

X75HD/X75SD Module and Local Control Panel Installation Note

Overview

This X75HD/X75SD module installation note includes the following procedures:

- [“Removing and Replacing the Chassis Cover”](#) on page 2
- [“Removing a Filler Plate”](#) on page 2
- [“Installing a Frame-Mounted Local Control Panel”](#) on page 3
- [“Installing an Audio Synchronizer Module, HDTV Module, or a Decoder Module”](#) on page 4
- [“Installing Dolby Modules”](#) on page 5
- [“Installing and Removing the Streaming Module”](#) on page 8
- [“Installing a Redundant Power Supply”](#) on page 12
- [“Connecting Analog Audio”](#) on page 13

You can find detailed installation instructions in “System Installation and Connections” and in “Servicing Instructions” in the *X75HD/X75SD Multiple Path Converters and Frame Synchronizers Installation and Operation Manual*.

Removing and Replacing the Chassis Cover



Caution

With the power cord disconnected, the unit is no longer grounded. Be aware of possible damage caused by static electricity. Some X75HD/X75SD units use a split cover, making it possible to install a power supply without removing the X75HD/X75SD from the rack.

Before installing any hardware options, follow these steps:

1. Read and heed the safety precautions outlined in the Preface of the *X75HD/X75SD Multiple Path Converters and Frame Synchronizers Installation and Operation Manual*.
2. Confirm that the X75HD/X75SD is turned off and that the power cord is disconnected from the rear panel.
3. Use a Phillips screwdriver to remove the retaining screws on the chassis cover. Keep the screws, as they will be needed to replace the top cover.
4. Lift off the chassis cover from the X75HD/X75SD.
5. Install the X75HD/X75SD modules, as described in this document.
6. Replace the top cover, using the original screws.
7. Plug the power cord back in.

Removing a Filler Plate



Caution

Prior to operation, a module or blank filler plate must be installed in all slots to maintain proper ventilation and avoid overheating.

To remove a back panel blank filler plate prior to installing a new module, follow these steps:

1. Remove the frame's chassis cover, as described on [page 2](#).
2. Remove the screws from the blank filler plate on the rear panel where the new module is to be installed. Retain the screws for later use.
3. Remove the filler plate.
4. Install the new module prior to operation.

Installing a Frame-Mounted Local Control Panel



Caution

To prevent damage to the control panel, you must unplug the X75 before beginning the installation.

The field retrofit kit (X75OPT-LCP) for the local control panel includes a new fan module. You will not need to retain the fan module from the blank front panel. To remove a blank front panel and replace it with a frame-mounted local control panel, follow these steps:

1. Remove all power from the X75HD/X75SD unit.
2. Remove the mounting ear screws that secure the X75HD/X75SD to the rack, and then slide the unit forward.
3. Remove the seven screws along the top of the blank front panel that hold the panel to the frame.
Retain the screws.
4. Remove the seven screws along the bottom of the blank front panel that hold the panel to the frame (do *not* remove the line of four screws that secure the fan module).

See [Figure 1](#) below.

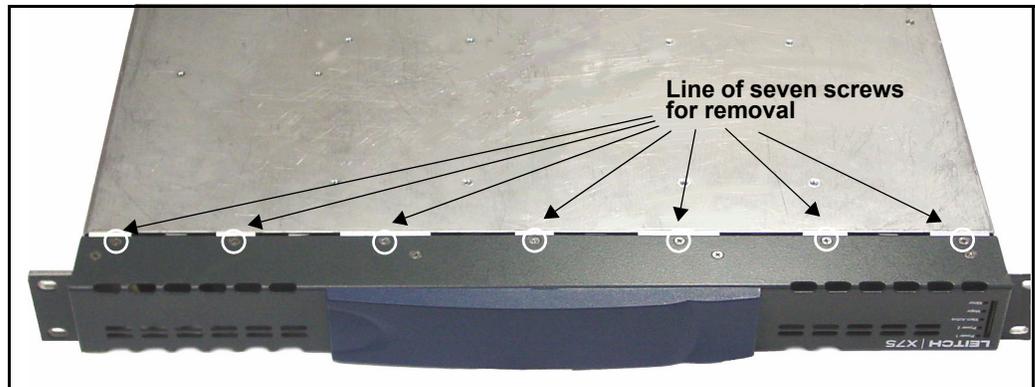


Figure 1. Removing the Bottom Front Panel Screws

5. Pull the blank front panel from the unit.
6. Carefully insert the new front panel, ensuring that you align the connector pins located behind the VFD.
7. Replace the screws on the bottom and top of the unit.
8. Reconnect all cabling, and restore power.

