X-Patch
User Guide
<table>
<thead>
<tr>
<th></th>
<th>Document Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>January 2010</td>
<td>82BWPP01A</td>
<td>Initial Release</td>
</tr>
<tr>
<td>June 2010</td>
<td>82BWPP01B</td>
<td>Network setup for X-Patch Remote V1.04</td>
</tr>
<tr>
<td></td>
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<td>Minor miscellaneous other changes</td>
</tr>
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1. Introduction

X-Patch
Congratulations on purchasing X-Patch, SSL’s newest innovation in routing management. In essence, X-Patch is a 16x16 analogue routing matrix which is configured remotely using the X-Patch Remote. In its simplest configuration, X-Patch allows each of its 16 inputs to be routed to any of its 16 outputs. However, its intelligent routing capability enables automatic routing of insert sends and returns, as well as simultaneous routing of chains of outboard equipment.

Each X-Patch is able to store 128 routing setups (‘Presets’), each of which can contain any of the 128 user-configured ‘Chains’, which are used for routing everything within a commonly used signal chain in one operation. MIDI controllers can be used to switch seamlessly between routing Presets, opening up a range of live performance and automated routing applications.

Up to six X-Patches can be controlled from one Remote. By routing between X-Patches, extensive and highly complex routing operations can be performed at the press of a button.

Reading Conventions
Throughout this manual, labels found on the X-Patch or in the Remote browser are indicated in **bold** type.

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

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

Software Versions
The information in this manual is correct for X-Patch Remote V1.04 or greater, and X-Patch firmware V1.0 or greater.
2. Connecting X-Patch

Introduction
Once you have unpacked and installed the X-Patch Remote software (as described in the Installation Guide included with your X-Patch), you will find a green icon like that shown to the right. Double-click on it to launch the X-Patch Remote software.

While the descriptions below provide an overview of X-Patch’s connections, the SSL website has some serving suggestions for a variety of operational contexts, to help you connect up your X-Patch in a way that gets the best out of it. Go to the SSL website, and select Products / Music / X-Patch for more information. The FAQ page there should also be able to answer any installation queries you may have.

Power, Audio and MIDI Connections
Plug the power cord and external mains adaptor into the POWER socket on the back of your X-Patch, taking care to avoid plugging power into the MIDI IN or MIDI THRU sockets.

Audio is connected to each X-Patch using standard Tascam DB25 format D-Connectors. The sockets on the front of the unit provide additional local connections for input and output 1 and 2. The inputs are combi connectors which are able to take XLR or 1/4” jack connectors.

Please note that the XLR inputs on the Combi connectors are paralleled with their respective inputs on the rear D-Connectors. As such only the XLR or the D-Connector input should be connected at any one time. Unlike the Combi XLRs, the Combi Jack sockets override the rear D-Connector inputs.

If you are building your own audio cabling, the pin-outs for the 25-way D-Connectors are described towards the back of the Installation Guide.

Note that the Preset Editor shown on Page 9 displays the 16 outputs as four rows of four boxes. It may be worth connecting up your X-patch in a way that gives you an intuitive layout in the display – connecting outboard gear to inputs / outputs 1-8 and channel inserts to inputs / outputs 9-16 would be an example.

MIDI IN and MIDI THRU sockets are provided for connecting a standard MIDI pedal, used for changing between routing Presets.

Front Panel

Back Panel
Remote Control Connections

X-Patch connects to the X-Patch Remote’s computer via Ethernet. Single X-Patches can be connected directly to the computer. However, for more complex setups, including setups involving multiple X-Patch units, it is also possible to connect X-Patches via a standard Ethernet hub.

