

## MADI-X8

### User Guide

**MADI-X8.** This is SSL.

**Solid State Logic**  
S O U N D | | V I S I O N

Factory Defaults			Notes/Changes
Passwords	Admin Level	admin	
	User Level	user	
Names	Unit Name	madi-x8	
	Link Local Name	madi-x8.local	

*Should these settings be changed from the defaults shown, the updated setting(s) will be unaffected by any software/firmware updates.*

#### Document History

October 2010	82BSXM01A	Initial Release
September 2012	82BSXM01B	Several small corrections and clarifications

# Table of Contents

<b>1. Introduction</b>	<b>3</b>
Reading Conventions	3
Software Versions	3
Contacting SSL	3
<b>2. Quick Start</b>	<b>5</b>
Connecting X8	5
X8 Remote Installation	5
Startup and Login	5
System Setup	6
Creating Devices	7
Creating Paths	8
Managing Presets	8
<b>3. X8 Setup</b>	<b>9</b>
Introduction	9
MADI-X8's Physical Connections	9
Installing the X8 Remote	9
System Requirements	9
Software Installation (Macintosh)	9
Software Installation (Windows)	10
Powering up X8	10
Launching and Connecting the X8 Remote	11
Permission Levels	11
Login	11
Unit 'Focus'	12
Editing Passwords and Unit Names	12
MADI and Clock Configuration	13
Selecting the Master Clock	13
Internal Clock Configuration	14
External Clock Configuration	14
Master Clock Failover	14
Clock Source Status Indication	14
MADI Port Settings	15
MADI Status Indication	15
MADI Status Display	16
Front Panel MADI Status Display	16
Restoring Factory Settings	17
Updating Software and Firmware	17
System Backup and Restore	18
Saving an X8 Setup	18
Loading an X8 Setup from file	18

<b>4. Devices</b>	<b>19</b>
Overview	19
Creating new Devices	20
Defining the Device Type	20
Selecting the Device Port	20
Selecting the Device Channels	20
Channel Status Indication	20
Selecting Channel Ranges	20
Linking Source and Destination Channel Selection	21
Saving Devices	21
Managing Devices	21
The Devices List	21
Device Status Indication	21
Naming Devices	21
Editing Devices	21
Copying Devices	22
Deleting Devices	22
<b>5. Routing Presets</b>	<b>23</b>
Overview	23
Creating and Managing Paths	24
Multiple Destination Indication	24
Labelling Paths	24
Locking Paths	24
Muting Paths	25
Path Box Colours	25
Clearing Paths	25
Deleting Path Boxes	25
Managing Presets	26
The Preset List	26
Preset Status Indication	26
Activating a Preset	26
Renaming Presets	27
Previewing Presets	27
Copying Presets	27
Deleting Presets	27
<b>Appendix</b>	<b>29</b>
Updating Firmware when X8 Unit is not connected to the Internet	29
Updating the Firmware through a Company Internal Webserver (Intranet)	29
Updating the Firmware with a Computer/Laptop	30
<b>Index</b>	<b>31</b>

# 1. Introduction

Welcome to MADI X8, Solid State Logic's powerful, versatile MADI routing system. In addition to offering you a simple way to route bulk MADI, X8 can route incoming MADI signals to multiple destinations and can split MADI sources and destinations into smaller signal bundles for more complex routing applications. X8 is controlled from a networked computer using an X8 Remote.

This manual assumes that you are familiar with MADI, and understand its formats and clock requirements.



## READING CONVENTIONS

Throughout this manual, labels found on the X8 or in the X8 Remote browser are indicated in **bold type**.

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*Notes and additional information are indicated by italic type, sandwiched between thin lines.*

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Be aware that screenshots shown may differ slightly in appearance from their on-screen equivalents.

## SOFTWARE VERSIONS

This manual was written for X8 Remote browser V1.2 running with X8 firmware V1.2/1.

## CONTACTING SSL

For support and FAQs, please refer to the support area of the SSL website: [www.solidstatellogic.com](http://www.solidstatellogic.com)

We would strongly encourage you to register your unit on the SSL website. This will enable SSL to inform you of new software releases and other support assistance.

Note that the **About** tab has a number of helpful internet links.

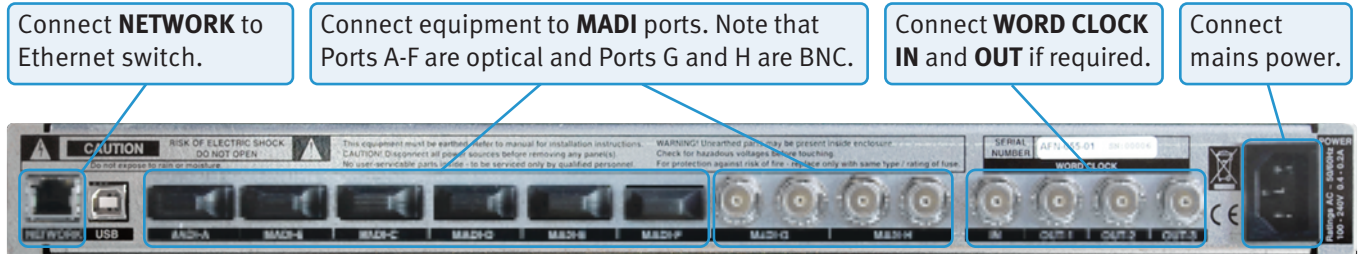
*Blank page. Nearly...*

## 2. Quick Start

This section provides an overview of X8 configuration and operation – all procedures are described in detail later in the manual – simply click on the page references shown.

### CONNECTING X8

Please read the paper install guide included with this unit before completing the following back panel connections:



*Note that X8 can either be connected directly to your computer or remotely via a wider Ethernet network. By default X8 will attempt to obtain an IP address from a DHCP server – if that fails it will fall back to a “Link Local” address. Many Ethernet networks will have a DHCP server present – most Internet (ADSL) routers for example are so equipped. See Page 9 for details of X8’s hardware connections.*

### X8 REMOTE INSTALLATION

**Macintosh** Open the MADI-X8 CD. In the pop-up which appears, drag the **MADI-X8 Remote** icon onto the **Applications** folder.

**Windows** Double-click on the **SSL MADI-X8 Setup** icon on the MADI-X8 CD to open the installer, and follow the on-screen instructions.

Full installation instructions are laid out on Pages 9 to 10.

### STARTUP AND LOGIN



Switch on all X8 units and open the X8 Remote software by double-clicking on the **MADI-X8** icon (shown left). The Remote will locate any X8 units, be they connected directly to your computer or via a wider Ethernet network.

*Note that the first time you connect, it may take over 30 seconds to establish a connection over a network, and up to 2 minutes to establish a direct connection.*

Units will appear in the **Discovered X8 Units** list on the right-hand side of the window and a button for each will appear at the bottom of the window. When connecting to a new X8 unit, click on its button and a Log-in screen will appear. Select the user level and type the password.



*Initially, the **admin** and **user** passwords are simply set to “admin” and “user” (all small case) respectively. These can be altered in the **System Settings** window.*

Much of the unit selection and log-in process can be bypassed in future start-ups, as described on Page 12. Note that you can be logged into a number of units at once – simply switch between them using the buttons across the base of the screen.

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See Page 11 for more information on login.

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## SYSTEM SETUP

Having logged into the X8, click on the **System** button towards the bottom of the window to open the **System Settings** page, and complete the following configuration:

**2** Configure the Master Clock settings. (see Page 13)

**3** Edit the password and name settings. (see Page 11)

**1** Click on **System** to enter the **System Settings** page

**4** For any 56 channel, DHD and/or at 96/192kHz equipment, select the appropriate MADI port Settings. The 'lights' in the display indicate the port status. (see Page 13)

In addition to routing audio, X8 is able to route control data for suitable SSL equipment. To enable this control data to be routed with the audio, select the **DHD** option in the **MADI I/O Mode** drop-down. Note that this needs to be done for both the source and destination MADI ports.

