User Guide

HDMI Switchers

SW HD 4K PLUS Series

HDMI Switchers

Extron

68-2940-01 Rev. E
05 23

Safety Instructions

Safety Instructions • English

WARNING: This symbol, ⚠, when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

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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Instructions de sécurité • Français

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ATTENTION : Ce pictogramme, ⚠, lorsqu'il est utilisé sur le produit, signale à l'utilisateur des instructions d'utilisation ou de maintenance importantes qui se trouvent dans la documentation fournie avec l'équipement.

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ATTENTZIONE: Il simbolo, ⚠, se usato sul prodotto, serve ad avvertire l'utente della presenza di importanti istruzioni di funzionamento e manutenzione nella documentazione fornita con l'apparecchio.

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Для получения информации о правилах техники безопасности, соблюдении нормативных требований, электромагнитной совместимости (ЭМП/ЭДС), возможности доступа и других вопросах см. руководство по безопасности и соблюдению нормативных требований Extron на сайте Extron: , **www.extron.com**, номер по каталогу - 68-290-01.

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注意: 产品上的这个标志意在提示用户，设备随附的用户手册中有重要的操作和维护(维修)说明。

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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.

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ＶＣＣＩ－Ａ

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

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.

Software Commands

Commands are written in the fonts shown here:

```
^AR Merge Scene,,0p1 scene 1,1 ^B 51 ^W^C.0
[01] R 0004 00300 00400 00800 00600 [02] 35 [17] [03]
Esc X1 * X17 * X20 * X23 * X21 CE ←
```