Installing an Audio Synchronizer Module, HDTV Module, or a Decoder Module

To install an audio synchronizer module (X75OPT-AS-8, X75OPT-AS-8-L; X75OPT-AS-16, X75OPT-AS-16-L; X75OPT-AS-32, or X75OPT-AS-32-L), an HDTV module, or a decoder module (X75OPT-A3D and X75OPT-PQM) in an X75HD/X75SD frame, follow these steps:

1. Remove the chassis cover and the back panel blank filler plate, as described on [page 2](#) and above.

2. Remove the module from the packaging.

Each package includes one module, the appropriate number of stackers, and standoff screws.

The number of stackers per module is as follows:

- Audio Synchronizer: four
- HDTV: seven
- Decoder: three

3. Turn the module upside down and insert the stackers into the corresponding connectors on the underside of the module.

(See [Figure 2](#) for the stacker positions)

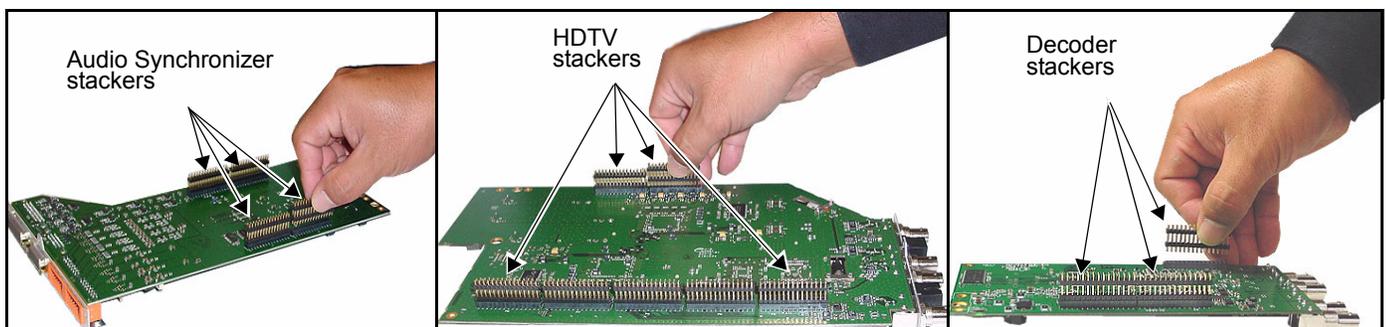


Figure 2. Connecting Stackers to Audio Synchronizer, HDTV, and Decoder Modules

4. Return the module to its upright position, and then align it with the appropriate standoffs attached to the main board.
5. Push the module gently over the stacker connection points until they lock firmly into place.
6. Secure the new module to the main board standoffs using the screws provided.
7. Screw the back panel into place using the original filler plate/back panel screws.
8. Reinstall the chassis cover using the original chassis screws.

Installing Dolby Modules

To add an X75OPT-DOLBY-1 decoder module or an X75OPT-DOLBY-2 encoder module, you must first remove the existing audio submodule or HD module, respectively, from the main board. Afterwards, the installation consists of two phases: hardware and softkey.

Hardware Installation

The installation process for the decoder and encoder modules is similar, except that the HD submodule (rather than the audio submodule) must be removed to insert the encoder. See [Figure 1-1](#) for the location of the two Dolby modules.

