

XTP II CrossPoint Series

Configurable Digital Video Matrix Switchers



Extron

Safety Instructions

Safety Instructions • English

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ATTENTION: This symbol, , when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference. This interference must be corrected at the expense of the user.

ATTENTION: The Twisted Pair Extension technology works with unshielded twisted pair (UTP) or shielded twisted pair (STP) cables; but to ensure FCC Class A and CE compliance, STP cables and STP Connectors are required.

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Battery Notice

This product contains a battery. **Do not open the unit to replace the battery.** If the battery needs replacing, return the entire unit to Extron (for the correct address, see the Extron Warranty section on the last page of this guide).

CAUTION: Risk of explosion. Do not replace the battery with an incorrect type. Dispose of used batteries according to the instructions.

ATTENTION : Risque d'explosion. Ne pas remplacer la pile par le mauvais type de pile. Débarrassez-vous des piles usagées selon le mode d'emploi.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

 **WARNING:** Potential risk of severe injury or death.

AVERTISSEMENT : Risque potentiel de blessure grave ou de mort.

CAUTION: Risk of minor personal injury.

ATTENTION : Risque de blessure mineure.

ATTENTION:

- Risk of property damage.
- Risque de dommages matériels.

NOTE: A note draws attention to important information.

TIP: A tip provides a suggestion to make working with the application easier.

Software Commands

Commands are written in the fonts shown here:

```
^AR Merge Scene,,Øp1 scene 1,1 ^B 51 ^W^C.Ø  
[Ø1] R ØØØØ4 ØØØØØØØØØØØØØØØØØØØØ [Ø2] 35 [Ø7] [Ø3]  
Esc X1 * X17 * X20 * X23 * X21 CE ←
```

NOTE: For commands and examples of computer or device responses used in this guide, the character “Ø” is used for the number zero and “O” is the capital letter “O.”

Computer responses and directory paths that do not have variables are written in the font shown here:

```
Reply from 2Ø8.132.18Ø.48: bytes=32 times=2ms TTL=32  
C:\Program Files\Extron
```

Variables are written in slanted form as shown here:

```
ping xxx.xxx.xxx.xxx -t  
SOH R Data STX Command ETB ETX
```

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

From the **File** menu, select **New**.

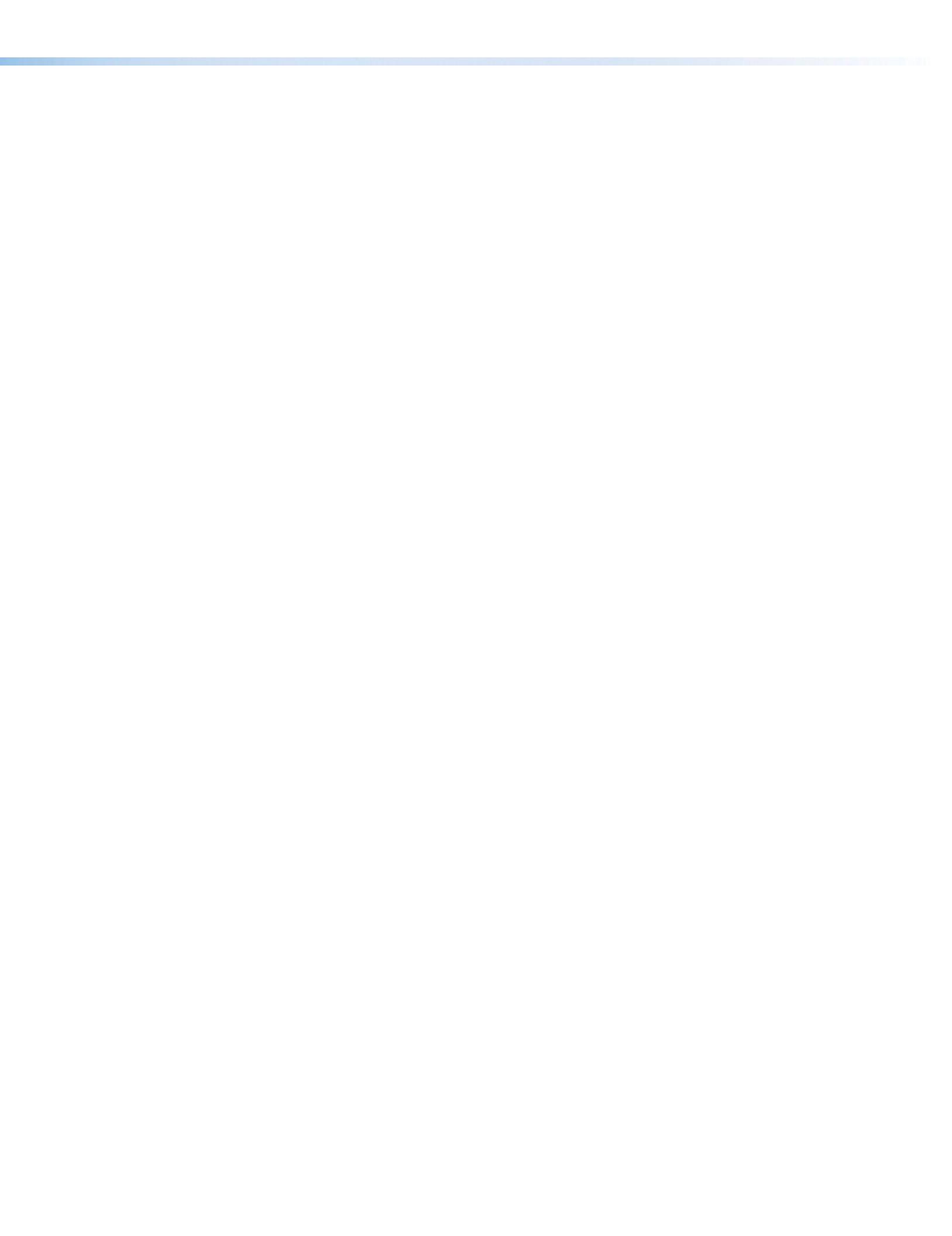
Click the **OK** button.

Specifications Availability

Product specifications are available on the Extron website, www.extron.com.

Extron Glossary of Terms

A glossary of terms is available at <http://www.extron.com/technology/glossary.aspx>.



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Introduction

This section contains basic information about this guide and the XTP II CrossPoint Series. Topics in this section include the following:

- [Guide Overview](#)
- [Product Description](#)
- [Features](#)

Guide Overview

This guide contains installation, configuration, and operating information for the Extron XTP II CrossPoint 1600 Matrix Switcher, XTP II CrossPoint 3200 Matrix Switcher, and XTP II CrossPoint 6400 Matrix Switcher.

NOTE: In this guide, the terms "XTP II CrossPoint Series matrix switchers" and "matrix switchers" refer to any of the matrix switcher models unless otherwise specified.

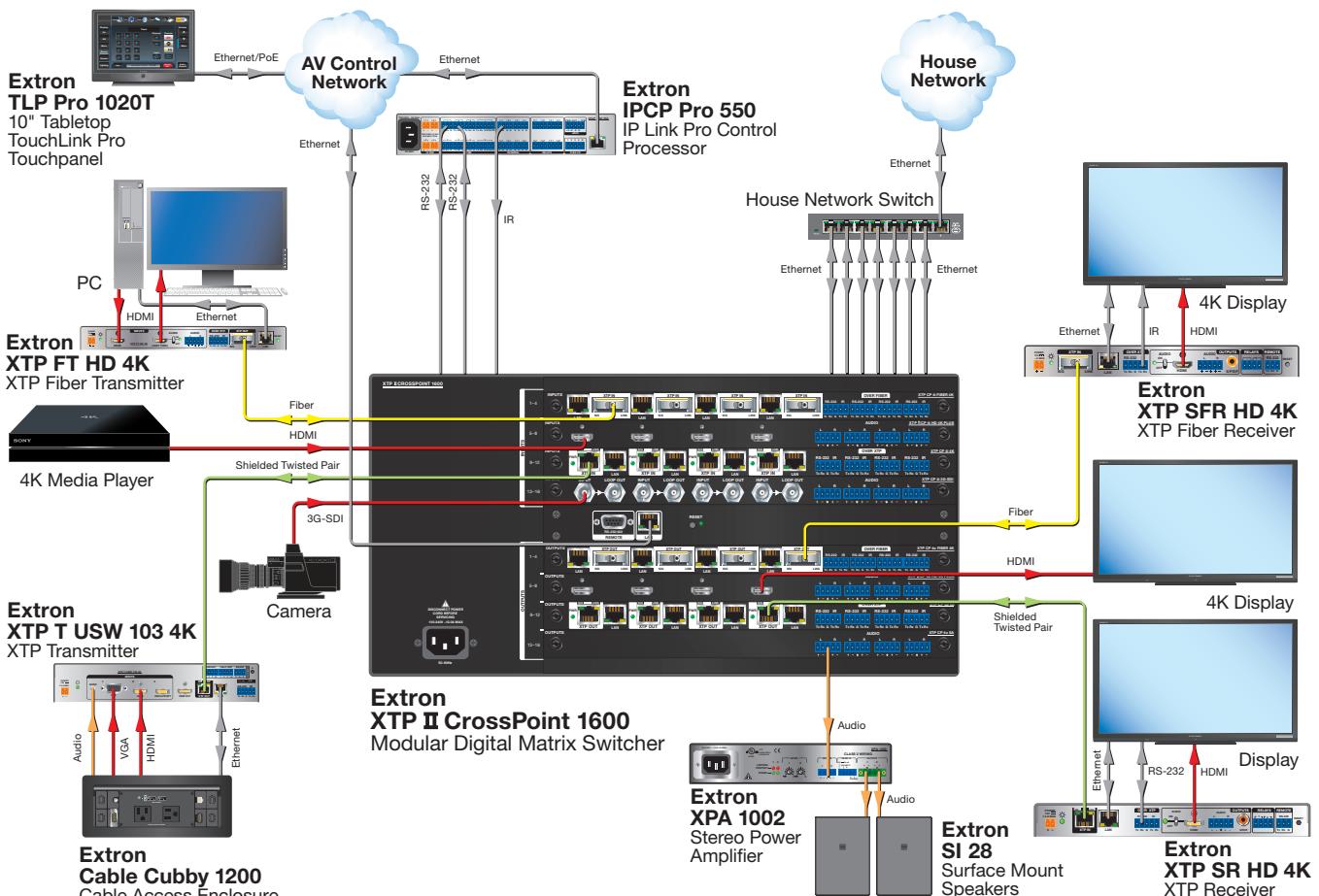


Figure 1. Typical XTP II CrossPoint 1600 Application

Product Description

The configurable and modular XTP II CrossPoint Series matrix switchers route video, audio, bidirectional RS-232 and IR, and Ethernet signals in an integrated XTP system. The types of signals routed depend on the input and output boards installed in the matrix switchers. The number of supported input and output boards include the following:

- **XTP II CrossPoint 1600** — Supports up to four input boards and four output boards in a 5U high enclosure.
- **XTP II CrossPoint 3200** — Supports up to eight input boards and eight output boards in a 10U high enclosure.
- **XTP II CrossPoint 6400** — Supports up to 16 input boards and 16 output boards in a 20U high enclosure.

Input and output boards provide signal routing between sources and output devices. The matrix switchers can also provide power to remote XTP devices over shielded twisted pair cabling.

Input and Output Board Types

The input and output boards provide either local distribution of audio and video connections to local sources and displays or signal extension to remote endpoints when using XTP transmitters and receivers. Each board is hot-swappable for replacement without interrupting signal routing. The following table describes available input and output boards (see the Extron [website](#) for a current list of available XTP CrossPoint boards).

Input and Output Boards	
Board Types	Description
Twisted pair boards	Input and output boards for XTP communication with Ethernet extension and RS-232 and IR insertion over twisted pair cable.
4K twisted pair boards	Input and output boards for 4K XTP communication with Ethernet extension and RS-232 and IR insertion over twisted pair cable.
Fiber boards	Input and output boards for XTP communication with Ethernet extension and RS-232 and IR insertion over fiber optic cable.
HDMI boards	Input and output boards for HDMI signals with analog stereo audio.
DMA boards	Input boards with multi-channel audio downmixing to 2-channel PCM stereo audio.
DVI Pro boards	Input and output boards for HDCP-compliant DVI signals with analog stereo audio.
SDI boards	Input boards for SDI signals.
VGA board	Input board for universal analog video signals with analog stereo audio.
Analog audio board	Output board for analog stereo audio signals..

Each input and output is individually isolated and buffered. Any input can be switched to any one or all outputs with virtually no crosstalk or signal noise between channels. Depending on the board configuration, the matrix switcher can include 4 inputs and 4 outputs to one of the following maximum sizes:

- **XTP II CrossPoint 1600** — Supports up to 16 inputs and 16 outputs.
- **XTP II CrossPoint 3200** — Supports up to 32 inputs and 32 outputs.
- **XTP II CrossPoint 6400** — Supports up to 64 inputs and 64 outputs.

Twisted pair and 4K twisted pair boards

The input and output boards enable long distance transmission of AV signals between the XTP II CrossPoint matrix switcher and remote twisted pair XTP transmitters and receivers. The twisted pair cable carries the following signals up to 330 feet (100 meters) over a shielded twisted pair cable:

- Digital video
- Digital audio
- Bidirectional RS-232 and IR commands
- Remote power
- Ethernet communication
- System communication

Each XTP connector is accompanied with an Ethernet extension port and bidirectional RS-232 and IR insertion ports for simultaneous control of remote devices. The main difference between the twisted pair and 4K twisted pair boards is as follows:

- Twisted pair boards are HDCP-compliant and support computer and video resolutions up to 1920x1200, including 1080p @ 60 Hz with Deep Color and 2K.
- 4K twisted pair boards are HDCP 2.3 compliant and support video resolutions up to 4K.

See the board specifications at www.extron.com for further differences between the two types boards.

Fiber boards

The input and output boards enable long-haul transmission of AV signals between the XTP II CrossPoint matrix switcher and remote fiber XTP transmitters and receivers. The fiber optic cable carries the following signals:

- Digital video
- Digital audio
- Bidirectional RS-232 and IR commands
- Ethernet communication
- System communication

Each XTP connector is accompanied with an Ethernet extension port and bidirectional RS-232 and IR insertion ports for simultaneous control of remote devices. The boards are HDCP-compliant and support video resolutions up to 4K.

Transmission distance depends on the model and fiber optic cable. The fiber optic cable is categorized in two types of cable: multimode (MM) and singlemode (SM).

- **Multimode** — Transmits data up to 500 meters (1,640 feet) depending on the fiber optic cable.
- **Singlemode** — Transmits data up to 10 km (6.2 miles).

NOTES:

- The multimode and singlemode boards are physically and functionally identical, with the exception of the effective range of transmission. In this guide, any reference applies to either transmission mode unless otherwise specified.
- Different modes are not compatible with each other.
- A color-coded sticker identifies the type of SFP module: orange for multimode and yellow for singlemode.

HDMI and DVI Pro boards

HDMI input and output boards support HDMI and separate analog stereo audio signals. They provide the capability to connect local HDMI sources and output devices to XTP Systems. Audio signals can be routed independently, including embedded HDMI audio.

- The XTP CP HDMI input and output boards are HDCP-compliant and support computer and video resolutions up to 1920x1200, including 1080p/60 with Deep Color and 2K.
- The XTP II CP HD 4K PLUS input and output boards comply with HDCP 2.3 and support video signals at resolutions up to 4K/60 at 4:4:4 chroma sampling.
- XTP II CP HD 8K input and output boards comply with HDCP 2.3, and support video resolutions up to 8K/30 HDR video with 4:4:4 color sampling at data rates up to 40.1 Gbps.

DVI Pro input and output boards support DVI and separate analog stereo audio signals. They provide the capability to connect local DVI sources and output devices to XTP Systems. They are HDCP-compliant, and support computer and video resolutions up to 1920x1200, including 1080p/60 with Deep Color and 2K. Audio signals can be routed independently.

DMA input boards

The DMA input boards provide multi-channel audio downmixing to 2-channel PCM stereo audio for separable audio routing. They can decode and process licensed, branded digital source formats from Dolby^{®1} and DTS^{®2}, including Dolby TrueHD and DTS-HD Master Audio™.



SDI boards

NOTE: 4K video can be routed only to boards that support that resolution.

The SDI boards provide four inputs for connection of 3G-SDI signals and 12G-SDI signals. Each input features automatic equalization to optimize signal quality over long cable runs, plus buffered loop-through with reclocking to support local monitors or additional distribution needs.

- The XTP CP 4i 3G-SDI board supports signal rates up to 2.97 Gbps.
- The XTP CP 4i 12G-SDI input board supports 12G-SDI, 6G-SDI, 3G-SDI, and HD-SDI video signal data rates up to 11.88 Gbps, and passes HDR, embedded audio. It features buffered SDI and HDMI loop-through connections for local displays.

The boards also feature four balanced or unbalanced stereo audio inputs with audio breakaway capability for switching distribution flexibility. Analog audio signals are digitized to two-channel PCM digital audio for separate audio routing within the system.

-
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VGA board

The VGA input board features universal video inputs that automatically detect incoming RGBHV, HD component video, S-video, and composite video signals. It also features analog stereo audio inputs for independent routing of audio signals.

The board switches high resolution video signals up to 1920x1200, including 1080p/60, and stereo audio. Extron-exclusive SD Pro processing ensures compatibility with HDMI and DVI-equipped displays, without the need for additional scalers.

Audio signals are digitized to two-channel PCM digital audio for separate audio routing within the system. Audio breakaway provides the capability to separate audio signals from corresponding video signals for switching to different destinations.

Audio board

The audio output board provides four analog stereo audio outputs for local connectivity to XTP Systems. It provides balanced or unbalanced analog stereo audio output, and can be used in audio breakaway applications.

Other XTP Devices

In an XTP System, XTP switchers, transmitters, or receivers connect to twisted pair, 4K twisted pair, or fiber boards for long distance transmission of XTP signals. Each XTP device can be configured locally, but in matrix applications, use SIS commands (see **SIS Configuration and Control** on page 44 or the XTP System Configuration Software (see the *XTP System Configuration Software Help File*) through the matrix switcher.

System Compatibility

XTP II CrossPoint series matrix switchers are compatible with other XTP devices, but the maximum video resolution may be limited with different connected XTP models. See the table below for maximum video resolutions and refresh rates for various XTP Systems.

		Output				
		Non-4K	4K Fiber	4K Twisted Pair	4K Plus	8K
Input	Analog	1920x1200 @ 60 Hz				
	Non-4K Digital	2048x1080 @ 60 Hz				
	4K Fiber	2048x1080 @ 60 Hz	4096x2160 @ 24 Hz			
	4K Twisted Pair	2048x1080 @ 60 Hz	4096x2160 @ 24 Hz	4096x2160 @ 30 Hz	4096x2160 @ 30 Hz	4096x2160 @ 30 Hz
	4K PLUS	2048x1080 @ 60 Hz	4096x2160 @ 24 Hz	4096x2160 @ 30 Hz	4096x2160 @ 60 Hz	4096x2160 @ 60 Hz
	8K	2048x1080 @ 60 Hz	4096x2160 @ 24 Hz	4096x2160 @ 30 Hz	4096x2160 @ 60 Hz	7680x4320 @ 30 Hz

Control Methods

To directly configure and control the matrix switchers, use one of the following methods:

- Front panel buttons (see [Front Panel Operation](#) on page 28).
- SIS commands (see [SIS Configuration and Control](#) on page 44)
- XTP System Configuration software (see the *XTP System Configuration Software Help File*)
- Internal web pages (see [HTML Operation](#) on page 66)

NOTE: Do not connect a computer directly to a connected XTP device for configuration when it is part of an XTP System.

For remote control of a matrix switcher, connect a host device to the matrix switcher. Host devices include the following types of devices (see www.extron.com for a list of compatible Extron control devices):

- A control system
- A PC
- An Extron remote control panel

NOTE: A front panel Configuration port connection and a rear panel Remote port connection can both be active at the same time. If commands are sent to both simultaneously, the command that reaches the processor first is handled first.

Features

Switching Features

- **50 Gbps digital backplane** — Ensures switching and distribution of video signals without degradation.
- **SpeedSwitch Technology** — Provides exceptional switching speed for HDCP-encrypted content.
- **Digital signal routing** — Analog signals are digitized, sending a reliable, high quality digital video signal to the output destination.
- **QuickSwitch Front Panel Controller (QS-FPC)** — Provides a discrete button for each input and output, allowing for simple, intuitive operation.

XTP Interconnection Features

- **XTP compatibility** — Provides a flexible signal switching and distribution solution that is completely integrated, ensuring reliable routing for multiple digital and analog formats.
- **Ethernet extension** — Reduces the amount of independent network drops required within a system with centralized 10/100 Ethernet communication through Ethernet pass-through connectors.
- **Remote power to XTP transmitters and receivers** — Provides power to remote XTP transmitters and receivers over the same STP cable that is used for sending AV signals. This avoids the need for external power supplies at remote endpoints.

Video Features

- **Computer and video resolutions up to 8K** — Exceeds the data-rate requirements of the highest resolution video formats, including 8K/30 with 4:4:4 chroma sampling at data rates up to 40.1 Gbps.
- **HDMI 2.1, 2.0, 1.4, or 1.3 compatibility** (dependent on connected devices) — Supports HDMI specification features, including data rates up to 40.1 Gbps, Deep Color up to 12-bit, 3D formats, Lip Sync, and HD lossless audio formats.
- **HDCP compliant up to HDCP 2.3** (dependent on connected devices) — Ensures display of content-protected media and interoperability with other HDCP-compliant devices.
- **SD Pro processing** — Deinterlaces 480i and 576i signals for compatibility with HDMI and DVI-equipped displays, without the need for additional scalers.

Audio Features

- **Audio input gain and attenuation** — Allows the level of gain or attenuation to be set, eliminating noticeable volume differences when switching between sources.
- **Audio output volume adjustment and muting capabilities**
- **Audio breakaway** — Separates an embedded audio signal from the corresponding video signal within the matrix switcher, allowing the audio and video signals from one source to be switched to different destinations.

Control Features

- **Front panel configuration port** — Enables easy configuration without having to access rear panel of the matrix switcher.
- **Optional remote control** — Provides the flexibility to control the matrix switcher from a remote location.
- **Serial port insertion from the Ethernet control port** — Provides comprehensive control of connected XTP devices and attached devices without needing additional cabling.

General Features

- **Flexible input and output sizes** — Matches a wide variety of small to large-sized installations. Sizes depend on the matrix switcher model.
- **Wide selection of input and output boards** — Provide integration for a variety of signal types and formats, ensuring system customization appropriate for a wide range of applications.
- **Modular, field-upgradeable and hot-swappable design** — Provides substantial flexibility, expandability, and affordability. Additional input and output boards may be added at any time for quick and easy upgrade or expansion. Hot-swappable components allow the user to replace an input and output board at any time without the need to power down the matrix switcher.
- **EDID Minder** — Automatically manages EDID communication between connected devices, ensuring that all sources power up properly and reliably output content for display.
- **Key Minder** — Continuously verifies HDCP compliance for quick, reliable switching. Authenticates and maintains continuous HDCP encryption between input and output devices to ensure quick and reliable switching in professional AV environments, while enabling simultaneous distribution of a single source signal to one or more displays.

- **HDCP authentication and signal confirmation via RS-232 or Ethernet** — Provides real-time verification of HDCP status for each digital video input and output.
- **HDCP Visual Confirmation** — Provides a green signal when encrypted content is sent to a non-compliant display, providing immediate visual confirmation that protected content cannot be viewed on the display.
- **+5 VDC, 250 mA power** — Provides power through the digital output of a board eliminates the need of a separate power supply for the connected peripheral device.
- **Four power connections provide +12 VDC, 125 mA power for active HDMI cables**
— XTP II CP 4i HD 8K input board only
- **Automatic cable equalization** — Optimizes signal performance for all incoming digital signals up to 100 feet (30 m) when used with Extron HDMI or DVI Pro cables.
- **Automatic output reclocking** — Reshapes and restores timing of digital video signals at each output, eliminating high frequency jitter to ensure reliable transmission over long cables.
- **Ethernet monitoring and control** — Provides proactive monitoring and system management over a LAN, WAN, or the Internet, using standard TCP/IP protocols. Ethernet control provides for remote selection of input and output ties, adjustment and control of audio input and output levels, and advanced system diagnostics.
- **Tri-color, backlit buttons** — Illuminate red, green, or amber, depending on function, for ease of use in low-light environments.
- **Global presets** — Save and recall input and output configurations either from the front panel, serial, or Ethernet control.
- **View I/O mode** — Displays which inputs and outputs are actively connected.
- **Front panel security lockout** — Prevents unauthorized use in non-secure environments.
- **JITC Certified** — Assures interoperability and information for use in government applications and other mission-critical environments.
- **Rack-mountable enclosure** — Allows for the full rack width metal enclosure to fit in 5U, 10U, or 20U rack spaces.
- **Internal universal power supply** (XTP II CrossPoint 1600 and XTP II CrossPoint 3200)
— Provides worldwide power compatibility with the 100-240 VAC, 50/60 Hz international power supply.
- **Primary and redundant power supplies** — Provides power reliability for continuous, mission-critical applications (redundant power supplies are optional for the XTP II CrossPoint 1600, standard for the XTP II CrossPoint 3200 and XTP II CrossPoint 6400).
- **Highly reliable, energy-efficient internal universal power supply**
(XTP II CrossPoint 6400) — Provides worldwide power compatibility with the single phase 200-240 VAC, 50/60 Hz international power supply.

NOTE: In North America, the XTP II CrossPoint 6400 plugs into a standard 220 V power outlet. In other regions, it must be wired into a 200-240 VAC junction box. In either case, the outlet or junction box must be installed near the equipment and be easily accessible.

- **Permanent, rechargeable battery** — Tracks time of day when power is disconnected.



WARNING: There is a danger of explosion if the battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the instructions of the manufacturer.

AVERTISSEMENT : Si la pile est mal remplacée, il y a un risque d'explosion. Remplacez la batterie seulement avec le même type ou un type similaire de pile, recommandé par le fabricant. Débarrassez-vous des piles utilisées selon les instructions du fabricant.

ATTENTION:

- Non-Extron personnel must not attempt to remove the battery. Doing so voids the warranty.
- Du personnel ne faisant pas partie d'Extron ne doit pas essayer de retirer la batterie. Cela annulerait la garantie.

Installation

This section details the installation and configuration of the XTP II CrossPoint Series matrix switchers. Topics in this section include the following:

- [Installation Overview](#)
- [Rear Panel Features](#)
- [Input and Output Board Features](#)
- [Connection Details](#)

Installation Overview

The following list describes the basic installation procedure to set up an XTP II CrossPoint Series matrix switcher.

1. Install input and output boards (see [Input board slots](#) and [Output board slots](#) on page 12).
2. If desired, replace button labels (see [Installing Labels in the Buttons](#) on page 90).
3. Mount the matrix switcher (see [Mounting the Matrix Switcher](#) on page 80).
4. Connect devices to the input and output boards (see [Input and Output Board Connectors](#) on page 13).

NOTE: The types and number of connectors available depend on the boards installed in the matrix switcher.

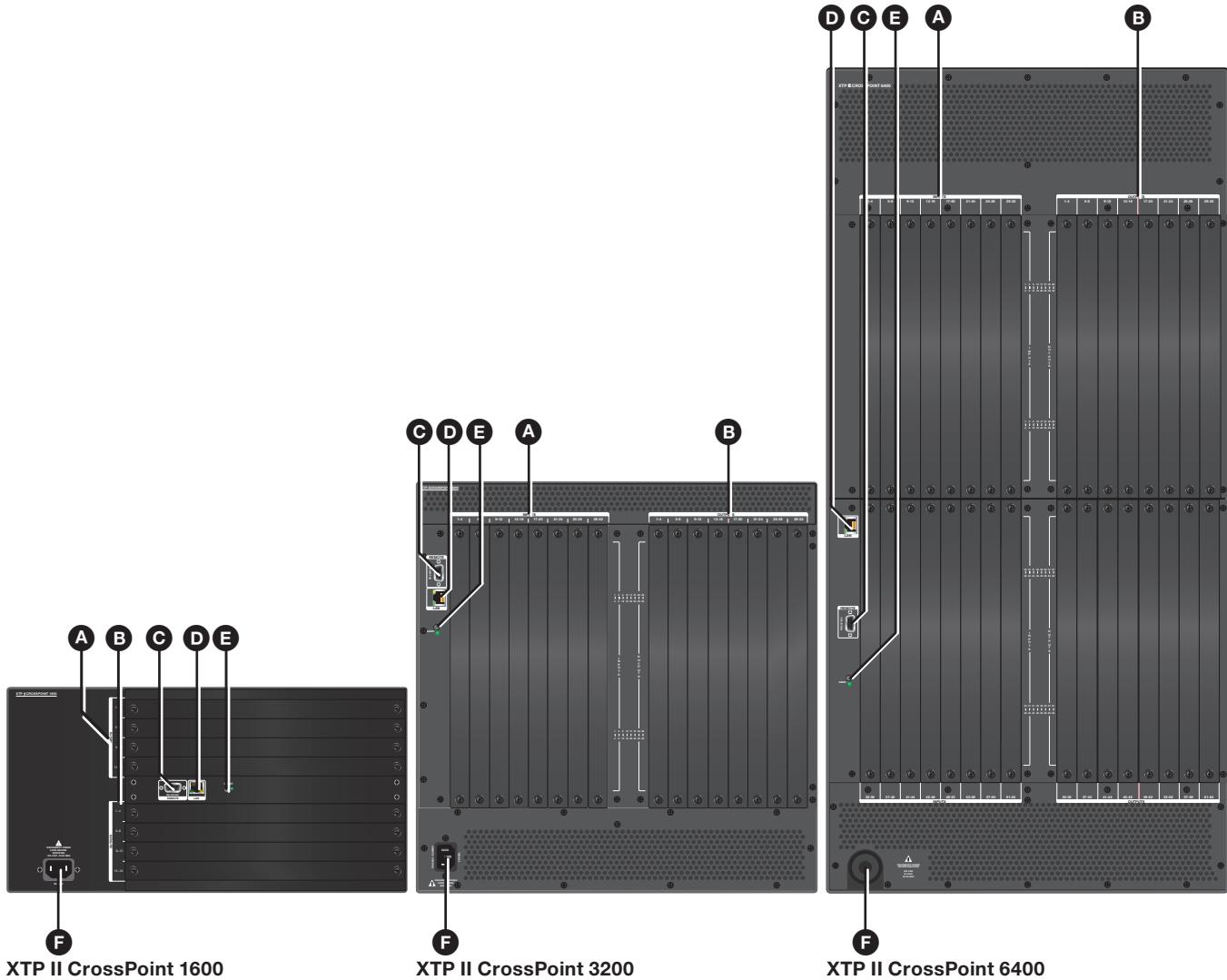
5. Connect control devices to the matrix switcher through the following connectors.
 - Front panel USB configuration connector (see [Front Panel Features](#) on page 26).
 - Rear panel RS-232 and RS-422 connector (see [Remote RS-232 and RS-422 connector](#) on page 12).
 - Rear panel Ethernet LAN connector (see [Ethernet LAN connector](#) on page 12).

NOTE: For an Ethernet connection, obtain IP setting information from the local network administrator.

6. Connect power (see [Power connector](#) on page 12).

Rear Panel Features

The XTP II CrossPoint matrix switchers include the same rear panel features. However, the XTP II CrossPoint 1600 includes horizontal slots for input and output boards instead of vertical slots. Each model also contains a different number of available board slots.