NOTE: For commands and examples of computer or device responses used in this guide, the character "0" is 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 208.132.180.48: bytes=32 times=2ms TTL=32
C:\Program Files\Extron
```

Variables are written in *italics* 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 **https://www.extron.com/technology/glossary.aspx**.

Contents

Introduction

This section gives an overview of the Extron SW HD 4K PLUS Series switchers. Topics include:

About this Guide

This guide describes the SW HD 4K PLUS Series switchers and discusses how to install, configure, and operate them.

In this guide, the terms “SW HD 4K PLUS Series,” “SW HD 4K PLUS,” and “switcher” refer to both the SW2 HD 4K PLUS and the SW4 HD 4K PLUS switchers. “SW2,” “SW4,” “SW6,” and “SW8” are used to refer to the specific model.

The SW HD 4K PLUS Series Switchers

The Extron SW HD 4K PLUS series are two, four, six, and eight input HDMI switchers that switch signals up to 4K and 1080p @ 60 Hz between multiple HDMI source devices to a single display. The switchers support data rates up to 18 Gbps, HDR, 12-bit Deep Color, 3D, Lip Sync, and HD lossless audio formats.

The SW HD 4K PLUS Series provide control via front panel buttons, USB, Extron Product Control Software (PCS), Ethernet, RS-232, contact closure, and auto-input switching for integration with any control system. Front panel LED indicators provide immediate visual confirmation of HDCP authentication and signal presence for each input and output.

Features

- **Switches HDMI video and embedded multi-channel digital audio**
- **Inputs** — Two, four, six, or eight female HDMI type-A connectors
- **Output** — 1 female HDMI type-A connector
- **Computer and video resolutions up to 4K @ 60 Hz** — Supports resolutions up to 4096x2160 @ 60 Hz, with 4:4:4 chroma sampling at 8 bits of color, including 1080p @ 60 Hz Deep Color.
- **EDID Minder** — Automatically manages EDID communication between connected devices, ensuring all sources power up properly and reliably output content for display.
- **Automatic input cable equalization to 25 feet (7.6 meters) when used with Extron HDMI Pro Series cable** — Actively conditions incoming HDMI signals to compensate for signal loss when HDMI cables, low quality HDMI cables, and source devices with poor HDMI signal output are used.

- **HDCP 2.2 compliance** — Ensures display of content-protected 4K video media and maintains interoperability with earlier versions of HDCP.
- **User-selectable HDCP authorization** — Allows individual inputs to appear HDCP compliant or non-HDCP compliant to the connected source. This is beneficial if the source automatically encrypts all content when connected to an HDCP-compliant device. Protected material is not passed in non-HDCP mode.
- **HDMI 2.0b specification features** — Include data rates up to 18 Gbps, HDR, Deep Color up to 12 bit, 3D, and HD lossless audio formats.
- **HDCP authentication and signal presence LED indicators**
- **Ethernet monitoring and control** — Enables control and proactive monitoring over a LAN, WAN, or the Internet.
- **CEC insertion** — A control processor can insert CEC commands via SIS commands to control devices connected at the HDMI output.
- **Automatic color bit depth management** — Automatically adjusts color bit depth based on the display EDID, preventing color compatibility conflicts between source and display.
- **High Dynamic Range (HDR) video support** — Enables greater contrast range and wider color gamut by providing the necessary video bandwidth, color depth, and metadata interchange capability for HDR video.