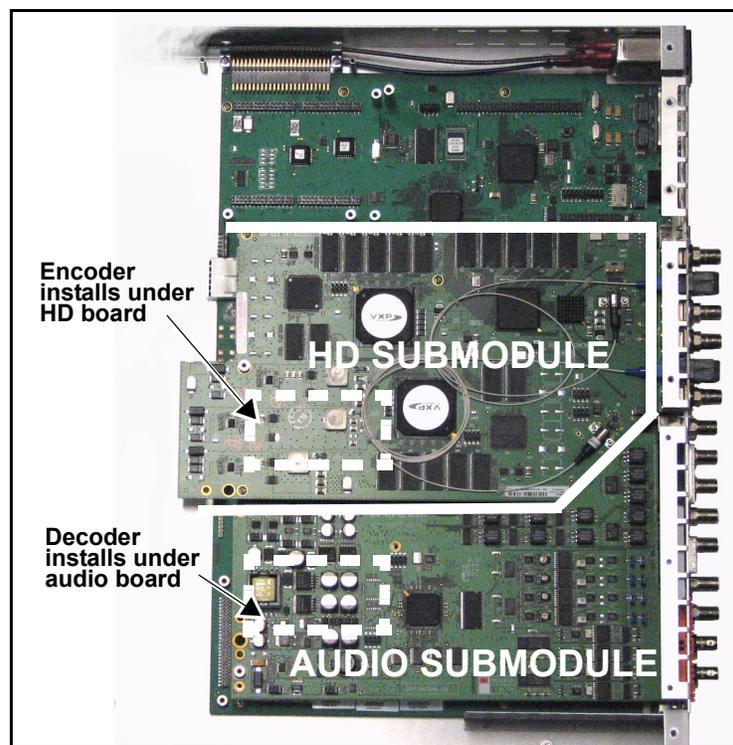


Figure 1-1. Location of Dolby Decoder and Encoder

The following instructions describe the installation of the decoder (except for the location, the instructions are the same as for the encoder):

1. Remove the screws along the back edge and each side of the frame's chassis cover (see [Figure C-2 on page 275](#)), and then slide the cover off.
Retain the screws for later use.
2. Remove the three rear connector screws that secure the audio submodule to the frame.
See [Figure C-9 on page 281](#) to locate these screws.
3. Remove the three screws that secure the audio submodule to the main board.
See [Figure C-8 on page 281](#) to locate these screws.

4. Gently lift the audio submodule off of the main board.
Be sure to lift the module off evenly to prevent the stacker connector pins from bending or breaking.
5. Inspect the connectors on the module and main board to ensure that all pins are straight.
6. Insert the Dolby decoder module into the socket. (See [Figure 1-2](#) on page 6.)