- A** Input board slots (see the next page)
- B** Output board slots
- C** Remote RS-232 and RS-422 connector
- D** Ethernet LAN connector
- E** Reset button and LED
- F** Power connector

Figure 2. XTP II CrossPoint Matrix Switcher Rear Panels

- A Input board slots** — Install input boards or blank plates in the available slots in any order or arrangement. Note the input numbers associated with each slot. The boards align vertically except on the XTP II CrossPoint 1600 where they align horizontally. Ensure a board or blank plate is installed in every slot.
- B Output board slots** — Install output boards or blank plates in the available slots in any order or arrangement. Note the output numbers associated with each slot. The boards align vertically except on the XTP II CrossPoint 1600 where they align horizontally. Ensure a board or blank plate is installed in every slot.
- C Remote RS-232 and RS-422 connector** — Connect a host device to the 9-pin D connector for serial RS-232 or RS-422 control of the matrix switcher (see [Remote RS-232 and RS-422 Connection](#) on page 19 for wiring details).

NOTE: The matrix switcher supports the RS-232 or RS-422 serial communication protocol, and operates at 9600, 19200, 38400, or 115200 baud rates.

To connect an MKP 2000 or MKP 3000 remote control panel, see to the *MKP 2000 Remote Control Panel User Guide* or the *MKP 3000 User Guide* for details.

- D Ethernet LAN connector** — Connect a computer network to the RJ-45 connector to control the matrix switcher remotely through Ethernet. Use a patch cable to connect to a switch, hub, or router. The LAN connector includes the following LED indicators:
 - **Activity LED indicator** — Blinks when the matrix switcher communicates with the connected device.
 - **Link LED indicator** — Lights when the matrix switcher is connected to an Ethernet LAN.
- E Reset button and LED** — Press the **Reset** button to activate different reset modes (see [Reset Modes](#) on page 41).
- F Power connector** — Connect a power supply to the AC power connector.
 - **Default AC power** — Connect a 100 VAC to 240 VAC, 50-60 Hz power source to this connector with a standard IEC power cord to this connector.
 - **Attached AC power** (XTP II CrossPoint 6400 only) —
 - **North America** — Connect the power cord into a NEMA L6-20R 220 VAC, 60 Hz power outlet.
 - **Other regions** — Have a licensed electrician install a 200-240 VAC power connector. Then, connect the power cord into a 200-240 VAC, 50-60 Hz power outlet. Ensure the wiring is in accordance with electrical codes.



ATTENTION:

- The outlet or junction box must be installed near the equipment and be easily accessible.
- La prise de courant ou la boîte de jonction doivent être installées près du dispositif et être facilement accessibles.
- The installation location must provide short circuit and overcurrent protection, to a minimum of 20 A.
- Le lieu d'installation doit disposer d'une protection contre les courts-circuits et la surtension de 20 A minimum.
- Do NOT use an extension cord.
- Ne PAS utiliser de rallonge électrique.

Input and Output Board Connectors

Each input and output board supports up to four inputs or outputs. See the table below for signal types included on the input and output boards.

Board Types	Board Signal Types									
	XTP Twisted Pair	XTP Fiber	Remote Power	RS-232 Inserts	Dedicated UARTs	HDMI	DVI Pro	3G/HD-SDI/SDI	Analog Video	Analog Audio
Twisted pair and 4K twisted pair boards	•		•	•	•					
Fiber boards		•		•	•					
HDMI and DMA boards						•				•
DVI Pro boards							•			•
SDI board								•		•
VGA board									•	•
Analog audio board										•

ATTENTION:

- Use electrostatic discharge (ESD) precautions (be electrically grounded) when making connections. Electrostatic discharge can damage equipment, even if you cannot feel, see, or hear it.
- Prenez des précautions contre les décharges électrostatiques (ESD) (soyez électriquement relié à la terre) lorsque vous effectuez des connexions. Les décharges électrostatiques peuvent endommager l'équipement, même si vous ne pouvez pas le sentir, le voir ou l'entendre.
- Remove system power before making all connections.
- Débranchez l'alimentation du système avant de faire n'importe quelle connexion.

NOTE: Audio ground pins on the input and output boards are labeled \pm or \downarrow . The wiring and function are the same, whichever way the board is labeled.

XTP Interconnection

XTP interconnection features include XTP twisted pair, XTP fiber, pass-through LAN, and RS-232 and IR Over XTP connectors on twisted pair, 4K twisted pair, and fiber boards.

XTP twisted pair input and output connectors

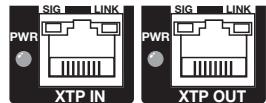


Figure 3. XTP Twisted Pair Input Connector (Left) and XTP Twisted Pair Output Connector (Right)

Connect an XTP twisted pair transmitter to an XTP twisted pair input connector or an XTP twisted pair receiver to an XTP twisted pair output connector (see [Twisted Pair Cable Termination and Recommendations for XTP Communication](#) on page 19) to the RJ-45 connector. The cable carries the following signals:

- Digital video
- Digital audio
- Bidirectional RS-232 and IR commands
- Remote power
- Ethernet communication
- System communication

ATTENTION:

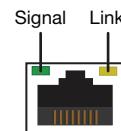
- Do not connect this connector to a computer data or telecommunications network.
- Ne connectez pas ce connecteur à un réseau de données informatiques ou à un réseau de télécommunications.
- XTP remote power is intended for indoor use only. No part of the network that uses XTP remote power should be routed outdoors.
- XTP à distance est destiné à une utilisation en intérieur seulement. Aucune partie du réseau qui utilise l'alimentation XTP à distance ne peut être routée en extérieur.

NOTE: To enable XTP remote power from a matrix switcher, use one of the following methods:

- SIS commands (see the [Enable/Disable XTP Remote Power](#) commands on page 57)
- XTP System Configuration Software (see the [XTP System Configuration Software Help file](#))

Each connector also includes LEDs for signal, link, and power status:

- **Signal LED indicator** — Lights when either the input board receives an XTP signal or the output board sends an XTP signal.
- **Link LED indicator** — Lights when XTP devices are connected and communication is established.
- **XTP power LED indicator** — Lights when the board provides XTP remote power to the connected XTP device.



LED state	Indication
Off	Endpoint does not support remote power
Green	Endpoint is being powered
Amber	Power available but port is currently disabled
Amber – blinking	Power unavailable but port is enabled
	Problem with RJ-45 connection
Red – blinking	For DTP products that support XTP mode: this LED state indicates that a DTP port (with XTP mode enabled) is connected to the XTP port.

XTP fiber input and output connectors

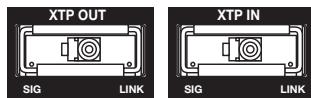


Figure 4. XTP Fiber Input Connector (Left) and XTP Fiber Output Connector (Right)

Connect an XTP fiber transmitter to an XTP fiber input connector or an XTP fiber receiver to an XTP fiber output connector. The cable carries the following signals:

- Digital video
- Digital audio
- Bidirectional RS-232 and IR commands
- Ethernet communication
- System communication

WARNING: Potential risk of severe injury. The device outputs continuous invisible light, which may be harmful to the eyes; use with caution.

AVERTISSEMENT : Risque potentiel de blessure grave ou de mort. Le dispositif émet une lumière invisible en continu qui peut être dangereux pour les yeux, à utiliser avec précaution.

- Do not look into the rear panel fiber optic cable connectors or into the fiber optic cables themselves.
- Ne regardez pas dans les connecteurs de câble fibre optique sur le panneau arrière ou dans les câbles fibre optique eux-mêmes.
- Plug the attached dust caps into the optical transceivers when the fiber cable is unplugged.
- Branchez les protections contre la poussière dans l'ensemble émetteur/récepteur lorsque le câble fibre optique est débranché.

NOTE: Ensure the proper fiber optic cable is used. Typically, singlemode fiber optic cable has a yellow jacket and multimode fiber optic cable has an orange or aqua jacket.

Pass-through LAN connectors



Figure 5. Pass-Through LAN Connector

Connect a control device or a device to control to a pass-through LAN connector for 10/100BASE-T Ethernet communication (see [Twisted Pair Cable Termination for Ethernet Communication](#) on page 21).

RS-232 and IR Over XTP or RS-232 Over Fiber connector

The RS-232 and IR Over XTP and RS-232 Over Fiber connectors are functionally the same. The connector name depends on the type of XTP interconnection.

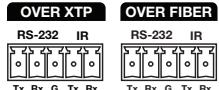


Figure 6. RS-232 and IR Over XTP (Left) and RS-232 Over Fiber (Right) Connectors

- **RS-232 Over XTP or RS-232 Over Fiber connector** — To pass bidirectional serial signals between XTP devices, connect a control device or device to control to the 5-pole captive screw connector. The connector includes only the 2 poles labeled “RS-232” and shares the ground pole with the IR poles.
- **IR Over XTP or IR Over Fiber connector** — To transmit and receive IR signals (up to 56 kHz), connect a control device or device to control to the 5-pole captive screw connector. This connector includes only the 2 poles labeled “IR” and shares the ground pole with the RS-232 poles.

NOTE: RS-232 and IR data can be transmitted or received simultaneously (see [RS-232 and IR Over XTP Communication](#) on page 22 for wiring details).

Input Connections

Excluding XTP interconnection, input boards connect local video and audio sources directly to inputs on the matrix switcher. The types of connectors available depend on the board, but may include HDMI, DVI, SDI, analog video, or analog audio connectors.

HDMI input connectors

Connect a digital video source device to an HDMI input connector. The connector accepts HDMI, DVI (with an appropriate adapter), or dual mode DisplayPort video sources.



Figure 7. HDMI Input Connector

NOTE: Use an Extron LockIt Cable Lacing Bracket to secure an HDMI cable to the HDMI connector (see [HDMI Connection](#) on page 24).

DVI input connectors

Connect a digital video source to a DVI Pro input connector.



Figure 8. DVI Pro Input Connector

NOTE: Although the DVI Pro boards use DVI-I connectors, the matrix switcher handles only DVI-D (digital) video.

SDI input connectors

Each SDI connector is accompanied with a local loop out connector.

- **SDI Input connector** — Connect a digital video source to a BNC input connector. The connector accepts 3G-SDI, HD-SDI, or SDI video and embedded digital audio. Additionally, the XTP CP 4i 12G-SDI board accepts 12G-SDI signals.
- **SDI Loop Out connector** — Connect a local digital display to the BNC loop out connector of the associated input signal for a buffered loop-through.

NOTE: SDI boards ship with 75 ohm terminators on the Loop Out connectors. Extron recommends leaving these installed when the loop out is not used.

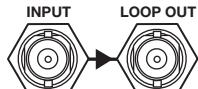


Figure 9. SDI Input and SDI Loop Output Connector

Analog video input connectors

Connect a computer video source to the 15-pin HD connector (see [Analog Video Connection](#) on page 23 for wiring details). It accepts RGB (RGBHV, RGBs, and RGsB), component, S-video, or composite video signals.

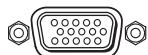


Figure 10. 15-Pin HD Input Connector

Analog audio input connectors

Connect a balanced or unbalanced, stereo analog audio source to the 5-pole captive screw connector (see [Analog Audio Connection](#) on page 25 for wiring details).

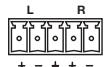


Figure 11. Analog audio input connector

By default, the matrix switcher prioritizes embedded digital audio when both digital and analog audio are present. To send analog audio, use one of the following methods:

- SIS commands:
 - For input cards, see the [Audio routing selection](#) SIS command on page 52.
 - For endpoints, see the [Audio routing selection for endpoints](#) SIS command.
- The XTP System Configuration Software (see the *XTP System Configuration Software Help* file)

Output Connection

Excluding XTP interconnection, output boards connect local video and audio output devices directly to outputs on the matrix switcher. The types of connectors available depends on the board, but may include HDMI, DVI, or analog audio connectors.

HDMI output connectors

Connect a display device to the female HDMI connector. It sends HDMI and DVI (with an appropriate adapter) signals.



Figure 12. HDMI Output Connector

NOTE: Use an Extron LockIt Cable Lacing Bracket to secure an HDMI cable to the HDMI connector (see [HDMI Connection](#) on page 24).

DVI Pro output connectors

Connect a display device to the female DVI-I connector.



Figure 13. DVI Pro Output Connector

NOTE: Although the DVI Pro boards use DVI-I connectors, the matrix switchers handle only DVI-D (digital) video.

Analog audio output connectors

Connect a balanced or unbalanced, stereo or mono analog audio device to the 3.5 mm, 5-pole captive screw connector (see [Analog Audio Connection](#) on page 25 for wiring details).



Figure 14. Analog Audio Output Connector

NOTE: If the input audio is 2-channel LPCM embedded audio on an HDMI input signal, the audio signal is extracted and converted to a stereo analog signal.

Dante digital audio output connectors

Connect a Dante-enabled audio processing device to a Dante digital audio transport (AT) LAN connector.



Figure 15. Dante Digital Audio Output Connector

NOTE: The Dante Controller software (available at www.extron.com) is required for configuration of the AT ports.

Connection Details

For connectors that require additional wiring details or recommendations, see the following sections pertaining to the type or connection.

Remote RS-232 and RS-422 Connection

Wire the 9-pin D connector for either RS-232 or RS-422 communication. See the following table for pin assignment details.

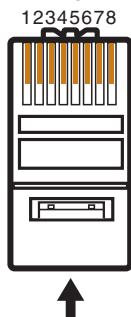
Remote RS-232 and RS-422 Pinout Table		
Pin	RS-232	RS-422
1		
2	Tx	Tx-
3	Rx	Rx-
4		
5	Gnd	Gnd
6		
7		Rx+
8		Tx+
9		



Twisted Pair Cable Termination and Recommendations for XTP Communication

Use the following pin configurations for twisted pair cables used for XTP communication.

Pins: 12345678		TIA/EIA-T568B	
Pin	Wire Color	Pin	Wire Color
1	White-orange	3	White-green
2	Orange	6	Green
3	White-blue	4	Blue
4	Blue	7	White-brown
5	Green	8	Brown
6	White-green		
7	Blue		
8	Orange		



Insert Twisted Pair Wires
RJ-45 Connector

Supported cables

The XTP connectors are compatible with shielded twisted pair (F/UTP, SF/UTP, and S/FTP) and unshielded twisted pair (U/UTP) cables.

ATTENTION:

- Do not use Extron UTP23SF-4 Enhanced Skew-Free AV UTP cable or STP201 cable to link the XTP products.
- N'utilisez pas le câble AV Skew-Free UTP version améliorée UTP23SF d'Extron ou le câble STP201 pour relier les produits XTP.
- To ensure FCC Class A and CE compliance, STP cables and STP connectors are required.
- Afin de s'assurer de la compatibilité entre FCC Classe A et CE, les câbles STP et les connecteurs STP sont nécessaires.

Cable recommendations

Extron recommends using the following practices for XTP communication to achieve full transmission distances up to 330 feet (100 meters) and reduce transmission errors.

- Use the following Extron XTP DTP 24 SF/UTP cables and connectors for the best performance:
 - **XTP DTP 24/1000** Non-Plenum 1000' (305 m) spool 22-236-03
 - **XTP DTP 24P/1000** Plenum 1000' (305 m) spool 22-235-03
 - **XTP DTP 24 Plug** Package of 10 101-005-02
- If not using XTP DTP 24 cable, at a minimum, Extron recommends 24 AWG, solid conductor, STP cable with a minimum bandwidth of 400 MHz.
- Terminate cables with shielded connectors to the TIA/EIA-T568B standard.
- Limit the use of more than two pass-through points, which may include patch points, punch down connectors, couplers, and power injectors. If these pass-through points are required, use shielded couplers and punch down connectors.

NOTE:

When using STP cable in bundles or conduits, consider the following:

- Do not exceed 40% fill capacity in conduits.
- Do not comb the cable for the first 20 m, where cables are straightened, aligned, and secured in tight bundles.
- Loosely place cables and limit the use of tie wraps or hook-and-loop fasteners.
- Separate twisted pair cables from AC power cables.

Twisted Pair Cable Termination for Ethernet Communication

The twisted pair cable used for Ethernet communication depends on the network speed. The LAN connectors support both 10BASE-T (10 Mbps Ethernet) and 100BASE-T (100 Mbps Fast Ethernet), half-duplex and full-duplex Ethernet connections. Terminate the RJ-45 connectors for Ethernet communication with straight-through or crossover termination standards.

NOTES:

- Do not use standard telephone cables. Telephone cables do not support Ethernet or Fast Ethernet.
- To avoid transmission errors, do not stretch or bend the cables.
- **Crossover cable** — Wire one end of the twisted pair cable with the T568A standard and the other with the T568B standard. Use this to connect to a computer.
- **Straight-through (patch) cable** — Wire both ends of the twisted pair cable with the T568B standard. Use this to connect to a switch, hub, or router.

Straight-Through Cable			Crossover Cable		
Pin	End 1 Wire	End 2 Wire	Pin	End 1 Wire	End 2 Wire
1	White-orange	White-orange	1	White-green	White-orange
2	Orange	Orange	2	Green	Orange
3	White-green	White-green	3	White-orange	White-green
4	Blue	Blue	4	Blue	Blue
5	White-blue	White-blue	5	White-blue	White-blue
6	Green	Green	6	Orange	Green
7	White-brown	White-brown	7	White-brown	White-brown
8	Brown	Brown	8	Brown	Brown

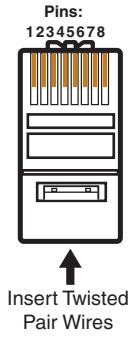


Figure 16. RJ-45 Pin Assignment for Ethernet Communication

RS-232 and IR Over XTP Communication

RS-232 and IR Over XTP connectors pass serial signals (such as projector control signals) and infrared data. To pass bidirectional serial command signals between XTP-compatible devices, connect a control device or device to control to the three poles (Tx, Rx, and G) under "RS-232" of the 5-pole captive screw connector. To transmit and receive IR signals, connect a control device or device to control to the three poles (G, Tx, and Rx) under "IR." The ground (G) pole is shared.

NOTE: RS-232 and IR data can be transmitted or received simultaneously (see figure 17 for wiring considerations).

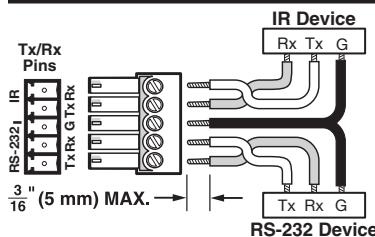


Figure 17. RS-232 and IR Over XTP Connector Wiring Configuration

ATTENTION: The length of the exposed wires in the stripping process is critical.

ATTENTION : La longueur des câbles exposés est primordiale lorsque l'on entreprend de les dénuder.

- The ideal length is 3/16 inch (5 mm).
- La longueur idéale est de 5 mm (3/16 inches).
- If they are too long, the wires may touch, causing a short circuit between them.
- S'ils sont trop longs, les câbles exposés pourraient se toucher et provoquer un court circuit.
- If they are too short, they can be easily pulled out, even if tightly fastened by the captive screws.
- S'ils sont trop courts, ils peuvent être tirés facilement, même s'ils sont correctement serrés par les borniers à vis.
- Do not tin the wires. Tinned wire does not hold its shape and can become loose over time.
- Ne pas étamer les câbles. Les câbles étamés ne sont pas aussi bien fixés dans les borniers à vis captives et pourraient s'arracher.

Analog Video Connection

Wire the 15-pin HD connector for RGBHV, RGBs, RGsB, component (bi-level or tri-level sync), S-video, or composite video signals. The connector also supports EDID emulation. See the following table for pin assignment details.

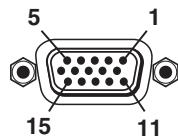


Figure 18. 15-Pin HD Connector Pins

15-Pin HD Connector Pinout Table						
Pin	RGBHV	RGBs	RGsB	Component	S-video	Composite
1	Red	Red	Red	R-Y		
2	Green	Green	Green/Sync	Y	Luma	Video
3	Blue	Blue	Blue	B-Y	Chroma	
4						
5						
6	Red return	Red return	Red return	R-Y return		
7	Green return	Green return	Green return	Y return	Luma return	Video return
8	Blue return	Blue return	Blue return	B-Y return	C return	
9						
10	Ground	Ground	Ground			
11						
12	EDID/DDC	EDID/DDC	EDID/DDC			
13	H sync	C sync				
14	V sync					
15	EDID/DDC return	EDID/DDC return				

HDMI Connection

To secure an HDMI cable to an HDMI connector, use an Extron LockIt Cable Lacing Bracket and a tie wrap.

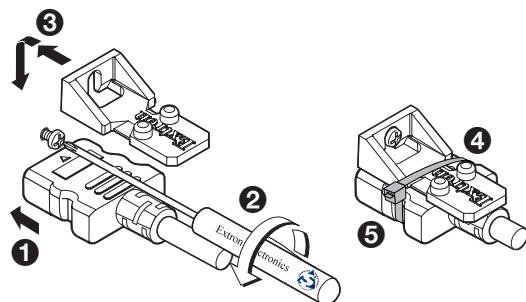


Figure 19. LockIt Cable Lacing Bracket Installation

1. Plug the HDMI cable into the panel connection (see figure 19, **1**).
2. Loosen the HDMI connection mounting screw from the panel (**2**) enough to allow the LockIt to be placed over it. The screw does not have to be removed.
3. Place the LockIt on the screw and against the HDMI connector (**3**), and then tighten the screw to secure the bracket.
4. Loosely place the included tie wrap around the HDMI connector and the LockIt (**4**).
5. While holding the connector securely against the cable lacing bracket, use pliers or similar tools to tighten the tie wrap, then remove any excess length (**5**).

ATTENTION:

- Connect and pull the tie wraps until they are secure. Do not overtighten.
- Connectez et tirez les serre-câbles jusqu'à ce qu'ils soient sécurisés.
N'effectuez pas de serrage excessif.

Analog Audio Connection

Wire the audio input and output connectors as shown in figure 19. Use the supplied tie wrap to secure the audio cable to the extended tail of the connector.

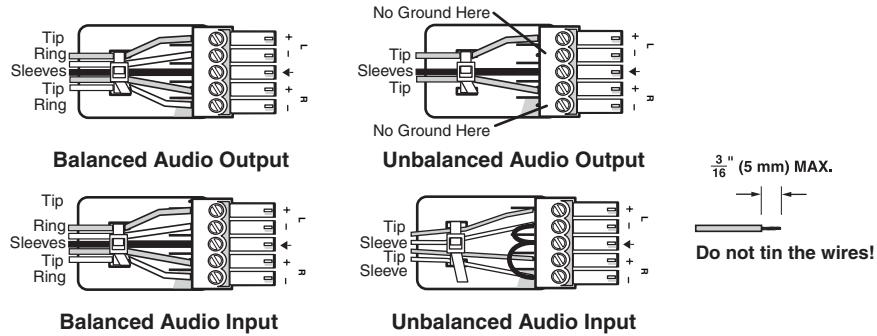


Figure 20. Analog Audio Wiring Configuration

ATTENTION:

- For unbalanced audio, connect the sleeves to the ground contact. Do not connect them to negative (-) contacts.
- Pour l'audio asymétrique, connectez les manchons au contact au sol. Ne PAS connecter les manchons aux contacts négatifs (-).
- The length of the exposed wires in the stripping process is critical. The ideal length is 3/16 inch (5 mm). If the exposed portion is longer, the wires may touch, causing a short circuit between them. If the exposed wires are shorter, they can be easily pulled out, even if tightly fastened by the captive screws.
- La longueur des câbles exposés est primordiale lorsque l'on entreprend de les dénuder. S'ils sont un peu plus longs, les câbles exposés pourraient se toucher et provoquer un court circuit. S'ils sont un peu plus courts, ils pourraient sortir, même s'ils sont attachés par les vis captives.
- Do not tin the wires. Tinned wire does not hold its shape and can become loose over time.
- Ne pas étamer les câbles. Les câbles étamés ne sont pas aussi bien fixés dans les terminaisons des connecteurs à vis captives et pourraient sortir.

See figure 21 for wiring considerations for TRS or RCA connectors.

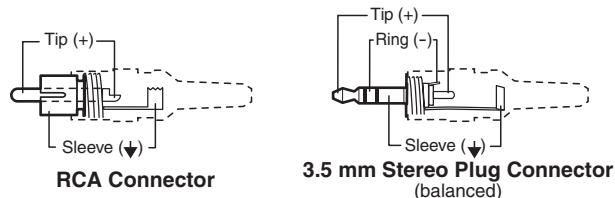


Figure 21. Typical Audio Connectors

Front Panel Operation

This section describes the front panel features and operation of the XTP II CrossPoint Series matrix switchers. Topics in this section include the following:

- **Front Panel Features**
- **Front Panel Operation**
- **Analog Audio Optimization**
- **RS-232 Insertion**
- **NVRAM modes**
- **Reset Modes**
- **Troubleshooting**

Front Panel Features

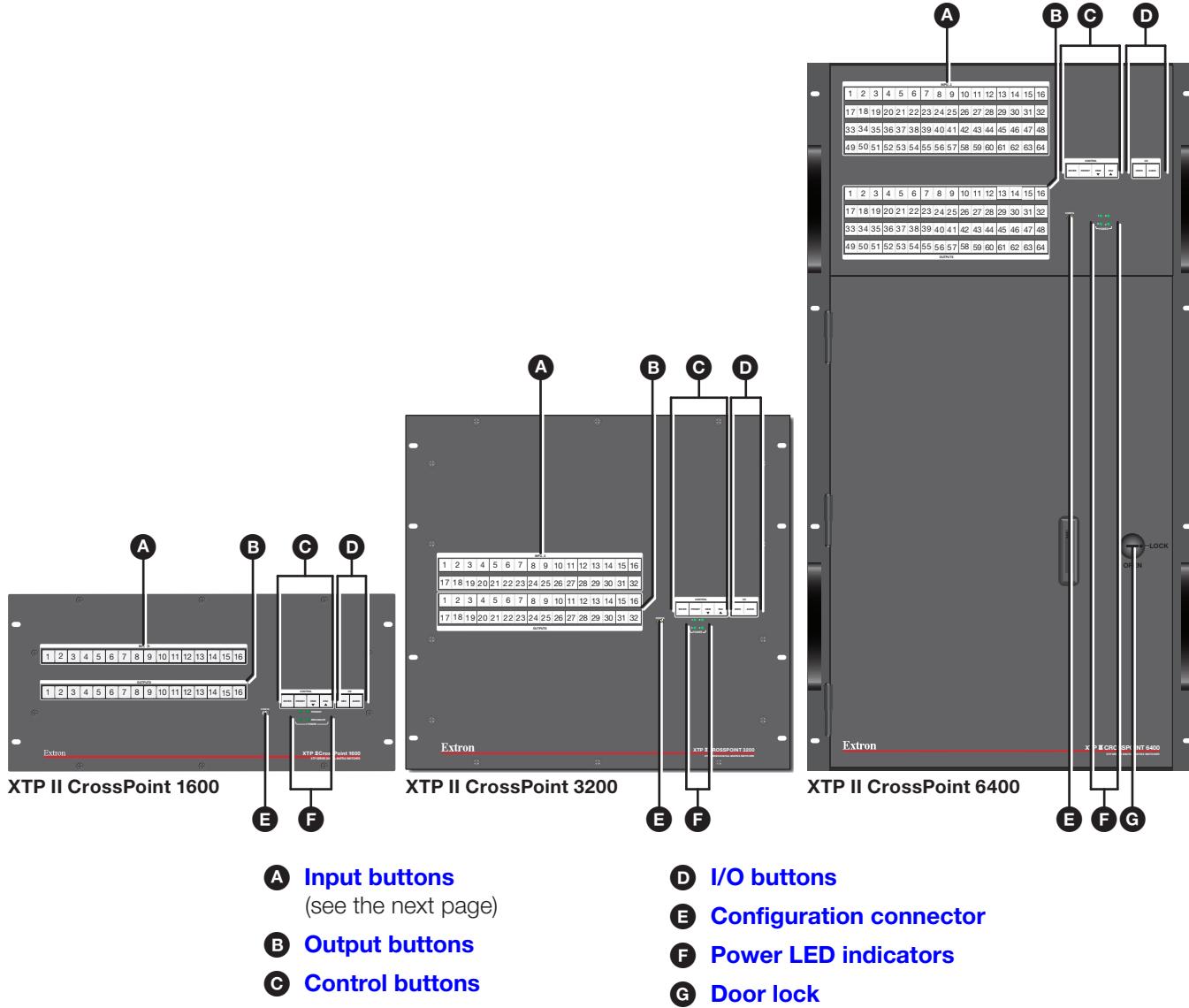


Figure 22. Front Panel Features

- A Input buttons** — Press an input button to select an input, preset, or audio level. Input buttons 1 and 2 also select background illumination settings (see **Button Illumination Summary** on page 42).
- B Output buttons** — Press an output button to select an output or preset.
- C Control buttons** — Include the **Enter**, **Preset**, **View (▼)**, and **Esc (▲)** buttons. Press them for the following:
 - **Enter button** — Press this button to accept pending changes to settings or presets. In conjunction with the other control buttons, this button also enables Serial Port Configuration mode.
 - **Preset button** — Press this button to enable Preset mode. In conjunction with the other control buttons, this button also enables Serial Port Configuration mode.
 - **View (▼) button** — Press this button to enable View mode or decrease the input audio level or output volume. In conjunction with the other control buttons, this button also enables Serial Port Configuration mode or a Front Panel Lockout mode.
 - **Esc (▲) button** — Press this button to cancel pending changes to settings or presets or increase the input audio level or output volume. In conjunction with the other control buttons, this button also enables Serial Port Configuration mode or a Front Panel Lockout mode.
- D I/O buttons** — Include the **Audio** and **Video** buttons. Press them for the following:
 - **Video button** — Press this button to select video for ties or RS-232 protocol in Serial Port Configuration mode. With the **Audio** button, this button also performs a system reset.
 - **Audio button** — Press this button to select audio for ties or RS-422 protocol in Serial Port Configuration mode. With the **Video** button, this button also performs a system reset.
- E Configuration connector** — Connect a host device (such as a PC) to the USB mini-B connector.
- F Power LED indicators** — Light when power is applied to associated power supply.

NOTES:

- The XTP II CrossPoint 1600 has two power supplies with two optional, redundant power supplies.
 - **Left Primary LED** — Corresponds to the 12 V power supply.
 - **Right Primary LED** — Corresponds to the 48 V power supply (also provides XTP remote power).
 - **Left Redundant LED** — Corresponds to the redundant 12 V power supply.
 - **Right Redundant LED** — Corresponds to the redundant 48 V power supply.
- The other XTP II CrossPoint Series matrix switchers have four power supplies.
 - **LEDs 1 and 2** — Correspond to the two primary 12 V power supplies.
 - **LED 3** — Corresponds to the redundant 12 V power supply.
 - **LED 4** — Corresponds to the 48 V power supply (also provides XTP remote power).

- **Green** — Indicates the power supply is operating within normal tolerances.
 - **Red** — Indicates the power supply is operating outside normal tolerances or has failed.
- G Door lock** — Insert the key into the slot and rotate to lock or unlock the door.

Front Panel Operation

When power is applied, the matrix switcher performs a diagnostics test. The front panel buttons blink red, green, and amber before returning to the button background illumination setting. If the test is successful, the **Video** and **Audio** button light. After the test, the most recent configuration is loaded.

If an error occurs during the test, the matrix switcher locks all operation. If this occurs, call the Extron S3 Sales and Technological Support Hotline (see the Extron [website](#) for contact information).

NOTE: By default, the matrix switcher is set in lock mode 2 (see [Front Panel Lockout Modes](#) on page 34 for a detailed list of basic and advanced functions and the procedure to set the various front panel locks).

Front Panel Tie Management

A tie is a connection between an input and output. Perform the following to create or remove a tie.

NOTES:

- An output supports one video input and one audio input only.
- Making a new tie to an output that is already tied to another input overwrites the previous tie.