- **Provides +5 VDC, 250 mA power on the output for external peripheral devices**
- **Extron Product Configuration Software** — Provides a convenient method of configuring multiple products using a single software application.
- **Multiple control options including front panel, RS-232, USB, contact closure, and Ethernet.**
- **Contact closure remote control with tally output** — Allows for remote selection of an input channel. +5 VDC is provided to light an LED to indicate the currently selected input.
- **Includes LockIt HDMI cable lacing brackets.**
- **HDMI to DVI Interface Format Correction** — Automatically reformats HDMI source signals for output to a connected DVI display.
- **Front panel security lockout** — Prevents unauthorized use in non-secure environments. In lockout mode, all functions are available through RS-232 and PCS control.
- **External universal power supply included** — The highly reliable, energy-efficient power supply (replacement part #70-769-01) provides worldwide power compatibility with high reliability and low power consumption for reduced operating costs. It features three 12 volt DC outputs, and includes a ZipClip 100 Mounting Kit to securely mount an Extron power supply onto most surfaces, including tables and lecterns.
- **Provides +5 VDC, 250 mA power on the output for external peripheral devices.**

Application Diagram

The following diagram shows a typical application for a SW4 HD 4K PLUS.

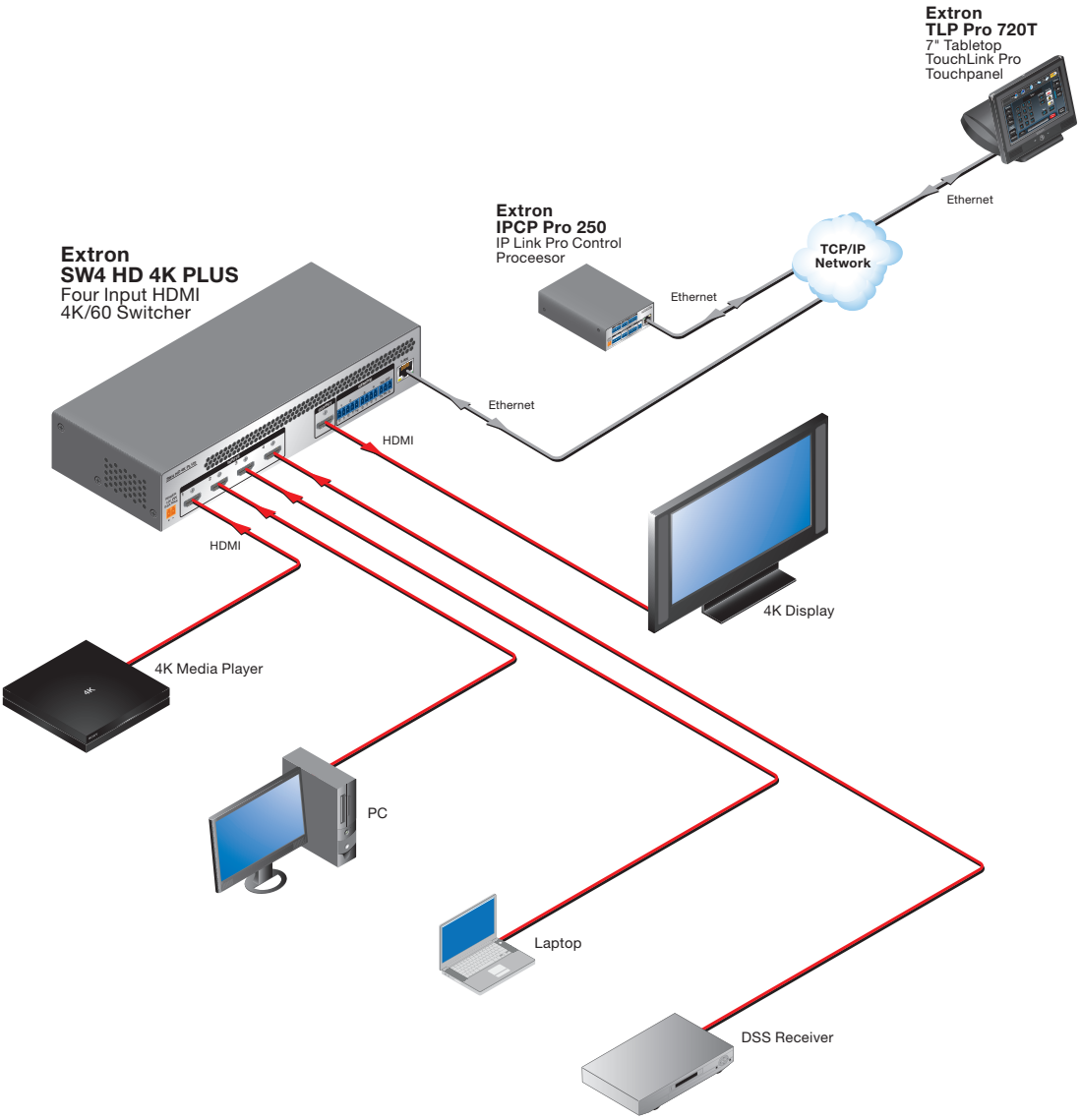


Figure 1. SW4 HD 4K PLUS Application Diagram

Installation

This section describes the installation and setup of the SW HD 4K PLUS Series switchers. Topics include:

- **Installation Overview**
- **Rear Panel Features**
- **Wiring the Power Connector (SW2 and SW4 HD 4K PLUS Only)**
- **Wiring for RS-232 Control**
- **Wiring the CONTACT/TALLY Connectors**
- **LockIt HDMI Cable Lacing Bracket Installation**

Installation Overview

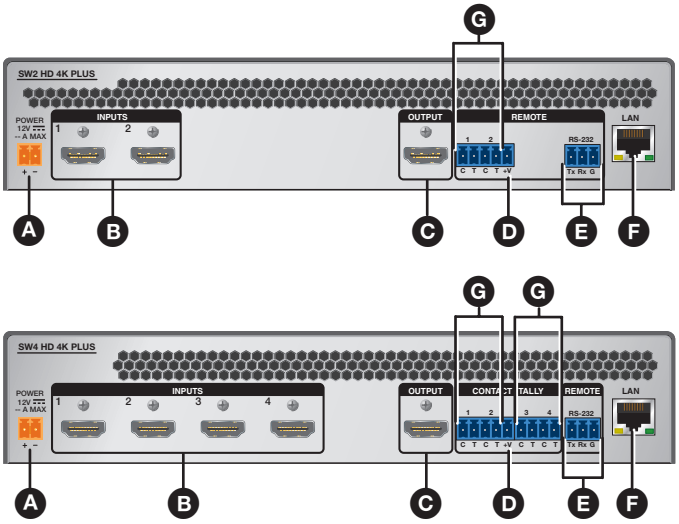
To install and set up the SW HD 4K PLUS Series switcher:

1. **Turn off all equipment** and disconnect it from the power source.
2. (Optional) **Mount the switcher** on a rack shelf or furniture (see **Mounting the SW HD 4K PLUS Switchers** on page 44).
3. **Connect HDMI input sources** to one or more of the SW HD 4K PLUS input connectors.

   NOTE: LockIt cable lacing brackets, one for each HDMI input and output connector, are provided with the SW HD 4K PLUS series. These brackets can be used to secure the HDMI cables to the rear panel connectors to reduce stress on the HDMI connectors and prevent signal loss due to loose cable connections. For information on attaching the LockIt brackets, see **LockIt HDMI Cable Lacing Bracket Installation** on page 12.

4. **Connect an HDMI output device** to the output connector. By default, the EDID of this device is stored at the HDMI inputs.
5. **Connect control devices.** Connect your computer to one of the following SW HD 4K PLUS ports to configure and control the switcher via SIS commands:
   - **RS-232 port** — 3-pole captive screw connector for serial RS-232 control (see **Wiring for RS-232 Control** on page 9 for connection procedures)
   - **Config port** — USB mini-B connector for USB control
   - **LAN port** — RJ-45 connector for Ethernet control
6. **Power on the output display.**
7. **Connect power to the switcher** (see **Powering on the Switcher** on page 15).
8. (Optional) **Configure the EDID Minder** (see **EDID Minder** on page 17).
9. **Power on the source devices.**

Rear Panel Features



- **A** Power connector
- **B** Input connectors
- **C** Output connector