Configurating Direct Connections

For direct connections to a single X-Patch, use a standard Ethernet cable to connect the computer to the X-Patch and switch the unit on using the power switch on the front panel. Normally, the X-Patch will be displayed as Online after a few seconds, as indicated in the bottom left-hand corner of the Remote window:

However, the first time the connection is made, you will need to click on the Locator button beside the status display in the Remote window (shown above) to open the Find pop-up:

Wait a few seconds and click on the Find button to scan for the X-Patch. It should appear in the pop-up’s list, with its serial number displayed in the left-hand (‘Product’) column. Its Status should be displayed as Online. The firmware Version is also displayed, along with any pre-assigned user Name (initially simply set to ‘X-Patch’) and any browser Tab allocation.

See Page 12 for details of how to give each X-Patch a custom name.

Click on the Select box at the right-hand end of the row, and press the Close button to close the Find pop-up. The status of the X-Patch is shown in the Remote browser, to the right of the Locator button, and should now display X-Patch online. The X-Patch should now be configurable within the first X-Patch Selector tab. (See Section 3 for more details)

If the X-Patch Remote is unable to locate the X-Patch, check that the Ethernet cable is properly plugged in. (If the Ethernet cable is working correctly, the two lights above the NETWORK connector on the X-Patch back-panel should be lit or flashing)

Note that X-Patch is initially set to a static IP address, as required for direct connections. If the Remote is unable to locate X-Patch, and if the unit has been used elsewhere, it is possible that the unit’s network settings have been changed to DHCP, removing the ability to connect directly. To change the IP address back to static, connect the unit via an Ethernet hub and enter the Network tab of the X-Patch’s Setup window (as described on the following pages). Select the Use Static IP settings radio button and insert sensible IP settings such as those shown in the picture on Page 8.

It is recommended that any Wi-Fi connection is switched off when using a direct connection.
Configurating Connections Via a Network Hub

If you are configuring more than one X-Patch, go through the following process with each unit individually, so that each can be been switched to DHCP or be assigned a unique static IP address, before connecting them all together.

If connecting via an Ethernet hub, connect the computer and X-Patch to the hub. (While the X-Patch must be connected using an Ethernet cable, the computer can be connected over Wi-Fi if required.) Switch the unit on using the power switch on the front panel, and click on the Locator button found in the bottom left-hand corner of the Remote window:

The Find pop-up will open. Wait a few seconds and click on the Find button to scan for the X-Patch. It should appear in the pop-up's list, with its serial number displayed in the left-hand ('Product') column. Its Status should be displayed as Online. The firmware Version is also displayed, along with any pre-assigned user Name (initially simply set to ‘X-Patch’) and browser Tab allocation.

See Page 12 for details of how to give each X-Patch a custom name.

Click on the Select box at the right-hand end the row, and press the Close button to close the Find pop-up. The status of the X-Patch is shown in the Remote browser, to the right of the Locator button, and should now display X-Patch online.

If the X-Patch Remote is unable to locate a directly-connected X-Patch, check that the Ethernet cable is properly plugged in. (If the Ethernet cable is working correctly, the two lights above the NETWORK connector on the X-Patch back-panel should be lit or flashing)

The unit’s IP address now needs to be set to DHCP. To do this, ensure that the first X-Patch tab is selected (as shown below), and click on the Setup button in the top-right corner of the central area of the Remote's window:
In the **X-Patch Setup** pop-up, select the **Network** tab.

- Click on the **Use DHCP** radio button to allow the unit to be dynamically assigned an IP address.
- Press the **Save** button (which will remain greyed out and unavailable if no change has been made).
- In the subsequent **Warning** pop-up, press the **OK** button to confirm your change(s).
- Quit and restart the X-Patch Remote.
- Switch off the X-Patch and switch it back on. If the X-Patch is not automatically located, use the Locator button and **Find** pop-up to locate it.

If you need to use static IP addresses over an Ethernet hub, then ensure that each X-Patch is given a unique IP address (most simply done by incrementing the number in the last **IP Address** box), and ensure that none of these numbers conflict with the IP addresses of any other equipment on the network.

**Configuration of Multiple X-Patches**

If you are setting up multiple X-Patches, a network hub must be used. Go through the process above for each unit individually. Once each is set to **Use DHCP**, connect all of the X-Patches to the hub and click on the Locator button in the bottom left-hand corner of the screen.