1. Press the **Esc** button to clear pending actions.
2. Press the I/O buttons to select a type of tie to make or remove. The I/O button lights when selected.
 - Press the **Video** button to select video-only.
 - Press the **Audio** button to select audio-only.
 - Press both the **Video** and **Audio** buttons to select both video and audio.
3. Press the input button that corresponds to the desired input source. The selected input button lights along with currently tied outputs (if applicable).

NOTE: The buttons light or blink in the following colors:

- **Amber** — Indicates video and audio ties.
- **Green** — Indicates video-only ties.
- **Red** — Indicates audio-only ties.

4. Perform one of the following:
 - Press the output buttons that correspond to the desired untied output devices to make ties.
 - Press the output buttons that correspond to the desired tied output devices to remove ties.

The output buttons blink along with the **Enter** button.

5. Press the **Enter** button to accept the pending changes. The buttons return to the regular illumination.

Front Panel Tie Configuration View

A tie configuration includes all ties within the matrix switcher. Use the view configuration mode to view the configuration while preventing unintentional changes to the current configuration.

NOTE: The view mode automatically discontinues after 30 seconds of front panel inactivity.

1. Press the **Esc** button to clear pending actions.
2. Press the **View** button. The **View** button along with output buttons that correspond to untied outputs light or blink.

NOTE: The output buttons light in the following colors:

- **Amber** — Indicates there are no video or audio ties.
- **Green** — Indicates there is no video tie.
- **Red** — Indicates there is no audio tie.

If an output button blinks, the output is muted.

3. Press the I/O buttons to select a type of tie to view. The I/O button lights when selected.
 - Press the **Video** button to view video ties only.
 - Press the **Audio** button to view audio ties only.
 - Press both the **Video** and **Audio** button to view video and audio ties.
4. Press the input or output button that corresponds to the desired input or output device. The tied input or output buttons light.

NOTE: The buttons light in the following colors:

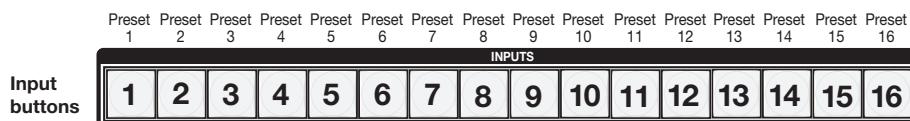
- **Amber** — Indicates a video and audio tie.
- **Green** — Indicates a video-only tie.
- **Red** — Indicates a audio-only tie.

5. Press the **View** button to discontinue the view mode.

Front Panel Preset Management

A preset saves configuration information to be recalled later. There are 32 presets available. When a preset is recalled, it becomes the current configuration.

- Preset numbers 1 through 16 are assigned to the input buttons, and are available to be either saved or retrieved using the front panel (see image below).



- Preset numbers 17 through 32 are available using SIS commands (see the **Presets** commands on page 51).

NOTES:

- Only audio and video ties are saved with presets.
- Audio input gain is not saved and does not change when a preset is recalled.
- To view preset configurations from the front panel, recall the preset.
- When power is removed and restored, the matrix switcher retains the current configuration and presets.
- The matrix switcher does not save the current configuration when a preset is recalled unless the current configuration is also saved as a preset.

Save a preset from the front panel

1. Press the **Esc** button to clear pending actions.
2. Hold the **Preset** button in until it blinks (approximately 2 seconds). The **Preset** button remains lit. The input or output buttons that correspond to presets with a saved configuration light as well.
3. Press the input button that corresponds to the desired preset number. The selected button blinks along with the **Enter** button.
4. Press the **Enter** button to save the preset.

Recall a preset from the front panel

1. Press the **Esc** button to clear pending actions.
2. Press the **Preset** button. The **Preset** button along with any input or output buttons that correspond to presets with a saved configuration light.
3. Press the input or output button that corresponds to the desired preset. The selected input or output button blinks along with the **Enter** button.
4. Press the **Enter** button.

Front Panel Analog Audio Input Levels

Each analog audio input level has a range of -18 dB to +24 dB (0 dB is default). Adjust the analog audio input to ensure there is no noticeable output volume difference between sources. To adjust the analog audio input levels from the front panel, remove any front panel locks that prevent front panel operation (see **Front Panel Lockout Modes** on page 34).

NOTE: Gain and attenuation apply to local inputs only.

1. Press the **Esc** button to clear pending actions.
2. Hold the **Audio** button until the button blinks.
3. Press the input button that corresponds to the desired analog audio input. The output buttons light to indicate the current audio level.

NOTES:

- Each output button represents 1 dB except on 1600 models. On 1600 models, each output button represents 1 dB when blinking and 2 dB when lit steadily.
- When output buttons light or blink green, gain is applied to the audio level.
- When output buttons light or blink red, attenuation is applied to the audio level.

4. Press the **Esc** to increase the audio level or the **View** button to decrease the audio level.

Highest Numbered Output Button Illumination for Analog Audio Input Levels

dB	1600 Models		Other Models	
	Button #	Button Color/State	Button #	Button Color/State
24	12	Green/Solid	24	Green/Solid
23	12	Green/Blinking	23	Green/Solid
22	11	Green/Solid	22	Green/Solid
21	11	Green/Blinking	21	Green/Solid
20	10	Green/Solid	20	Green/Solid
19	10	Green/Blinking	19	Green/Solid
18	9	Green/Solid	18	Green/Solid

Highest Numbered Output Button Illumination for Analog Audio Input Levels				
	1600 Models		Other Models	
dB	Button #	Button Color/State	Button #	Button Color/State
17	9	Green/Blinking	17	Green/Solid
16	8	Green/Solid	16	Green/Solid
15	8	Green/Blinking	15	Green/Solid
14	7	Green/Solid	14	Green/Solid
13	7	Green/Blinking	13	Green/Solid
12	6	Green/Solid	12	Green/Solid
11	6	Green/Blinking	11	Green/Solid
10	5	Green/Solid	10	Green/Solid
9	5	Green/Blinking	9	Green/Solid
8	4	Green/Solid	8	Green/Solid
7	4	Green/Blinking	7	Green/Solid
6	3	Green/Solid	6	Green/Solid
5	3	Green/Blinking	5	Green/Solid
4	2	Green/Solid	4	Green/Solid
3	2	Green/Blinking	3	Green/Solid
2	1	Green/Solid	2	Green/Solid
1	1	Green/Blinking	1	Green/Solid
0	Unlit		Unlit	
-1	1	Red/Blinking	1	Red/Solid
-2	1	Red/Solid	2	Red/Solid
-3	2	Red/Blinking	3	Red/Solid
-4	2	Red/Solid	4	Red/Solid
-5	3	Red/Blinking	5	Red/Solid
-6	3	Red/Solid	6	Red/Solid
-7	4	Red/Blinking	7	Red/Solid
-8	4	Red/Solid	8	Red/Solid
-9	5	Red/Blinking	9	Red/Solid
-10	5	Red/Solid	10	Red/Solid
-11	6	Red/Blinking	11	Red/Solid
-12	6	Red/Solid	12	Red/Solid
-13	7	Red/Blinking	13	Red/Solid
-14	7	Red/Solid	14	Red/Solid
-15	8	Red/Blinking	15	Red/Solid
-16	8	Red/Solid	16	Red/Solid
-17	9	Red/Blinking	17	Red/Solid
-18	9	Red/Solid	18	Red/Solid

5. Press the **Audio** button to exit the Audio mode. The **Audio** button stops blinking.

Front Panel Output Mutes

The matrix switcher can mute audio, video, or both on any output. To mute or unmute an output from the front panel, remove any front panel locks that prevent front panel operation (see **Front Panel Lockout Modes** on page 34).

NOTE: The matrix switcher retains mute settings after power is removed and restored.

To toggle output mutes, perform the following:

1. Press the **Esc** button to clear pending actions.
2. Press the **View** button. The **View** button and output buttons that correspond to untied outputs light or blink.

NOTE: The input and output buttons light in the following colors:

- **Amber** — Indicates there are no video or audio ties.
- **Green** — Indicates there is no video tie.
- **Red** — Indicates there is no audio tie.

3. Press the I/O buttons to select the type of mute.
 - Press the **Video** button to mute the video only.
 - Press the **Audio** button to mute the audio only.
 - Press both the **Video** and **Audio** button to mute the video and audio.
4. For each desired output, hold the corresponding output button in until it either starts blinking or stops blinking (approximately 2 seconds). Hold the buttons one at a time.

NOTE: The output buttons blink in the following colors:

- **Amber** — Indicates the video and audio is muted.
- **Green** — Indicates only the video is muted.
- **Red** — Indicates only the audio is muted.

If an output button is illuminated with a tie, it also maintains the view color

5. Press the **View** button to accept the changes.

Front Panel Output Volume

There are 65 steps of volume attenuation. The volume ranges from 0% to 100%. To adjust the output volume of an output from the front panel, remove any front panel locks that prevent front panel operation (see **Front Panel Lockout Modes** on page 34).

NOTE: Output volume applies to local inputs only.

1. Press the **Esc** button to clear pending actions.
2. Hold the **Audio** button until the button blinks.
3. Press the output button that corresponds to the desired output. The input buttons display the current output volume for the selected output.
4. Press the **Esc** button to increase the volume or the **View** button to decrease the volume.

TIP: Hold the **Esc** or **View** button to change the volume 3 dB per second.

Highest Numbered Input Button For Audio Output Volume											
		1600 Model		Other Models				1600 Model		Other Models	
Volume	Attenuation	Button	State	Button	State	Volume	Attenuation	Button	State	Button	State
100.0%	0 dB	16	Solid	32	Solid	50.5%	33 dB	8	Blinking	16	Blinking
98.5%	1 dB	16	Blinking	32	Blinking	49.0%	34 dB	8	Blinking	15	Solid
97.0%	2 dB	16	Blinking	31	Solid	47.5%	35 dB	8	Blinking	15	Blinking
95.5%	3 dB	16	Blinking	31	Blinking	46.0%	36 dB	7	Solid	14	Solid
94.0%	4 dB	15	Solid	30	Solid	44.5%	37 dB	7	Blinking	14	Blinking
92.5%	5 dB	15	Blinking	30	Blinking	43.0%	38 dB	7	Blinking	13	Solid
91.0%	6 dB	15	Blinking	29	Solid	41.5%	39 dB	7	Blinking	13	Blinking
89.5%	7 dB	15	Blinking	29	Blinking	40.0%	40 dB	6	Solid	12	Solid
88.0%	8 dB	14	Solid	28	Solid	38.5%	41 dB	6	Blinking	12	Blinking
86.5%	9 dB	14	Blinking	28	Blinking	37.0%	42 dB	6	Blinking	11	Solid
85.0%	10 dB	14	Blinking	27	Solid	35.5%	43 dB	6	Blinking	11	Blinking
83.5%	11 dB	14	Blinking	27	Blinking	34.0%	44 dB	5	Solid	10	Solid
82.0%	12 dB	13	Solid	26	Solid	32.5%	45 dB	5	Blinking	10	Blinking
80.5%	13 dB	13	Blinking	26	Blinking	31.0%	46 dB	5	Blinking	9	Solid
79.0%	14 dB	13	Blinking	25	Solid	29.5%	47 dB	5	Blinking	9	Blinking
77.5%	15 dB	13	Blinking	25	Blinking	28.0%	48 dB	4	Solid	8	Solid
76.0%	16 dB	12	Solid	24	Solid	26.5%	49 dB	4	Blinking	8	Blinking
74.5%	17 dB	12	Blinking	24	Blinking	25.0%	50 dB	4	Blinking	7	Solid
73.0%	18 dB	12	Blinking	23	Solid	23.5%	51 dB	4	Blinking	7	Blinking
71.5%	19 dB	12	Blinking	23	Blinking	22.0%	52 dB	3	Solid	6	Solid
70.0%	20 dB	11	Solid	22	Solid	20.5%	53 dB	3	Blinking	6	Blinking
68.5%	21 dB	11	Blinking	22	Blinking	19.0%	54 dB	3	Blinking	5	Solid
67.0%	22 dB	11	Blinking	21	Solid	17.5%	55 dB	3	Blinking	5	Blinking
65.5%	23 dB	11	Blinking	21	Blinking	16.0%	56 dB	2	Solid	4	Solid
64.0%	24 dB	10	Solid	20	Solid	14.5%	57 dB	2	Blinking	4	Blinking
62.5%	25 dB	10	Blinking	20	Blinking	13.0%	58 dB	2	Blinking	3	Solid
61.0%	26 dB	10	Blinking	19	Solid	11.5%	59 dB	2	Blinking	3	Blinking
59.5%	27 dB	10	Blinking	19	Blinking	10.0%	60 dB	1	Solid	2	Solid
58.0%	28 dB	9	Solid	18	Solid	8.5%	61 dB	1	Blinking	2	Blinking
56.5%	29 dB	9	Blinking	18	Blinking	7.0%	62 dB	1	Blinking	1	Solid
55.0%	30 dB	9	Blinking	17	Solid	5.5%	63 dB	1	Blinking	1	Blinking
53.5%	31 dB	9	Blinking	17	Blinking	0.0%	76 dB	Unlit		Unlit	
52.0%	32 dB	8	Solid	16	Solid						

5. Press the **Audio** button to save the audio settings and exit Audio mode.

Front Panel Lockout Modes

Front panel lockout modes prevent operation from the front panel to varying degrees. The modes include the following:

- **Lock mode 0** — Allows front panel operation.
- **Lock mode 1** — Prevents all front panel operation except for changing the front panel lockout mode and viewing some settings.
- **Lock mode 2** — Prevents the following front panel operation:
 - Audio output mutes
 - Audio output volume
 - Remote serial connector protocol and baud rate

The following features remain available:

- Tie management
- Preset management
- Audio input level
- Front panel lockout modes

NOTE: The matrix switcher is shipped from the factory in lock mode 2.

To toggle the front panel lockout mode between lock mode 1 and 2, press the **View** and **Esc** buttons simultaneously until the two buttons blink twice (about 2 seconds).

NOTE: If the matrix switcher is in lock mode 0, this enables lock mode 2.

To toggle the front panel lockout mode between lock mode 0 and 2, press the **Preset**, **View**, and **Esc** buttons simultaneously until the three buttons blink twice (about 2 seconds).

Front Panel Remote Port Settings

The rear panel serial port supports RS-232 or RS-422 serial protocol and 9600, 19200, 38400, or 11520 baud rate. To define the rear panel serial port protocol and baud rate from the front panel, remove any front panel locks that prevent front panel operation (see **Front Panel Lockout Modes** above).

1. Hold the four control buttons (**Enter**, **Preset**, **View**, and **Esc**) until they and the I/O buttons light or blink (about 2 seconds).

NOTES:

- Three control buttons light and one blinks.
- One I/O button lights and one blinks.
- The blinking button is the current setting.

2. Press the desired control or I/O button. The button blinks. See the following table for button definitions.

Front Panel Button Baud Rate and Protocol Settings			
Control Buttons		I/O Buttons	
Button	Baud Rate	Button	Protocol
Enter	9600	Video	RS-232
Preset	19200	Audio	RS-422
View	38400		
Esc	115200		

3. Press an output button to save the settings and exit configuration mode.

Front Panel Reset

This reset performs the following functions:

- Clears all ties and presets.
- Unmutes all outputs.
- Disables all RS-232 output inserts.
- Resets all input audio levels to unity gain (0 dB).
- Sets all output volume levels to 100% (0 dB of attenuation).

Use this reset to reset settings to factory default values.

1. Hold the **View** and **Esc** buttons in simultaneously until the end of step 3.
2. Apply AC power to the matrix switcher while still holding the two front panel buttons. The front panel buttons and indicators blink before turning off.
3. Release the **View** and **Esc** buttons when the front panel buttons return to the default illumination, except the **Video** and **Audio** buttons which light.

Button Background Illumination

The button background illumination setting determines the default illumination state of front panel buttons. The buttons can either not light or light a dim amber color. To change the button background illumination setting from the front panel, remove any front panel locks that prevent front panel operation (see **Front Panel Lockout Modes** on the previous page).

1. Press the **Esc** button to clear pending actions.
2. Hold the **Input 1** and **Input 2** buttons simultaneously until the front panel buttons change in illumination (about 2 seconds).

Analog Audio Optimization

To ensure the best headroom, the optimal signal-to-noise ratio, and that there is no noticeable volume difference between sources, consider the following:

1. Wire analog audio inputs and outputs for balanced audio (see [Analog Audio Connection](#) on page 25).
2. If the audio source has output level control, set the output to the maximum level or 0 dB of attenuation.
3. If the audio source is connected to an XTP transmitter or switcher, set the audio settings of the XTP device to the default values.
4. If the audio output device has output level control, set the output to the maximum level or 0 dB of attention.
5. If the audio output device is connected to an XTP receiver or scaler, set the audio settings of the XTP device to the default value.
6. Make the desired configuration ties for the matrix system.
7. Switch among inputs, listening to the audio output or measuring the audio output level with test equipment (such as a VU meter).
8. As necessary, adjust the audio input level for analog audio.
 - If the audio source is connected directly to the matrix switcher, adjust the audio input level so that the approximate output level is the same for all inputs.
 - If the audio source is connected to another XTP device (such as an XTP transmitter or switcher) before the signal reaches the matrix switcher, adjust the audio input level on the XTP device.
9. Tie an audio input to each output.
10. As necessary, adjust the output audio volume.
 - If the audio output device is connected directly to the matrix switcher, adjust the output volume
 - If the audio output device is connected to another XTP device (such as an XTP receiver or scaler) before the signal reaches it, adjust the output volume on the XTP device.

RS-232 Insertion

RS-232 insertion determines how RS-232 serial control signals are passed through the matrix switcher to connected devices. The RS-232 serial control signals always extends to the RS-232 Over XTP connector on a connected XTP device, but there are two methods of insertion on the matrix switcher: Ethernet to RS-232 insertion and captive screw insertion.

NOTE: The RS-232 Over XTP connectors support up to a 115k baud rate.

- **Ethernet to RS-232 insertion** — Passes serial control signals between a device connected to the LAN connector on the matrix switcher and an XTP device connected to an XTP twisted pair or fiber board.
- **Captive screw insertion** — Passes serial control signals between a device connected to an RS-232 Over XTP connector on an XTP twisted pair or fiber board and an XTP device connected to the corresponding XTP connector on the same XTP board.

NOTE: Ensure the captive screw connector used for insertion is physically connected to another device.

To enable XTP ports for either insertion method, use the XTP System Configuration Software (see the *XTP System Configuration Software Help* file).

Ethernet to RS-232 Insertion

Ethernet to RS-232 insertion allows control of a device from a remote location over the Ethernet network. For example, an Extron IPCP control processor, connected to the matrix switcher LAN connector, controlling a camera, connected to an XTP transmitter which is connected to an XTP input connector in the matrix switcher (see below).

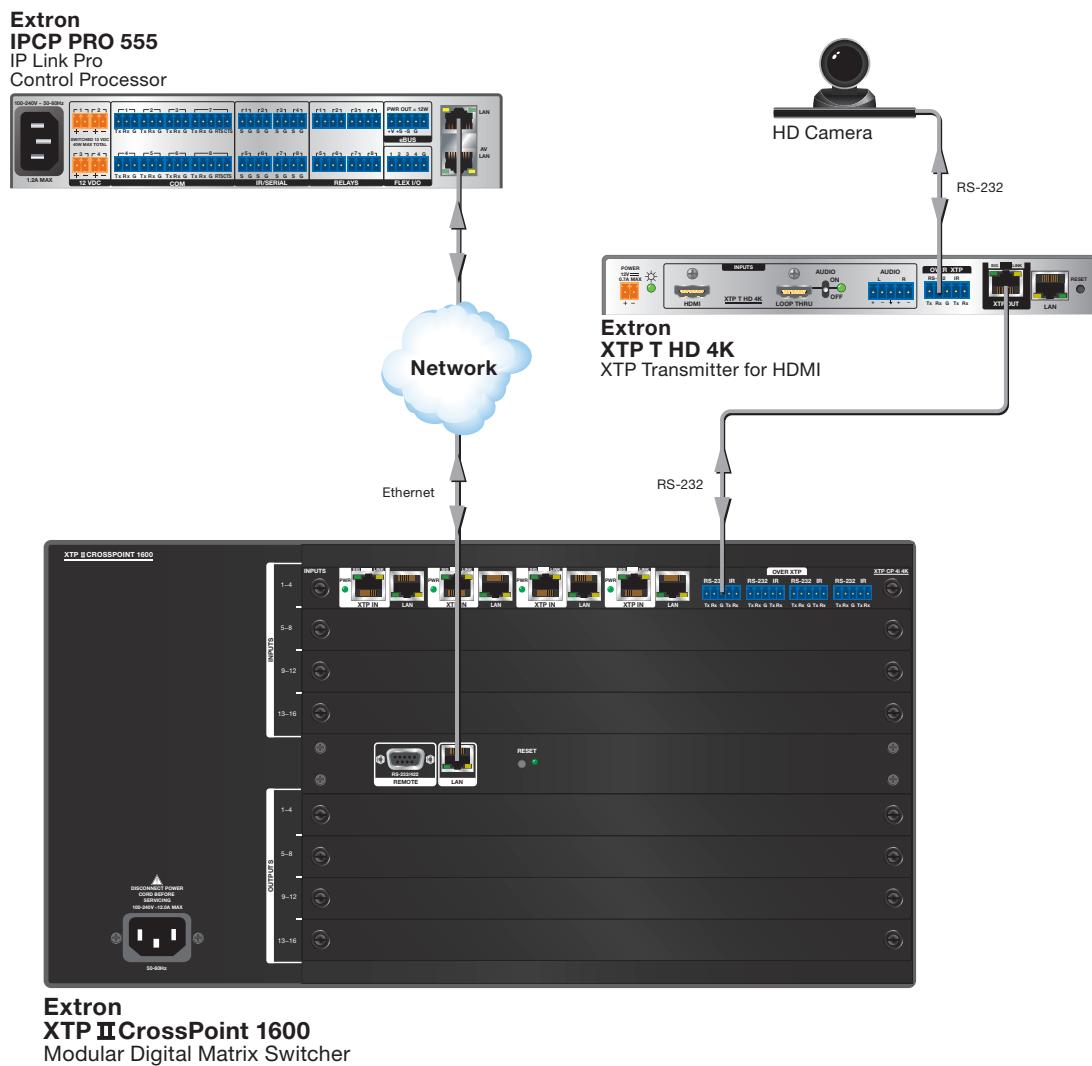


Figure 23. Typical Ethernet to RS-232 Insertion

Each XTP twisted pair or fiber input and output connector on the matrix switcher has a dedicated UART port number. The number of XTP inputs and outputs determine the total number of available ports. To determine the numbers for the ports, set a starting number for the RS-232 and RS-422 connector. Each additional input starts numbering sequentially after two numbers greater than the starting value. Each output starts numbering sequentially after the maximum number of possible inputs (33 for 1600 and 3200 models, and 65 for 6400 models).

To change the starting point, use the XTP System Configuration Software (see the *XTP System Configuration Software Help* file).

NOTE: Ensure the RS-232 protocol matches the connected device. To do this, use the XTP System Configuration Software (see the *XTP System Configuration Software Help* file).

Captive Screw Insertion

Captive screw insertion allows control of a device from a remote location over the RS-232 Over XTP connector on the XTP twisted pair or fiber board. For example, an Extron IPCP control processor, connected to an RS-232 Over XTP connector on an XTP twisted pair input board, controls a Blu-Ray Disc player, connected to an XTP transmitter which is connected to the corresponding XTP input connector on the same XTP twisted pair input board.

NOTE: Captive screw insertion applies only to the corresponding XTP connector to the RS-232 Over XTP connector.

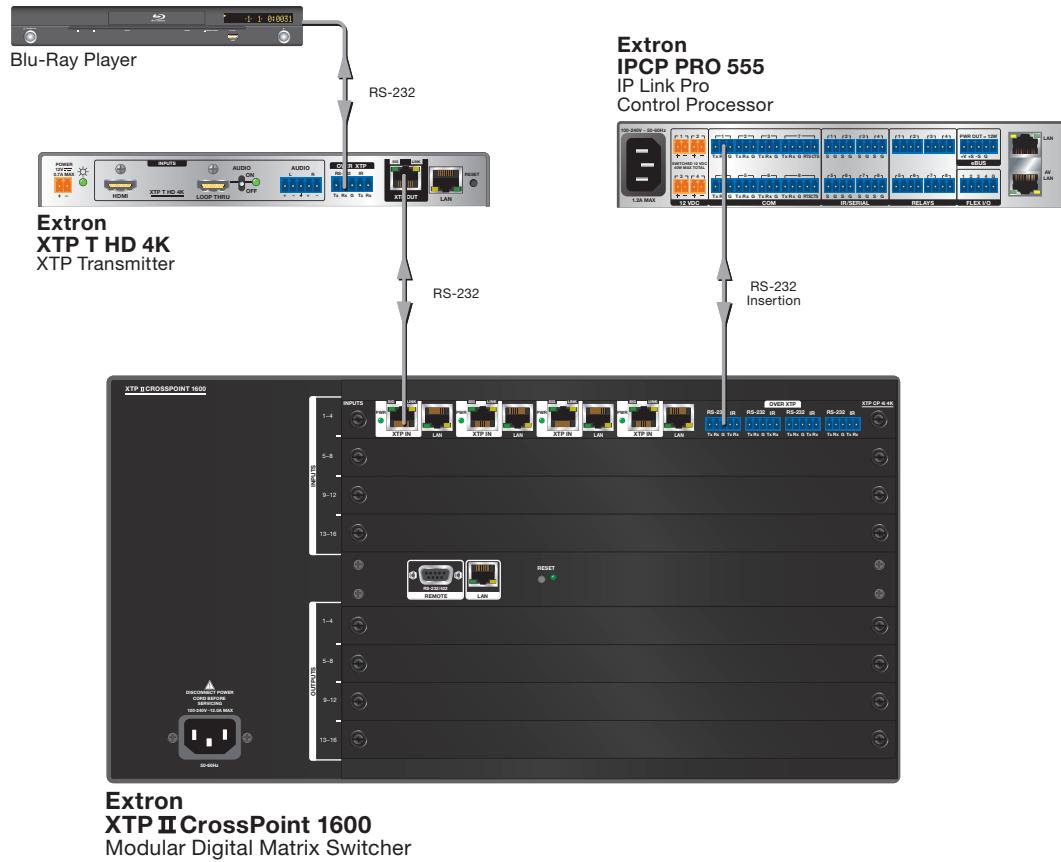


Figure 24. Typical Captive Screw Insertion Application

For Ethernet to RS-232 insertion, define the starting insertion port number. This number is entered as the Telnet port number when establishing communication with the insertion port.

The rear panel Remote RS-232 and RS-422 connector and all input serial ports in the matrix switcher are numbered sequentially (see the table on the next page). Output serial ports start at 34 or 64 and continue sequentially.

Input UART Default Values										
	Matrix Switcher Model				Model			Model		Model
Port	1600	3200	6400	Port	3200	6400	Port	6400	Port	6400
Serial	1999									
Input 1	2001			Input 17	2017		Input 33	2033	Input 49	2049
Input 2	2002			Input 18	2018		Input 34	2034	Input 50	2050
Input 3	2003			Input 19	2019		Input 35	2035	Input 51	2051
Input 4	2004			Input 20	2020		Input 36	2036	Input 52	2052
Input 5	2005			Input 21	2021		Input 37	2037	Input 53	2053
Input 6	2006			Input 22	2022		Input 38	2038	Input 54	2054
Input 7	2007			Input 23	2023		Input 39	2039	Input 55	2055
Input 8	2008			Input 24	2024		Input 40	2040	Input 56	2056
Input 9	2009			Input 25	2025		Input 41	2041	Input 57	2057
Input 10	2010			Input 26	2026		Input 42	2042	Input 58	2058
Input 11	2011			Input 27	2027		Input 43	2043	Input 59	2059
Input 12	2012			Input 28	2028		Input 44	2044	Input 60	2060
Input 13	2013			Input 29	2029		Input 45	2045	Input 61	2061
Input 14	2014			Input 30	2030		Input 46	2046	Input 62	2062
Input 15	2015			Input 31	2031		Input 47	2047	Input 63	2063
Input 16	2016			Input 32	2032		Input 48	2048	Input 64	2064

Output UART Default Values											
	Matrix Switcher Model				Model			Model		Model	
Port	1600	3200	6400	Port	3200	6400	Port	6400	Port	6400	
Output 1	2033			2065	Output 17	2049	2081	Output 33	2097	Output 49	2113
Output 2	2034			2066	Output 18	2050	2082	Output 34	2098	Output 50	2114
Output 3	2035			2067	Output 19	2051	2083	Output 35	2099	Output 51	2115
Output 4	2036			2068	Output 20	2052	2084	Output 36	2100	Output 52	2116
Output 5	2037			2069	Output 21	2053	2085	Output 37	2101	Output 53	2117
Output 6	2038			2070	Output 22	2054	2086	Output 38	2102	Output 54	2118
Output 7	2039			2071	Output 23	2055	2087	Output 39	2103	Output 55	2119
Output 8	2040			2072	Output 24	2056	2088	Output 40	2104	Output 56	2120
Output 9	2041			2073	Output 25	2057	2089	Output 41	2105	Output 57	2121
Output 10	2042			2074	Output 26	2058	2090	Output 42	2106	Output 58	2122
Output 11	2043			2075	Output 27	2059	2091	Output 43	2107	Output 59	2123
Output 12	2044			2076	Output 28	2060	2092	Output 44	2108	Output 60	2124
Output 13	2045			2077	Output 29	2061	2093	Output 45	2109	Output 61	2125
Output 14	2046			2078	Output 30	2062	2094	Output 46	2110	Output 62	2126
Output 15	2047			2079	Output 31	2063	2095	Output 47	2111	Output 63	2127
Output 16	2048			2080	Output 32	2064	2096	Output 48	2112	Output 64	2128

NVRAM Modes

NVRAM modes determine how the matrix switcher communicates with connected endpoint devices. There are two NVRAM modes—centralized mode and distributed mode—which can be applied using the XTP System Configuration software (see the *XTP System Configuration Software Help* file, available at www.extron.com). The user can configure each extended input or output to work in one of these modes depending on the application.

Centralized Mode (Default)

By default, the XTP II CrossPoint matrix switchers operate in centralized mode. In this mode, the matrix switcher is the “master” device in the system which stores all endpoint settings and controls all changes to the endpoints.

If changes are made directly to the endpoints (such as input selection on a transmitter using the buttons, or changes to a scaler using the on-screen display), these changes are pushed back to the matrix and stored.

NOTE: Projectors and other XTP compatible devices work in this mode as well.

Distributed Mode

In this mode, the matrix switcher is no longer the master device in the system. When a port is set up in distributed mode and an endpoint is connected, the settings are maintained on the endpoint and pushed to the matrix to ensure that they are in sync.

NOTE:

- The user can still configure the endpoints from the matrix in this mode.
- Projectors and other XTP compatible devices work in this mode as well.

Reset Modes

The rear panel **Reset** button initiates four levels of resets. See the table below for a summary of the reset levels.

NOTES:

- Review the reset modes carefully. Some reset modes delete all user-loaded content.
- The reset modes close all open IP and Telnet connections and close all sockets.