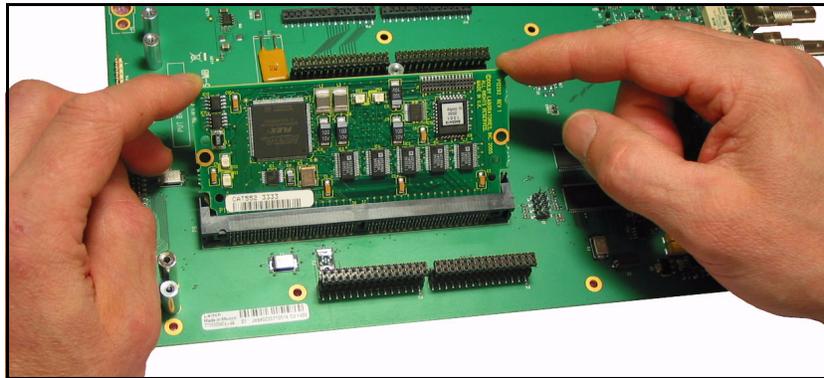


Figure 1-2. Inserting Dolby Decoder Module into Socket

7. Press the module edges down slowly until you hear the metal clips click. (See [Figure 1-3.](#))

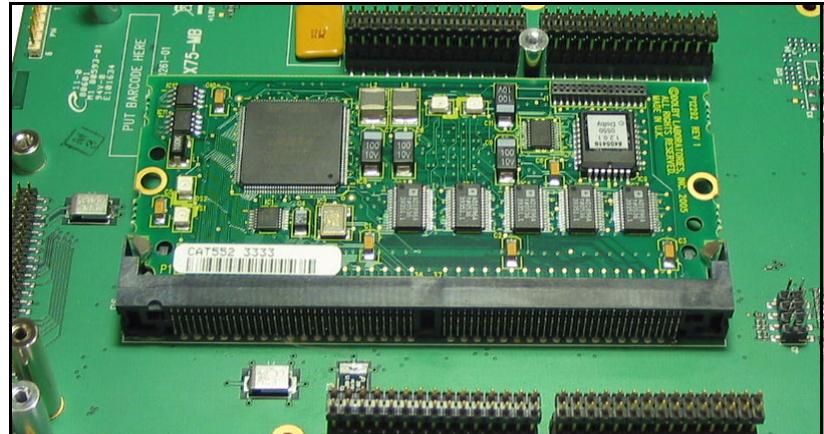


Figure 1-3. Dolby Decoder Module Installed

8. Gently reinstall the audio module above the Dolby decoder, using all of the screws provided.

Data Port Information

Note

Dolby audio metadata is typically an RS-485 balanced multi-drop interface. For the audio metadata implementation in the X75, either an unbalanced RS-232 or balanced RS-422 single drop interface is provided.

The X75OPT-DOLBY-1 decoder and X75OPT-DOLBY-2 encoder modules connect to the **RS-232/422** port located at the back of the X75HD/X75SD unit. Both modules use the same port, but are connected to different pins in this DB-9 connector (see [Figure 2](#) below and [Table 1](#) on page 7).



Figure 2. Data Port Pinouts

Table 1. Data Port Pinouts

Audio Metadata	Module	Pins	Serial Interface
Output	X75OPT-DOLBY-1 Decoder	2 (TX+) and 5 (Ground)	RS-232
		2 (TX+) and 7 (TX-) and 5 (Ground)	RS-422
Input	X75OPT-DOLBY-2 Encoder	3 (RX-) and 5 (Ground)	RS-232
		3 (RX-) and 8 (RX+) and 5 (Ground)	RS-422

To change the serial interface on this port, follow this parameter path:

System Config > Setup > RS-232 or RS-422
(The default setting is RS-232.)

Softkey Installation

The Dolby decoder requires a softkey code to operate. The softkey can be entered using the control panel or the Web Server software application. Follow these instructions to enable the softkey option:

1. Go to the **System Config > Setup** menu and select the **License Key** parameter.
2. Enter the fourteen license key characters and then press **Enter**.

Installing and Removing the Streaming Module

Installing a New Module



Caution

This module is not hot-swappable. To prevent damage, ensure that the power to the X75 is off before inserting or removing the module.

This module requires version 1.7 or later X75 firmware.

If you have ordered an X75OPT-STR streaming module separately, follow these installation steps:

1. Inspect the connectors on both the module and the main board to ensure that all pins are straight, and then push the board gently over the main board stacker connection points until they lock into place.

[Figure 3](#) illustrates the area of the module you should push to lock the stackers into place.

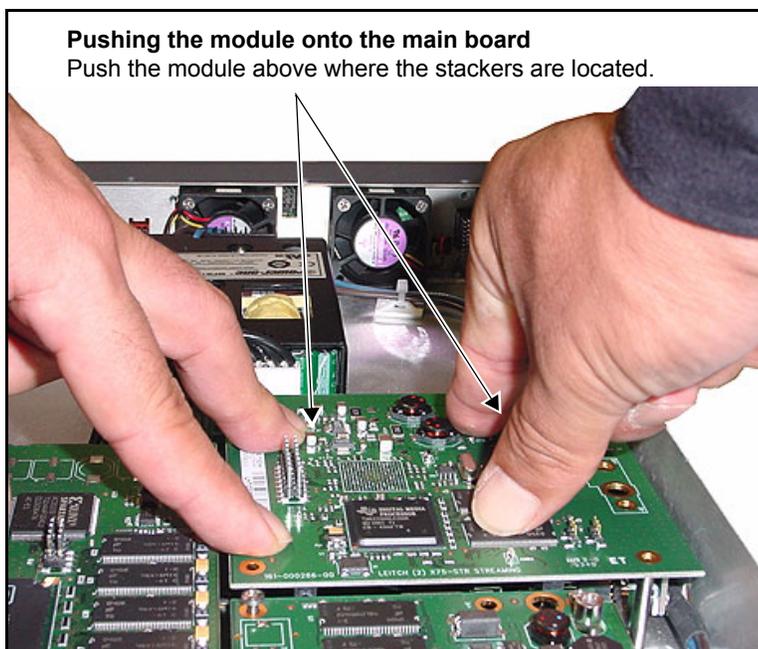


Figure 3. Pushing the Module on to the Main Board

2. Secure the new module to the main board using the provided screws.

[Figure 4 on page 9](#) illustrates the location of the three module standoffs where you must install the screws.