Once the **Find** pop-up opens wait a few seconds and click on **Find** to scan for X-Patches. All X-Patches should appear in the pop-up’s list, distinguished by the serial number displayed in the left-hand (‘**Product**’) column (as shown on the back of the unit). The **Status** of each X-Patch should be displayed as **Online**.

Note that any X-Patches which were previously connected but are not now available will be shown in the list, with their status set to **Offline**.

Click on the **Select** box at the right-hand end of each X-Patch row, in the order in which you wish them to occupy the tabs in the window. Each X-Patch will be assigned to the right-most available tab. When all X-Patches have been selected, press the **Close** button to close the **Find** pop-up.

The status of connected X-Patches is shown in the Remote browser, to the right of the locator button: **X-Patch online** indicates that all X-Patches are correctly connected. If any X-Patch goes offline, **X-Patch offline** is displayed. The X-Patch which is offline will display **Offline** in place of the X-Patch name in its Selector tab.
3. X-Patch Remote Operation

Remote Overview
X-Patch is controlled entirely from a networked computer using the X-Patch Remote. When the Remote is opened, a window similar to that shown below will appear.

See Section 2 for information regarding configuring the X-Patch Remote’s connections

Across the top of the window (below the X-Patch image), there are eight tabs, the first six of which are used to select which X-Patch is being configured in the rest of the window. The seventh tab (“Backup”) is used for backing up and restoring routing Configurations, while the last tab on the right (“About”) displays essential hardware and software information, and provides useful links to parts of the SSL website.

The active routing Preset is selected by double-clicking on an entry in the scrollable list in the right-hand side of the window, and is displayed in the Preset Editor in the central area of the window. The Chain Editor (used for creating chains of inputs and outputs which can be routed as one) is located across the bottom of the window, and the Chain which is being edited is selected using the scrollable list in the left-hand side of the window.
Backup, Restore and Clear

It may not be important to save complete X-Patch Configurations, because the X-Patch Remote will always re-open in the Configuration it was in when it was closed. However, Configurations can be saved as an .xml file to any location accessible via your computer, for purposes of transfer or security. The saved file includes the 128 Chains and Presets as well as the Setup window's settings, for all X-Patches connected to the Remote.

*Note that the Save functions within the Chain and Preset Editors refer only to the Configuration currently active in the Remote – if changes need to be included in any backed up files, including the one from which the current Configuration was loaded, those files will need to be backed up again.*

Backup and restore functions are accessed by clicking on the Backup tab towards the right-hand end of the row of tabs in the Remote.

Pressing the Backup or Restore buttons, located towards the top left-hand corner of the window, will open a standard load/save pop-up. To create a backup of the configuration, press the Backup button, use the file directory controls across the top of the pop-up to define the backup location, name the file in the box below the file list, and press Save. To restore a Configuration that has been backed up, press the Restore button, use the file directory controls to locate the file, select it so that its name appears in the box below file list, and press Open.

The file directory can be navigated as follows:

- The current folder location is displayed in the box at the top of the pop-up.
- The arrow to the right of the current location can be used for viewing the folder’s location within the computer’s folder architecture, or for moving back up through the folder levels.
- The buttons to the right of the folder’s name function as follows:

  - Move up one folder level
  - Return to top level
  - New Folder
  - Icon View
  - List View

The Configuration can also be completely cleared using the Clear All function in the Backup window: Press the button and then press OK in the warning pop-up which appears.

*Note that when Clear All is used, the only user elements that are retained are the X-Patch names.*
X-Patch Setup
The following pages describe the defining of inputs and outputs, and the creation of Chains and Presets. Due to the interaction of signals and Presets, completing this setup stage in the order it is described here will keep the process as simple as possible.