Reset Mode Summary			
Mode	Activation	Result	Purpose and Notes
Factory Firmware Reset (mode 1)	Press and hold the recessed Reset button while applying power to the device. Release the Reset button when all input and output buttons return to the default illumination, and the Video and Audio buttons turn on. NOTE: After this reset, update the device with the latest firmware version. Do not operate the device with the firmware version that results from this reset.	The device reverts to the factory default firmware for a single power cycle. NOTE: If this reset was performed by mistake or is no longer desired, cycle power to the device again to restore the firmware version running prior to the reset.	Use this reset to return the firmware to the factory version temporarily if an incompatibility issue arises with the current firmware.
Events Reset (mode 3)	Press and hold the Reset button until the rear panel Reset LED blinks once (after 3 seconds). Then, press and release the Reset button again momentarily (<1 second).	Events turn on or off. During the reset, the Reset LED blinks two times if events start, or three times if events stop.	Use this reset for troubleshooting.
IP Reset (mode 4)	Hold down the Reset button until the Reset LED blinks two times (over approximately 6 seconds). Then, press the Reset button again momentarily (<1 seconds).	The device reverts IP settings to the default values. <ul style="list-style-type: none"> • ARP capability is enabled. • IP address, subnet mask, gateway address, and port mapping reset to the default value. • DHCP is disabled. • Events are disabled. The Reset LED blinks four times in quick succession during the reset.	Use this reset to set the IP settings to the default values.
Complete Reset (mode 5)	Hold down the Reset button until the rear panel Reset LED blinks three times (over approximately 9 seconds). Then, press the Reset button again momentarily (<1 second).	The device reverts user settings to the factory default values (firmware excluded). <ul style="list-style-type: none"> • All user configurations reset to default values including real-time adjustments. • IP settings reset to default values. • Uploaded files are removed. • The Reset LED blinks four times in quick succession during the reset. 	Use this reset to restart with the default configuration.

Troubleshooting

Basic Checks

If the matrix switcher is not behaving in the manner described in this guide, perform the following checks:

1. Ensure all related devices are plugged in and powered on.
2. Check for unexpected output mutes.
3. Ensure the desired input is properly tied to the output.
4. Ensure the proper signal format is sent from the input to the output.
5. Check the cabling and make corrections as necessary.

NOTE: If necessary, call the Extron S3 Sales and Technical Support hotline (see www.extron.com for contact information).

Button Illumination Summary

Front Panel Button Illumination Summary								
Function	Inputs	Outputs	Enter	Preset	View	Esc	Video	Audio
Active video and audio tie	Amber (solid)						Green (solid)	Red (solid)
Pending video and audio tie	Amber (blinks)	Green (blinks)					Green (solid)	Red (solid)
View no ties	Amber (solid)			Red (solid)			Green (solid)	Red (solid)
Active video tie	Green (solid)						Green (solid)	
Pending video tie	Green (blinks)	Green (blinks)					Green (solid)	
View audio-only tie	Red (solid)			Red (solid)			Green (solid)	
Active audio tie	Red (solid)							Red (solid)
Pending audio tie	Red (blinks)	Green (blinks)						Red (solid)
View video-only tie	Green (solid)			Red (solid)				Red (solid)
Presets with saved configurations	Red (solid)		Red (blinks)					
Pending preset to save	Red (blinks)	Green (blinks)	Red (blinks)					
Preset to recall	Red (solid)		Red (solid)					
Analog audio input attenuation	Red (solid)	Red (solid or blinks)						Red (blinks)
Analog audio input gain	Red (solid)	Green (solid or blinks)						Red (blinks)
Output volume	Red (solid or blinks)	Red (solid)						Red (solid)

Front Panel Button Illumination Summary								
Function	Inputs	Outputs	Enter	Preset	View	Esc	Video	Audio
Output video and audio mute		Amber (blinks)			Red (solid)		Green (solid)	Red (solid)
Output video mute		Green (blinks)			Red (solid)		Green (solid)	
		Green and Amber (blinks)			Red (solid)		Green (solid)	Red (solid)
Output audio mute		Red (blinks)			Red (solid)			Red (solid)
		Red and Amber (blinks)			Red (solid)		Green (solid)	Red (solid)
9600 baud rate for RS-232			Red (blinks)				Green (blinks)	
19200 baud rate for RS-232				Red (blinks)			Green (blinks)	
38400 baud rate for RS-232					Red (blinks)		Green (blinks)	
115200 baud rate for RS-232						Red (blinks)	Green (blinks)	
9600 baud rate for RS-422			Red (blinks)					Red (blinks)
19200 baud rate for RS-422				Red (blinks)				Red (blinks)
38400 baud rate for RS-422					Red (blinks)			Red (blinks)
115200 baud rate for RS-422						Red (blinks)		Red (blinks)

SIS Configuration and Control

This section describes the operation of the XTP II CrossPoint Series Matrix Switchers via Simple Instruction Set (SIS) commands. It includes commands for basic, everyday functions of the matrix switcher frame, as well as **IP and Remote Port Commands** to control and monitor the IP interface and Remote RS-232/RS-422 port of the matrix switcher.

The switcher can also be remotely controlled through the XTP System Configuration software or the built-in HTML pages.

This section covers the following:

- **Host Device Connection**
- **SIS Overview**
- **Command and Response Table Overview**
- **Command and Response Tables**

Host Device Connection

To control the matrix switcher, input or output boards, or other connected XTP devices, connect a host device (such as a PC) to the matrix switcher in one of the following methods:

- Front panel USB connector.
- Rear panel Remote RS-232 and RS-422 connector (see “Local Serial Connection Considerations” below).
- Rear panel LAN connector (see **Ethernet Connection Considerations** on the next page).

On the host device, use the Extron DataViewer utility to send SIS commands and receive responses.

Local Serial Connection Considerations

The rear panel RS-232 and RS-422 connector and front panel Configuration connector both support serial data. They are independent from each other, but can act simultaneously.

The RS-232 and RS-422 connector has the following default protocol:

- | | | |
|-------------|--------------|---------|
| • 9600 baud | • No parity | • 8-bit |
| • No flow | • 1 stop bit | |

NOTE: Extron recommends leaving the default baud rate at 9600.

The Configuration connector requires connected computers have a compatible USB driver. To ensure the driver is installed, run the XTP System Configuration software (see the *XTP System Configuration Software Help* file).

Ethernet Connection Considerations

To access the matrix switcher through the LAN connector, obtain the IP address, subnet mask, and gateway address of the device. The default values are as follows:

- IP address = 192.168.254.254
- Subnet mask = 255.255.0.0
- Gateway address = 0.0.0.0

The Ethernet link disconnects after a designated period of time of no activity. By default, the timeout period is 5 minutes.

NOTE: Extron recommends leaving the default timeout at 5 minutes and periodically issuing the Query (Q) command to keep the connection active. If there are long idle periods, Extron recommends disconnecting the socket and reopening the connection when another command must be sent.

The matrix switcher accepts up to 200 simultaneous TCP connections, including all http sockets and telnet connections. When the matrix switcher reaches the limit, there is no message or indication. New connections are not accepted until other connections are closed.

Establishing a Connection

The Ethernet cable can be terminated as a straight-through cable or a crossover cable, and must be properly terminated for your application (see [Twisted Pair Cable Termination for Ethernet Communication](#) on page 21).

- **Crossover cable** — Direct connection between the computer and the XTP II CrossPoint Series matrix switcher.
- **Patch (straight-through) cable** — Connection of the XTP II CrossPoint Series matrix switcher to an Ethernet LAN.

To connect to the XTP II CrossPoint Series matrix switcher, open a TCP socket to port 23 using the IP address of the matrix switcher.

The matrix switcher responds with a copyright message including the date, the name of the product, firmware version, part number, and the current date and time.

- If the matrix switcher is **not** password-protected, the device is ready to accept SIS commands immediately after it sends the copyright message.
- If the matrix switcher **is** password-protected, a **password** prompt appears below the copyright message. Enter the appropriate administrator or user password.

NOTES:

- If the password is accepted, the matrix switcher responds with **Login User** or **Login Administrator**. If the password is not accepted, the **Password** prompt reappears.
- **For the XTP II CrossPoint 6400 only:** the factory set administrator password is the product serial number. Enter the serial number in the **password** prompt for initial setup. After initial setup, you may reset the password (see the [Reset administrator password command](#) on page 64, or [Passwords Page](#) on page 73).

SIS Overview

Host and Device Communication

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the matrix switcher determines that a command is valid, it executes the command and sends a response to the host device. All responses from the matrix switcher to the host device end with a carriage return and a line feed (CR/LF = ↵), which signals the end of the response character string. A string is one or more characters.

Unsolicited Messages

When a local event (such as a front panel operation) occurs, the matrix switcher sends a message to the host.

Copyright message

(c) Copyright YYYY, Extron Electronics, *Model Name*, Vx.xx, nn-nnnn-nn↵
DDD, MMM dd, YYYY, HH:mm:ss↵

- YYYY is the year.
- *Model Name* is the XTP CrossPoint matrix switcher model name.
- Vx.xx is the firmware version number.
- nn-nnnn-nn is the model part number.
- DDD is the three letter day of the week.
- MMM is the three letter month.
- dd is the numerical day of the month.
- HH is the hour.
- mm is the minute.
- SS is the second.

NOTE: The matrix switcher reports the day, date, and time only if the host device is connected through the LAN connector.

Password messages

If the matrix switcher is protected by a password, the password message prompts the user for the password to access the matrix switcher features.

NOTES:

- Enabled passwords apply to TCP/IP or Telnet connections only.
- **For the XTP II CrossPoint 6400 only:** the factory set administrator password is the product serial number. Enter the serial number in the password prompt for initial setup. After initial setup, you may reset the password (see the [Reset administrator password command](#) on page 64, or [Passwords Page](#) on page 73).

Password:↵

When a valid password is entered, the matrix switcher responds with one of the following:

- ↵Login Administrator↵
- ↵Login User↵

The Login Administrator response represents administrator access and the Login User response represents user access.

Other unsolicited messages

The matrix switcher sends the following unsolicited messages when certain operations are made from the front panel.

Message	Description
Qik←	Occurs when a front panel tie is created.
PrstSnn←	Occurs when a preset is saved from the front panel. <i>nn</i> is the preset number.
PrstRnn←	Occurs when a preset is recalled from the front panel. <i>nn</i> is the preset number.
Innn●Audxx←	Occurs when the analog audio input level is changed from the front panel. <i>nn</i> is the input number. <i>xx</i> is the audio level in dB.
Outnn●Volxx←	Occurs when the output volume is changed from the front panel. <i>nn</i> is the output number. <i>xx</i> is the volume level in dB of attenuation.
Vmtnn*x←	Occurs when a video output is muted or unmuted from the front panel. <i>nn</i> is the output number. <i>x</i> is the mute status (0 = unmuted, 1 = muted).
Amtnn*x←	Occurs when an audio output is muted or unmuted from the front panel. <i>nn</i> is the output number. <i>x</i> is the mute status (0 = unmuted, 1 = muted).
Execn←	Occurs when the front panel lockout mode is changed from the front panel. <i>n</i> is the lockout mode (0 = allow front panel operation, 1 = prevent all font panel operations except changing the lockout mode and viewing some settings, 2 = prevent front panel operations for audio output mutes, volume, and remote serial connector protocol and baud rate).

To receive notices of changes made to the matrix switcher from other telnet sockets or a serial connection, set the verbose mode to modes 1 or 3 (see the **Set verbose mode** SIS command on page 65). The notices appear as SIS responses.

Command and Response Table Overview

The SIS command and response tables list the commands sent to a device, the responses returned to the host, a description of the command function or results executing the command, and some examples of commands in ASCII.

NOTE: Uppercase and lowercase text are interchangeable unless otherwise stated.

Commands are available for the following functions:

- **Ties** (see page 50)
- **Presets** (see page 51)
- **Mutes** (see page 51)
- **Audio Configuration and Adjustment** (see page 52)
- **SDI Audio** (see page 53)
- **HDMI Input Settings** (see page 54)
- **VGA Input Configuration and Adjustment** (see page 54)
- **Scaler Adjustment** (see page 55)
- **HDCP Status** (see page 55)
- **Signal Status** (see page 56)
- **XTP Setup Parameters** (see page 57)
- **XTP Relay Control** (see page 58)
- **View and Erase File Directory** (see page 58)
- **Information Requests** (see page 59)
- **Lockout modes** (see page 61)
- **Resets** (see page 61)
- **IP and Remote Port Commands** (see page 62)

The command and response tables throughout this guide use symbols, which represent variables in the command and response fields. Command and response examples are shown throughout the tables. The SIS commands are not case sensitive, except for audio input gain and attenuation commands.

The ASCII to HEX conversion table below is for use with the command and response table.

ASCII to Hex Conversion Table		Esc	1B	CR	ØD	LF	ØA								
Space →	20	!	21	“	22	#	23	\$	24	%	25	&	26	‘	27
(28)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F
Ø	30	1	31	2	32	3	33	4	34	5	35	6	36	7	37
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
@	40	A	41	B	42	C	43	D	44	E	45	F	46	G	47
H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F
P	50	Q	51	R	52	S	53	T	54	U	55	V	56	W	57
X	58	Y	59	Z	5A	[5B	\	5C]	5D	^	5E	_	5F
‘	60	a	61	b	62	c	63	d	64	e	65	f	66	g	67
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F
p	70	q	71	r	72	s	73	t	74	u	75	v	76	w	77
x	78	y	79	z	7A	{	7B		7C	}	7D	~	7E	DEL	7F

Symbol definitions

- ◀ = Carriage return and line feed
- ◀ = Carriage return with no line feed
- | = Pipe (can be used interchangeably with the ▶ character).
- = Space
- Esc** = Escape key
- W = Can be used interchangeably with the **Esc** character.

Special Characters

The matrix switcher does not accept the following characters for names or passwords:

+ - , @ = ‘ [] { } < > ` “ ; : | \ ? • (space character, acceptable for names)

Error Responses

If the matrix switcher determines a command is invalid or contains invalid parameters, it returns an error response to the host. The following error codes may apply the matrix switcher or installed boards. Some error codes also apply to connected XTP devices.

- E01 = Invalid input number (out of range)
- E10 = Invalid command
- E11 = Invalid preset number (out of range)
- E12 = Invalid output number (out of range)
- E13 = Invalid value (out of range)
- E14 = Invalid command for the current configuration
- E17 = timeout (caused only by direct write or global presets)
- E22 = Busy
- E24 = Privileges violation (password access)
- E25 = Device not present
- E26 = Maximum number of connections exceeded
- E27 = Invalid event number
- E28 = Bad filename or file not found

Command and Response Tables

Ties

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Output switching			
Tie input (audio and video) to output	<code>[X301]*[X303]!</code>	<code>Out[X303]•In[X301]•All↔</code>	Tie input [X301] to output [X303] (audio and video)
Tie RGBHV input to output	<code>[X301]*[X303]&</code>	<code>Out[X303]•In[X301]•RGB↔</code>	Tie input [X301] to output [X303] (RGBHV)
Tie video input to output	<code>[X301]*[X303]%</code>	<code>Out[X303]•In[X301]•Vid↔</code>	Tie input [X301] to output [X303] (Video)
Tie audio input to output	<code>[X301]*[X303]\$</code>	<code>Out[X303]•In[X301]•Aud↔</code>	Tie input [X301] to output [X303] (Audio)

NOTE: The & tie command for RGBHV and the % tie command for video can be used interchangeably.

Tie an input to all outputs			
Tie input to all outputs (audio and video)	<code>[X301]*!</code>	<code>In[X301]•All↔</code>	
Tie input to all outputs (RGBHV only)	<code>[X301]*&</code>	<code>In[X301]•RGB↔</code>	
Tie input to all outputs (video only)	<code>[X301]*%</code>	<code>In[X301]•Vid↔</code>	
Tie input to all outputs (audio only)	<code>[X301]*\$</code>	<code>In[X301]•Aud↔</code>	
Untie			
Untie all outputs	<code>Ø*!</code>	<code>InØØAll↔</code>	
Untie output	<code>Ø*[X301]!</code>	<code>Out[X303]•InØØ•All↔</code>	Untie a specific output
Untie an input	<code>[X301]*Ø!</code>	<code>OutØØ•In[X301]•All↔</code>	
Quick tie			
Quick multiple tie	<code>Esc+Q[X301]*[X303]! ←</code>	<code>Qik↔</code>	Make multiple ties with one command

NOTES:

- Commands can be made back to back with no spaces. Example `1*1!ØØ2*ØØ2!ØØ3*ØØ3!...`
- The quick multiple tie and tie input to all outputs commands activate all I/O switches simultaneously.
- The matrix switcher supports 3-digit numeric entries (`ØØ1*ØØ1`).

Multi input-endpoint switch			
Multi-input XTP transmitters	<code>Esc[X301]*[X322]*[X323] ETIE←</code>	<code>Etie[X301]*[X327]*[X328]↔</code>	Switch connected multi-input XTP transmitter
View multi-input tie per input	<code>Esc[X301]ETIE←</code>	<code>Etie[X327]*[X328]↔</code>	
View all multi-input tie	<code>EscETIE←</code>	<code>EtieØØ*[X327]¹*[X328]¹•[X327]² *[X328]²•...•[X327]ⁿ*[X328]ⁿ↔</code>	Unsolicited response when the auto switch makes a switch: <code>Etie[X301]*[X327]*[X328]↔</code>
View tie(s)			
View follow-all tie	<code>[X303]!</code>	<code>[X301]↔</code>	Verbose modes 2/3: <code>Out[X303]•In[X302]•All↔</code>
View RGBHV output tie	<code>[X303]&</code>	<code>[X301]↔</code>	Verbose modes 2/3: <code>Out[X303]•In[X302]•RGB↔</code>
View video output tie	<code>[X303]%</code>	<code>[X301]↔</code>	Verbose modes 2/3: <code>Out[X303]•In[X302]•Vid↔</code>
View audio output tie	<code>[X303]\$</code>	<code>[X301]↔</code>	Verbose modes 2/3: <code>Out[X303]•In[X302]•Aud↔</code>

KEY: `[X301]` = Input number (for tie) `ØØ` to maximum number of inputs (input = Ø untie)

`[X303]` = Output number `Ø1` to maximum number of outputs

`[X322]` = Input number on XTP transmitter

`[X323]` = Type of tie

1 = Video tie

2 = Video tie

3 = Video and audio tie

`[X327]` = Video tie

1 = Analog input 1

2 = HDMI input 2

3 = HDMI input 3

`[X328]` = Audio tie

1 = Analog input 1

2 = HDMI input 2

3 = HDMI input 3

1. If the “View follow-all” command is sent to an output with a break-away tie, the switcher responds with error message E13

Presets

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Recall global preset	[Esc]R[X311]PRST←	Prstr[X311]←	Recall a global configuration
KEY: [X311] = Global preset #	01–32		

Mutes

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Video mute (local)			
Video mute	[X303]*1B/b	Vmt[X303]*1←	Mute video per output
Video unmute	[X303]*ØB/b	Vmt[X303]*Ø←	Unmute video per output
View video mute	[X303]B/b	[X309]←	View mute status per output
Video mute all	1*B/b	Vmt1←	Mute video on all outputs
Video unmute all	Ø*B/b	VmtØ←	Unmute video on all outputs
Video mute endpoint			
Video mute/unmute	[Esc]R[X303]*[X305]*[X309]B/b←	VmtR[X303]*[X305]*[X309]←	
View video mute	[Esc]R[X303]*[X305]B/b←	VmtR[X303]*[X305]*[X309]←	
Video mute/unmute all	[Esc]R[X309]*B/b←	VmtR[X309]←	
Audio mute (local)			
Audio mute	[X303]*[X310]Z/z	Amt[X303]*[X310]←	Mute audio per output
Audio unmute	[X303]*ØZ/z	Amt[X303]*[X310]←	Unmute audio per output
View audio mute	[X310]Z/z	[X310]←	View mute status per output
Audio mute all	1*Z/z	Amt[X310]←	Mute audio on all outputs
Audio unmute all	Ø*Z/z	Amt[X310]←	Unmute audio on all outputs
Audio mute endpoint			
Audio mute/unmute	[Esc]R[X303]*[X305]*[X310] Z/z←	AmtR[X303]*[X305]*[X310]←	
View mute	[Esc]R[X303]*[X305]Z/z←	AmtR[X303]*[X305]*[X310]←	
Audio mute/unmute all	[Esc]R[X310]*Z/z←	AmtR*[X310]←	
View mute			
View local output mutes	[Esc]VM←	[X314]^1[X314]^2...[X314]^n←	View output mute status. Verbose modes 2/3: MutØ Ø [X314]^1[X314]^2... [X314]^n←
View all output-endpoint mutes	[Esc]RVM←	MutRØØ*[X303]^0ut1*[X305]^1*[X314]* [X305]^2*[X314]*[X305]^3*[X314]*[X305]^4 *[X314]*[X303]^0ut2*[X305]^1*[X314] *[X305]^2*[X314]*[X305]^3*[X314]*[X305]^4 *[X314]...*[X303]^0utN*[X305]^1*[X314] *[X305]^2*[X314]*[X305]^3*[X314] *[X305]^4*[X314]←	View all output-endpoint mute status
KEY:	[X303] = Output number [X305] = Output number on XTP endpoints [X309] = Video mute status [X310] = Connector type [X314] = Video/audio mute status	Ø 1 to maximum number of outputs Ø = Off 1 = On Ø = Off, 1 = HDMI/SPDIF, 2 = Analog, 3 = All Ø = No mutes, 1 = Video mute, 2 = HDMI/SPDIF Audio Mute, 3 = Video and HDMI/SPDIF Audio Mute, 4 = Analog audio, 5 = Video and Analog audio mute, 6 = All audio mute, 7 = Video and audio mute	

Audio Configuration and Adjustment

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Audio routing selection			
Input audio switch mode	[Esc] I [X301]*[X343]AFMT ←	Afmt I [X301]*[X343]←	Select analog auto, HDMI, or analog
Audio routing selection for endpoints			
Endpoint-input audio switch mode	[Esc] T [X301]*[X302]*[X343] AFMT ←	Afmt T [X301]*[X302]*[X343]←	Select analog auto, HDMI, or analog
View audio selection			
View input audio breakaway selection	[Esc] I [X301]AFMT ←	[X343]←	Verbose modes 2/3: Afmt I [X301]*[X343]←
View all input audio breakaway selection	[Esc] I AFMT ←	[X343]^ [X343]^ ... [X343]^n ←	Verbose modes 2/3: Afmt I ØØ*[X343]^ [X343]^2 ... [X343]^n ←
View audio selection for endpoints			
View input audio selection for endpoints	[Esc] T [X301]*[X302]AFMT ←	Afmt T [X301]*[X302]*[X343]←	
View all input audio selection for connected endpoint	[Esc] T AFMT ←	Afmt T ØØ*[X343]^In1Sub1[X343]^In1Sub2 [X343]^In1Sub3[X343]^In1Sub4 • [X343]^In2Sub1 [X343]^In2Sub2[X343]^In2Sub3[X343]^In2Sub4 • ... • [X343]^InNSub1[X343]^InNSub2 [X43]^InNSub3[X343]^InNSub4 ←	View all connected input endpoint input audio selection
Set analog input audio gain or attenuation			
Positive (+db)	[X301]*[X304]G	In [X301]•Aud [X313]←	Set gain per analog audio input
Attenuation (-db)	[X301]*[X315]g	In [X301]•Aud [X313]←	Set attenuation per analog audio input
Increment	[X301]+G	In [X301]•Aud [X313]←	Increment gain per analog audio input
Decrement	[X301]- G	In [X301]•Aud [X313]←	Decrement attenuation per analog audio input
Set analog input audio gain or attenuation for endpoints			
Positive (+db)	[Esc] T [X301]*[X302]*[X304]G ←	Aud T [X301]*[X302]*[X313]←	Set gain per analog audio input
Attenuation (-db)	[Esc] T [X301]*[X302]*[X315]g ←	Aud T [X301]*[X302]*[X313]←	Set attenuation per analog audio input
Increment	[Esc] T [X301]*[X302]*+G ←	Aud T [X301]*[X302]*[X313]←	Increment gain or attenuation level per analog audio input
Decrement	[Esc] T [X301]*[X302]* - G ←	Aud T [X301]*[X302]*[X313]←	Decrement gain or attenuation level per analog audio input
Set output audio volume			
Increment	[X303]+V / v	Out [X303]•Vol [X307]←	Increment audio volume per output
Decrement	[X303]- V / v	Out [X303]•Vol [X307]←	Decrement audio volume per output
Output level	[X303]*[X307]V / v	Out [X303]•Vol [X307]←	Set audio volume level per output
KEY:			
[X301]	= Input number	Ø1 to maximum number of inputs for your switcher model	
[X302]	= Input number on XTP transmitter		
[X303]	= Output number		
[X304]	= Audio gain (input)	Ø - 24 (1 dB per step)	
[X305]	= Output number on XTP endpoints		
[X307]	= Volume (output)	ØØ - 64 (1 dB per step)	
[X313]	= Numeric dB value	- 18 to +24 (43 steps of gain or attenuation) (default = 0 dB)	
[X315]	= Audio attenuation (input)	1 - 18 (1 dB per step)	
[X343]	= (0) Auto, (1) Digital 2-channel audio, (2) Local 2-channel audio		

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Set analog output volume for endpoints			
Increment	<code>[Esc]R[X303]*[X305]*+V/v</code> ↵	<code>VolR[X303]*[X305]*[X307]</code> ↵	Increment audio volume per output
Decrement	<code>[Esc]R[X303]*[X305]*-V/v</code> ↵	<code>VolR[X303]*[X305]*[X307]</code> ↵	Decrement audio volume per output
Output level	<code>[Esc]R[X303]*[X305]*[X307]V/v</code> ↵	<code>VolR[X303]*[X305]*[X307]</code> ↵	Set audio volume level per output
View output volume level	<code>[Esc]R[X303]*[X305]V/v</code> ↵	<code>VolR[X303]*[X305]*[X307]</code> ↵	View output volume
View audio level setting			
View audio gain/attenuation for input	<code>[X301]G</code>	<code>[X313]</code> ↵	
View audio volume for output	<code>[X303]V/v</code>	<code>[X307]</code> ↵	
KEY: <code>[X301]</code> = Input number <code>[X303]</code> = Output number <code>[X305]</code> = Output number on XTP endpoints <code>[X307]</code> = Volume (output) <code>[X313]</code> = Numeric dB value			
$\emptyset 1$ to maximum number of inputs for your switcher model $\emptyset 0$ - 64 (1 dB per step) -18 to $+24$ (43 steps of gain or attenuation) (default = 0 dB)			

SDI Audio

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Audio Routing Selection			
Input audio breakaway selection	<code>[Esc]I[X301]*[X343]AFMT</code> ↵	<code>AfmtI[X301]*[X343]</code> ↵	
View unput audio breakaway select	<code>[Esc]I[X301]AFMT</code> ↵	<code>[X343]</code> ↵	Verbose modes 2/3: <code>AfmtI[X301]*[X343]</code> ↵
View all input audio breakaway select	<code>[Esc]IAFMT</code> ↵	<code>[X343]^1[X343]^2...[X343]^n</code> ↵	Verbose modes 2/3: <code>AfmtI[X343]^1[X343]^2...[X343]^n</code> ↵
AES Audio Channel			
Select channel	<code>[Esc]I[X301]*[X317]AESC</code> ↵	<code>AescI[X301]*[X317]</code> ↵	
View selected channel	<code>[Esc]I[X301]AESC</code> ↵	<code>[X317]</code> ↵	Verbose modes 2/3: <code>AescI[X301]*[X317]</code> ↵
AES Group Select			
Select channel	<code>[Esc]I[X301]*[X318]AESG</code> ↵	<code>AesgI[X301]*[X318]</code> ↵	
View selected channel	<code>[Esc]I[X301]AESG</code> ↵	<code>[X318]</code> ↵	Verbose modes 2/3: <code>AesgI[X301]*[X318]</code> ↵
KEY: <code>[X301]</code> = Input number <code>[X317]</code> = SDI audio channel (AES channel pairs 1 or 2) <code>[X318]</code> = SDI audio group (AES channel group 1 to 4) <code>[X343]</code> = (0) Auto, (1) Digital 2-channel audio, (2) Local 2-channel audio			
$\emptyset 1$ to maximum number of inputs for your switcher model			

HDMI Input Settings

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Input reports as an HDCP authorized device			
HDCP authorized device On (default)	[Esc]E[X301]*1HDCP←	HdcpE[X301]*1←	Allow HDCP authentication
HDCP authorized device Off	[Esc]E[X301]*0HDCP←	HdcpE[X301]*0←	Disable HDCP authentication
Query HDCP authorized device status	[Esc]E[X301]HDCP←	[X306]←	Verbose: HdcpE[X301]*[X306]←
Input HDCP authorized device for endpoints			
HDCP authorized device On (default)	[Esc]TE[X301]*[X302]*1HDCP←	HdcpTE[X301]*[X302]*1←	Allow HDCP authentication
HDCP authorized device Off	[Esc]TE[X301]*[X302]*0HDCP←	HdcpTE[X301]*[X302]*0←	Disable HDCP authentication
Query HDCP authorized device status	[Esc]TE[X301]*[X302]HDCP←	HdcpTE[X301]*[X302]*[X306]←	
Query all connected endpoints	[Esc]TEHDCP←	HdcpTE00*[X306]In1Sub1[X306]In1Sub2 [X306]In1Sub3[X306]In1Sub4●[X306]In2Sub1 [X306]In2Sub2[X306]In2Sub3[X306]In2Sub4 ●...●[X306]InNSub1[X306]InNSub2[X306] InNSub3[X306]InNSub4←	View all connected endpoint HDCP authorized settings
KEY: [X301] = Input number [X302] = Input number on transmitter [X306] = 1 = allow HDCP encryption (default), 0 = block HDCP encryption			

VGA Input Configuration and Adjustment

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Image reset			
Execute image reset	[Esc]I[X301]*2AADJ←	Aadj I[X301]*2←	Execute an image reset to the current input
VGA Input Preset			
Recall preset	[X301]*1*[X372].	Rpr[X301]*1*[X372]←	Recalls input preset [X372].
Save preset	[X301]*1*[X372],	Spr[X301]*1*[X372]←	Saves input parameters to preset [X372].
Image reset (transmitter)			
Enable	[Esc]T[X301]*[X302]*1AADJ←	Aadj T[X301]*[X302]*1←	Image reset input [X301] when selected.
Disable	[Esc]T[X301]*[X302]*0AADJ←	Aadj T[X301]*[X302]*0←	Turn off image reset for input [X301].
Execute	[Esc]T[X301]*[X302]*2AADJ←	Aadj T[X301]*[X302]*2←	Execute an image reset to the current input.
View	[Esc]T[X301]*[X302]AADJ←	Aadj T[X301]*[X302]*[X320]←	View image reset setting.
KEY: [X301] = Input number [X302] = Input number on transmitter [X320] = Image reset status [X372] = Preset number 1 - 6			
01 to maximum number of inputs for your switcher model 0 = disable, 1 = enable			

Scaler Adjustment

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Image reset			
Enable	<code>Esc R[X303]*[X305]*1AADJ←</code>	AadjR[X303]*[X305]*1←	Image reset output <code>[X303]</code> when selected.
Disable	<code>Esc R[X303]*[X305]*0AADJ←</code>	AadjR[X303]*[X305]*0←	Turn off image reset for output <code>[X303]</code> .
Execute	<code>Esc R[X303]*[X305]*2AADJ←</code>	AadjR[X303]*[X305]*2←	Execute an image reset
View	<code>Esc R[X303]*[X305]AADJ←</code>	AadjR[X303]*[X305]*[X320]←	View image reset setting
Freeze			
Enable	<code>Esc R[X303]*[X305]*1F←</code>	FrzR[X303]*[X305]*1←	Freeze output video (<code>[X403]</code> = freeze status)
Disable	<code>Esc R[X303]*[X305]*0F←</code>	FrzR[X303]*[X305]*0←	Unfreeze output video
View freeze status	<code>Esc R[X303]*[X305]F←</code>	FrzR[X303]*[X305]*[X403]←	View freeze status
KEY:			
<code>[X303]</code> = Output number			
<code>[X305]</code> = Output number on XTP endpoints			
<code>[X320]</code> = Image reset status \emptyset = disable, 1 = enable			
<code>[X403]</code> = Freeze status \emptyset = Disable (default), 1 = Enable			