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See Page 13 for a detailed description of MADI clock and port configuration.

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See Page 12 for a detailed description of network and permissions configuration.

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## CREATING DEVICES

Before MADI signals can be routed, they need to be placed into 'Devices'. Devices can consist of any number of channels from a single port. There are three types of Device:



### Source

A Device which only has outputs (a rack of pre-amps, for example).



### Destination

A Device which only has inputs (a satellite uplink, for example).



### IO

A Device with inputs and outputs which can be configured together (a mixing console, for example). The Device name and port (and optionally the channel range) are the same on the input side as on the output side.

*Note that I/O groups require the Source and Destination component of the equipment to use the same MADI port.*

To create and edit Devices, click on the Devices button towards the bottom of the screen, and then complete the following:

### 3 Define the Device's IO Type and MADI Port.

Select **Link** to mirror input and output channel selections for IO Devices.

5 Click **Save** to save the new Device

2 Click **New** to create a blank new Device

6 Devices list. Right click on **New Device X** to rename or delete Devices.

1 Click on **Devices** to open the Devices page



4 Channel selection pads. Click on numbered channel buttons to include channel in the Device.

The button shade indicates its status, as shown below. Unavailable channels (channels 57-64 on a 56 channel port) can still be selected for future use:

Unselected but available

Unselected and unavailable



Selected and active

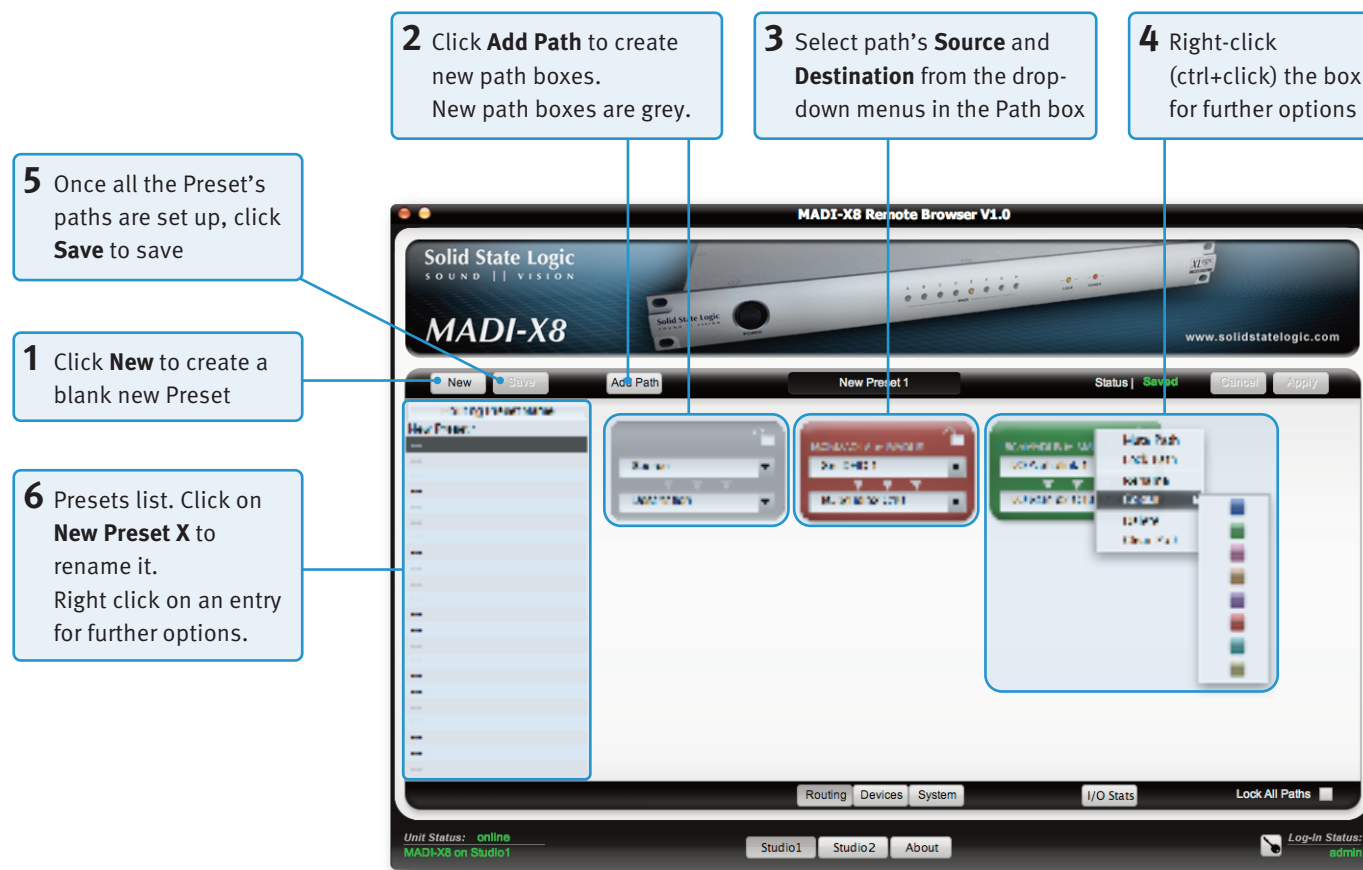
Selected but unavailable

See Page 20 for a detailed description of Devices.

## CREATING PATHS

The Routing page of the X8 Remote is opened by clicking on the **Routing** button towards the bottom of the display. Sets of routes are contained within Presets – the Preset which is active within the Remote will also be active within the X8 unit. Each Path within a Preset is configured within its own Path Box – each Preset can have up to 128 paths, each configured as shown below.

*Note that much of the window may initially be blank.*



Path boxes can be locked, muted, re-coloured, cleared and deleted using the right-click drop-down menu.

*See Page 24 for a detailed description of Paths.*

## MANAGING PRESETS

To activate a routing Preset, double-click the Preset in the Presets list in the left-hand side of the Routing window, or right click (ctrl+click) on it and select **Load** from the drop-down list which appears. The active Preset's name is displayed above the Path Boxes, between the **Add Path** button and **Status** display (shown as **New Preset 1** in the illustration above).

Presets can be previewed and edited without being made active – right click (ctrl+click) on it in the Presets list and select **Preview** from the drop-down list which appears. The Preset's Path Boxes will appear on a dark grey background with a red header, and the **Status** display above the Path Boxes will display **Preview**. Changes can be made active by pressing the **Apply** button in the top right-hand corner of the window. The **Preview** function is ideal for preparing the next routing configuration in a live environment.

**Rename** and **Delete** options are available from the Preset list's right-click menus.

*See Page 26 for a detailed description of Presets.*

## 3. X8 Setup

### INTRODUCTION

This section of the manual provides detailed descriptions of X8's setup requirements, including the physical connections and X8 Remote configuration. The configuration of Devices and Routing Presets are covered in the sections following this one.

### MADI-X8's PHYSICAL CONNECTIONS

Please read the paper Installation Guide that came with each unit before completing the following connections on each X8 back panel:

Connect **NETWORK** socket to Ethernet network

**USB** connection is for SSL servicing and has no user function

Connect equipment to **MADI** ports. Note that Ports A-F are optical and Ports G and H are BNC

Connect **WORD CLOCK IN** and **OUT** if required.