Defining Inputs and Outputs
Before signals can be routed, X-Patch’s intelligent routing needs to be set up. In other words, the relationship between each input and its corresponding output needs to be defined. Each input/output pair can be treated as independent signals, as connections to a console channel’s insert circuit, or as the send and return to a piece of outboard equipment. (See the table below for more details)

To define an X-Patch’s input / output types, ensure that the correct X-Patch tab is selected, then press the Setup button in the top right-hand corner of the Preset Editor area of the window. In the Setup window which appears, select the Channels tab:

![Setup Window]

Each row in the display represents one of the 16 input/output pairs, with each input (Source) down the left-hand side and each output (Destination) down the right. The three central columns of radio buttons are used to define the intelligent routing relationship between the input and output on that row, as summarised below:

<table>
<thead>
<tr>
<th>I/O Type</th>
<th>Connected to...</th>
<th>Intelligent Routing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlinked</td>
<td>...signal sources and destinations which are not related to each other</td>
<td>Inputs and output pairs are treated as entirely independent connections.</td>
</tr>
<tr>
<td>Device</td>
<td>...the input and output of an outboard signal processing unit</td>
<td>Inputs and outputs are routed together when routed within the Chain Editor, or when routed to an Insert Return within the Preset Editor. They are otherwise treated as separate connections. See Page 15 for more details.</td>
</tr>
<tr>
<td>Insert</td>
<td>...console channel insert send and return</td>
<td>When a Device Source is routed to an Insert Return, that Insert Send is automatically routed to that Device Destination. However, when Unlinked inputs are routed to Insert Returns (or when Insert Sends are manually routed), no intelligent routing is performed.</td>
</tr>
</tbody>
</table>
Each input and output can be switched between +4dBu and –10dBu operating level by checking the –10dBu box.

Inputs and outputs can also be named by clicking on its text box and entering new text. Preset names are limited to a maximum of twelve characters.

*Note that any input or output that has already been assigned to a chain or a preset will be unavailable for editing in the Setup window.*

When you have finished with the Setup display, press the Close button at the base of the display.

**Naming an X-Patch**

It is possible to give an X-Patch a custom name. This name will appear in the X-Patch’s tab label in the main Remote window, as well as in the Name column of the X-Patch Find pop-up.

This can be done by opening the Setup display and selecting the Network tab. Click on the text box towards the top of the display (which initially displays ‘X-Patch’) and enter the new name – the new name is used immediately.

When you have finished with the Setup display, press the Close button at the base of the display.
Chains

A sequence of inputs and outputs can be routed together by creating Chains. For example, if you have a particular mic pre-amp, compressor and EQ combination you like to use on vocals of a particular genre, you could have a Chain that includes those three Devices. Up to six devices (or an unlinked source and five devices) can be included in a Chain, and 128 Chains can be stored within a Configuration. Complete Chains can then be routed to a destination in one action in the Preset Editor (see Page 15). Chains become unavailable once any of the items included within them is employed elsewhere within the active Preset.

Chains are displayed in the scrollable list in the left-hand side of the main Browser window. Chain colours indicate the following:

<table>
<thead>
<tr>
<th>Chain colour</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greyed out</td>
<td>Chain is blank</td>
</tr>
<tr>
<td>Black</td>
<td>Chain is configured but not in use</td>
</tr>
<tr>
<td>Blue</td>
<td>Chain is in use within one or more of the Configuration's Presets</td>
</tr>
<tr>
<td>Red</td>
<td>Chain is in the process of being edited.</td>
</tr>
</tbody>
</table>

Creating Chains

To create a Chain in any location within the Chains list, or to edit a Chain which has already been created, double-click its entry in the list, or right click (ctrl+click) on a Chains list entry and select Edit Chain from the drop-down menu. The Chain will appear in the Chain Editor, located across the base of the Browser window. The Chain's entry in the Chains List will now be in bold, and any Presets to which the Chain is assigned will be displayed in the Presets List in blue.