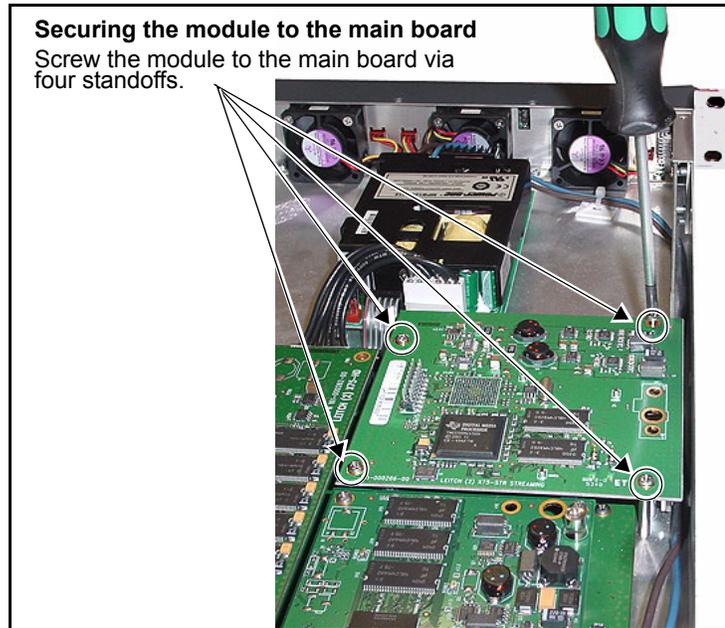


Figure 4. Securing the Module to the Main Board

3. Replace the chassis cover using the original screws. See [page 2](#) for more information on replacing the cover.
4. Using the control knob interface, follow this path to reach the streaming module's network address parameters:

High End Streaming>Network Settings

5. Make the necessary **Gateway**, **Subnet Mask**, and **IP Address** settings in the **Network Settings** parameters, as shown in [Table 2 on page 10](#), and then select **Save IP>Yes**.

The default settings are:

- Gateway: (192.168.100.1)
 - Subnet Mask: (255.255.255.0)
 - IP Address: (192.168.100.252)
6. On a computer linked via Ethernet to the X75HD/X75SD, visit www.apple.com and then download the free QuickTime™ version 7 player.
 7. Launch QuickTime Player, click **File**, and then click **Open URL**.
 8. Type the following text into the **Open URL** field (where **ipaddr** represents the IP Address of the streaming module):

```
rtsp://ipaddr:554/X75streaming
```

The QuickTime player should begin receiving streaming media from the X75HD/X75SD after a delay of 4 seconds.

Table 2. Streaming Module Settings

Main Menu	High End Streaming		VBR Quality (1 to 10)
	Bit Rate	Control Mode	Variable
			Fixed
			Fixed Bit Rate (200 Kbps to 1 Mbps)
	Network Settings	Streaming IP	(Enter number)
		Subnet Mask	(Enter number)
		Gateway	(Enter number)
		Save IP	Yes
			No
	Video Output	Enable	
		Disable	
	Audio Output	Enable	
		Disable	

Removing an Existing Module

If you must remove an existing streaming module from a unit, follow these steps:

1. Remove the screws along the back edge and each side of the frame's chassis cover, and then slide the cover off.
Retain the screws for later use.
2. Remove the three screws that secure the module to the main board.
See [Figure 4 on page 9](#) to locate these screws.
3. Gently lift the module off of the main board.
Be sure to lift the module off evenly to prevent the stacker connector pins from bending or breaking.
4. Inspect the connectors on the module and main board to ensure that all pins are straight.
5. Store the board in a protective bag to protect it from damage or ESD

Launching QuickTime in CCS Pilot and Navigator

The streaming video output is viewable using QuickTime Player directly, or via QuickTime in CCS Pilot and Navigator. (Version 7.0 of the player must be installed.)

In CCS Pilot and Navigator, you can add the streaming video module as a device icon in the **Navigation** window. In CCS Navigator only, you can view the streaming video either by adding a device icon in the **Navigation** window, or by installing a button on a Graphical Navigator page.