Connect mains power



### INSTALLING THE X8 REMOTE

#### System Requirements

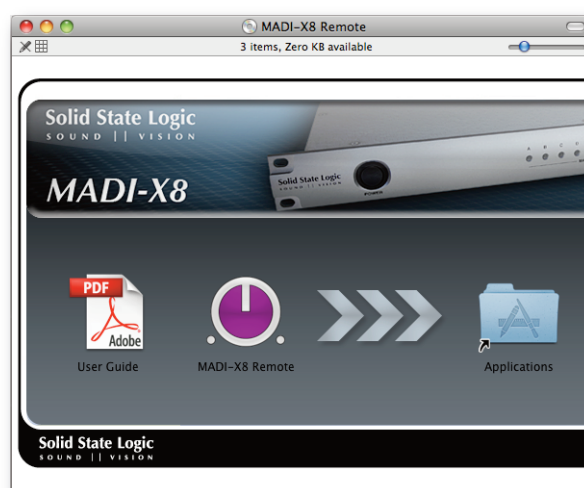
The following systems will be able to run the X8 Remote software:

- Mac OS X: 10.5.8 (Leopard), 10.6.8 (Snow Leopard) or 10.7.4 (Lion)
- Windows: XP, Windows Vista (32bit/64bit) and Windows 7 (32bit and 64bit)

*Note that X8 Remote is a Java application; for Windows a suitable run-time environment will be installed for you whilst Mac installations will use the Java installed for that version of Mac OS – please ensure that your Mac is up to date.*

#### Software Installation (Mac)

Using Finder, open the MADI-X8 CD. In the pop-up which appears, drag the **MADI-X8 Remote** icon onto the **Applications** folder:



You may also want to drag the icon to your Dock or any other convenient location.

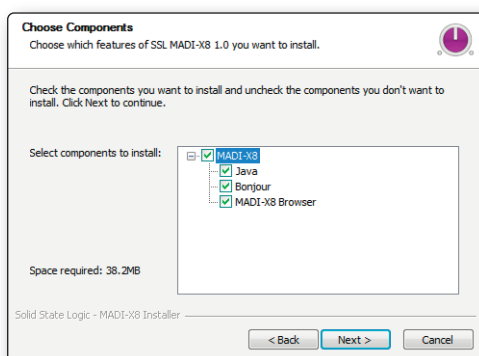
## Software Installation (Windows)



Locate the **SSL MADI-X8 Setup** icon on the MADI-X8 CD and double-click on it to open the installer:



You will find the installation instructions laid out in the installer. There are three components to the software installation: the MADI-X8 Remote application, Java (which is required in order to run the Remote) and Bonjour (which is required for network connectivity). Once you have clicked **Next** in the installer window, ensure that all three are selected:



Follow the on-screen instructions to complete the install process for all three software elements.

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*NOTE: If the Installer asks to repair or reinstall Java and/or Bonjour, please click **OK** and let it update these components.*

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## POWERING UP X8

Any X8 units which you wish to control from the X8 Remote should be switched on and left for 20 seconds before the Remote is launched, in order to ensure that they complete their handshake with the network before the Remote searches for them.



## LAUNCHING AND CONNECTING THE X8 REMOTE

X8 is controlled over Ethernet using the Remote software and can be connected using either a direct connection (ie. point-to-point with no Internet or wider network) or via a wider Ethernet network. X8 must have an IP address to operate.

*Note that the IP address is displayed in the **Unit Info** area of the Remote's **System Setup** screen. The address range for Link Local is 169.254.0.0 to 169.254.255.255 and should be automatically set by the computer. Please be aware that Link Local IP address negotiation can take up to 2 minutes. You can speed up this negotiation by opening a web browser and typing the web address: **http://<name\_of\_your\_X8>.local:8000** into the address bar.*

Once any X8 units are switched on, launch the Remote by double-clicking on the pink X8 icon (shown right).



### Permission Levels

There are three permission levels for the X8 Remote, as defined during the login procedure described on the following page:

- Default level allows routing to be viewed but allows no changes. This is the permission level when no one is logged in.
- User level allows routing to take place, but no System or Device setup can be performed, and Presets cannot be saved.
- Admin level provides access to all routing and configuration pages.

### Login

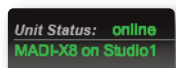
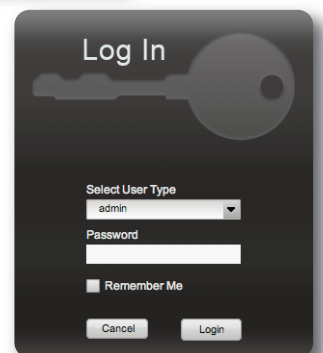
When the X8 Remote software is launched, the **'About'** page will be displayed and it will search the network for X8 units, displaying them in the **Discovered X8 Units** list. Buttons for each unit will appear next to the **About** button at the base of the screen. Note that you can be logged into a number of units at once – simply switch between them using the buttons across the base of the screen. In the example below, two units have been located, called **Studio1** and **Studio2**:



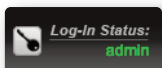
Clicking on the unit buttons at the base of the screen will bring up a **Log In** page for that unit:

Click on the box below the **Select User Type** label and select either **admin** or **user** access from the drop-down list which appears. Type the password in the **Password** box below it, and select the **Remember Me** box if you wish the X8 Remote to remember the unit's password. Now click **Login** to complete the login process.

To view routing without being able to change anything (Default level), click on **Cancel**.



When logged into an X8 unit, the status of its network connection is displayed in the bottom left-hand corner of the window. The display is green when it is connected, and red when there is a connection error.



The permission level is shown in the **Log-In Status** area in the bottom right-hand corner of the window. To log in with a different permission level, click on the **Log-In Status** key symbol to bring back the **Log In** page.

To log out, right-click (ctrl+click) on the key symbol and select **Logout** from the drop-down list.

## Unit 'Focus'

A specific X8 unit can be selected as the 'Focus' unit for the X8 Remote. This means that it will automatically be selected when the Remote is launched, and other units which appear on the network will be ignored until you choose to select them.

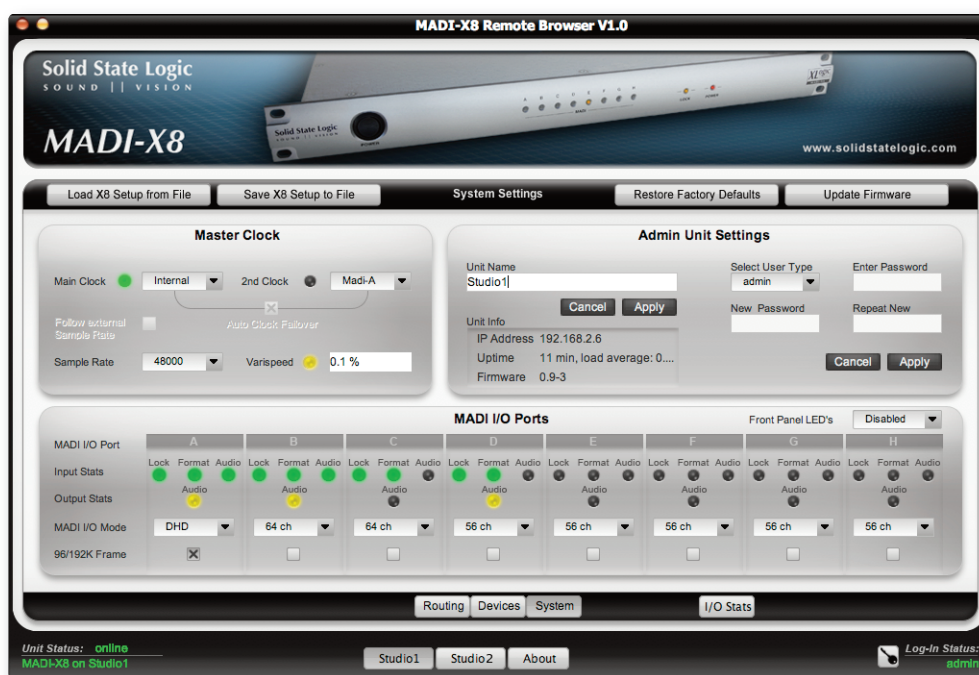
To specify a Focus unit, click on the **About** button at the bottom of the screen to return to the **About** page. At the bottom of the **Discovered X8 Units** area, click on the box labelled **Startup Unit in Focus** (shown right) and select the default unit from the list which appears.