Note that you cannot edit Chains while there are unsaved changes to the Preset in the Preset Editor. Press the Save button in the top left-hand corner of the Preset Editor to enable Chain editing.

The six boxes across the middle of the Chain Editor represent the Devices to be included in the Chain, and the Chain's processing order is from left to right. Any X-Patch input can be assigned to Box 1. However, because each subsequent item in the Chain has to have a return associated with its send, only Devices can be placed in the remaining boxes. To place a Source into the Chain, click on a box and select the required Source from the drop-down list. Regardless of the box used, the left-most available box will be filled.

When the Replace Devices box (in the top right-hand corner of the Chain Editor) is checked, selecting a new Device in a box which already contained one will cause the old assignment to be replaced. When the Replace Devices box is unchecked, selecting a new Device in a box which already contained one will cause the old assignment to move one box to the right, along with any other the assignments further to the right. Any old assignment that had been in Box 6 will be lost.

Once you have completed creating or editing a Chain, press the Save button in the top left-hand corner of the Chain Editor to overwrite the Chain in the currently selected entry in the list. To save the Chain as a new Chain, press the Save New button – the Chain will be saved to the next available entry in the Chains list, and the new entry in the list will now be active in the Chain Editor.

Note that if you edit a Chain which is already included in any Preset, you can only save it to a new location – the current entry in the Chains list cannot be overwritten while it is active.
To return a Chain to its most recently saved state, press the **Undo** button next to the **Save New** button.

To clear the Editor without saving changes to the Chain, press the **Close** button next to the **Undo** button.

To preview the contents of a Chain without opening it in the Chain Editor, hover the mouse over an entry in the Chains List. A text box appears displaying the Chain's routes.

**Naming Chains**

To give a Chain a custom name, right click (ctrl+click) on the **Chains** list entry and select **Rename Chain** from the drop-down menu to open the **New Name** pop-up. Enter the new name in the text box and press **OK**.

![New Name Pop-Up](image)

**Deleting Chains**

To delete a Chain, right click (ctrl+click) on the **Chains** list entry, select **Delete Chain** from the drop-down menu and press **OK** in the warning pop-up which appears.
Presets
Once all the inputs and outputs have been setup and all the chains have been created, you can start to define the routes within each Preset.

Note that if you configure Presets before the Channels and Chains setups are complete, these setup processes may become severely restricted.

Presets are displayed in the scrollable list in the right-hand side of the main Browser window. Preset colours indicate the following:

<table>
<thead>
<tr>
<th>Preset colour</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greyed out</td>
<td>Preset is blank</td>
</tr>
<tr>
<td>Black</td>
<td>Preset is configured</td>
</tr>
<tr>
<td>Blue</td>
<td>Preset uses the Chain currently assigned to the Chain Editor</td>
</tr>
<tr>
<td>Red</td>
<td>Preset is in the process of being edited.</td>
</tr>
</tbody>
</table>

Creating Presets
To create a Preset in any location within the Presets list, or to edit a Preset which has already been created, double-click its entry in the list, or right click (ctrl+click) on a Presets list entry and select Load Preset from the drop-down menu. The Preset will appear in the Preset Editor in the centre of the Browser window. The entry in the Presets list will display in bold.

Note that you cannot edit Presets while there are unsaved changes to a Chain in the Chain Editor. Press the Save button in the top left-hand corner of the Chain Editor to enable Preset editing.

The 16 Destinations (or Outputs) available to the X-Patch are displayed in the Preset Editor as four rows of four rectangular boxes, with Destination names displayed across the top half of the box. Any currently routed source is displayed in the box below the Destination label. The name of any Device Destination which has already been assigned within the Preset (as part of an active Chain) will be greyed-out. Each box goes dark red when the mouse hovers over it.

To create a route, click on the down arrow at the right-hand end of the Source display within the appropriate Destination box. In the drop-down list which appears, move the mouse to the Sources or Chains entry, and then click on the appropriate entry in the sub-list which appears. Unavailable Sources and Chains will be greyed-out in the list – Sources are unavailable if they are assigned elsewhere, either independently, or using Chains or intelligent routing.