HDCP Status

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Input HDCP Status			
View input HDCP status	<code>Esc I[X301]HDCP←</code>	<code>[X340]←</code>	Verbose modes 2/3: <code>HdcpI[X301]*[X340]←</code>
Unsolicited HDCP status change		<code>HdcpI[X301]*[X340]←</code>	Unsolicited response when HDCP status change is detected
View all input HDCP status	<code>Esc IHDCP←</code>	<code>[X340]^*[X340]^...*[X340]^n←</code>	Verbose modes 2/3: <code>HdcpI00*[X340]^*[X340]^...*[X340]^n←</code>
Endpoint-input HDCP Status			
View endpoint input HDCP status	<code>Esc T[X301]*[X302]HDCP←</code>	<code>[X301]*[X302]*[X340]←</code>	
Unsolicited response for endpoint-input HDCP change		<code>HdcpT[X301]*[X302]*[X340]←</code>	Unsolicited response when HDCP status change is detected
View all endpoint input HDCP status	<code>Esc THDCP←</code>	<code>HdcpT00*[X340]In1Sub1[X340] In1Sub2[X340]In1Sub3[X340] In1Sub4•[X340]In2Sub1[X340] In2Sub2[X340]In2Sub3[X340]In2Sub4 •...•[X340]InNSub1[X340]InNSub2[X340] InNSub3[X340]InNSub4←</code>	
KEY:			
<code>[X301]</code> = Input number 01 to maximum number of inputs for your switcher model			
<code>[X302]</code> = Input number on transmitter			
<code>[X340]</code> = \emptyset = No source connected; 1 = Source is HDCP compliant; 2 = Source is not HDCP compliant			

Signal Status

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
List DSVP (Digital Sync Validation Processing)			
List all inputs sync (DSVP)	ØLS	[X319] ¹ [X319] ² ...[X319] ⁿ ←	Verbose modes 2/3: FrqØ•[X319] ¹ [X319] ² ...[X319] ⁿ ←
Unsolicited signal status		FrqØ•[X319] ¹ [X319] ² ...[X319] ⁿ ←	Unsolicited response when a change in signal status is detected.
Input signal status for endpoints	[Esc]T[X301]*[X302]*LS←	[X301]*[X302]*[X319]←	
Unsolicited signal status for endpoint		LsT[X301]*[X302]*[X319]←	Unsolicited response when a change in signal status is detected.
List all sync for endpoints	[Esc]TLS←	LsTØØ*[X301]*[X319]SubInput1[X319]SubInput2[X319]SubInput3[X319]SubInput4●...←	
KEY:			
[X301]	= Input number	Ø1 to maximum number of inputs for your switcher model	
[X302]	= Input number on transmitter or receiver		
[X319]	= Signal status	Ø = No signal at input 1 = Both H/V or signal at input	

WindоЩall

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
WindоЩall Preset Recall			
WindоЩall Preset Recall	[Esc]R[X11]CHOP←	ChopR[X11]←	
Video Mute – Individual Window			
Video mute/unmute	[Esc]B[X12]*[X309]CHOP←	[X12]*[X13]*[X14]*[X309]*[X321]←	Verbose modes 2/3: ChopB[X12]*[X13]*[X14]*[X309]*[X321]←
View video mute	[Esc]B[X12]CHOP←	[X12]*[X13]*[X14]*[X309]*[X321]←	Verbose modes 2/3: ChopB[X12]*[X13]*[X14]*[X309]*[X321]←
Audio Mute – Individual Window			
Audio mute/unmute	[Esc]Z[X12]*[X321]CHOP←	[X12]*[X13]*[X14]*[X309]*[X321]←	Verbose modes 2/3: ChopZ[X12]*[X13]*[X14]*[X309]*[X321]←
View audio mute	[Esc]Z[X12]CHOP←	[X12]*[X13]*[X14]*[X309]*[X321]←	Verbose modes 2/3: ChopZ[X12]*[X13]*[X14]*[X309]*[X321]←
WindоЩall Ties			
Tie input (audio and video) to window	[Esc]! [X12]*[X301]CHOP←	[X12]*[X13]*[X14]*[X309]*[X321]←	Verbose modes 2/3: Chop ! [X12]*[X13]*[X14]*[X309]*[X321]←
Tie video input to window	[Esc]%[X12]*[X301]CHOP←	[X12]*[X13]*[X14]*[X309]*[X321]←	Verbose modes 2/3: Chop % [X12]*[X13]*[X14]*[X309]*[X321]←
Tie audio input to window	[Esc]\$[X12]*[X301]CHOP←	[X12]*[X13]*[X14]*[X309]*[X321]←	Verbose modes 2/3: Chop \$ [X12]*[X13]*[X14]*[X309]*[X321]←
View input (audio and video) to window	[Esc]! [X12]CHOP←	[X12]*[X13]*[X14]*[X309]*[X321]←	Verbose modes 2/3: Chop ! [X12]*[X13]*[X14]*[X309]*[X321]←
KEY:			
[X11]	= Preset number	Ø1 - 64	
[X12]	= Window number	Ø1 - 64	
[X13]	= Video input	ØØ to maximum number of inputs (input = Ø untie)	
[X14]	= Audio input	ØØ to maximum number of inputs (input = Ø untie)	
[X301]	= Input number (for tie)	ØØ to maximum number of inputs (input = Ø untie)	
[X309]	= Video mute status	Ø = Off, 1 = On	
[X321]	= Audio mute status	Ø = Off, 1 = On	

XTP Setup Parameters

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Enable/Disable XTP Remote Power			
Enable or disable input power and report status	<code>Esc I[X301]*[X391]POEC←</code>	<code>Poec I[X301]*[X391]*[X392]*[X394]←</code>	
		<i>Unsolicited response when an "amount power request" changes:</i>	<code>Poec I[X301]*[X391]*[X392]*[X394]←</code>
Enable or disable input power and report status, all inputs	<code>Esc I[X391]*POEC←</code>	<code>Poec I00*[X391]^*[X391]^*[X391]^*</code> ... <code>[X391]^←</code>	
Enable or disable output power and report status	<code>Esc O[X303]*[X391]POEC←</code>	<code>Poec O[X303]*[X391]*[X392]*[X394]←</code>	
		<i>Unsolicited response when an "amount power request" changes:</i>	<code>Poec O[X303]*[X391]*[X392]*[X394]←</code>
Enable or disable output power and report status, all outputs	<code>Esc O[X391]*POEC←</code>	<code>Poec O00*[X391]^*[X391]^*[X391]^*</code> ... <code>[X391]^←</code>	
View XTP Power Settings			
View XTP input power (enable/disable and status)	<code>Esc I[X301]POEC←</code>	<code>[X391]*[X392]*[X394]←</code>	View power setting per input
View all XTP input power (enable/disable)	<code>Esc IPOEC←</code>	<code>[X391]^*[X391]^*[X391]^*[X391]^...</code> <code>[X391]^←</code>	Verbose modes 2/3: <code>Poec I00*[X391]^*[X391]^*[X391]^*</code> ... <code>[X391]^←</code>
View XTP output power (enable/disable and status)	<code>Esc O[X303]POEC←</code>	<code>[X391]*[X392]*[X394]←</code>	View power setting per output. Verbose modes 2/3: <code>Poec O[X303]00*[X391]^*[X391]^*</code> * <code>[X391]^*[X391]^...</code> <code>[X391]^←</code>
View ALL XTP output power (enable/disable)	<code>Esc OPOEC←</code>	<code>[X391]^*[X391]^*[X391]^*[X391]^...</code> <code>[X391]^←</code>	Verbose modes 2/3: <code>Poec O00*[X391]^*</code> <code>[X391]^*[X391]^*[X391]^...</code> <code>[X391]^←</code>
Power Usage			
Query XTP power usage	<code>Esc TPOEC←</code>	<code>[X394]*[X395]←</code>	Power usage for all enabled power devices. Verbose modes 2/3: <code>Poec T[X394]*[X395]←</code>
KEY:			
<code>[X301]</code>	= Input number 01 to maximum number of inputs for your switcher model		
<code>[X303]</code>	= Output number		
<code>[X391]</code>	= 0 = Disable (default), 1 = Enable		
<code>[X392]</code>	= Amount of power requested		
<code>[X394]</code>	= Power status Ø = Unpowerable endpoint 1 = Power is being provided to the endpoint 2 = Power available for the endpoint, but disabled 3 = No power available for the endpoint, but enabled 4 = Fault		
<code>[X395]</code>	= Error status Ø = Power status OK 1 = Power supply fault		

XTP Relay Control

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
XTP Rx Relay Command			
Turn relays on/off	<code>Esc[X303*X396*X397]RELY←</code>	<code>Rely[X303*X396*X397]←</code>	
Pulse relay	<code>Esc[X303*X396*3*X398]RELY←</code>	<code>Rely[X303*X396*X397]←</code>	
View relays	<code>Esc[X303*X396]RELY←</code>	<code>X397←</code>	Verbose modes 2/3: <code>Rely[X303*X396*X397]←</code>
KEY: <ul style="list-style-type: none"> <code>X303</code> = Output number <code>X396</code> = Relay # on the endpoint (1 or 2) <code>X397</code> = \emptyset = Off 1 = On 2 = Toggle <p><code>X398</code> = Pulse time: 1 to 65535 (1 = 16 ms)</p>			

View and erase file directory

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
NOTE: The response to the View File Directory command differs, depending on whether the command is sent via an RS-232/RS-422 or Telnet connection or sent via a Web browser connection.			
View file directory <u>USB, RS-232/RS-422 port and</u> <u>Telnet</u>	<code>Esc DF←</code>	See below: <code>filename1•date/time•length←</code> <code>filename2•date/time•length←</code> <code>filename3•date/time•length←</code> <code>• •</code> <code>• •</code> <code>filenamen•date/time•length←</code> <code># of Bytes•Left←←</code>	List user-supplied files.
View file directory <u>Web browser</u>	<code>Esc DF←</code>	See below: <code>Var•file==new•array•();</code> <code>File•[1]==‘filename1,date1,filesize1’;</code> <code>File•[2]==‘filename2,date2,filesize2’;</code> <code>File•[3]==‘filename3,date3,filesize3’;</code> <code>• •</code> <code>• •</code> <code>File•[n]==‘filenamen,daten,filesize’n’;</code> <code>File•[n+1]==# of Bytes•Left</code>	List user-supplied files.
Erase user-supplied web pages/files	<code>EscfilenameEF←</code>	<code>Del•filename←</code>	

Information requests

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Information request	I	V[X45]X[X46]•A[X45]X[X46]↔	V (video) matrix size•A (audio) matrix size
Request part number	N	60-nnnn-nn↔	See the Extron website for part numbers.
Request input/output board configuration	*N	60-nnnn-nn . [X47]^ [X47]^2 ... [X47]^n [X48]^1 [X48]^2 ... [X48]^n↔	Part number, dot, 4 or 8 (n) [X47]s; each is the input board installed, starting from input slot 1, followed by 4 or 8 (n) [X48]s; each is the output board installed.
NOTE: There are up to three separate sets of Extron firmware on which the matrix switcher can report: the controller firmware, which is the overall control firmware; the Ethernet protocol firmware, which handles the Ethernet interface; and the latest optional Extron firmware update, which is available at www.extron.com .			
Query controller firmware version	Q	X49↔	
Example:	Q	1.23↔	The factory-installed controller firmware version is 1.23 (sample value only).
Query controller firmware version (verbose)	ØQ	X49 - X50 - X50↔	Detailed status of the controller firmware and any firmware upgrade. The active firmware is marked by an asterisk (*). A caret (^) indicates a bad checksum or an invalid load. ??? indicates that firmware is not loaded.
<i>Response description:</i> Ethernet protocol firmware version-controller firmware version-updated firmware version			
Example:	Øq	See below	
<p style="text-align: center;">Description 1.23 - 1.00 (1.06-XTP CP Series -Tue, 02 Dec 2010 00:00:00 GMT), -1.00* (1.06-XTP CP Series -Mon, 02 Apr 2012 16:39:21 GMT) Ethernet protocol firmware XTP II CrossPoint firmware version</p>		* indicates the version running	Upload date and time Updated firmware version
KEY:	<p>[X45] = Number of inputs [X46] = Number of outputs</p> <p>[X47] = Installed input board n = XTP II CP 4i HD 8K l = XTP CP 4i 4K (HP) a = XTP CP 4i 4K T = XTP II CP 4i HD 4K PLUS P = XTP CP 4i 3G-SDI G = XTP CP 4i F = XTP CP 4i VGA</p> <p>[X48] = Installed output board o = XTP II CP 4o HD 8K m = XTP CP 4o HPPOE b = XTP CP 4o 4K U = XTP II CP 4o HD 4K PLUS h = XTP II CP 4o HD AT 4K PLUS O = XTP CP 4o Fiber 4K</p> <p>[X49] = Firmware version number to second decimal place (x.xx) [X50] = Verbose firmware version-description-upload date/time (see the Query firmware version (verbose) command, above).</p>		
	<p>K = XTP CP 4i HDMI DMA I = XTP CP 4i DVI Pro H = XTP CP 4i HDMI j = XTP CP 4i 12G-SDI N = XTP CP 4i Fiber 4K X = No board installed</p> <p>M = XTP CP 4o SA (stereo audio) J = XTP CP 4o DVI Pro E = XTP CP 4o HDMI D = XTP CP 4o X = No board installed</p>		

Lockout modes

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Front Panel Executive Mode			
Locked (basic feature only; default)	[Esc]2EXEC←	Exec2←	
Locked (view only)	[Esc]1EXEC←	Exec1←	
Unlocked (basic and advanced)	[Esc]ØEXEC←	ExecØ←	
View lock status	[Esc]EXEC←	Exec[X309]←	
Endpoint Front Panel Executive Mode			
Set input endpoint front panel lockout mode	[Esc]T[X301]*[X309]X/x←	ExeT[X301]*[X309]←	
Set all input endpoint front panel lockout mode	[Esc]T[X309]*X/x←	ExeTØØ*[X309]←	
View input endpoint front panel lockout mode	[Esc]T[X301]X/x←	ExeT[X301]*[X309]←	
Set output endpoint front panel lockout mode	[Esc]R[X303]*[X309]X/x←	ExeR[X303]*[X309]←	
Set all output endpoint front panel lockout mode	[Esc]R[X309]*X/x←	ExeRØØ*[X309]←	
View output endpoint front panel lockout mode	[Esc]R[X303]X/x←	ExeR[X303]*[X309]←	
KEY: [X301] = Input number [X303] = Output number [X309] = Executive mode			
01 to maximum number of inputs for your switcher model Ø = un-locked (basic and advanced) 1 = locked (view only) 2 = locked (basic feature only; default)			

Resets

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Factory Defaults (Zap command)			
Reset global presets & names	[Esc]ZG←	Zpg←	
Reset individual global	[Esc]X311ZG←	Zpg[X311]←	
Reset all audio gains to 0dB	[Esc]ZA←	Zpa←	
Reset all audio volume to 100%	[Esc]ZV←	Zpv←	
Unmute RGB/Audio (all mutes)	[Esc]ZZ←	Zpz←	
System reset (factory default)	[Esc]ZXXX←	Zpx←	
Reset flash	[Esc]ZFFF←	Zpf←	
Reset partial (room) map	[Esc]ZR←	Zpr←	
Reset individual partial (room)	[Esc]X308ZR←	Zpr[X308]←	
Reset partial (room) presets & names	[Esc]ZP←	Zpp←	
Reset individual partial (room) preset	[Esc]X308*X312ZP←	Zpr[X308]*[X312]←	
Absolute reset, including IP settings	[Esc]ZQQQ←	Zpq←	
Reset all device settings and delete files	[Esc]ZY←	Zpy←	
Reset Endpoints			
Reset input endpoint	[Esc]T[X301]ZXXX←	ZpxT[X301]←	
Reset all input endpoints	[Esc]TZXXX←	ZpxT←	
Reset output endpoint	[Esc]R[X303]ZXXX←	ZpxR[X303]←	
Reset all output endpoints	[Esc]RZXXX←	ZpxR←	
KEY: [X301] = Input number [X303] = Output number [X308] = Room # (for room presets) [X311] = Global preset # [X312] = Room preset #			
01 to maximum number of inputs for your switcher model 10 maximum (each can have up to 10 presets ([X312] assigned) Ø = current ties for system in view) [16-32-64 max] 1Ø maximum (Ø = current configuration)			

IP- and Remote port-Specific SIS Commands

Symbol definitions

X61	= Matrix name	Up to 24 alphanumeric characters
NOTE: The HTML language reserves certain characters for specific functions (see Special Characters on page 48).		
X62	= Default name	XTP-II-CP- <i>nn00</i> + Last 3 pairs of MAC address. <i>nn</i> = 16, 32, or 64.
X63	= Time and date (for set)	In the format: <i>MM/DD/YY•HH:mm:ss</i> where: <i>MM</i> = month: 01 (January) to 12 (December) <i>DD</i> = day: 01 to 31 <i>YY</i> = year: 00 to 99 <i>HH</i> = hour: 00 to 23 <i>mm</i> = minute: 00 to 59 <i>SS</i> = second: 00 to 59
X64	= Time and date (for read)	In the format: <i>Day, •DD•Mmm•YYYY•HH:mm:ss</i> where: <i>Day</i> = day of the week: Mon to Sun <i>DD</i> = day: 01 to 31 <i>Mmm</i> = month: Jan to Dec <i>YYYY</i> = year: 2000 to 2099 <i>HH</i> = hour: 00 to 23 <i>mm</i> = minute: 00 to 59 <i>SS</i> = second: 00 to 59
X65	= GMT offset	-12.0 to +14.0 (hours and minutes removed from GMT)
X66	= Daylight Savings Time	0 = off or ignore (default) 1 = on (North America) 2 = on (Europe) 3 = on (Brazil)
X67	= IP address	###.###.###.###
X68	= Hardware (MAC) address	##-##-##-##-##-##
X69	= Number of open connections	000 to 200
X70	= Password	Up to 12 alphanumeric characters
NOTE: The HTML language reserves certain characters for specific functions (see Special Characters).		
X71	= Domain name	Standard domain name rules apply (for example: xxx.com)
NOTE: The @ character is acceptable only as the lead-in to the domain name (such as @extron.com).		
X73	= E-mail account	65 to 72 (65 = e-mail recipient 1, 66 = 2, 67 = 3,... 72 = recipient 8)
X74	= E-mail address	Typical e-mail address format (for example: nnn@xxx.com)

X75	= Notification selections, part 1	I = inputs F = fans P = power supply
X76	= Notification selections, part 2	If X75 = I, then X76 = 00 (all inputs, or 01 to 16 , 32 , or 64 (input 1 through 16, 32, or 64) If X75 = F, then X76 = 00 (all fans) If X75 = P, then X76 = 00 (all power supplies)
X77	= Notify when	0 = no response 1 = fail or missing 2 = fixed or restored 3 = both 1 and 2 4 = suspend
X78	= DHCP	0 = off (default) 1 = on
X79	= Port number	01 = Remote RS-232/RS-422 port 02 = Unused 03-130 = UARTs 1-128 (XTP input and output board ports)
X80	= Baud rate	9600 (default), 19200 , 38400 , 115200
X81	= Parity	O = odd E = even N = none (default) M = mark S = space
X82	= Data bits	7 , 8 (default)
X83	= Stop bits	1 (default), 2
X84	= Port type	0 = RS-232 (default) 1 = RS-422
X85	= Verbose mode	0 = clear or none (default for Telnet connection) 1 = verbose mode (default for RS-232 and RS-422 or USB connection) 2 = Tagged responses for queries 3 = Verbose mode and tagged for queries

NOTE: If tagged responses is enabled (modes 2 and 3), all read commands return the constant string and the value as the set command does (for example, the read matrix name command **Esc CN←**, returns **Ipn●X11←**).

X86	= Flow control	H = hardware S = software N = none (default)
X87	= Data pacing in MS	0000 to 1000 (0000 = default)
X88	= Time (in 10 MS increments) to wait for characters	10 to 32767 (for example, 10 = 100 MS)
X89	= Time (in 10 MS increments) between characters	2 to 32767 (2 = default)

X90	= Priority status for receive timeouts	\emptyset = use the “Send” data string command parameters if they exist (default) 1 = use the Configure receive timeout command parameters
X91	= Length of message (L) or delimiter (D)	$nnnnnL$ = byte count (1 to 32767 or \emptyset = ignore byte length, use time) <i><Delimiter>D</i> (for example: 13D [carriage return - ↵])
X92	= Port timeout interval in 10 second increments	1 to 65000 (30 = default)

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
IP and Remote port setup commands			
Set matrix name	[Esc][X61]CN←	Ipn•[X61]←	
Read matrix name (location)	[Esc]CN←	[X61]←	
Reset matrix name to factory default	[Esc]•CN←	Ipn•[X62]←	
Set time and date	[Esc][X63]CT←	Ipt[X63]←	
Read time and date	[Esc]CT←	[X64]←	
Set GMT offset	[Esc][X65]CZ←	Ipz[X65]←	In the command, the divider between hours and minutes can be either a colon or a period. In the response, the divider is a colon. Example: [Esc]8 . 3CZ← Ipz+08:30← 8.3 = 8:30
Read GMT offset	[Esc]CZ←	[X65]←	
Set Daylight Savings Time	[Esc][X66]CX←	Ipx[X66]←	
Read Daylight Savings Time	[Esc]CX←	[X66]←	
Set IP address	[Esc][X67]CI←	Ipi[X67]←	Default: 192.168.254.254
Read IP address	[Esc]CI←	[X67]←	
Read hardware address	[Esc]CH←	[X68]←	Reads MAC address. Verbose modes 2/3: Iph[X68]←
Read # of open connections	[Esc]CC←	[X69]←	Verbose modes 2/3: Icc[X69]←
Set subnet mask	[Esc][X67]CS←	Ips[X67]←	Default: 255.255.0.0
Read subnet mask	[Esc]CS←	[X67]←	
Set gateway IP address	[Esc][X67]CG←	Ipg[X67]←	Default: 0.0.0.0
Read gateway IP address	[Esc]CG←	[X67]←	
Set administrator password	[Esc][X70]CA←	Ipa•*****←	
Read administrator password	[Esc]CA←	*****← or ←	If there is a valid password the response is *****←. If there is no password, the response is ←.
Reset (clear) administrator password	[Esc]•CA←	Ipa•←	
Set user password	[Esc][X70]CU←	Ipu•*****←	
Read user password	[Esc]CU←	*****← or ←	If there is a valid password the response is *****←. If there is no password, the response is ←.
Reset (clear) user password	[Esc]•CU←	Ipu•←	
Set mail server, domain name	[Esc][X67],[X71],[X70]CM←	Ipm[X67],[X71],[X70],,←	
Read mail server, domain name	[Esc]CM←	[X67],[X71],[X70],,←	

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional Description
Set e-mail recipient	<code>[Esc][X73],[X74]CR←</code>	<code>Ipr[X73],[X74],←</code>	This command sets the recipient. To receive e-mail notifications, you must then set the events that the switcher reports, using one or more separate “Set e-mail events” (EM) commands (see below).
Example:	<code>[Esc]72,Jsmith@folklore.netCR←</code>	<code>Ipr72,Jsmith@folklore.net,←</code>	
Read e-mail recipient	<code>[Esc][X73]CR←</code>	<code>[X74],←</code>	
Set e-mail events for recipient	<code>[Esc][X75],[X73],[X76],[X45]EM←</code>	<code>Ipe[X75],[X73],[X76],[X45]←</code>	You must first have set an e-mail recipient for the e-mail account number (X73), using the separate Set e-mail (CR) command (see above). E-mail account #72 (recipient #8) (Jsmith, as set by the preceding Set e-mail recipient command) will receive “fail/missing” and “fixed/restore” messages for all inputs.
Example:	<code>[Esc]I72,0,3EM←</code>	<code>IpeI*72*0*3←</code>	
Read e-mail notifications for one account (recipient)	<code>[Esc][X73],[X84],[X77]EM←</code>	<code>[X84],[X84],[X84], ..., [X84]←</code>	
Set DHCP on or off	<code>[Esc][X78]DH←</code>	<code>Idh[X78]←</code>	Default: Ø (Off)
Read DHCP on/off status	<code>[Esc]DH←</code>	<code>[X78]←</code>	
Set serial port parameters	<code>[Esc][X79]*[X80],[X81],[X82],[X83]CP←</code>	<code>Cpn[X79]•Ccp[X80],[X81],[X82],[X83]←</code>	
Read serial port parameters	<code>[Esc][X79]CP←</code>	<code>[X80],[X81],[X82],[X83]←</code>	
Configure flow control	<code>[Esc][X79]*[X86],[X87]CF←</code>	<code>Cpn[X79]•Cfl[X86],[X87]←</code>	
Read flow control	<code>[Esc][X79]CF←</code>	<code>[X86],[X87]←</code>	
Configure receive timeout	<code>[Esc][X79]*[X88],[X89]CE←</code>	<code>Cpn[X79]•Cce[X88],[X89],[X90],[X91]←</code>	
NOTE: The configure command is sufficient as shown for most users, with the priority (X90) and length or delimiter (X91) omitted). The response in this case is “Cpn[X79]•Cce[X88],[X89],Ø,ØØØØØL←,” with the default X90 and X91 values returned.			
Read receive timeout	<code>[Esc][X79]CE←</code>	<code>[X88],[X89],[X90],[X91]←</code>	
Set mode	<code>[Esc][X79]*[X84]CY←</code>	<code>Cpn[X79]•Cty[X84]←</code>	
Read mode	<code>[Esc][X79]CY←</code>	<code>[X84]←</code>	
Set verbose mode	<code>[Esc][X85]CV←</code>	<code>Vrb[X85]←</code>	Enable or disable verbose mode and tagged responses, where additional information is provided in response to a query.
Read verbose mode	<code>[Esc]CV←</code>	<code>[X85]←</code>	
Configure current port timeout	<code>[Esc]Ø*[X92]TC←</code>	<code>PtiØ*[X92]←</code>	
Read current port timeout	<code>[Esc]ØTC←</code>	<code>[X92]←</code>	
Configure global IP port timeout	<code>[Esc]1*[X92]TC←</code>	<code>Pti1*[X92]←</code>	
Read global IP port timeout	<code>[Esc]1TC←</code>	<code>[X92]←</code>	

HTML Operation

The XTP II CrossPoint Series can be remotely controlled via:

- The XTP System Configuration Software (see the *XTP System Configuration Software Help* file, available at www.extron.com)
- SIS commands (see **SIS Configuration and Control** on page 44)
- Built-in HTML pages (see below)

This section introduces using the built-in HTML pages to operate the XTP II CrossPoint Series, including:

- **Download the Startup Page**
- **Status Tab**
- **Configuration Tab**
- **File Management Tab**
- **Control Tab**

The matrix switcher can be controlled and operated through its LAN port, connected via a LAN or WAN, using a Web browser such as the Microsoft Internet Explorer. The display in the browser of the status or operation of the matrix switcher has the appearance of Web pages. This chapter describes the factory-installed HTML pages, which are always available and cannot be erased or overwritten.

NOTE: If your Ethernet connection to the matrix switcher is unstable, try turning off the proxy server in your Web browser. In Microsoft Internet Explorer, click **Tools > Internet Options > Connections > LAN Settings**, uncheck the **Use a proxy server...** box, and then click **OK**.

Download the Startup Page

Access the matrix switcher using HTML pages as follows:

1. Open a web browser and enter the matrix IP address in the **Address** field of the browser.

NOTE: If the local system administrators have not changed the value, the factory-specified default, 192.168.254.254, is the correct value for this field.

2. If you want the browser to display a page other than the default page (such as a custom page that you have uploaded), enter a slash (/) and the file name to open.

NOTES:

- The **Address** field of the browser should display the address in the following format: <xxx.xxx.xxx.xxx>/<optional_file_name>.html.
- The HTML language reserves certain characters for specific functions (see [Special Characters](#) on page 48).

3. Press the keyboard <**Enter**> key. The matrix switcher checks to see if it is password-protected.

If the matrix switcher is not password-protected, it checks and downloads the HTML pages (proceed to step 6).

If the matrix switcher is password-protected, the matrix switcher asks for your password (see figure 25).



Figure 25. Sample Password Inquiry

NOTE: A **User name** entry is not required.

4. Click in the **Password** field (see figure 25, ①) and type in the appropriate administrator or user password.

NOTE: For the XTP II CrossPoint 6400 only: the factory set administrator password is the product serial number. Enter the serial number in the password prompt for initial setup. After initial setup, you may reset the password (see the [Reset administrator password command](#) on page 64, or [Passwords Page](#) on page 73).

5. Click the **OK** button (②).

6. The matrix switcher checks several possibilities, in the following order, and then responds accordingly:

- If the address include a specific file name, such as 192.168.254.254/<file_name>.html, the matrix switcher downloads that HTML page.
- If there is a file in the matrix switcher memory that is named "index.html", the matrix switcher downloads "index.html" as the default startup page.
- If neither of the above conditions is true, the matrix switcher downloads the factory-installed default startup page, "nortxe_index.html" (see [figure 26](#) on the next page), also known as the **System Status** page.

Status Tab

System Status Page

The **System Status** page (see figure 26) provides an overall view of the status of the matrix switcher, including individual voltages, fan operation, and the serial port status. The **System Status** page is the default page that the matrix switcher downloads when you connect to the matrix switcher. Access the **System Status** page from other pages by clicking the **Status** tab.

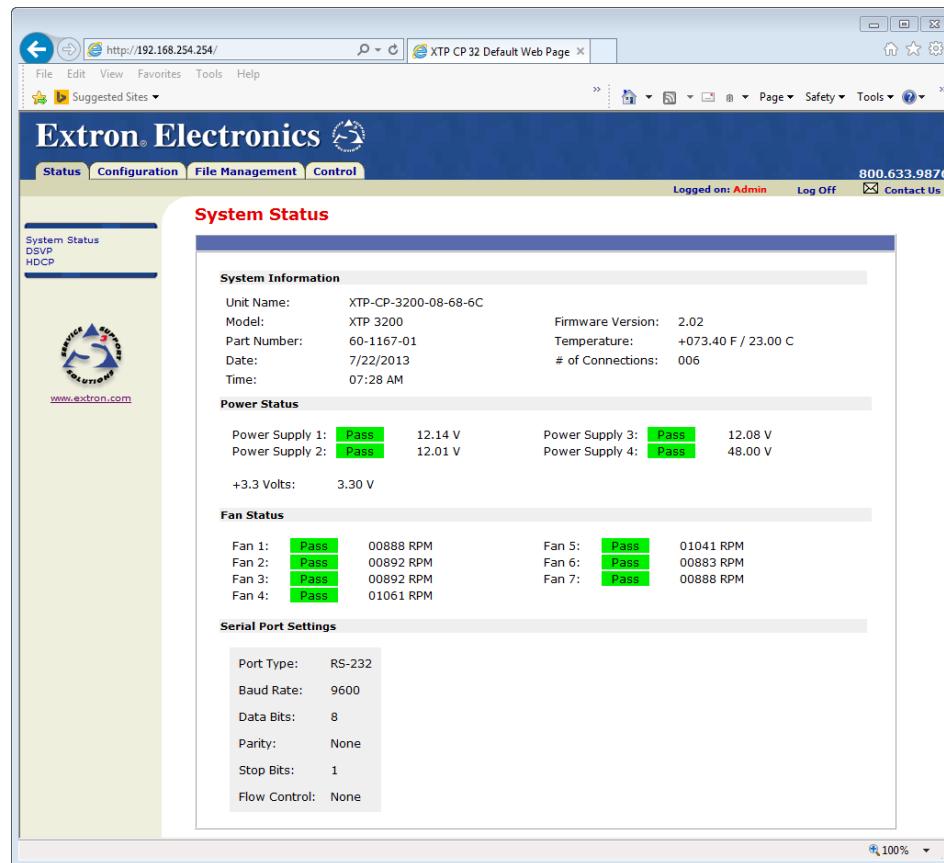


Figure 26. System Status Page

The **System Status** page periodically refreshes itself to reflect the latest status of the matrix switcher components. If a value changes, the display shows the change in status the next time it refreshes.