- **D** +V connector
- **E** RS-232 connector
- **F** LAN (Ethernet) connector
- **G** Contact closure input and tally output ports

Figure 2. SW2 and SW4 HD 4K PLUS Rear Panels

- **A** Power connector
- **B** Input connectors
- **C** Output connector
- **D** +V connector
- **E** RS-232 connector
- **F** LAN (Ethernet) connector
- **G** Contact closure input and tally output ports
- **H** Reset button

Figure 3. SW6 and SW8 HD 4K PLUS Rear Panels

A Power connector —

- **SW2 and SW4** — Plug the provided external 12 VDC, 1.5 A power supply into this 2-pole, 3.5 mm captive screw connector and into an AC power outlet.
- **SW6 and SW8** — Connect this male IEC connector to an AC power source.

B **Input connectors** — Connect HDMI video input sources to these female Type A HDMI connectors.

> **NOTE:** LockIt cable lacing brackets are provided with the SW HD 4K PLUS units. These brackets secure the HDMI cables to the rear panel connectors and reduce stress on the connectors, preventing signal loss due to loose cable connections (see **LockIt HDMI Cable Lacing Bracket Installation** on page 12 for more information).

C **Output connector** — Connect an HDMI display device to this female HDMI A connector.

The EDID information is read from the connected output device via this connector and is written to memory on each input whenever the output device is connected to this port and powered on.

> **NOTE:** The EDID information is also read and stored whenever power is recycled to the connected output device or when the output device is replaced.

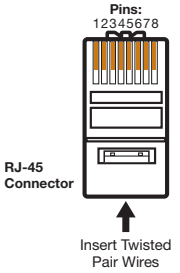
D **+V connector** — The +V pin (SW2 and SW4) or the 3-pin connector (SW6 and SW8) constantly outputs +5 VDC with 200 mA total (shared between pins). Use this pin when power is needed for external Tally LEDs, such as Extron Show Me cables.

E **RS-232 connector** — Use this 3-pole, 3.5 mm captive screw connector for RS-232 communication with the switcher (including firmware updates).

To enable RS-232 control, connect the Tx (transmit), Rx (receive) and G (ground) pins to the serial port of your computer (see **Wiring for RS-232 Control** on page 9).

F **LAN (Ethernet) connector** — Use an RJ-45 cable to connect this jack to a LAN for control of the switcher via Ethernet.

- Use a straight-through cable for connection to a switch, hub, or router.
- Use a crossover cable or a straight-through cable for connection directly to a PC. Wire the connector as shown in the image below.



Straight-through Cable
(for connection to a switch, hub, or router)

End 1 Pin	End 1 Wire Color	End 2 Pin	End 2 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

TIA/EIA-T568B T568B

Crossover Cable
(for direct connection to a PC)

End 1 Pin	End 1 Wire Color	End 2 Pin	End 2 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

T568B T568A

Figure 4. Wiring for Ethernet Control

G **Contact closure input and tally output ports** —

- **SW2** — The `CONTACT/TALLY` panel contains one 5-pole captive screw connector with two pairs of pins labeled `C` (contact) and `T` (tally), and a +V pin that supplies power to an optional indicator device.

  SW4 — The `CONTACT/TALLY` panel contains one 5-pole connector with two pairs of pins labeled `C` and `T`, and a +V pin that supplies power to an optional indicator device. It also has a 4-pole captive screw connector with two more `C-T` pin pairs.

  (Optional) Connect a push-button contact closure device to a `C` pin and to the `G` (ground) pin of the 3-pole RS-232 connector (see **figure 2**, **E**, on the previous page). Connect an indicator device, such as an LED, to tally output pin `T` of the same pin pair, to identify the currently selected input when the front panel buttons are not visible.