When starting up in future, the Remote will now go immediately to the **Log In** page for that unit. When combined with the **Remember Me** function described on the previous page, the Routing page can be automatically opened whenever the Remote is launched.



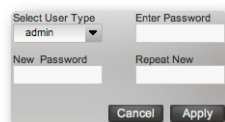
## Editing Passwords and Unit Names

Passwords and unit names are edited in the **Admin Unit Settings** area in the right-hand side of the **System Settings** display, opened by pressing the **System** button towards the base of the window:



To rename the unit, click on the **Unit Name** text box, and use your QWERTY keyboard to delete the old name and type the new one.

Click the **Apply** button just beneath it to complete the rename. The button label at the base of the window will change to the new name. There's a **Cancel** button if you change your mind while typing.



To change passwords for the unit, select the permission level whose password is to be edited by clicking on the **Select User Type** box and clicking on the permission level in the drop-down menu. Use your QWERTY keyboard to type the old password in the **Enter Password** box, then the new password in the **New Password** and **Repeat New** boxes.

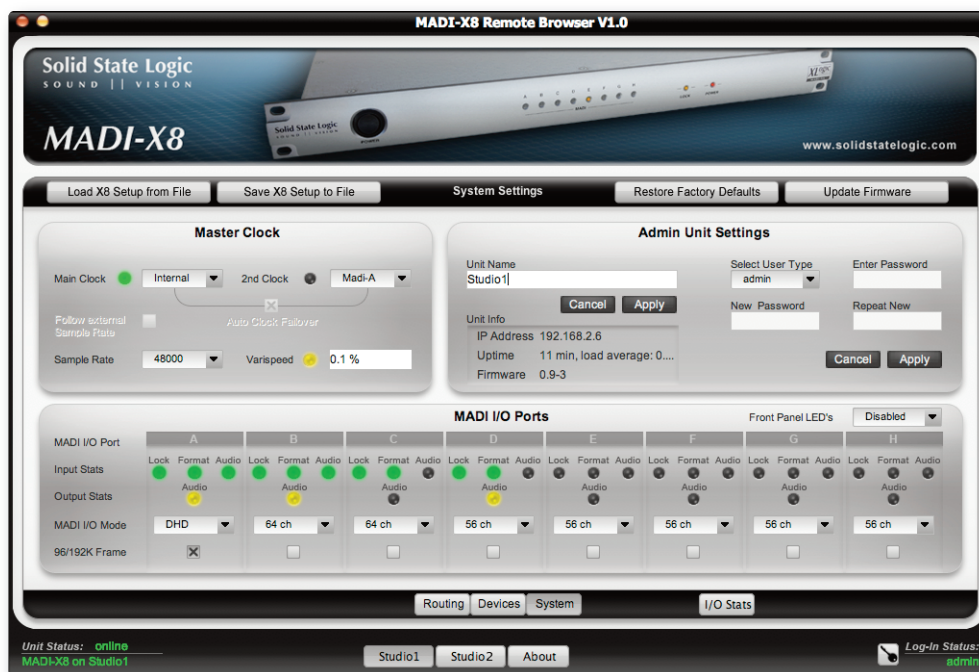
Click the **Apply** button just beneath the boxes to complete the process. Again, there's a **Cancel** button if you change your mind while typing.

*Note that passwords must be more than three characters and the permission levels must have different passwords.*

## MADI AND CLOCK CONFIGURATION

X8 can connect up to eight MADI inputs and outputs. Of these, six can be connected using optical fibre and two using BNC coaxial cable. BNC connectors are also provided for a Word Clock or Frame Clock input and up to three Word Clock or Frame Clock outputs. These physical connections are introduced on Page 9.

Once all of the MADI equipment to be used is connected to X8, the MADI and Clock settings are configured in the **System Settings** display, opened by pressing the **System** button towards the base of the window:



*Note that you will need to understand the concepts surrounding MADI formats and clocking before configuring these areas of the X8.*

### Selecting the Master Clock

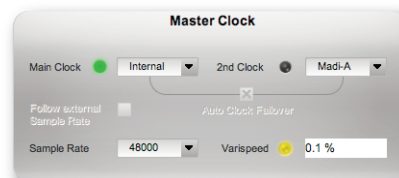
The **Master Clock** settings are found in the left-hand side of the **System Setup** window.

To select the primary clock source, click on the box to the right of the **Main Clock** light and select the required source from the drop-down list.

The options are:

- Internal** X8's own internal clock;
- Wordclock** A Wordclock source connected to the **WORD CLOCK** input on the back of the X8 unit.
- Frameclock** A Frameclock source connected to the **WORD CLOCK** input on the back of the X8 unit.
- MADI A to H** The clock coming from the device connected to the selected MADI port.

The sample rate of the selected clock source is shown in the **Sample Rate** box at the bottom of the **Master Clock** area.



## Internal Clock Configuration

When the **Internal** clock is selected, it is configured as follows:

Select the sample rate by clicking on the **Sample Rate** box and selecting the required option from the drop-down list. Options are displayed in Hz: 44100, 48000, 88200, 96000, 176400 and 192000.

If varispeed is required, double-click on the box next to the **Varispeed** light and enter the amount (beginning with + or –). Press ENTER on your keyboard to apply the change, or press ESC to cancel it.

Varispeed can be set to  $\pm 10\%$ , with a resolution of 0.1%. If varispeed is set to any value other than 0.0%, the **Varispeed** 'light' will display yellow to provide clear indication that varispeed is active.

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*NOTE: There is no Bandwidth for positive Varispeed Values on 64 Channel MADI. Hence MADI Ports set to 64 channels will not lock properly with positive Varispeed Values.*

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## External Clock Configuration

When any external clock is selected, the sample rate follows the external source's sample rate by default, as indicated by the **Follow external Sample Rate** box being checked with a cross (X).

To set the base sample rate manually, uncheck the **Follow external Sample Rate** box and select the sample rate in the **Sample Rate** box below it, as described above.

## Master Clock Failover

To protect the unit's operation in the event of a clock failure, X8 allows a second clock source to be selected. The second clock source will take over as Master Clock if the main clock fails for 200ms. Once the main clock source is recovered, it will automatically be made the Master Clock source again.

To enable this function, check the **Auto Clock Failover** box and select the backup clock source from the drop-down list to the right of the **2nd Clock** light in the same way the **Main Clock** source was selected.