DSVP Page

The DSVP page (see figure 27) provides the connection status of the matrix switcher. Access the DSVP page from the System Status or HDCP page by clicking the **DSVP** link on either the System Status or HDCP page.

The screenshot shows the DSVP page with the following interface elements:

- Header:** Extron Electronics logo, navigation menu (Status, Configuration, File Management, Control), contact information (800.633.9876, Admin, Log Off, Contact Us).
- Left Sidebar:** System Status, DSVP, HDCP links; Extron logo and website (www.extron.com).
- Content Area:**
 - Section Header:** DSVP
 - Description:** This screen allows you to view your System's Input Status.
 - Table:** DSVP
 - Columns:** Input, Signal Status, Source
 - Data Rows:**
 - XTP In 001: Signal Status (green circle), Source Available
 - XTP In 002: Signal Status (green circle), Source Available
 - XTP In 003: Signal Status (green circle), Source Available
 - XTP In 004: Signal Status (green circle), Source Available
 - XTP In 005: Signal Status (white circle), No Source
 - XTP In 006: Signal Status (white circle), No Source
 - XTP In 007: Signal Status (green circle), Source Available
 - XTP In 008: Signal Status (white circle), No Source
 - HDMI In 009: Signal Status (white circle), No Source
 - HDMI In 010: Signal Status (white circle), No Source
 - HDMI In 011: Signal Status (white circle), No Source
 - HDMI In 012: Signal Status (white circle), No Source
 - Empty Slot 013: Signal Status (white circle), No Source
 - Empty Slot 014: Signal Status (white circle), No Source

Figure 27. DSVP Page

HDCP Page

The HDCP page (see figure 28) provides the HDCP status of inputs to and outputs from the matrix switcher. Access the HDCP page from the System Status or DSVP page by clicking the **HDCP** link on either the System Status or DSVP page.

The screenshot shows the HDCP page with the following interface elements:

- Header:** Extron Electronics logo, navigation menu (Status, Configuration, File Management, Control), contact information (800.633.9876, Admin, Log Off, Contact Us).
- Left Sidebar:** System Status, DSVP, HDCP links; Extron logo and website (www.extron.com).
- Content Area:**
 - Section Header:** HDCP
 - Description:** This screen allows you to view your System's Input/Output Status.
 - Table:** HDCP
 - Left Column:** HDCP Input
 - Right Column:** HDCP Output
 - Input Data:**
 - XTP In 001: HDCP Content
 - XTP In 002: No HDCP Content
 - XTP In 003: No HDCP Content
 - XTP In 004: No HDCP Content
 - XTP In 005: No Source Connected
 - XTP In 006: No Source Connected
 - XTP In 007: No HDCP Content
 - XTP In 008: No Source Connected
 - HDMI In 009: No Source Connected
 - HDMI In 010: No Source Connected
 - HDMI In 011: No Source Connected
 - HDMI In 012: No Source Connected
 - Empty Slot 013: No Source Connected
 - Empty Slot 014: No Source Connected
 - Empty Slot 015: No Source Connected - Output Data:**
 - XTP Out 001: Monitor connected, not encrypted
 - XTP Out 002: Monitor connected, not encrypted
 - XTP Out 003: Monitor connected, currently encrypted
 - XTP Out 004: No monitor connected
 - XTP Out 005: Monitor connected, not encrypted
 - XTP Out 006: No monitor connected
 - XTP Out 007: Monitor connected, currently encrypted
 - XTP Out 008: No monitor connected
 - XTP Out 009: No monitor connected
 - XTP Out 010: Monitor connected, currently encrypted
 - XTP Out 011: No monitor connected
 - XTP Out 012: No monitor connected
 - HDMI Out 013: Monitor connected, currently encrypted
 - HDMI Out 014: No monitor connected
 - HDMI Out 015: No monitor connected
 - HDMI Out 016: No monitor connected
 - Audio Out 017: No monitor connected

Figure 28. HDCP Page

Configuration Tab

System Settings Page

The XTP II CrossPoint Series matrix switcher downloads the **System Settings** page (see figure 29) when you click the **Configuration** tab (1). The screen consists of fields in which you can view and edit IP administration and system settings. You can access the **Email Settings** and **Passwords** pages by clicking the appropriate link (see **Ethernet Link** on page 92 for basic information about IP addresses and subnetting).

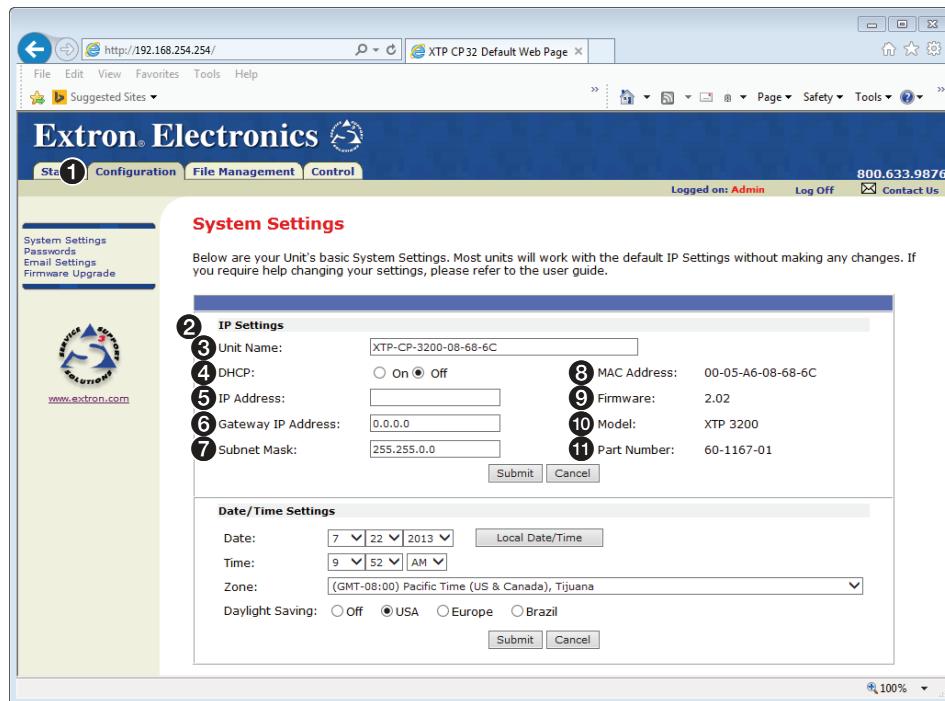


Figure 29. System Settings Page

On password-protected connections, there are two levels of protection: administrator and user. Administrators have full access to all switching capabilities and editing functions. Users can create ties, create and recall presets, set audio mutes, and view all settings with the exception of passwords.

IP Settings panel

NOTE: Editing variables in the IP Settings panel can immediately disconnect the user from the matrix switcher. Extron recommends editing these settings using SIS commands (see **IP- and Remote port-Specific SIS Commands** on page 62) and protecting the Ethernet access to this screen by assigning an administrator password to qualified and knowledgeable personnel only.

The IP Settings panel (2) provides a location for viewing and editing settings unique to the Ethernet interface. After editing any of the settings on this page, click the **Submit** button at the bottom of the page to save the changes.

Unit Name field

The **Unit Name** field (see figure 29, 3) contains the name used as the “from” information when the matrix switcher e-mails notification of its failed or repaired status. This name field can be any valid name, up to 24 alphanumeric characters.

NOTE: The HTML language reserves certain characters for specific functions (see **Special Characters** on page 48).

DHCP radio buttons

The **DHCP On** radio button (see [figure 29](#) on the previous page, ④) directs the matrix switcher to ignore any entered IP addresses and to obtain its IP address from a Dynamic Host Configuration Protocol (DHCP) server (if the network is DHCP capable). The **DHCP Off** radio button turns DHCP off. Contact the local system administrator to determine if DHCP is appropriate.

IP Address field

The **IP Address** field (⑤) contains the IP address of the connected matrix switcher. This value is encoded in the blink memory of the matrix switcher.

Valid IP addresses consist of four 1-, 2-, or 3-digit numeric octets separated by dots (periods). Each field can be numbered from 000 through 255. Leading zeroes, up to 3 digits total per field, are optional. Values of 256 and above are invalid.

The factory-installed default address is 192.168.254.254, but if this conflicts with other equipment, you should ask your network administrator for a new, valid address.

NOTE: IP address changes can cause conflicts with other equipment. Only local system administrators should change IP addresses.

Gateway IP Address field

The **Gateway IP Address** field (⑥) identifies the address of the gateway to the mail server to be used if the matrix switcher and the mail server are not on the same subnet.

The gateway IP address has the same validity rules as the system IP address.

Subnet Mask field

The **Subnet Mask** field (⑦) is used to determine whether the matrix switcher is on the same subnet as the mail server when you are subnetting. For more information, see [Subnetting – A Primer](#) on page 97.

MAC Address field

The Media Access Control (**MAC**) **Address** listing (⑧) is hardcoded in the matrix switcher and can be changed only as part of a firmware update.

Firmware field

The **Firmware** field identifies (⑨) the installed firmware version. This field is hardcoded in the matrix switcher and cannot be changed.

Model field

The **Model** field (⑩) identifies the number of video and audio inputs and outputs. This field is hardcoded in the matrix switcher and cannot be changed.

Part Number field

The **Part Number** field (⑪) identifies the part number of your matrix switcher. This field is hardcoded in the matrix switcher and cannot be changed.

Date/Time Settings panel

The Date/Time Settings panel (see figure 30) provides a location for viewing and setting the time functions.

The screenshot shows the 'Date/Time Settings' panel. On the left, there are three dropdown menus: 'Date' (set to 7/21), 'Time' (set to 9:52 AM), and 'Zone' (set to (GMT-08:00)). To the right of these is a scrollable list of years from 2000 to 2013. A blue box highlights the year '2013'. Numbered callouts point to specific elements: (1) points to the date dropdown; (2) points to the year scroll list; (3) points to the 'Daylight Saving' radio button; and (4) points to the 'Submit' button. A 'Local Date/Time' button is also visible.

Figure 30. Date/Time Settings Panel

Change the date and time settings as follows:

1. Click the drop-down list for the desired value (see figure 30, ①). The adjustable variables are month, day, year, hours, minutes, AM/PM, and (time) zone. A drop-down list appears (the year list is selected in figure 29).
2. If necessary, click and drag the slider or click the scroll up ▲ button or the scroll down ▼ button until the desired value is visible.
3. Click the desired value (②).

NOTES:

- If setting the time, set the local time. The **Zone** drop-down list allows you to then enter the offset from Greenwich Mean Time (GMT).
- The **Zone** drop-down list identifies the standard time zone selected and displays the amount of time, in hours and minutes, that the local time varies from the GMT international time reference.

4. Repeat steps 1 through 3 for other variables that need to be changed.
5. If appropriate, select the appropriate **Daylight Saving** radio button (③) to turn on the daylight savings time feature for your region or nation.

NOTE: When **Daylight Saving** is turned on, the matrix switcher automatically updates its internal clock between Standard Time and Daylight Saving Time in the spring and fall on the date that the time change occurs in the country or region selected. When **Daylight Saving** is turned off, the matrix switcher does not adjust its time reference.

6. Click the **Submit** button (④).

Passwords Page

Access the Passwords page (see figure 31) by clicking the **Passwords** link (**1**) on the left of the System Settings, Email Settings, or Firmware Upgrade page.

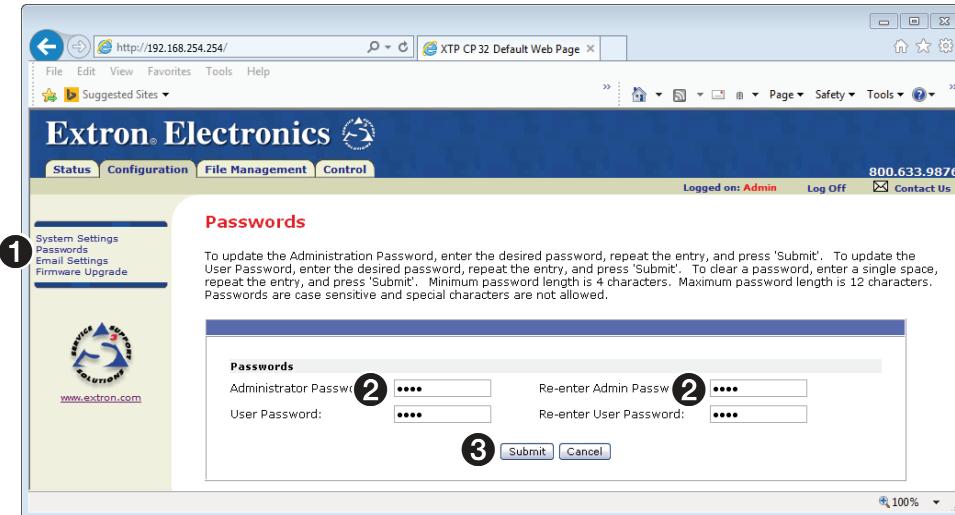


Figure 31. Passwords Page

NOTE: If the matrix switcher is password-protected, fields on this page can be edited only by people logged in as administrators.

The fields on the **Passwords** page are for entering and verifying administrator and user passwords. Passwords are case sensitive and are limited to as many as 12 upper-case and lower-case alphanumeric characters. Each password must be entered twice; once in the **Password** field and then again in the **Re-enter Password** field (see figure 31, **2**). Characters in these fields are masked by asterisks (*****). If you do not want to password protect an access level, leave the **Password** field and the **Re-enter Password** field blank. After entering the password in both fields, click the **Submit** button (**3**).

NOTE: An administrator password must be created before a user password can be created.

Resetting a password

Reset an existing password so that no password is required as follows:

1. Replace any existing password by entering a single space character in the **Password** and **Re-enter Password** fields (see figure 31, **2**).
2. Click the **Submit** button (**3**).

Email Settings Page

Reach the **Email Settings** page by clicking the **Email Settings** link (see figure 32, ①) on the left of the **System Settings**, **Passwords**, or **Firmware Upgrade** page. The **Email Settings** page has fields for setting up the e-mail notification capabilities of the matrix switcher. For the e-mail settings and for each row of the e-mail notification settings, click the **Edit** button (②) to make the fields available for editing. The button changes to **Save**. After editing the settings associated with the **Edit/Save** button, click the **Save** button.

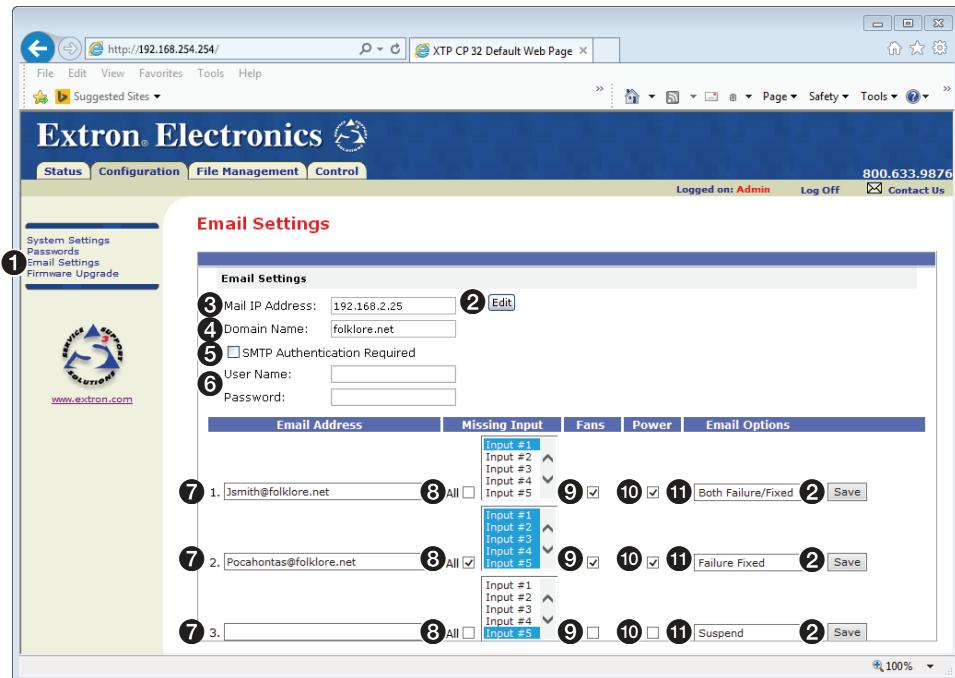


Figure 32. Email Settings Page

Email Settings pane

The **Email Settings** pane displays the **Mail IP Address** (③) and the **Domain Name** (④) of the mail server that handles the e-mail for the facility in which the matrix switcher is installed.

Valid IP addresses consist of four 1-, 2-, or 3-digit numeric octets separated by dots (periods). Each field can be numbered from 000 through 255. Leading zeroes, up to three digits total per field, are optional. Values of 256 and above are invalid.

Setting up SMTP authorization

If desired, set the XTP II CrossPoint to require SMTP authorization before accepting any e-mail as follows:

1. Click **Edit** (see **figure 32** on the previous page, **②**). The button changes to **Save**.
2. Check the **SMTP Authorization Required** check box (**⑤**). This enables the **User Name** and **Password** fields below the check box.
3. Enter a user name and a password in the **User Name** and **Password** fields (**⑥**). For the XTP II CrossPoint to accept their e-mail messages, senders must enter the user name and password.

NOTES:

- For the User name, any combination of letters, numerals, spaces, and symbols except the comma (,) and the single and double quotation marks (' and ") are valid. For the password, all characters except the comma are valid. The user name and password can each be from 1 to 30 characters.
- Both a user name and a password must be specified.

4. Click **Save** to save the user name and password (**②**).

Deselecting SMTP authorization

Remove SMTP authorization as follows:

1. Click **Edit** (**②**). The button changes to **Save**.
2. Click (deselect) the **SMTP Authorization Required** check box (**④**).
3. Click **Save** (**②**).

Domain Name field

The **Domain Name** field (**④**) displays the domain name that the XTP II CrossPoint Series matrix switcher uses to log on to the e-mail server. Standard domain name conventions (for example: *xxx.com*) apply.

NOTE: The HTML language reserves certain characters for specific functions (see **Special Characters** on page 48). The @ character is acceptable only as the lead-in to the domain name (such as @folklore.net).

Email Address fields

The five **Email Address** fields (**⑦**) identify the e-mail addresses of the personnel to whom the XTP II CrossPoint Series matrix switcher e-mails notification of its failure and repair status. Standard e-mail address conventions (*nnnnn@xxx.com*) apply.

The check boxes and drop boxes associated with each address field permit the operator to specify specific criteria under which the matrix switcher will e-mail recipients. In the associated **Missing Inputs** scroll boxes (**⑧**), select the inputs to monitor for presence or absence of a signal. Check the **Fans** (**⑨**) and **Power** (**⑩**) boxes to monitor the cooling and power supplies. In the associated **Email Options** drop-down list (**⑪**), select whether the recipient is to be e-mailed of failures, fixes, both, not notified, or to be removed from the e-mail list. The **Suspend** option is useful for temporarily removing personnel from the e-mail list when they are unavailable, such as if travelling or on vacation. Deleting an e-mail addressee and clicking the **Save** button (**②**) removes the recipient from e-mail notification completely.

Firmware Upgrade Page

NOTE: The Firmware Upgrade page is only for replacing the matrix switcher firmware.

Access the Firmware Upgrade page by clicking the **Firmware Upgrade** link (see figure 33, ①) on the left of the System Settings, Passwords, or Email Settings page.

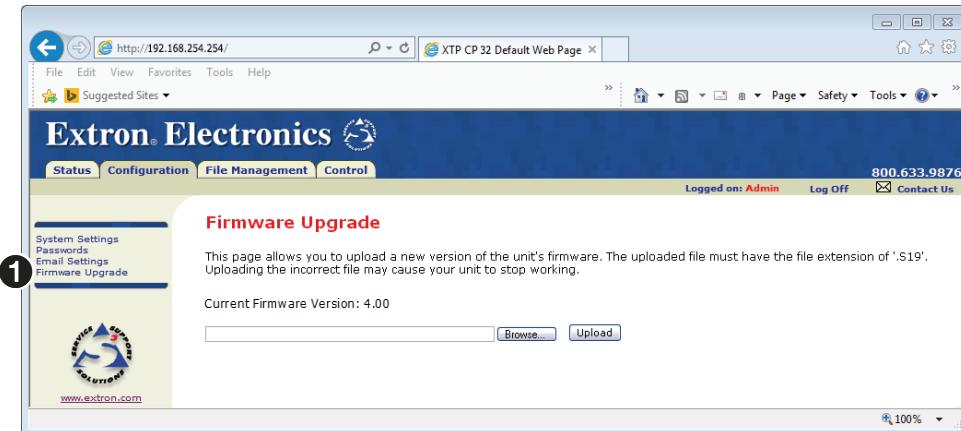


Figure 33. Firmware Upgrade Page

Downloading Firmware

1. On the Extron website, www.extron.com, go to the **Download** tab and click **Firmware** (see figure 34, ①).

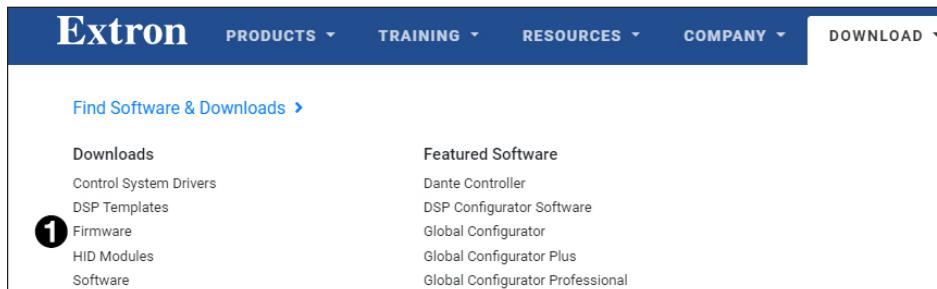


Figure 34. Downloading Firmware from the Extron Website

2. Navigate to the desired product (see figure 35, ②).



Figure 35. Downloading Firmware from the Extron Website

3. Ensure the available firmware version is a later version than the current one on the device, and click the **Download** link (③).

NOTE: The firmware release notes are a PDF file that provides details about the changes between different firmware versions. The file can be downloaded from the same page as the firmware.

4. Submit any required information to start the download. Note where the file is saved.

Updating Firmware

1. Connect the PC to the XTP II CrossPoint Series matrix switcher via the LAN port of the matrix switcher.
2. Access the XTP II CrossPoint Series matrix switcher using HTML pages (see [Download the Startup Page](#) on page 67).
3. Click the **Configuration** tab (see figure 36, ①).

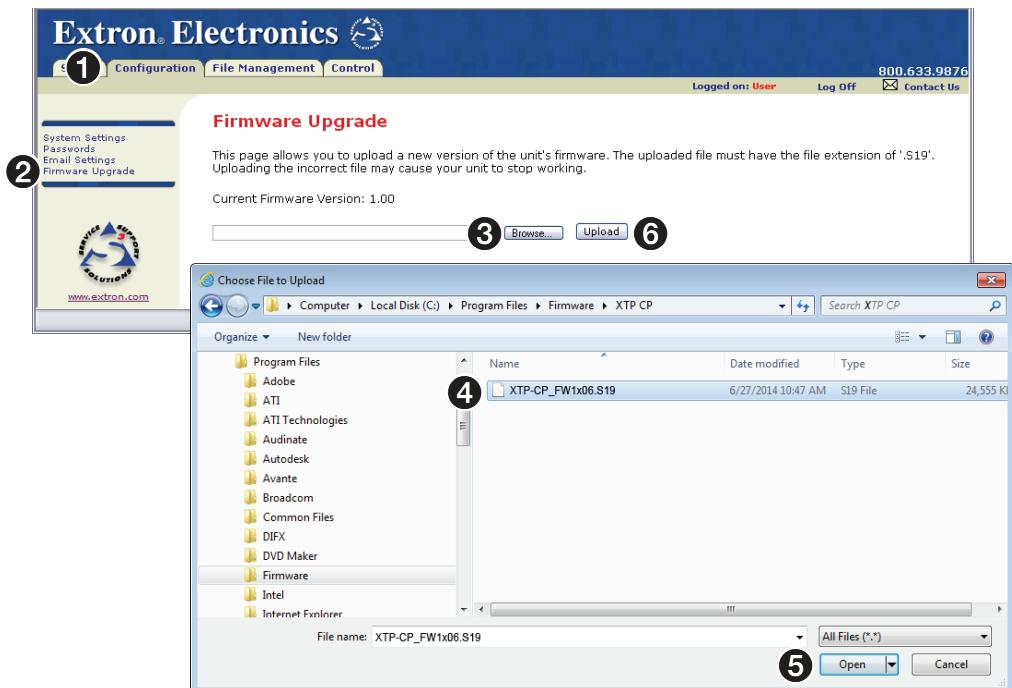


Figure 36. Firmware Upgrade

4. Click the **Firmware Upgrade** link (2).
5. Click the **Browse** button (3).
6. Navigate to the new firmware file, which has an .S19 extension, and select it (4).

ATTENTION:

- The firmware file must have an .s19 extension. Other file types can cause the switcher to stop functioning.
- Le firmware doit avoir une extension .s19. D'autres types de fichiers peuvent nuire au fonctionnement de le sélecteur.

NOTE: The original factory-installed firmware is permanently available on the matrix switcher. If the attempted firmware upload fails for any reason, the matrix switcher reverts to the factory-installed firmware.

7. Click the **Open** button (5).
8. Click the **Upload** button (6). The firmware upload may take a few minutes.

File Management Tab

File Management Page

To delete files such as user-supplied HTML pages from the matrix switcher or to upload your own files to the matrix switcher, click the **File Management** tab (see figure 37, ①). The matrix switcher downloads the File Management page.

Files	Date	File size	Delete All
CSS			
1. matrix.css	Tue 24 Jan 2006 01:39:39 GMT	1,495	② Delete
EVT			
2. 1.evt	Tue 24 Jan 2006 21:02:51 GMT	44,715	Delete
GIF			
3. in1.gif	Tue 24 Jan 2006 01:35:06 GMT	116	Delete
HTML			
4. GV-Port10SvPCmd.html	Tue 24 Jan 2006 01:35:19 GMT	2,696	Delete
5. GV-Port11eSCmd.html	Tue 24 Jan 2006 01:35:07 GMT	2,905	Delete
6. matrixcmd.html	Tue 24 Jan 2006 01:35:06 GMT	377	Delete
7. nortex_email.html	Sat 04 Feb 2006 18:22:07 GMT	9,913	Delete
8. nortex_video_3232.htm	Sat 04 Feb 2006 18:24:09 GMT	19,372	Delete

Figure 37. File Management Page

NOTE: The files listed in figure 37 are shown for example only and may not be present on your matrix switcher.

To delete a file, click the **Delete** button associated with that file (②).

Upload your own files as follows:

NOTE: The HTML language reserves certain characters for specific functions (see **Special Characters** on page 48).

1. Click the **Browse** button (③).
2. Browse through your system and select the desired file or files.

NOTE: If you want one of the pages that you create and upload to be the default startup page, name that file "index.html."
3. Click the **Upload File** button (④). The file or files that you selected appear in the list.

Control Tab

Set and View Ties page

You can create ties on the Set and View Ties page. Access the Set and View Ties page by clicking the **Control** tab (see figure 38, ①).

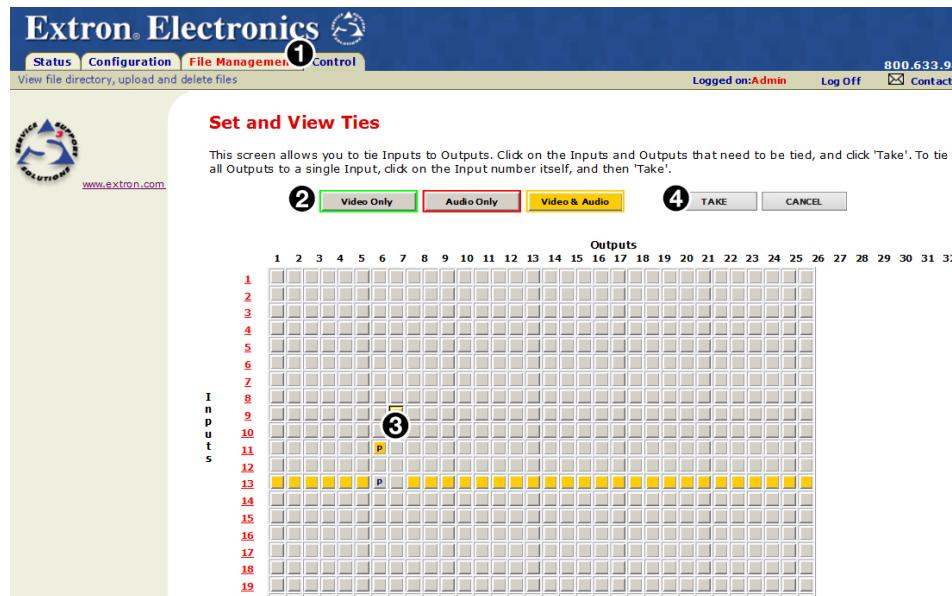


Figure 38. User Control Ties page

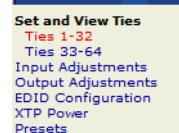
The page consists of a matrix of input (rows) and output (columns) selection buttons of four different colors:

- **Amber** buttons indicate **video and audio ties**.
- **Green** buttons indicate **video only ties**.
- **Red** buttons indicate **audio only ties**.
- **Gray** buttons indicate **no ties**.

The page displays only those inputs and outputs that are available on **installed** boards only.

Select and switch an input as follows:

1. Click the **Video Only**, **Audio Only**, or **Video & Audio** button (②) to select video, audio, or both for switching (audio follow or audio breakaway). Each mouse click on a button toggles the other two buttons off.
2. **XTP II CrossPoint 6400 only** — If necessary, select the desired range of outputs to tie by clicking either the **Ties 1-32** or **Ties 33-64** link on the left of the Set and View Ties page.
3. Move the mouse over the matrix of input and output selection buttons (③). Click a button to create a pending tie (if a tie does not exist) or pending untie (if a tie exists) of the input and output associated with that button. A "P" (for pending) appears in the button.



NOTES:

- If you lose track of the input and output associated with a specific button, let the mouse rest over one of the tie buttons for a moment. A field pops up that identifies the input and output for that button.
- To tie an input to all outputs, click that input number.

4. Click the **Take** button (④) to make the configuration changes or the **Cancel** button to abandon the configuration changes.

Maintenance and Modifications

This section covers XTP II CrossPoint Series matrix switcher topics, including:

- [Mounting the Matrix Switcher](#)
- [Battery and Power Precautions](#)
- [Removing and Installing an Input or Output Board or Blank Plate](#)
- [Removing and Installing a Power Supply \(XTP II CrossPoint 6400\)](#)
- [Replacing and Terminating the Power Cable \(XTP II CrossPoint 6400\)](#)
- [Removing and Installing Button Labels](#)

ATTENTION:

- Installation and service must be performed by authorized personnel only.
- L'installation et l'entretien doivent être effectués par le personnel autorisé uniquement.

