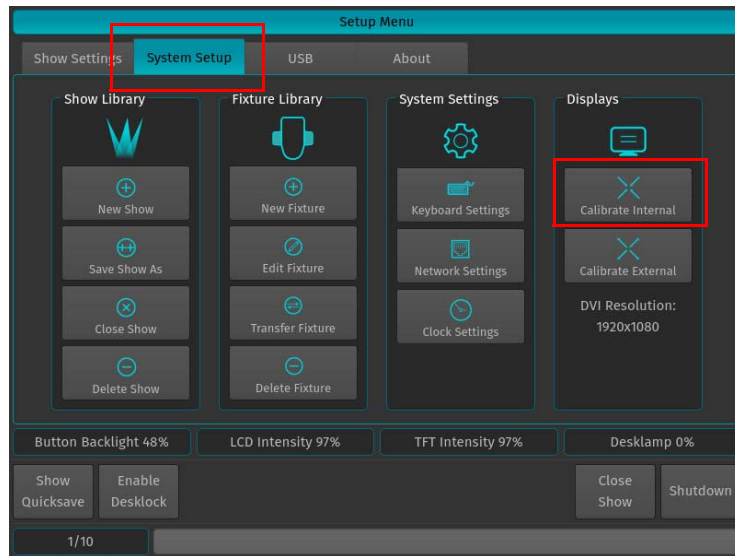
Calibrating Internal Console Touchscreen

Sometimes it may be necessary to recalibrate the internal touchscreen.

To do this, as illustrated in , access the Setup Menu by pressing [SETUP] and select the System Setup tab. Click on Calibrate Internal.

Note: You may also use a USB mouse (not supplied, by others) attached to the console.

Figure 79: Setup Menu Window - Calibrate Internal Touchscreen

## Calibrating External Console Touchscreen

If an external touchscreen was purchased and is connected to the console, it may be necessary - from time to time - to recalibrate the external touchscreen.

To do this, as illustrated in Figure 80, access the Setup Menu by pressing [SETUP] and select the System Setup tab. Click on Calibrate External.

Note: You may also use a USB mouse (not supplied, by others) attached to the console.
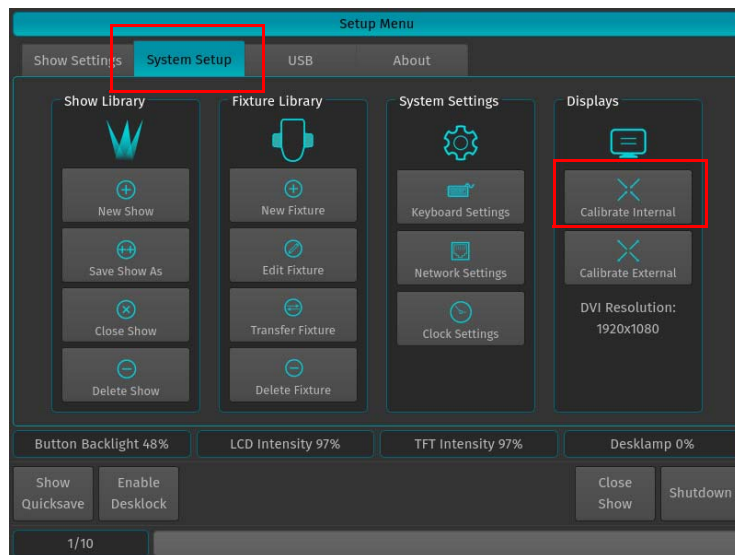
Figure 80: Setup Menu Window - Calibrate External Touchscreen

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HOTKEYS

1. General Hotkeys

[SHIFT] + [OFF] = Release all Cuelists, clear Programmer and reset all Fader values back to 100%

[OFF] + [CUELIST] = Release all Cuelists

[SHIFT] + Preset PoolItem = Copy Preset contents for all selected fixtures to programmer instead of linking to preset

Pressing the [BACKSPACE] Button for longer will clear the complete command line.

Whenever there is a keypad dialog shown on the touch screen display, the face-plate keypad may be used to enter values. Most of the times you can also use the [+] or [-] key to increase or decrease the current value. This is especially useful, if you would like to adjust a timecode-time framewise.

2. Programmer Hotkeys

[SHIFT] + [LOAD] = For all selected fixtures load the current output values to programmer.

[SHIFT] + [CLEAR] = Will revert back to the last programmer state (Unclear Programmer)

[SHIFT] + [LAST] = Will deselect all fixtures

[SHIFT] + [NEXT] = Will select all fixtures (of the current selection set, if applicable)

[LAST] + [NEXT] = Will select all fixtures (of the current selection set, if applicable)

[SHIFT] Will show fine values in programmer and allows for fine adjustment of parameters using the encoders.

Holding down the [FAN] Button automatically switches off the fan function as soon as the button is released.

Holding down the [CLEAR] hard key for longer will fully clear command line and programmer.

Pressing the [BACKSPACE] Button for longer will clear the complete command line.

3. Output Screen Hotkeys

[SHIFT] Button shows fine values in output screen.

4. Library Editor Hotkeys

[SHIFT] Button shows fine values for default/highlight/blackout values

5. External Keyboard Hotkeys

F9 = Make screen shot of internal monitor (needs USB Stick to be connected to desk)

F10 = Make screen shot of external monitor (needs USB Stick to be connected to desk)

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