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*Note that when the **Main Clock** is set to Internal, no **2nd Clock** can be selected.*

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## Clock Source Status Indication

The status of the selected clock source is indicated by the 'light' to the right of each clock source label. The status of the active clock source is also displayed using the **LOCK** LED on the front panel of the X8 unit:

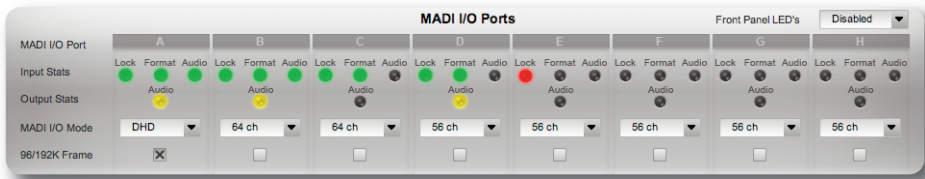


The light colours indicate the following:

Flashing red	No clock source detected
Steady green	The unit is locked to the Main clock source
Flashing green	The unit is locked to the 2nd clock source (Clock Failover)

## MADI Port Settings

The channel count and frame-rate for each port is selected in the **MADI I/O Ports** area across the bottom of the **System Settings** window, where the status of each MADI connection can also be viewed:



By default, all ports are set to be 56 channels with 48kHz framing. For devices using a 96/192kHz Frame rate, click on that port's **96/192kHz** Frame box so that it is checked with a cross (X).

In addition to routing audio, X8 is able to route control data for SSL equipment such as DHD mic pre-amps. To enable this control data to be routed with the audio, click on that port's **MADI I/O Mode** box and select the **DHD** option in the drop-down which appears. Note that this needs to be done for both the mic amp unit being controlled and the console controlling them.

For any 64 channel MADI connections, click on that port's **MADI I/O Mode** box and select **64 ch** mode.

*Note that these settings affect both the input and output components of the selected ports.*

## MADI Status Indication

The current status of each MADI port is displayed in the **MADI I/O Ports** area shown above, as well as in the MADI Status pop-up, opened using the **I/O Stats** button (See following page):

*Important note: No MADI status information is displayed for ports which are not passing audio.*

'Light'	Colour	Meaning
Input <b>Lock</b>	Blank	No routing
	Red flashing:	No lock
	Green solid	Lock is okay
Input <b>Format</b>	Blank	No routing or lock
	Red flashing	Format conflict
	Green solid	Format correct, signal is locked and being transmitted
Input <b>Audio</b>	Blank	No routing, lock or audio
	Green solid	Signal is locked and active
Output <b>Audio</b>	Blank	No audio
	Yellow solid	Signal is locked and being transmitted

*The X8 front panel also displays this information – in a slightly different format – on the MADI Status LEDs, as described on Page 14.*

MADI Status Display

A smaller **I/O Stats** window duplicating the **MADI I/O Ports** area can be opened by clicking on the **I/O Stats** button located lower right in the System Settings window.

This allows MADI information to be viewed easily when you have navigated away from the **System Settings** page of the X8 Remote. If you are controlling multiple units from one Remote, the **I/O Stats** pop-ups for each can be open simultaneously.

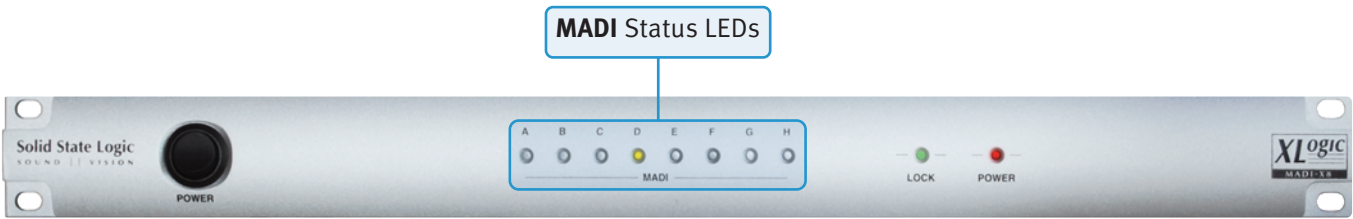


*Note that the **I/O Stats** button is available in all pages of the Remote.*

To close the Status display, click on its **Close** button.

Front Panel MADI Status Display

The LEDs in the centre of the X8’s front panel can be used to display the status of the input or output MADI signals:



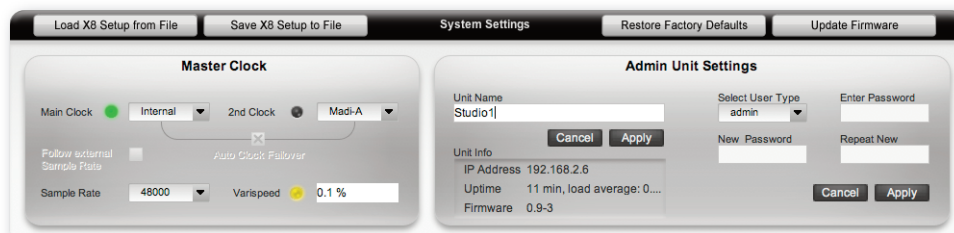
To select the source for the front panel LEDs, click on the menu box in the top right-hand corner of the **MADI I/O Ports** area of the **System Settings** page (labelled **Front panel LEDs**) and select **Input** or **Output**. Alternatively, select **Disabled** to disable the front panel LEDs. The LEDs display the information listed below:

	Colour	Meaning
Input mode	LED is off	Nothing is routed to the port, or the front panel LEDs are <b>Disabled</b> (see above)
	Red flashing	Lock error
	Red solid	Format error
	Green solid	Signal is locked and being transmitted
Output mode	Green flashing	Signal is locked but inactive
	Yellow solid	Signal is locked and being transmitted
	Yellow flashing	Signal is locked but inactive

*Note that the front panel display is similar (but not identical) to the **MADI I/O Ports** display described above.*

## RESTORING FACTORY SETTINGS

All settings within the X8 Remote can be restored to their factory defaults by clicking on the **Restore Factory Defaults** button at the top of the **System Settings** dialogue. To complete the reset, click **OK** in the confirmation pop-up which appears.



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*Note that this function cannot be undone unless the Remote's configuration has been saved within a project. All settings in the Remote will be reset: all Devices, Paths, Chains and Presets will be lost.*

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*Note also that factory defaults cannot be restored if X8 has been on for five minutes or more. To restore factory defaults, you may first need to switch the unit off and on again.*

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## UPDATING SOFTWARE AND FIRMWARE

If you have registered your X8 on the SSL website, you will be sent emails notifying you of new software and firmware releases.

Before you can register your X8, you will need to be registered yourself on the SSL website; go to [www.solidstatellogic.com](http://www.solidstatellogic.com), click on **REGISTER** in the top right-hand corner of the web page, and follow the on-screen instructions. Once you are registered and logged in, you can register your products through the **My Profile** page by clicking on **My Products**.

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*Note that additional instructions for installing software and firmware may be included with any download. Please refer to those instructions before attempting the below.*

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To update the X8 Remote software, simply delete the old Remote program and install the new one as described on Pages 9 to 10.

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*Note that software and firmware updates require an internet connection. To update software and firmware without an internet connection, refer to this manual's appendix.*

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*Note also that the Remote data is held on the X8 unit, not the host computer, meaning that deleting the Remote software will not cause you to lose your settings. We recommend, however, that you back up your Remote configuration before updating, as described below.*

---

To update X8 Firmware, click on the **Update Firmware** button in the **System Settings** page of the Remote. Click **OK** in the pop-up which appears, then click **Close** in the pop-up once the update is complete.

---

*Note that firmware updates do not overwrite any Remote settings. We recommend, however, that you back up your Remote configuration before updating, as described below.*

---

## SYSTEM BACKUP AND RESTORE

The X8 Remote can save all User settings of any MADI-X8 Unit to a single file on a computer. This Setup File contains all User Presets, along with all its Paths and User Devices, as well as the Clock Setup and MADI I/O Port settings.