Mounting the Matrix Switcher

The XTP II CrossPoint 6400 is housed in a rack-mountable, 20U high metal enclosure. The XTP II CrossPoint 3200 is housed in a rack-mountable, 10U enclosure.

The XTP II CrossPoint 1600 is in a 5U high enclosure. All models have built-in mounting flanges for standard 19-inch wide racks.

UL Guidelines

The following Underwriters Laboratories (UL) guidelines pertain to the installation of the matrix switcher into a rack.

- **Elevated operating ambient temperature** — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consider installing the equipment in an environment compatible with the maximum ambient temperature specified by Extron ($T_{ma} = +32$ to $+122^{\circ}\text{F}$ [0 to $+50^{\circ}\text{C}$]).
- **Reduced air flow** — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical loading** — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit overloading** — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable earthing (grounding)** — Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (such as the use of power strips).

Mounting Instructions

If desired, rack mount the matrix switcher as follows:

1. Insert the unit into the rack, aligning the mounting bracket holes with those in the rack.
2. Secure the matrix switcher to the rack using the supplied bolts.

Battery and Power Precautions

The matrix switchers are each provided with a permanently installed (factory-soldered in place) lithium battery. The battery maintains the real time clock in the event of power failure or extended storage periods and does not affect the normal operation of the matrix switcher. If the battery becomes ineffective, return the matrix switcher to Extron for repair.

 **WARNING:** There is a danger of explosion if the battery is incorrectly replaced. Do not attempt to remove or replace the internal battery.

AVERTISSEMENT : Si la pile est mal remplacée, il y a un risque d'explosion. N'essayez pas de retirer ou de remplacer la batterie interne.

Removing and Installing an Input or Output Board or Blank Plate

Circuit boards can be replaced for fault correction. They can be added or removed to increase or decrease the Input or output configuration (size) of the XTP II CrossPoint Series matrix switcher.

ATTENTION:

- Do not touch the electronic components or the backplane or circuit board connectors without being electrically grounded. Handle circuit boards by their edges only. ESD can damage circuits, even if you cannot feel, see, or hear it.
- Ne pas toucher les composants électroniques ou les connecteurs sur la carte mère ou sur les circuits imprimés sans être électriquement relié à la terre. Manipuler les circuits imprimés en les tenant seulement par leurs bords. ESD peuvent endommager l'équipement, même si vous ne pouvez pas le sentir, le voir ou l'entendre.

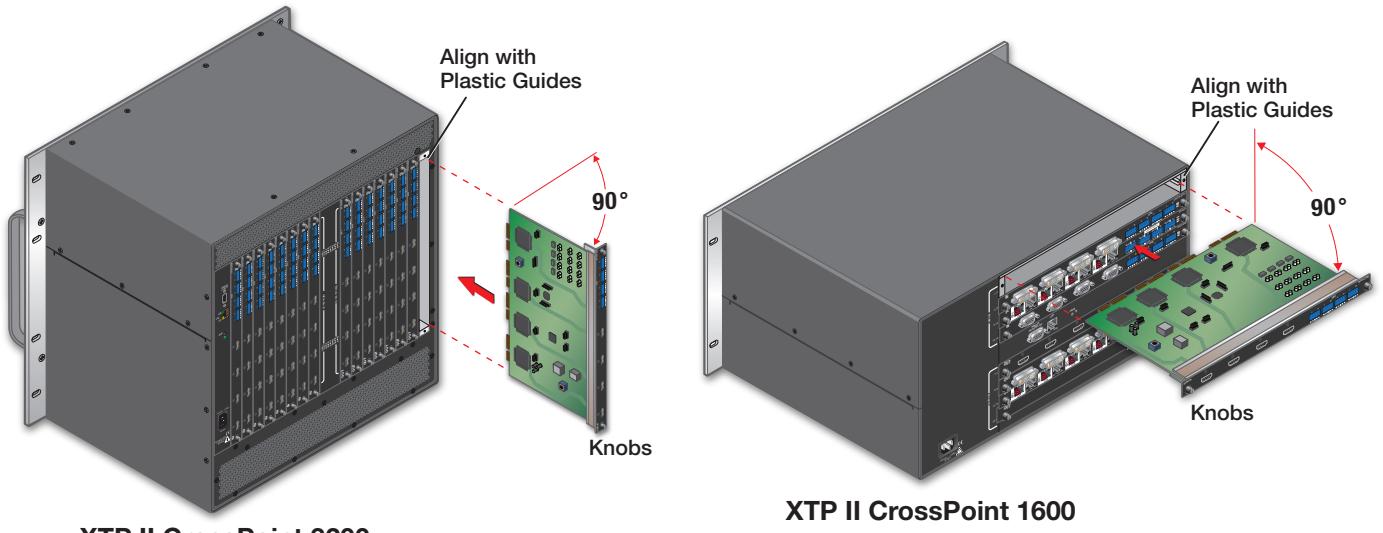
NOTES:

- For proper cooling and air flow, boards or blank plates should be installed in all locations during normal matrix switcher operations.
- The Input and output boards are hot-swappable. You do not need to power down the matrix switcher to remove or install an input or output board.

Removing an Input or Output Board or Blank plate

Remove an Input or output board or blank plate as follows:

1. **For an input or output board**, disconnect any connected cables.
2. Rotate the top and bottom (XTP II CrossPoint 3200 or XTP II CrossPoint 6400) or left and right (XTP II CrossPoint 1600) knurled knobs (see [figure 39](#) on the next page) to completely loosen the screws.
3. Gently pull on the screws to loosen the board or panel from the backplane.
4. Slide the board or panel out of the chassis and place it on an anti-static surface or in an anti-static container.



XTP II CrossPoint 3200

XTP II CrossPoint 1600

Figure 39. Input or Output Board Replacement

Installing an Input or Output Board or Blank Plate

Install an input or output board or blank plate as follows:

1. **For an input or output board**, orient the board to be installed so that the silk-screened word “Inputs” or “Outputs” is right-side up and to the bottom (XTP II CrossPoint 3200 or XTP II CrossPoint 6400) or to the left (XTP II CrossPoint 1600) (see figure 40).



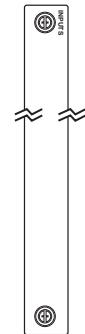
Figure 40. Board Orientation

2. **For an input or output board**, align the board with the top and bottom (XTP II CrossPoint 3200 or XTP II CrossPoint 6400) or left and right (XTP II CrossPoint 1600) chassis guides (see figure 39).

ATTENTION:

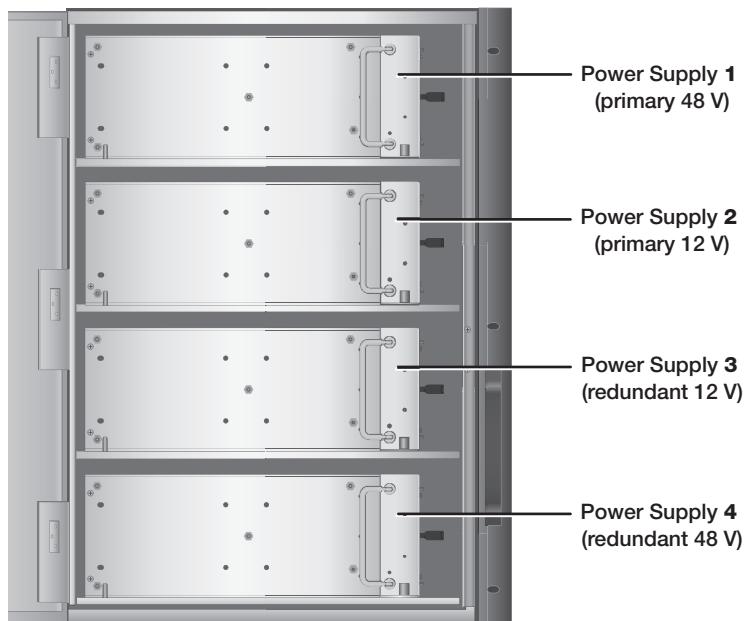
- Ensure the board goes straight into the chassis, and not angled to either side. Damage to the board may occur.
- Assurez-vous que la carte s’emboîte parfaitement dans le châssis, sans aucune inclinaison latérale, étant donné les risques de détérioration de la carte.

3. Gently slide the board or blank plate into the enclosure. **For an input or output board**, slide the board toward the front panel until it meets resistance.
4. Gently seat the board or panel in the backplane.
5. Use a screwdriver to tighten the captive screws that lock the board or panel in place.



Removing and Installing a Power Supply Assembly (XTP II CrossPoint 6400)

The XTP II CrossPoint 6400 has four field replaceable, hot-swappable power supply assemblies: primary and redundant 12 V, and primary and redundant 48 V (see image below).



Removing a Power Supply Assembly

Remove a power supply assembly as follows:

1. Open the power supply cabinet as follows:
 - a. Turn the door fastener clockwise from ① to ②.
 - b. Swing the door open.
2. Use an Extron Tweeker or small screwdriver to remove the locking screw (see figure 41, ①).

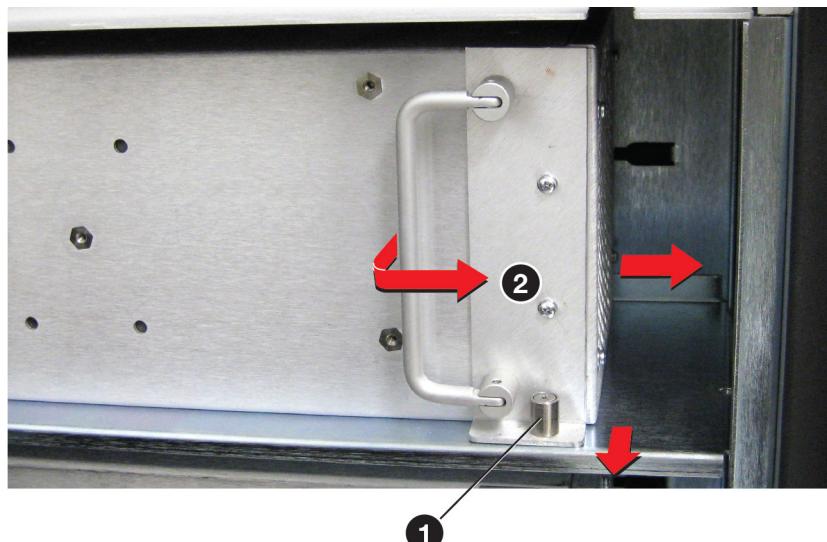


Figure 41. Removing a Power Supply Assembly

3. Slide the power assembly to the right (②) and pull the assembly from the cabinet.
4. If you are not going to install a replacement power supply immediately, close the power supply cabinet door and turn the door fastener counter-clockwise to lock it shut.

Installing a Power Supply Assembly

Install a power supply assembly as follows:

1. If necessary, open the power supply cabinet in accordance with “Removing a Power Supply Assembly,” step 1, on the previous page.
 2. Orient the power supply to be installed so that the voltage label is facing you and right-side up.
- NOTE:** The power supply assemblies are keyed so that you cannot install a power supply assembly of the wrong voltage.
3. Place the power supply assembly on the shelf in the power supply cabinet, against the right wall. Slide the power supply assembly fully into the cabinet, so that it contacts the back wall.
 4. Slide the power supply to the left until it contacts the left wall.
 5. Use an Extron Tweeker or small screwdriver to install the locking screw.
 6. Close the power supply cabinet door and turn the door fastener counter-clockwise to lock it shut.

Replacing and Terminating the Power Cable (XTP II CrossPoint 6400)

The XTP II CrossPoint 6400 has an attached power cable with a standard North American 220 V plug. For matrix switchers outside of North America, the attached power cable is unterminated. The plug can be replaced with a termination that is more appropriate to where you install the matrix switcher and the entire cable can be replaced.

 **WARNING:** High leakage current, earth connection is essential before connecting the supply.

AVERTISSEMENT : Courant de fuite élevé, le raccordement à la terre est indispensable avant le raccordement au réseau.

ATTENTION:

- The outlet or junction box must be installed near the equipment and be easily accessible.
- La prise de courant ou la boîte de jonction doivent être installées près du dispositif et être facilement accessibles
- The installation location must provide short circuit and overcurrent protection, to a minimum of 20 A.
- Le lieu d'installation doit disposer d'une protection contre les courts-circuits et la surtension de 20 A minimum.
- Do **NOT** use an extension cord.
- Ne **PAS** utiliser de rallonge électrique.

Replacing or Installing the Power Plug

Replace or install the 220 VAC power plug as follows:

ATTENTION:

- Extron recommends that this procedure be performed by a licensed electrician **only**.
- Extron recommande que cette tâche soit exécutée par un électricien agréé **uniquement**.
- The installation location must provide short circuit and overcurrent protection, to a minimum of 20 A.
- Le lieu d'installation doit disposer d'une protection contre les courts-circuits et la surtension de 20 A minimum.
- Do **NOT** use an extension cord.
- Ne **PAS** utiliser de rallonge électrique.

1. If the matrix switcher is powered, unplug it or remove power from the power outlet or junction box that powers the matrix switcher.
2. Locally acquire a 220 VAC power connector that is standard for the region where the switch is to be installed.
3. If necessary, cut the power cable just before the existing 220 V plug.
4. Trim the jacket back and strip the insulation from the line, neutral, and ground wires.
5. Connect the wires to the appropriate prongs of the power plug and assemble the plug, as detailed in the instructions that accompanied the plug.
6. Plug the power cord into the 220 VAC power outlet.

Replacing the Cable

ATTENTION:

- The replacement power cable must be no longer than 9.85 feet (3 m) and rated for 200-240 VAC, 16 amps, minimum.
- La longueur du câble d'alimentation de substitution doit être inférieure ou égale à 3 mètres (9,85 pieds) ; le câble doit être évalué pour 16 ampères à 200/240 Vca minimum.
- Ensure that the replacement wiring is in accordance with the electrical code for the country or region where installed and the wiring color code in force for the installation site. See the wire and connector specifications in **figure 46** on page 88.
- Assurez-vous que le câblage de substitution installé soit conforme aux réglementations en matière d'électricité du pays ou de la région, et aux codes couleurs en vigueur dans le lieu d'installation. Consultez les spécifications du câble et du connecteur sur la **figure 46**, page 88.

Replace the power cable as follows:

1. If the matrix switcher is powered, unplug it or remove power from the power outlet or junction box that powers the matrix switcher.
2. On the rear of the matrix switcher, remove and retain the 15 screws that secure the lower panel (the panel with the power connection) in place (see figure 42).

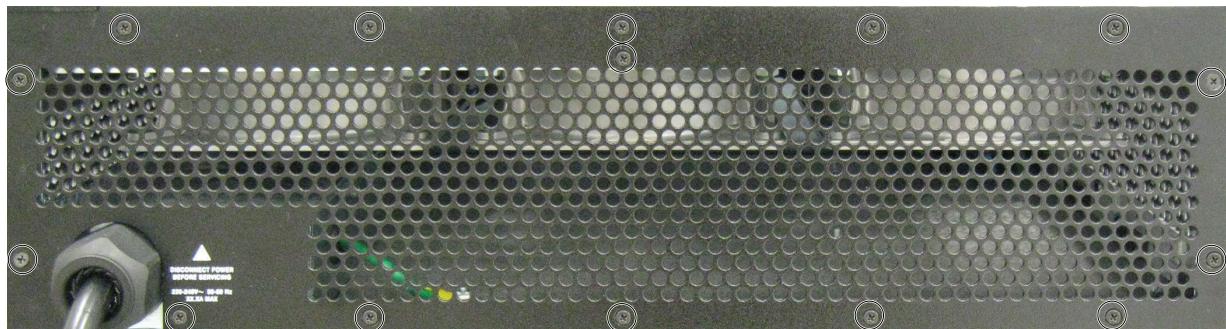


Figure 42. Power Panel Screw Locations

3. Pull the fan assembly out of the cabinet (see figure 43, ①).

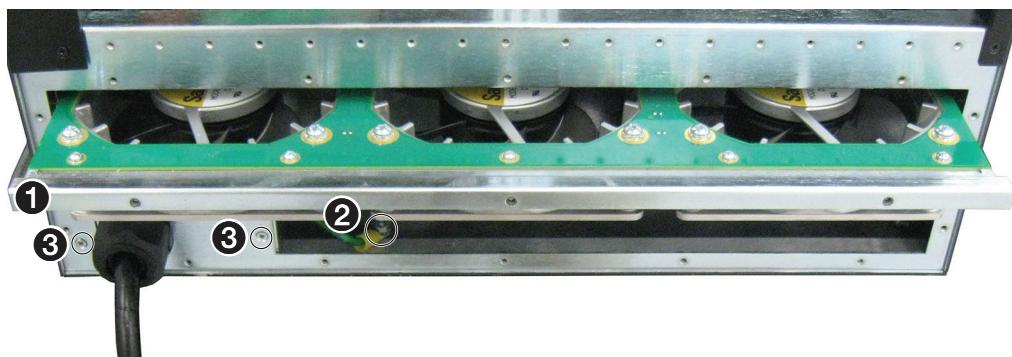


Figure 43. Remove Fan Assembly, Ground Stud, and Power Distribution Box

4. Remove and retain the nut securing the ground strap to the chassis ground stud (see figure 43, ②). Remove the ground strap.
5. Remove and retain the two screws that secure the matrix switcher power distribution box panel in place (③). Lift the power box from the matrix switcher.

6. Remove and retain the screw securing the power distribution box cover in place (see figure 44). Remove the cover.



Figure 44. Power Distribution Cover

7. Disconnect the two external wiring terminal lugs from the terminal block inside the matrix switcher power distribution box (see figure 45, ①). Retain the screws.

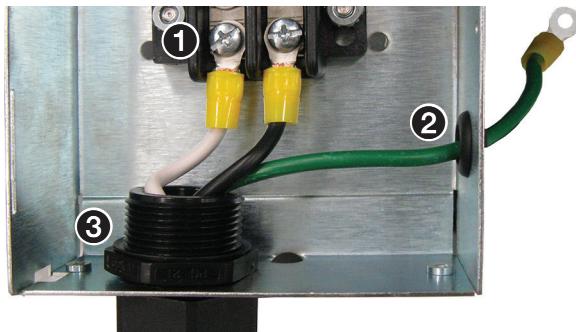


Figure 45. Power Distribution Box Interior

8. Gently pull the ground cable through the rubber grommet into the power distribution box (②).
9. Unscrew the cable clamp on the power distribution box (③). Gently pull the exterior cable free of the power distribution box.
10. Gently push the **terminated** cables of the replacement power cord through the cable clamp and into the power distribution box. **Loosely** reassemble the cable clamp.
11. Gently push the ground (green and yellow) cable through the rubber grommet in the side of the power distribution box.
12. Adjust the length of the cables inside the power distribution box until they reach the terminal block and ground stud with minimal excess.
13. Tighten the cable clamp.

14. Connect the terminal lugs on the replacement cable to the terminal block inside the matrix switcher power distribution box (see figure 46 on the next page).

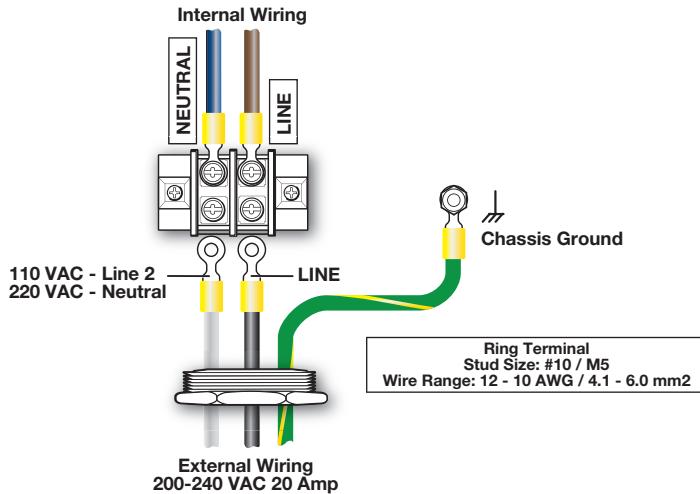


Figure 46. Power Connection and Cable and Ring Specifications

- NOTE:** Figure 46 also specifies the wire gauge and ring terminal and ground stud sizes.
15. Replace the power distribution box cover and secure it in place with the screw removed in step 6.
 16. Replace the power distribution box in the matrix switcher and secure it in place with the two screws removed in step 5.
 17. Fasten the chassis ground strap to the ground stud with the nut removed in step 4.
 18. Orient the fan assembly so that the fans are on the underside and the board power connector is to the left. Align the board edges with the board guides in the cabinet and slide the fan assembly into place.
 19. Replace the lower panel and secure it in place with the 15 screws removed in step 2.

Removing and Installing Button Labels

Making Labels Using the Button-Label Generator Program

The Button Label Generator creates labels that you can place in the translucent covers of the input and output selection buttons. You can create labels with names, alphanumeric characters, or even color bitmaps for easy and intuitive input and output selection (see **Installing Labels in the Buttons** on page 90 for the procedure for removing and replacing the translucent covers).

Installing the Button Label Generator software

The Extron Button Label Generator is available on the Extron website, www.extron.com, under the **Download** tab. Click the **Software** link (see figure 47 on the next page), and download and install the program on your PC.

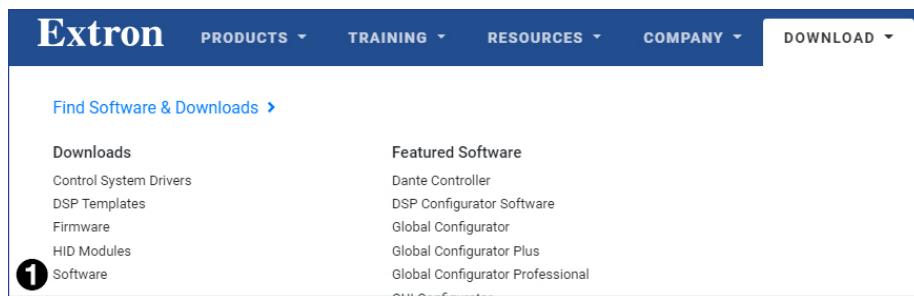


Figure 47. Location of Software on the Website

By default, the Windows installation creates a folder for the software, as follows:

- **64-bit OS:** C:\Program Files (x86)\Extron\ButtonLabelGenerator
- **32-bit OS:** C:\Program Files\Extron\ButtonLabelGenerator

The installation also places the Button Label Generator icon into a group or folder named "Extron Electronics."

Using the Button-Label Generator software

1. Click **Start > Programs > Extron Electronics > Button Label Generator > Button Label Generator**. The Button-Label Generator window opens (see figure 48).

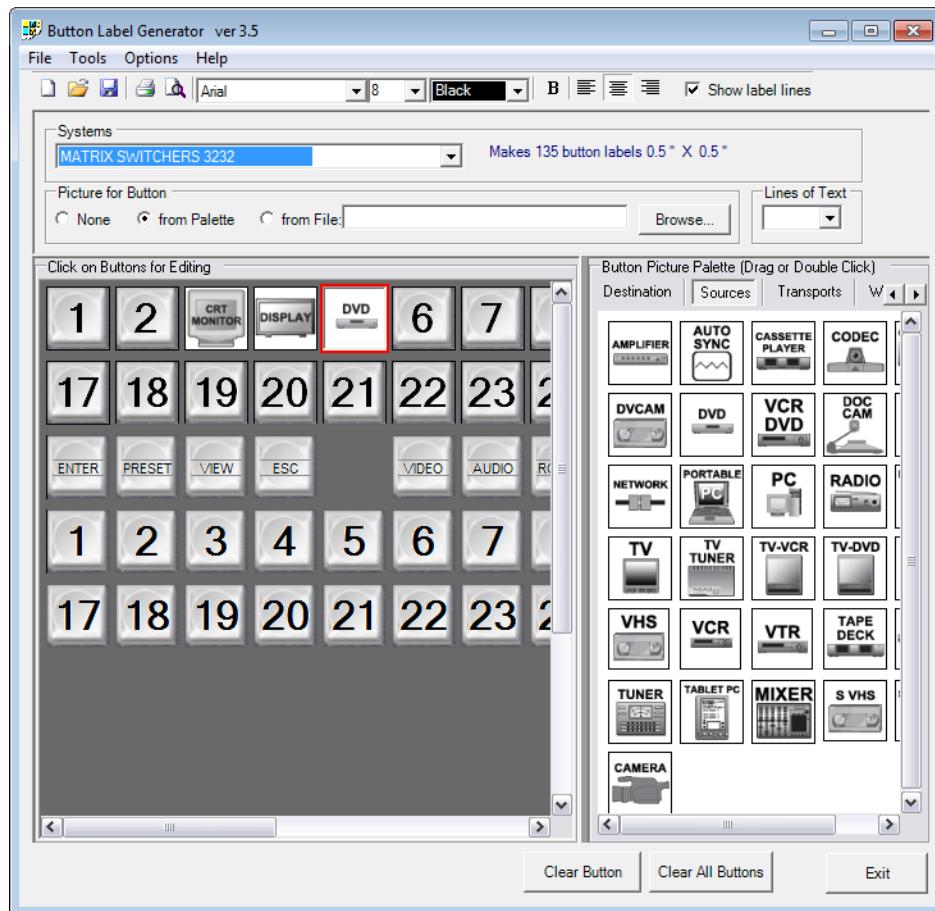


Figure 48. Extron Button-Label Generator Window

2. In the **Systems** selection box, choose the **Matrix Switchers 3232** option to match, as closely as possible, the button label size and quantities for your matrix switcher.

- Using normal Windows controls, you can create and print labels that can be placed in the label windows on the front panel of the matrix switcher.

NOTE: For best results, print on transparent or translucent material.

- Click the **Clear All Buttons** button and create new labels as many times as necessary to make all of the button labels that you need.

To access the help program, click the **Help** menu.

Making Labels from Paper Templates

Figure 50 on the next page provides strips of blank button labels. If desired, copy them or cut them out, write button information in each button area as desired, and put them in the windows of the input or output buttons.

Installing Labels in the Buttons

Install new labels in the front panel buttons as follows:

- Remove the button from the matrix switcher; use a small, flat bladed screwdriver such as an Extron Tweeker to gently pry a button out from the front panel (see figure 49).

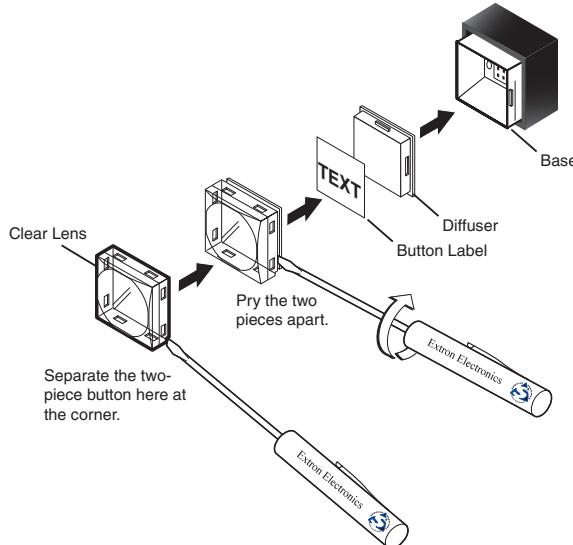


Figure 49. Illuminated Button Label Replacement

- Locate the notch in the corner of one side of the clear button cap lens.
- Separate the white backing (diffuser) from the clear button cap (lens); insert the blade of the small screwdriver into the corner notch and gently twist the blade.
- Save the translucent, white diffuser, but remove the text/label insert from the transparent button cap lens.
- Insert the replacement button label into the button cap. Check for correct label orientation.
- Align the white diffuser plate with the cap (lens). The bumps on the diffuser plate should be aligned (top and bottom) with the notches on the clear button cap. Firmly snap it into place.
- Align the tabs on the base of the matrix switcher with the notches on the diffuser plate. Gently, but firmly, press the reassembled button into place in the front panel of the matrix switcher.
- Repeat steps 1 to 7 as needed to relabel other buttons.

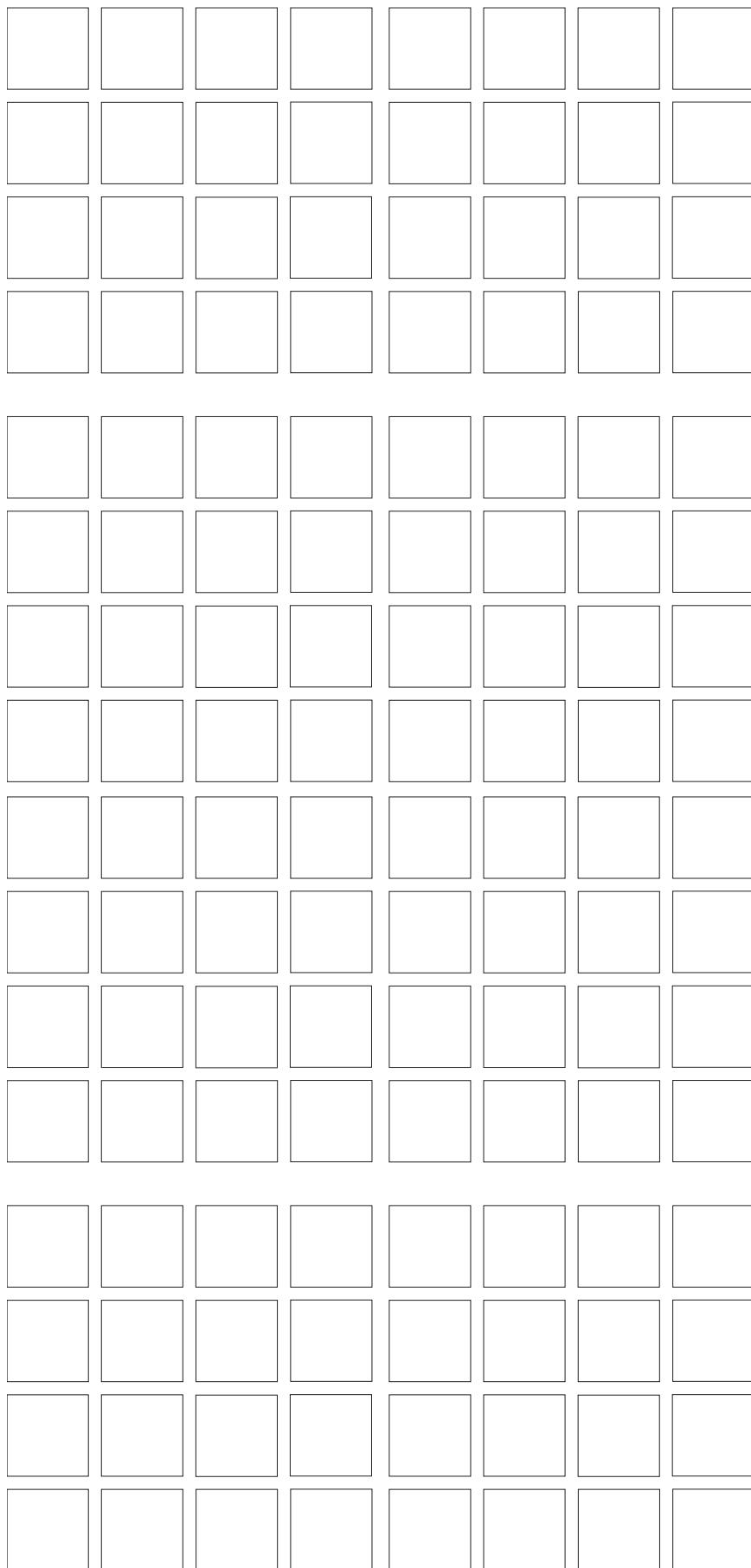


Figure 50. Button Label Blanks

Ethernet Connection

This section provides a high level discussion of the Ethernet connection to the matrix switcher and a primer on the subject of subnetting. Topics that are covered, include:

- **Ethernet Link**
- **Subnetting — A Primer**

Ethernet Link

The rear panel Ethernet connector on the XTP II CrossPoint Series matrix switcher can be connected to an Ethernet LAN or WAN. This connection makes SIS control of the matrix switcher possible using a computer or control system connected to the same LAN.