Adding Streaming as a Device Icon in the Navigation Window

To add a device icon to launch X75 streaming video, follow these steps:

1. With Pilot or Navigator in Build mode, right click in the **Network**, **Discovery**, or **Temporary** folder of the Navigation window, and then select **Create > Server**.

This will create a **Server** icon in the **Navigation** window.

2. Right-click on the server icon and select **Properties...** from the menu that appears.

The **Navigation Properties** dialog box opens.

3. Select the **Command** tab, and fill it in with the following information:

Operation: Control

Command: c:\program files\quicktime\quicktimeplayer.exe

(Or the complete path to your QuickTime Player installation, if it differs from the above)

Arguments: rtsp://[IP address]:554/x75streaming

(Replace [IP address] with the IP address of the X75 streaming Ethernet port)

You can leave the **Initial Directory** field blank.

4. Close the **Navigation Properties** dialog box by clicking the **Close** button in the top right corner.

When you enter Control mode, double-click on the server icon. This will open a QuickTime Player and play streaming video from the X75.

Adding Streaming via a Button in Navigator

To add a button to launch X75 streaming video, follow these steps:

1. With Navigator in Build mode, place a button on a Graphical Navigator page.
For information on creating buttons, see “Adding Buttons” in the CCS Navigator online help.

2. Right-click on the button and select **Properties...** from the menu that appears.

The **Object Properties** dialog box opens.

3. Select the **Rules** tab, and then click the **New Rule** button.

A new line appears in the Rules table.

4. In the new rule’s Event list, select **OnMouseClicked**.

The default Condition setting for this event is **Always**; you can leave that as it is, or you can change it by clicking the **Condition** button. See “Defining Condition” in the CCS Navigator online help for information on completing the Condition dialog box.

5. From the new rule's Action list, select **Launch Application**.
6. Click the **Action Properties** button.
The **Action Property** dialog box opens. Fill it in with the following information:
 - **Command:** `c:\program files\quicktime\quicktimeplayer.exe`
 - **Arguments:** `rtsp://[ip address]:554/x75Streaming`You can leave the **Initial Directory** field blank.
7. Click OK to close the **Action Properties** dialog box.
8. Close the **Object Properties** window by clicking the X in the top right corner.
When you enter Control mode, the new button will open a QuickTime Player and play streaming video from the X75.

Installing a Redundant Power Supply

This procedure describes the installation of a new redundant power supply when there is only one power supply currently in the frame. As seen from the front, a redundant power supply is mounted on the right side of the frame. Follow these steps to install a redundant power supply:

 **Note**

If the HD submodule is installed, you may need to remove it first before connecting the DC cables.

1. Remove all power from the frame, and then remove the chassis cover, as described on [page 2](#).
2. Install the power supply onto the four standoffs on the chassis floor, and then screw the power supply into place.
The two-pin AC cable connector faces the front of the chassis, while the two six-pin DC cable connectors face the rear.
3. Connect one end of the main DC power cable and the secondary DC ribbon cable to the main board, and the other end of each cable to the power supply.
4. Plug the two-pin AC connector into the power supply, ensuring that the neutral wire is on the left side and the live wire is on the right, as seen from the front.

The AC polarity is as follows:

- Black/brown: live wire
 - White/blue: neutral wire
5. Secure the AC cabling to the chassis.
To do this, follow these steps:
 - a. Attach the self-stick tie holders to the chassis floor (two locations for each power supply's AC cabling).
 - b. Feed the tie wraps through the holders.
 - c. Wrap the tie wraps around the AC cabling.
 - d. Clip any extra tie length.
 6. Take off the AC inlet cover plate by removing the inlet cover screw on the chassis side, and then install the new AC inlet into the slot.

Ensure the following during installation:

- The ground plug on the inlet faces the outside chassis wall.
 - The AC inlet snaps securely into place.
- Securely plug the AC wires into the appropriate AC inlet blade terminals.
There are three wires: live (black/brown), neutral (white/blue), and ground (green/yellow). The live wire plugs above the neutral wire; the ground wire always plugs into the single row slot that is closest to the chassis wall.
 - Place the attached ring terminal on the end of the ground wire over the stud on the chassis floor, and then secure it into place with the supplied nut.
 - Reinstall the cover on the frame, and then return power to the unit.