---

*NOTE: IP Address, admin and user passwords and the Unit name are not stored inside a Setup file.*

---

A setup file can be used as a general security backup, to clone a device (ie. in a redundant setup) or simply for switching between completely different MADI-X8 tasks quickly.

Since the X8 unit has a limited amount of storage space for Devices, Routing Paths and Presets, a clean up of the devices and presets lists maybe required from time to time, and it may be a good idea to save all the work beforehand.

### Saving an X8 Setup

To save a setup, click on the **Save X8 Setup to File** button towards the top of the window, and browse to a location where you want to store the Backup. The X8 Remote will propose a filename containing the date and time of the backup, though feel free to rename the file. The File extension of a Setup File is .mx8

### Loading an X8 Setup from file

To load a setup from file, click on the **Load X8 Setup from File** button towards the top of the window, locate the required .mx8 file and click **Open**.

Warning messages will appear and you need to confirm that you really want to overwrite all contents on the X8 Unit with the information inside the .mx8 file.

---

**Important Note:** *Loading an X8 Setup on a Unit will overwrite ALL Presets, containing Paths and Devices. There is no way to Undo this operation.*

---

## 4. Devices

### OVERVIEW

The main Routing page of the X8 Remote routes signals in groups called Devices – signals have to be in a Device in order to be routed. Any group of signals which you may want to route as a single bundle within X8 can be defined as a Device within the Remote. Devices can comprise any array of channels from a single port, and each channel can be placed in any number of Devices.

*Note that each output channel from X8 can only have one signal routed to it but Input channels to X8 can be routed to multiple destinations – see Page 24 for details.*

Once you have logged into the unit within the Remote, the Device setup page is opened by pressing the Devices button towards the bottom of the main Remote window:

*Note that the Channel Selection pads will be blank until a new Device is created.*

**3** Define the Device's **IO Type** and **MADI Port**.  
Select **Link** to mirror input and output channel selections for IO Devices.

**5** Click **Save** to save the new Device

**2** Click **New** to create a blank new Device

**6** Devices list. Right click on **New Device X** to rename or delete Devices.

**1** Click on **Devices** to enter Device page




**4** Source and Destination channel selection pads. Click on numbered channel buttons to include them in the Device – selected channels go white.  
To select a channel range, hold your keyboard SHIFT key then click on first and last channels in range.

## CREATING NEW DEVICES

To create a new Device, click on the **New** button in the top left-hand corner of the Device Editor.

### Defining the Device Type

Define the Device Type using the drop-down list in the central column of the window (labelled Type). There are three Device Type options, as indicated by the symbol near the centre of the window:

Symbol	Name	Description
	Source	Any Device which only has outputs (a rack of mic pre-amps, for example).
	Destination	Any Device which only has inputs (a satellite uplink, for example).
	IO	A Device with inputs and outputs which can be configured together (a mixing console, for example). The Device name and port (and optionally the channel range) are the same on the input side as on the output side.

To define the Device Type, click on the text box beneath the **IO Type** label, and click on the required Type from the drop-down list which appears.

---

*Note that areas of the window go blank if they are not relevant to the selected Device Type.*

---

### Selecting the Device Port

Select the port containing the Device's channels by clicking on the **MADI Port** box near the centre of the window and selecting the port from the drop-down list which appears.

---

*It is important to ensure that the MADI mode used by the device is correctly configured. This is done in the **MADI I/O Ports** area of the **System Setup** window, as described on Page 13.*

---

### Selecting the Device Channels

Channels are selected for inclusion in the Device using the pads of numbered buttons either side of the **Device** area in the middle of the window – The button numbers refer to the channel numbers, with **Source** channels displayed on the left and **Destination** channels on the right. Select channels by clicking on them.

### Channel Status Indication

Each channel can be in one of four states, as indicated by the button's shade. Unavailable channels (channels 57-64 on a 56 channel port) can still be selected for future use, but their selection will have no effect while the port remains a 56 channel port. The button indication is as follows:



### Selecting Channel Ranges

Channel ranges can be selected by holding your keyboard's SHIFT key and then clicking on the first and last channels in the range.

---

*Note that you need to press and hold SHIFT before selecting the first channel.*

---

The Remote will apply the new status of the first channel to all channels in the range (as opposed to simply inverting the status of each).



## Copying Devices

To copy a Device, locate it in the Devices list, and double-click on it so that it becomes active in the display. Now Right click (ctrl+click) on an empty entry in the Devices list and select **Save** from the drop-down list which appears.

---

*An alternative method for copying Devices which are active in the Routing display: When a Device is active, make any changes you wish to make, as if it were already copied. Now click the **Save** button above the Devices list. As you cannot save changes to an active Device, a pop-up will appear inviting you to save the Device to an empty entry in the Devices list – click **OK**. Clicking **NO** will discard the changes and revert to the saved Version of the Device.*

---

---

*Note that the new device will be placed in the next free entry in the list, even if you selected an entry further down the list.*

---

## Deleting Devices

To delete a Device, right-click (ctrl+click) the Device name in the Devices list in the left-hand side of the window, select **Delete** from the drop-down menu and press **OK** in the warning pop-up which appears.

## 5. Routing Presets

### OVERVIEW

Once the System and Device configurations are complete, you are ready to start routing signals. Sets of Paths (routes) are contained within Presets. Each Path within a Preset is configured within its own Path Box – a Preset can contain up to 128 Path Boxes, displayed in rows of four.

The Routing page of the X8 Remote is opened by clicking on the Routing button towards the bottom of the display:

*Note that much of the window may initially be blank.*

The screenshot shows the MADI-X8 Remote Browser V1.0 interface. It features a top banner with the Solid State Logic logo and a product image. Below the banner is a toolbar with buttons for 'New', 'Save', 'Add Path', and 'New Preset 1'. A status bar at the top right shows 'Status | Saved' and 'Cancel' and 'Apply' buttons. The main area is divided into a left-hand 'Presets List' and a central 'Preset Editor'. The 'Presets List' shows a scrollable list of presets, with 'New Preset X' highlighted. The 'Preset Editor' shows a grid of 'Path Boxes'. Three callouts point to specific elements: Callout 1 points to the 'New' button. Callout 2 points to the 'Add Path' button. Callout 3 points to the 'Source' and 'Destination' dropdown menus in a Path Box. Callout 4 points to a right-click context menu on a Path Box. Callout 5 points to the 'Save' button. Callout 6 points to the 'New Preset X' entry in the Presets List. The bottom of the interface has a navigation bar with 'Routing', 'Devices', 'System', 'I/O Stats', and 'Lock All Paths' buttons. The status bar at the very bottom shows 'Unit Status: online', 'MADI-X8 on Studio1', 'Studio1', 'Studio2', 'About', and 'Log-In Status: admin'.

**2** Click **Add Path** to create new path boxes. New path boxes are grey.

**3** Select path's **Source** and **Destination** from the drop-down menus in the Path box.

**4** Right-click (ctrl+click) the box for further options

**5** Once all the Preset's paths are set up, click **Save** to save.

**1** Click **New** to create a blank new Preset

**6** Presets list. Click on **New Preset X** to rename it. Right click on an entry for further options.

Three rows of routing boxes can be viewed at any one time, and a scrollbar appears to the right of the Preset Editor whenever there are more than 12 Path boxes. Each Path Box can contain a single route, though that route may include up to 64 channels.

Up to 128 routing Presets can be created, as shown in the scrollable Presets List to the left of the Preset Editor.

The status of the Preset shown in the display is indicated by the Status display above and to the right of the Path Box area of the window. The active Preset's name is always displayed above the Path Boxes.