To remove a routing assignment, select None from the drop down list. To clear all of the routing assignments within the Preset, select Clear All Routes from the drop down list and press OK in the warning pop-up which appears.

To give a Preset a custom name, right click (ctrl+click) on the Presets list entry and select Rename Preset from the drop-down menu to open the New Name pop-up. Enter the new name in the text box and press OK.

Note that the name of a Preset which has not been manually named will always reflect the row the Preset is in within the Presets list. If their position within the list is changed, their name will also change.
Once you have completed creating or editing a Preset, press the **Save** button in the top left-hand corner of the Preset Editor to overwrite the Preset in the currently selected entry in the list. To save the Preset as a new Preset, press the **Save New** button – the Preset will be saved to the next available entry in the **Presets** list, and the new entry in the list will now be active in the Preset Editor. To return a Preset to its most recently saved state, press the **Undo** button in the top right-hand corner of the Preset Editor.

To preview the contents of a Preset without assigning it to the Preset Editor, right click (ctrl+click) on the **Presets** list entry to be previewed and select **Preview Preset** from the drop-down menu. A separate pop-up will open displaying the Preset’s routes.

**Editing the Presets List**

It is possible to alter the order in which Presets appear in the list. This is particularly useful if you are using MIDI to control Preset changes, as the position of a Preset in the **Presets** list is also its Program number.

To move a Preset up or down the **Presets** list, right click (ctrl+click) on the **Presets** list entry to be moved and select **Move Up** or **Move Down** from the drop-down menu. The selected Preset will be swapped with the Preset adjacent to it in the list.

To copy a Preset to a new location, right click (ctrl+click) on the **Presets** list entry to be moved and select **Copy Preset** from the drop-down menu. Now right click (ctrl+click) on the destination **Presets** list entry and select **Paste Preset** to paste the contents of the Preset to be moved into the new location.

To swap the positions of the two Presets, right click (ctrl+click) on the **Presets** list entry to be moved and select **Swap From** from the drop-down menu. Now right click (ctrl+click) on the other **Presets** list entry to be swapped, and select **Swap To**.

*Note that using the **Copy Preset** function moves the contents of the Preset without changing the name of the destination Preset. Also note that using the **Paste Preset** function to paste into a list entry which is already occupied will cause the previous occupant to be overwritten.*

**Deleting Presets**

To delete a Preset from the list, right click (ctrl+click) on its **Presets** list entry and select **Delete Preset**. The entry in the **Presets** list will become blank.

*Note that when moving a Preset which has not been manually named, the Preset’s name changes to reflect its position in the Presets list.*
Selecting Presets using MIDI

MIDI Program Change messages can be used to switch an X-Patch between routing Presets. This requires a MIDI controller to be connected to the **MIDI IN** socket on the back of X-Patch. This might be a MIDI pedal, or even a MIDI channel in your Digital Audio Workstation (such as Protools or Logic). The **MIDI THRU** socket can be used to connect more than one X-Patch to the same MIDI controller. Each Preset's Program number is the same as its position in the **Presets** list. For example, if a Preset is in position 112 in the **Presets** list, it can be activated using the Program Change 112 control message.

*Note that because the Presets list is numbered 1-128, MIDI Program Change 0 does nothing, and Preset 128 in not accessible via MIDI Program Change messages.*

To define the MIDI channel being used to control each X-Patch, press the **Setup** button in the top right-hand corner of appropriate tab's Preset Editor and select the **Midi** tab:

![Xpatch Setup Midi](image)

Click on the box to the left of the **Enable Midi** legend to enable MIDI control (an X in the box indicates that MIDI control is enabled), and then select the appropriate MIDI channel by pressing the down arrow next to the **Channel** number and selecting the appropriate channel from the drop-down list.

*Please refer to your MIDI controller's user guide for more information regarding the use of Program Change messages.*