You can find detailed installation instructions in “Appendix C: Servicing Instructions” in the *X75HD/X75SD Multiple Path Converters and Frame Synchronizers Installation and Operation Manual*.

Connecting Analog Audio

Figure 5 shows the connections you may need to make for your analog audio input and output.

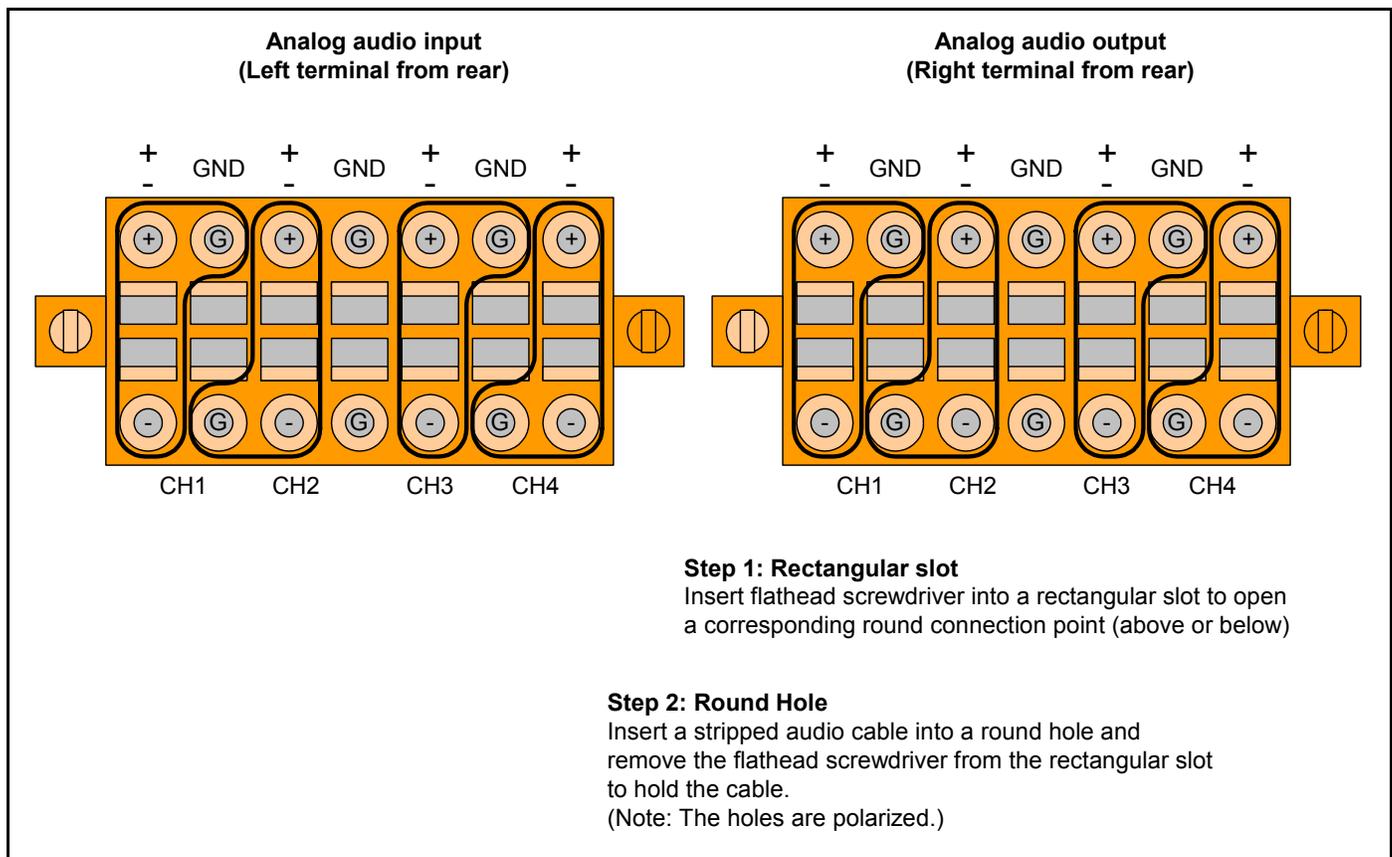


Figure 5. Analog Audio Input and Output Terminal Blocks