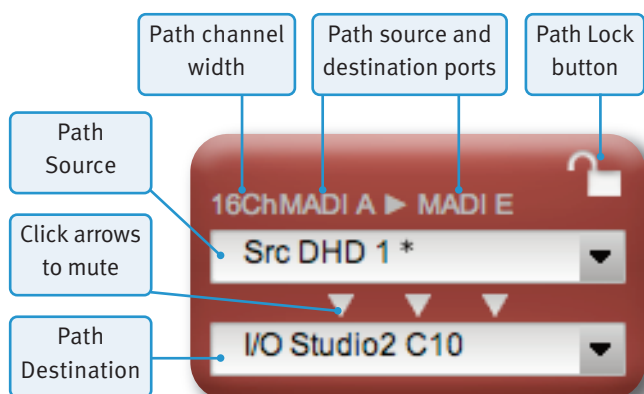
To activate a routing Preset, right click (ctrl+click) on it in the Presets list in the left-hand side of the Routing window, and select **Load** from the drop-down list which appears.

## CREATING AND MANAGING PATHS

Click on **Add Path** in the top left-hand corner of the window to create a box for a new path (route).

The position of each Path Box within the Preset Editor bears no technical relation to the route being made – the route itself is defined entirely within the routing box.

Path Boxes are grey to indicate that they are unused, and initially go red to indicate that they contain an active route.



Within the Path Box, click on the upper text box (initially labelled **Source**) and select a source for the route from the drop-down list which appears.

Now click on the lower text box (initially labelled **Destination**) and select a destination for the route from the drop-down list which appears.

The Device type is always displayed before the Device name – **Src** for Sources, **Dst** for Destinations, and **I/O** for I/O Devices.

The path which has been made will be described immediately above the Source selector: the path's channel width is displayed to the left, followed by the Source and Destination ports (separated by an arrow).

---

*Note that you can also select the **Destination** before the **Source**, if you like!*

---

---

*Note also that the **Source** and **Destination** lists are alphabetical (0 to 9, then A to Z, then a to z). If you have created a lot of Devices, you may want to place a number before then names of commonly used Devices in order to keep them close to the top of the list.*

---

### Multiple Destination Indication

Sources can be routed to any number of destinations. Once a source has already been routed, an asterisk (\*) appears after the source name in the Source list, allowing you to avoid routing sources to multiple destinations if necessary.

### Labelling Paths

Paths can be labelled if required. To do this, double-click in the space at the top of the Path Box (above the path width and ports indications).

Alternatively, right click (ctrl+click) on the Path Box, and select the **Rename** entry in the drop-down list which appears.

A text box will appear at the top of the Path Box– type the label and press your keyboard's RETURN key (see above-right).



### Locking Paths

To prevent accidental routing changes, paths can be locked once they have been configured. To do this, click on the padlock symbol in the top right-hand corner of the Path Box. The symbol will close, and the Source and Destination displays will become greyed out (as shown below right).

No editing or muting can be performed on the locked path until it is unlocked by clicking on the closed padlock symbol.

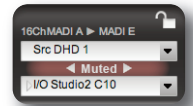
You can also lock and unlock paths by right clicking (ctrl+click) on the Path Box and selecting **Lock Path** or **Unlock Path** from the drop-down list which appears.

To lock all paths, click on the **Lock All Paths** check box in the bottom right-hand corner of the window, so that it contains a cross (X). Uncheck the **Lock All Paths** box to unlock all paths.

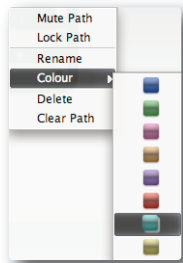


## Muting Paths

Paths can be muted by clicking on the arrows between the Source and Destination boxes, or by right clicking (ctrl+click) on the Path Box and selecting **Mute Path** from the drop-down list which appears. Muted Path Boxes appear 'unlit' and display the word '**Muted**' between the Source and Destination boxes (shown right).



Paths can be configured while they are muted. To unmute a path right click (ctrl+click) on the Path Box and select **Unmute Path** from the drop-down list.



## Path Box Colours

A number of alternative colours can be applied to the Path Box. These colours are of no routing significance and can be used to indicate whatever the user might find useful.

To change the colour of the Path Box, right click (ctrl+click) on the Path Box, hover over the **Colour** entry in the drop-down list which appears, and select a new colour from the colour palette sub-menu.



## Clearing Paths

To clear a path, right click (ctrl+click) on the Path Box, and select the **Clear Path** entry in the drop-down list which appears. The Path Box will be blanked and return to grey.

## Deleting Path Boxes

To delete a path box, right click (ctrl+click) on it and select the **Delete** entry in the drop-down list which appears. The Path Box will disappear.

---

*Note that clearing and deleting Path Boxes are actions which cannot be undone. Proceed with caution.*

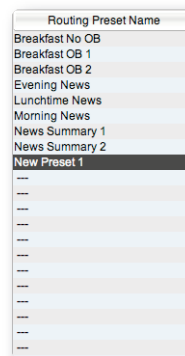
---

## MANAGING PRESETS

### The Preset List

In the left-hand side of the Routing window, there is a Presets list, displaying the names all of the Presets which have been created.

Double-clicking an entry in the list will load that Preset into the main part of the Routing window. Two slower clicks will allow you to edit the Preset's name. Right-clicking (ctrl+click) on a Preset will open up a sub-menu of further options.



### Preset Status Indication

The status of the Preset shown in the display is indicated by the **Status** display above and to the right of the Path Box area of the window. The status options are:

- |                                   |  |
|-----------------------------------|--|
| <b>Loaded</b> (displayed yellow)  | The displayed Preset is active on the X8 unit.   |
| <b>Preview</b> (displayed yellow) | The displayed Preset is NOT active on the unit, but is displayed for purposes of preview and editing. This status is also indicated by a dark grey background. |
| <b>Changed</b> (displayed red)    | There are unsaved changes within the displayed Preset  |
| <b>Saved</b> (displayed green)    | Changes to the Preset have been saved.   |

The active Preset's name is always displayed above the Path Boxes, between the **Add Path** button and **Status** display (shown as **New Preset 1** in the illustration above).

### Activating a Preset

To activate a routing Preset, right click (ctrl+click) on it in the Presets list in the left-hand side of the Routing window, and select **Load** from the drop-down list which appears. The active Preset's name is displayed above the Path Boxes, between the **Add Path** button and **Status** display (shown as **New Preset 1** in the illustration below).



## Renaming Presets

When Presets are created, they are shown in the Presets list in the left-hand side of the window with the name '**New Preset X**' (where X is an incrementing number). To rename a Preset, click on its default name in the list so that it is selected. Then click on the name again, type in a new name and press your keyboard's ENTER key.

Alternatively, right-click (ctrl+click) the Preset name in the list, select **Rename** from the drop-down menu, type a new name (using your keyboard to delete any previous name if necessary) and press your keyboard's ENTER key.

## Previewing Presets

Presets can be previewed and edited without being made active. To preview a routing Preset, right click (ctrl+click) on it in the Presets list and select **Preview** from the drop-down list which appears. The Preset's Path Boxes will appear on a dark grey background with a red header, and the **Status** display above the Path Boxes will display **Preview**.



Changes can be made active by pressing the **Apply** button in the top right-hand corner of the window, or cancelled by pressing the **Cancel** button next to it. The **Preview** function is ideal for preparing the next routing configuration in a live environment.

## Copying Presets

To copy a Preset locate it in the Preset list, and double-click on it so that it becomes active in the display. Now Right click (ctrl+click) on an empty entry in the Preset list and select **Save** from the drop-down list which appears.