Ethernet Connection

The Ethernet cable can be terminated as a straight-through cable or a crossover cable and must be properly terminated for your application (see figure 51).

- **Crossover cable** — Direct connection between the computer and the XTP II CrossPoint Series matrix switcher
- **Patch (straight-through) cable** — Connection of the XTP II CrossPoint Series matrix switcher to an Ethernet LAN

Straight-through Cable (for connection to a switch, hub, or router)				
End 1		End 2		
Pin	Wire Color	Pin	Wire Color	
1	white-orange	1	white-orange	
2	orange	2	orange	
3	white-green	3	white-green	
4	blue	4	blue	
5	white-blue	5	white-blue	
6	green	6	green	
7	white-brown	7	white-brown	
8	brown	8	brown	

Crossover Cable (for direct connection to a PC)				
End 1		End 2		
Pin	Wire Color	Pin	Wire Color	
1	white-orange	1	white-green	
2	orange	2	green	
3	white-green	3	white-orange	
4	blue	4	blue	
5	white-blue	5	white-blue	
6	green	6	orange	
7	white-brown	7	white-brown	
8	brown	8	brown	

Figure 51. RJ-45 Connector Pinout Tables

Default IP Address

To access the XTP II CrossPoint Series matrix switcher via the LAN port, you need the IP address of the matrix switcher. If the address has been changed to an address comprised of words and characters, you can determine the actual numeric IP address using the ping utility. If the address has not been changed, the factory-specified default is 192.168.254.254.

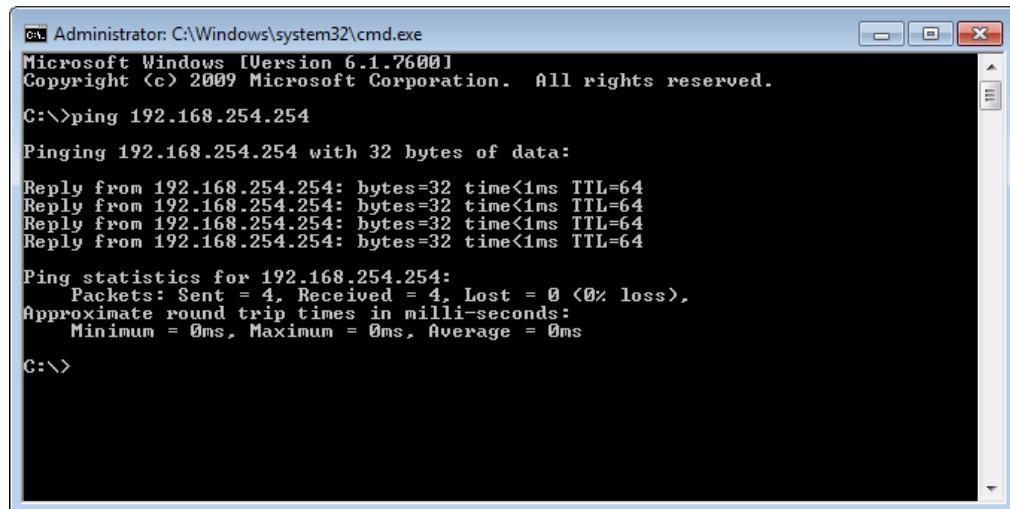
Ping can also be used to test the Ethernet link to the XTP II CrossPoint Series matrix switcher.

Pinging to Determine the Extron IP Address

The ping utility is available at the Command prompt. Ping tests the Ethernet interface between the computer and the XTP II CrossPoint Series matrix switcher. Ping can also be used to determine the actual numeric IP address from an alias and to determine the Web address.

Ping the matrix switcher as follows:

1. Search for **cmd** in the taskbar (Windows 10) or the Start menu (Windows 10-Vista).
2. Select **cmd**.
3. At the C:\ prompt, type **ping <IP address>** and then press <**Enter**>. The computer returns a display similar to the one shown in figure 52.



A screenshot of a Windows Command Prompt window titled "Administrator: C:\Windows\system32\cmd.exe". The window shows the following output:

```
Microsoft Windows [Version 6.1.7600]
Copyright © 2009 Microsoft Corporation. All rights reserved.

C:\>ping 192.168.254.254

Pinging 192.168.254.254 with 32 bytes of data:
Reply from 192.168.254.254: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.254.254:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Figure 52. Typical Ping Response

The line **Pinging ...** reports the actual numeric IP address, regardless of whether you entered the actual numeric IP address or an alias name.

Pinging to Determine the Web IP Address

The ping utility has a modifier, -a, that directs the command to return the Web address rather than the numeric IP address.

At the C:\ prompt, type **ping -a <IP address>** and then press <**Enter**>. The return display is similar to the ping response shown in figure 52, except that when you specify the -a modifier, the line **Pinging mail...** reports the Web IP address rather than the numeric IP address, regardless of whether you entered the actual numeric IP address or an alias name.

Configuring the XTP II CrossPoint Series Matrix Switcher for Network Use via the ARP Command

The ARP (address resolution protocol) command tells your computer to associate the MAC (media access control) address of the XTP II CrossPoint Series matrix switcher with the assigned IP address. You must then use the ping utility to access the controller, at which point the IP address of the controller is reconfigured.

Use ARP to configure the IP address as follows:

1. Obtain a valid IP address for the XTP II CrossPoint Series matrix switcher from your network administrator.
2. Obtain the MAC address (UID #) of the XTP II CrossPoint Series matrix switcher from the label on its rear panel. The MAC address should have this format: 00-05-A6-xx-xx-xx.
3. If the XTP II CrossPoint Series matrix switcher has never been configured and is still set for factory defaults, proceed to step 4. If not, perform a mode 4 system reset and then proceed to step 4. For detailed information on reset modes, see **Reset Modes** on page 41.

NOTE: The XTP II CrossPoint Series matrix switcher must be configured with the factory default IP address (192.168.254.254) before the ARP command is executed, as described below.

4. At the PC, access the C:\ prompt (see **Pinging to Determine the Extron IP Address** on the preceding page, steps 1 and 2) and enter the **arp -s** command. Type in the desired new IP address for the unit (obtained in step 1) and the MAC address of the unit (from the rear panel of the unit). For example:

arp -s 10.200.254.254 00-05-A6-03-69-B0 and then press <Enter>.

The computer returns the command prompt (C:\).

After you issue the **arp -s** command, the controller changes to the new address and starts responding to the ping requests to the new address, as described in the next step.

NOTE: You must ping the XTP II CrossPoint Series matrix switcher for the IP address change to take place.

5. Execute a ping command by entering ping followed by a space and the new IP address at the command prompt. For example:

ping 10.200.254.254

NOTE: You can reconnect using either Telnet or a Web browser to verify that the update was successful.

6. After verifying that the IP address change was successful, enter and issue the **arp -d** command at the C:\ prompt. For example:

arp -d 192.168.254.254 removes 192.168.254.254 from the ARP table

or

arp -d* removes all static IP addresses from the ARP table.

Connecting as a Telnet Client

The Microsoft Telnet utility is available from the C:\ prompt. Telnet allows you to input SIS commands to the XTP II CrossPoint Series matrix switcher from the PC via the Ethernet link and the LAN.

Access the C:\ prompt and start Telnet as follows:

1. Search for **cmd** in the taskbar (Windows 10) or the Start menu (Windows 10-Vista).
2. Select **cmd**.
3. At the C:\ prompt, type **Telnet** and then press <**Enter**>. The computer returns a display similar to the one shown in figure 53.

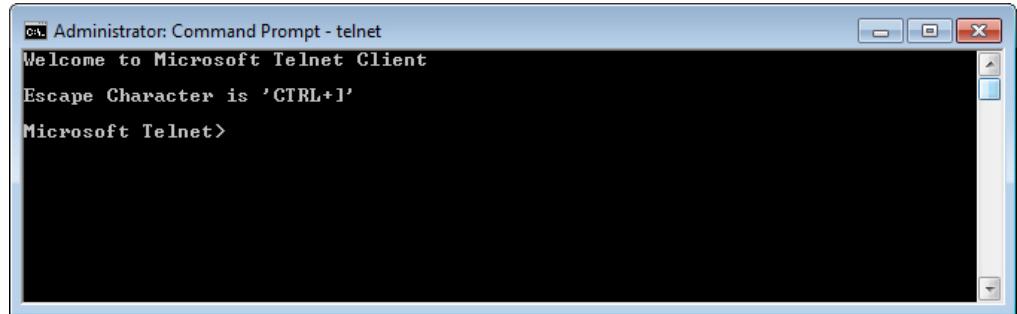


Figure 53. Telnet Window

Telnet Tips

It is not the intention of this guide to detail all of the operations and functionality of Telnet; however, some basic level of understanding is necessary for operating the XTP II CrossPoint Series matrix switcher via Telnet.

Open

Connect to the XTP II CrossPoint Series matrix switcher using the **Open** command. Once you are connected to the matrix switcher, you can enter the SIS commands the same as you would if you were using the RS-232 or RS-422 link.

Connect to the XTP II CrossPoint Series matrix switcher as follows:

1. At the Telnet prompt, type open <IP address> and then press <**Enter**>.
If the matrix switcher is not password-protected, no further prompts are displayed until you break or disconnect the connection to the matrix switcher.
If the matrix switcher is password-protected, Telnet displays the password prompt.
2. If necessary, at the password prompt, type the appropriate password and then press <**Enter**>.

Connection to the matrix switcher via the Ethernet can be password-protected. There are two levels of password protection: administrator and user. A person logged on as an administrator has full access to all matrix switcher switching capabilities and editing functions. Users can create ties, set mutes, and view all settings with the exception of passwords. By default, the XTP II CrossPoint Series matrix switcher is shipped with both passwords set to <*carriage return*>.

Once you are logged in, the matrix switcher returns either **Login Administrator** or **Login User**. No further prompts are displayed until you break or disconnect the connection to the XTP II CrossPoint Series matrix switcher.

Escape character and Esc key

When Telnet is first started, the utility advises that the Escape character is '**Ctrl+J**'. Many SIS commands include the keyboard <Esc> key. Consequently, some confusion may exist between the Escape character and the Escape key.

The Telnet Escape character is a key combination, the <Ctrl> key and the <J> key pressed simultaneously, which returns you to the Telnet prompt while leaving the connection to the XTP II CrossPoint Series matrix switcher intact.

The Escape key is the <Esc> key on the computer keyboard. Use this key for SIS commands.

Analog echo

Once connected to the XTP II CrossPoint Series matrix switcher, by default, Telnet does not display your keystrokes on the screen. SIS commands are typed in blindly and only the SIS responses are displayed on the screen. To command Telnet to show keystrokes, at the Telnet prompt, type `set analog_echo` and then press <Enter> before you open the connection to the matrix switcher.

With analog echo turned on, keystrokes and the responses of the matrix switcher are displayed on the same line. For example: `1*1!In1 Out1 A11`, where `1*1!` is the SIS command and `In1 Out1 A11` is the response.

With analog echo turned on, all keystrokes are displayed, even those that should be masked, such as the password entry. For example, when entering a password with analog echo turned on, you see a display such as `a*d*m*i*n*`, where `admin` is the keyed in password and `*****` is the masked response.

You can turn off analog echo by typing `unset analog_echo` and then pressing <Enter> at the Telnet prompt. If you are connected to the XTP II CrossPoint Series matrix switcher and need to access the Telnet prompt to turn analog echo off, type the Escape character (<Ctrl>+<J>).

Set carriage return-line feed

Unless commanded otherwise, Telnet transmits a line feed character only (no carriage return) to the connected matrix switcher when you press the <Enter> key. This is the correct setting for SIS communication with the matrix switcher. The Telnet `set crlf` command forces Telnet to transmit carriage return and line feed characters when <Enter> is pressed, but if crlf is set, the SIS link with the matrix switcher does not function properly.

Close

To close the link to the matrix switcher, access the Telnet prompt by typing the Escape character (<Ctrl>+<J>). At the Telnet prompt, type `close`, and then press <Enter>.

Help

For Telnet command definitions, at the Telnet prompt, type `?` and then press <Enter>.

Quit

Exit the Telnet utility by typing `quit` and then pressing <Enter> at the Telnet prompt. If you are connected to the XTP II CrossPoint Series matrix switcher, access the Telnet prompt by typing the Escape character (<Ctrl>+<J>).

Subnetting – A Primer

It is not the purpose of this guide to describe TCP/IP protocol in detail. However, some understanding of TCP/IP subnetting (a subnet is a subset of a network — a set of IP devices that have portions of their IP addresses in common) is necessary in order to understand the interaction of the XTP II CrossPoint Series matrix switcher and the mail server gateway. To understand subnetting at the level required to install and operate the XTP II CrossPoint Series matrix switcher, you must understand the concepts of a gateway, analog and remote devices, IP addresses and octets, and subnet masks and octets.

Gateways

The XTP II CrossPoint Series matrix switcher can communicate with the e-mail server that the matrix switcher uses for e-mail notification directly (if they are on the same subnet) or the communication can be routed via a gateway (a computer that provides a link between different subnets).

Analog and Remote Devices

The analog and remote devices are defined from the point of view of the function being described. In this guide, subnetting is an issue when you are using the controlling PC to set TCP/IP and e-mail values in the matrix switcher (see [Email Settings Page](#) on page 74). When you are setting up the variables for e-mail notification, which may include subnetting, the matrix switcher is the analog device and the e-mail server is the remote device.

IP Addresses and Octets

Valid IP addresses consist of four 1-, 2-, or 3-digit numeric subfields, properly called “octets,” separated by dots (periods) (see figure 54). Each octet can be numbered from 000 through 255. Leading zeroes, up to three digits total per octet, are optional. Values of 256 and above are invalid.

Typical IP Address: 192.168.254.254
Octets

Figure 54. Typical IP Address

Subnet Masks and Octets

The subnet mask (see figure 55) is used to determine whether the analog and remote devices are on the same subnet or different subnets. The subnet mask consists of four numeric octets separated by dots. Each octet can be numbered from 000 through 255. Leading zeroes, up to three digits total per octet, are optional. Each octet typically contains either 255 or 0. The octets determine whether or not the same octets of two IP addresses will be compared when determining if two devices are on the same subnet.

255 indicates that this octet will be compared between two IP addresses.

0 indicates that this octet will **not** be compared between two IP addresses.

Typical Subnet Mask: 255.255.0.0
Octets

Figure 55. Typical Subnet Mask

Determining Whether Devices Are on the Same Subnet

To determine the subnet, the IP address of the analog device is compared to the IP address of the remote device (see figure 56). The octets of each address are compared or not compared, depending on the value in the related subnet mask octet.

- If a subnet mask octet contains the value 255, the related octets of the IP addresses of the analog device and the remote device are unmasked.

Unmasked octets are compared (indicated by ? in figure 56).

- If the subnet mask octet contains the value 0, the related octets of the IP addresses of the analog device and remote device are masked.

Masked octets are not compared (indicated by X in figure 56).

If the unmasked octets of the two IP addresses **match** (indicated by = in figure 56, example 1), the two addresses **are on the same subnet**.

If the two unmasked fields **do not match** (indicated by ≠ in figure 56, example 2 and example 3), the addresses **are not on the same subnet**.

	Example 1	Example 2	Example 3
Local IP Address:	192.168.254.254	192.168.254.254	192.168.254.254
Subnet Mask:	255.255.0.0 (??.XX)	255.255.0.0 (??.X.X)	255.255.0.0 (??.XX)
Remote IP Address:	192.168.2.25	190.190.2.25	192.190.2.25
Match?:	=.=.XX—Match (Same subnet)	≠.=.XX—No match (Different subnet)	≠.=.XX—No match (Different subnet)

Figure 56. Comparing the IP Addresses of the Analog and Remote Devices

Reference Information

The following section contains information on configuration worksheets.

Configuration Worksheets

Configuration worksheets can be used to help remember the various preset configurations for each XTP II CrossPoint switcher.

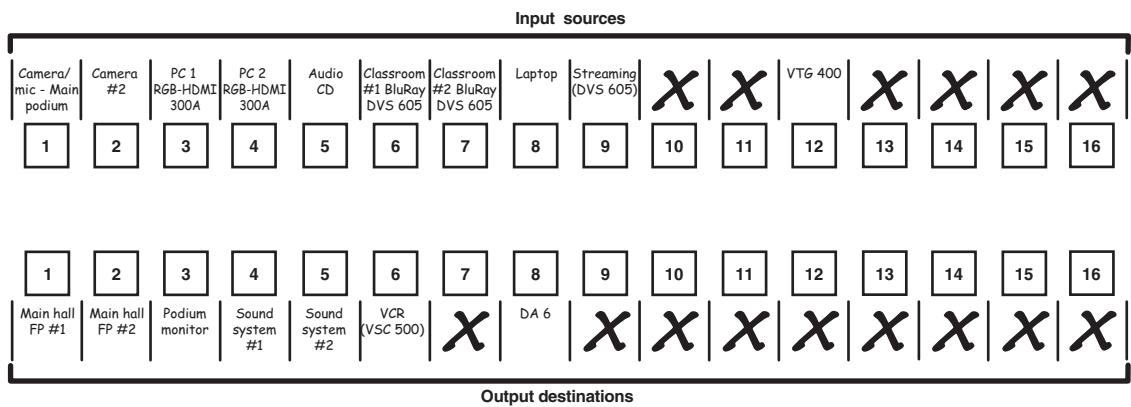
- See [page 102](#) for the XTP II CrossPoint 6400 worksheet.
- See [page 103](#) for the XTP II CrossPoint 3200 worksheet.
- See [page 104](#) for the XTP II CrossPoint 1600 worksheet.

Print copies of the blank worksheet, and use one for each preset configuration. You may cross out all unused or inactive inputs and outputs, and use different colors for video and audio. Consider the following examples for ideas.

NOTE: All of the equipment in the following examples is connected through the appropriate input board, output board, transmitter, or receiver.

Worksheet Example 1: System Equipment

Figure 57 shows a portion of a worksheet for an XTP II CrossPoint 1600 in a fictional organization with the system hardware annotated. Inputs 10, 11, and 13 have no connection in this organization, so they are crossed out on the worksheet. Similarly, outputs 7 and 9 through 16 are crossed out.



Preset # 3 Title: Weekly status mtg Video: _____ Audio: _____
Fill in the preset number and use colors, dashes, etc., to make connecting lines.
Indicate if the configuration is for video, audio, or both.

Figure 57. Worksheet Example 1: System Equipment

Inputs include PCs, an audio CD player, cameras, and an Extron VTG 400DVI. Output devices include monitors, projectors, a stereo, a VCR for recording presentations, and a DA.

The VTG 400DVI video test generator connected to input 12 enables a video test pattern to be sent to one, several, or all output devices for problem isolation or adjustment purposes. An audio test tape or CD could be used in a similar manner to check out the audio components.

Worksheet Example 2: Daily Configuration

Figure 58 continues from worksheet example 1 by showing the video and audio ties that make up the configuration of preset 1. Black lines shows video ties and red lines show the audio ties.

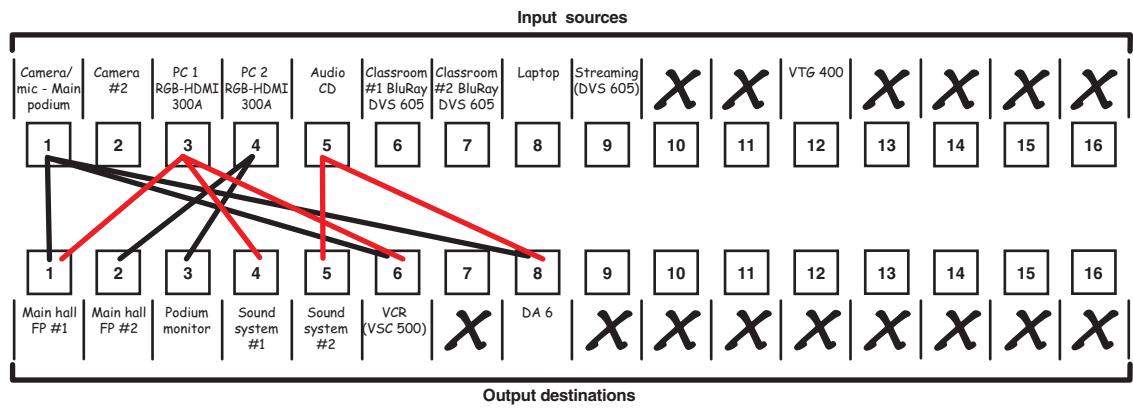


Figure 58. Worksheet Example 2: Daily Configuration

In this example:

- The image of the presenter, from the main podium camera (input 1), is:
 - Displayed in the main hall (output 1)
 - Displayed in the lobby via a distribution amplifier (output 8)
 - Tied to the VCR (output 6)
- The presenter has a presentation on her laptop computer (input 4) that is:
 - Displayed in the main hall (output 2)
 - Displayed locally on the podium (output 3)
- The audio from the microphone the presenter uses (input 1) is:
 - Played in the hall (output 1)
 - Played in the conference room (output 4)
 - Sent to the VCR (output 6)
- Classical music from the CD player (input 5) is:
 - Played in the background in the main hall on sound system #2 (output 5)
 - Played in the lobby via a distribution amplifier (output 8)

Worksheet Example 3: Test Configuration

The AV system in our fictional organization needs to be fine tuned on a regular basis.

Figure 59 shows a typical test configuration, with an Extron video test generator (input 12) generating a test pattern to all monitors (outputs 1, 2, 3, and 8). Sound checks are run from the CD player (input 5) to all audio systems (outputs 1, 2, 4, 5, and 8).

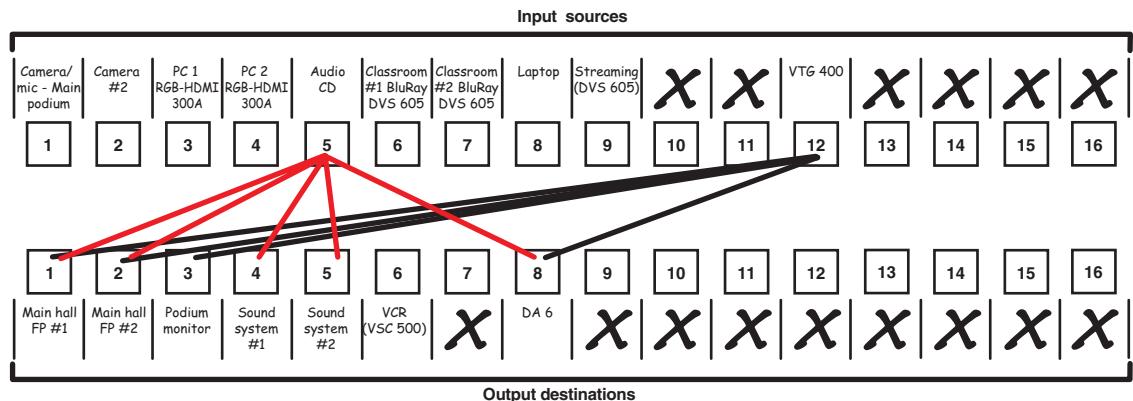


Figure 59. Worksheet Example 3: Test Configuration

Preset # 3 Title: Weekly status mtg Video: Audio:

Fill in the preset number and use colors, dashes, etc., to make connecting lines.

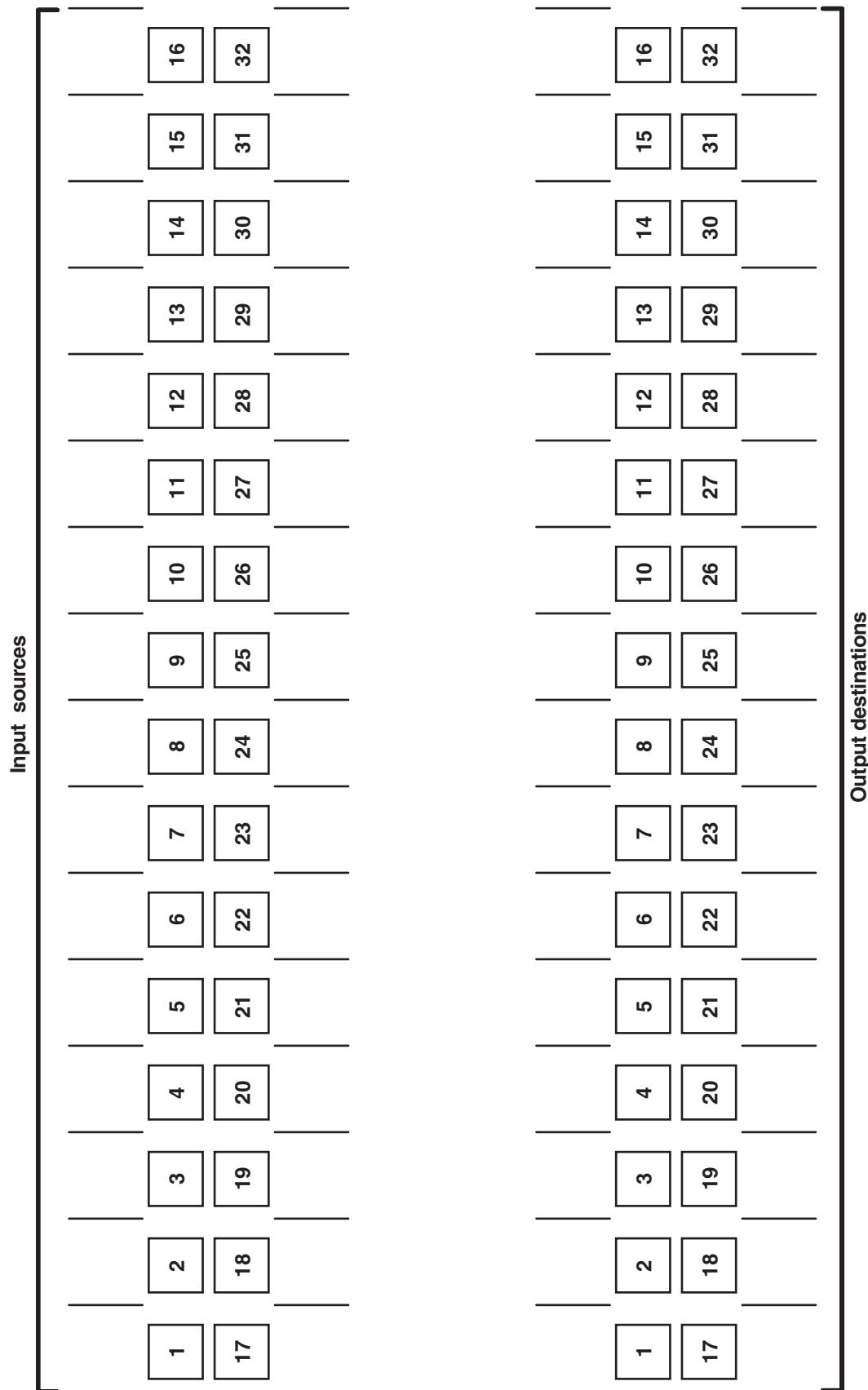
Indicate if the configuration is for video, audio, or both.

XTP II CrossPoint 6400 Matrix Switchers Configuration Worksheet

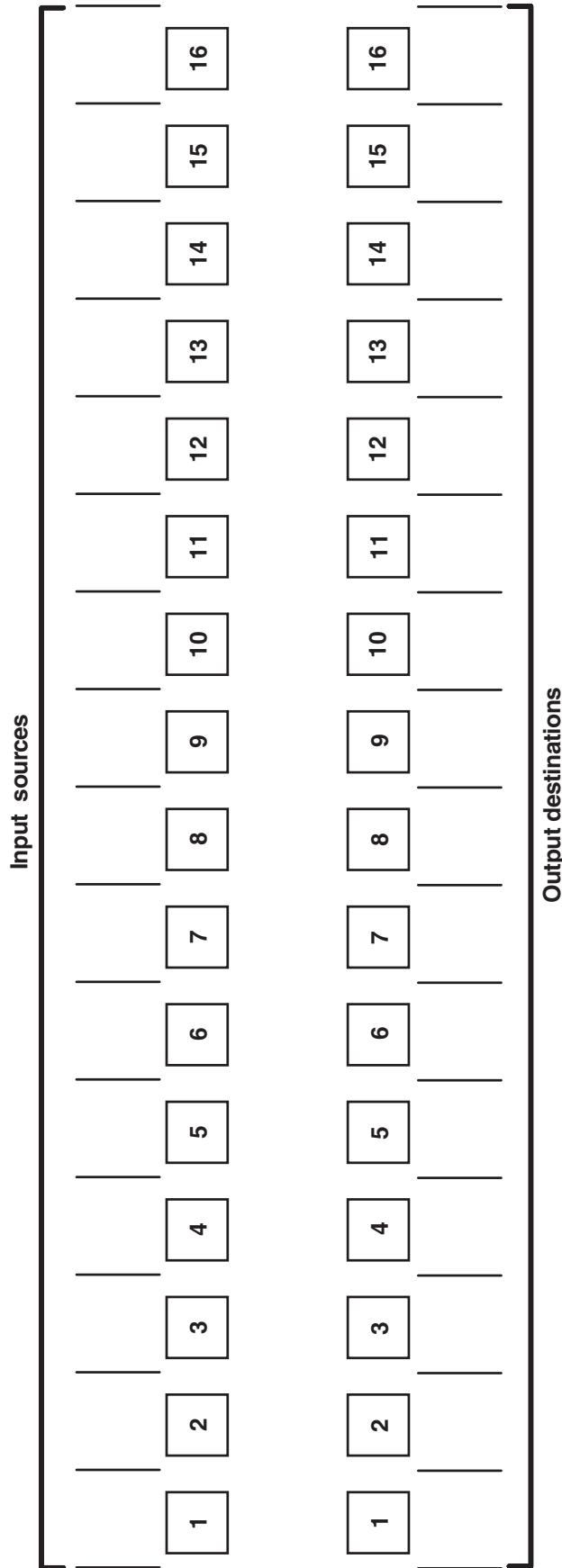
Input sources																Output destinations															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64

Preset # _____ Title: _____ Video: _____
 Fill in the preset number and use colors, or dashes, etc. to make connecting lines.
 Indicate if the configuration is for Video, Audio, or both.

XTP II CrossPoint 3200 Matrix Switchers Configuration Worksheet



XTP II CrossPoint 1600 Matrix Switchers Configuration Worksheet



Preset # _____ Title: _____ Video: _____ Audio: _____
 Fill in the preset number and use colors, or dashes, etc. to make connecting lines.

Indicate if the configuration is for video, audio, or both.

Extron Warranty

Extron warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

**USA, Canada, South America,
and Central America:**

Extron
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Asia:

Extron Asia Pte Ltd
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Japan:

Extron, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe:

Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:

Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Middle East:

Extron Middle East
Dubai Airport Free Zone
F13, PO Box 293666
United Arab Emirates, Dubai

Africa:

Extron South Africa
South Tower
160 Jan Smuts Avenue
Rosebank 2196, South Africa

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

NOTE: If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.

USA: 714.491.1500 or 800.633.9876

Asia: 65.6383.4400

Europe: 31.33.453.4040 or 800.3987.6673

Japan: 81.3.3511.7655

Africa: 27.11.447.6162

Middle East: 971.4.299.1800

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.