---

*Note that in both methods, the new Preset will be placed in the next free entry in the list, even if you selected an entry further down the list.*

---

## Deleting Presets

To delete a Preset, right-click (ctrl+click) the Preset name in the Presets list in the left-hand side of the window, select **Delete** from the drop-down menu and press **OK** in the warning pop-up which appears.

*Blank page. Nearly...*

## Appendix

### UPDATING FIRMWARE WHEN X8 UNIT IS NOT CONNECTED TO THE INTERNET

With the MADI-X8 SSL has significantly streamlined the process of updating the unit's firmware (or internal operating environment). By pressing the **Update Firmware** button on the **System Settings** Page (as described on Page 17), the unit itself connects to an SSL server, checks if a new firmware is available and downloads and installs the firmware fully automatically, without any further user interaction. In most cases this will be the preferred updating method, if the X8 unit is connected to a network which is itself connected to the Internet. If your MADI-X8 unit does not have a connection to the internet, please read below on how to install firmware updates.

---

*NOTE: The information below is provided for network-savvy people only. The process of firmware updating can, when not done properly, lead to a malfunctioning device, which can only be revived in the SSL factory.*

---

### Updating the Firmware through a Company Internal Webserver (Intranet)

If the production network the MADI-X8 unit is connected to does not have an Internet connection, it is possible to change the location where MADI-X8 units look for new firmware and select a local folder inside the Intranet.

- Step 1:** Download the firmware image file. You will always find the latest firmware at:  
<http://www.solidstatelogic.com/music/xlogic%20madi-x8/downloads/fwipkg.zip>
- Step 2:** Extract the firmware image to a company internal webserver folder
- Step 3:** Log into the MADI-X8 with a standard web browser by typing the following into the address bar:  
<http://<IP of your X8>:8000/cgi-bin/ipkg-conf>
- Example: If your MADI-X8 has the IP Address 192.168.178.112, the resulting line to enter would be:  
<http://192.168.178.112:8000/cgi-bin/ipkg-conf>
- Press **Enter**

---

*Note: You can check the IP Address of any MADI-X8 unit on the System Page inside the Unit Info section*

---

- Step 4:** Change the MADI-X8 firmware "watch folder". The Madi-X8 Update Configuration is shown. You can now change the Update URL to the Path created in Step 2.

---

*Note: Make sure the new Path points into the same folder level as the files extracted in Step 2*

---

Optionally you can enter a Proxy in the proxy box.

Press **Update** to store the new firmware update location inside the Unit.

### Update Log

The X8 unit checks immediately if the location specified is existing/available and if it contains a valid MADI-X8 firmware file structure. A log box will show the results below the update button.

If all went well, the log box should say something similar to:

madix8 - 1.2-1 - Solid State Logic Madi-X8 router firmware.

---

*Note: If your network is connected to the Internet by a proxy server, you can only add the Proxy into the Update Configuration to connect to the SSL server directly.*

---

---

*Note: If you want to revert to the original SSL server address, please use the following URL:*  
<http://www.solidstatelogic.com/downloads/MADI-X8/update>

---

## Updating the Firmware with a Computer/Laptop

In case your MADI-X8 Unit is buried underground, inside an OB Van or installed in a venue far away from modern telecoms, it is also possible to walk in with a laptop or computer, connect the X8 directly over Ethernet and use a slim web-server running on the PC.

---

*Note: We are assuming you have downloaded the firmware image already and extracted the folder to the computer*

---

**Step 1:** Install and configure a slim webserver

There are several simple web servers available, eg. for Windows:

Abyss Web Server X1 – [www.aprelum.com](http://www.aprelum.com)

Simple Server WWW – [www.analogx.com](http://www.analogx.com)

For Mac the Apache webserver is pre-installed; enable it by enabling “Personal Web Sharing” in the Sharing control panel

For Linux, use your distribution’s package management tools to install one of the available servers

**Step 2:** Locate the ‘document root’ of your local webserver (refer to the relevant documentation). Create a folder for the firmware and copy files from the firmware image to it

**Step 3:** Log into the MADI-X8 with a standard web browser by typing the following into the address bar:  
<http://<IP of your X8>:8000/cgi-bin/ipkg-conf>

Example: Your MADI-X8 has the IP Address 192.168.178.112, the resulting line to enter would be:  
<http://192.168.178.112:8000/cgi-bin/ipkg-conf>

Press **Enter**

---

*Note: You can check the IP Address of any MADI-X8 unit on the System Page inside the Unit Info section*

---

**Step 4:** Change the MADI-X8 firmware “watch folder”. The Madi-X8 Update Configuration is shown. You can now change the Update URL to the Path created in Step 2.

---

*Note: Make sure the new Path points into the same folder level as the files extracted in Step 2*

---

Optionally you can enter a Proxy in the proxy box.

Press **Update** to store the new firmware update location inside the Unit.

### Update Log

The MADI-X8 unit checks immediately if the location specified is existing/available and if it contains a valid MADI-X8 Firmware file structure.

A log box will show the results below the update button.

If all went well, the log box should say something similar to:

madix8 - 0.9-3 - Solid State Logic Madi-X8 router CGI and kernel module

---

*Note: Most modern NAS Systems (networked attached storage) also have a built-in webserver you can use for MADI-X8 firmware update.*

---

---

*Note: If you want to revert to the original SSL server address, please use the following URL:*  
<http://www.solidstatelogic.com/downloads/MADI-X8/update>

---

If the above doesn’t make any sense to you at all, it may be simpler to take the MADI-X8 unit out of the rack and take it to an Internet equipped environment to update the firmware.

# Index

<b>*</b>	24	<b>IO Type</b>	21
2nd Clock	14	<b>L</b>	
64 ch	15	Labelling Paths	24
96/192kHz Frame	15	Link	21
<b>A</b>		Loading Setup	18
About	12	LOCK LED	14
Activating a Preset	26	Locking Paths	24
Add Path	24	Login	11
Admin Unit Settings	12	<b>M</b>	
Apply button	27	MADI Configuration	13
asterisk	24	MADI I/O Ports	15
<b>B</b>		MADI Port	20
Backup	18	Main Clock	13
<b>C</b>		Master Clock	13
Channel ranges	20	Muting Paths	25
Channel selection	20	<b>N</b>	
Clearing Paths	25	Naming Devices	21
Clock Configuration	13	Naming Presets	27
colour (Path Box)	25	Naming X8	12
Connecting the Remote	11	New Device	20
connections	9	New Path	24
control data	15	<b>P</b>	
Copying Devices	22	padlock	24
Copying Presets	27	Path Box	24
<b>D</b>		Path Box Colours	25
Deleting Devices	22	Permission Levels	11
Deleting Path Boxes	25	physical connections	9
Deleting Presets	27	Presets	23, 26
Device Type	20	Previewing Presets	27
Devices	19	<b>R</b>	
DHD Control	15	Remote	9, 11
Discovered X8 Units	12	Restore	18
Dst	24	Restoring Factory Settings	17
<b>E</b>		<b>S</b>	
Editing Passwords	12	Sample Rate	13
<b>F</b>		Saving Setup	18
Failover	14	setup	9
firmware update	17, 29	Software Installation	9
Focus	12	software update	17
Follow external Sample Rate	14	Src	24
front panel LEDs	14, 16	Startup Unit in Focus	12
<b>I</b>		<b>U</b>	
I/O Stats	15, 16	Unit Name	12
Indication (Channel Selection)	20	Update Firmware	17, 29
Indication (Clock Status)	14	<b>V</b>	
Indication (Device Status)	21	Varispeed	14
Indication (MADI Status)	15		
Indication (Preset Status)	26		
Installing Remote	9		
Internal clock	14		

# Solid State Logic

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