- **SW6 and SW8** — The CONTACT IN/TALLY OUT panel contains six (SW6) or eight (SW8) 3-pole captive screw connectors, each with a `C` (contact), `T` (tally), and `G` (ground) pin.

  (Optional) Connect a push-button contact closure device to the `C` and `G` pins of one of the 3-pole connectors (see **figure 3**, G, on page 5). Connect an indicator device, such as an LED, to tally output pin `T` of the same connector, to identify the currently selected input when the front panel buttons are not visible.

See **Wiring the CONTACT/TALLY Connectors** on page 10 for more information.

H **Reset button** —The `Reset` button initiates three modes of reset for the switcher. For the different reset levels, press and **hold** the button while the switcher is running or while you power up the switcher (see **Resetting** on page 16 for details).

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is `extron`.

Wiring the Power Connector (SW2 and SW4 HD 4K PLUS Only)

A 12 VDC, 1.5 A, pre-wired power supply is provided with the SW2 and SW4 HD 4K PLUS. If, instead, you intend to use a different power supply, follow the **instructions** beginning on the next page to wire the provided 2-pole captive screw connector to your power supply.

CAUTION: The wires must be kept separate while the power supply is plugged in. Remove power before wiring.

ATTENTION : Les deux cordons d'alimentation doivent être tenus à l'écart l'un de l'autre quand l'alimentation est branchée. Couper l'alimentation avant de faire l'installation électrique.

ATTENTION:

- Always use a power supply supplied and or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product.
- Utilisez toujours une source d'alimentation fournie ou recommandée par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute conformité réglementaire et peut endommager la source d'alimentation ainsi que le produit final.

- If not provided with a power supply, this product is intended to be supplied by a power source marked "Class 2" or "LPS" and rated at 12 VDC and a minimum of 1.5 A.
- Si ce produit ne dispose pas de sa propre source d'alimentation électrique, il doit être alimenté par une source d'alimentation de classe 2 ou LPS et paramétré à 12 V et 1.5 A minimum.

- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 725 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to building structure or similar structure.
- Cette installation doit toujours être en accord avec les mesures qui s'applique au National Electrical Code ANSI/NFPA 70, article 725, et au Canadian Electrical Code, partie 1, section 16. La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.

ATTENTION:

- Power supply voltage polarity is critical. Incorrect voltage polarity can damage the power supply and the unit. The ridges on the side of the cord (see figure 5) identify the power cord negative lead.
- La polarité de la source d'alimentation est primordiale. Une polarité incorrecte pourrait endommager la source d'alimentation et l'unité. Les stries sur le côté du cordon permettent de repérer le pôle négatif du cordon d'alimentation.

- To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.
- Pour vérifier la polarité avant la connexion, brancher l'alimentation hors charge et mesurer sa sortie avec un voltmètre.

- The length of the exposed (stripped) copper wires is important.
  The ideal length is 3/16 inch (5 mm). Longer bare wires can short together. Shorter wires are not as secure in the connectors and could be pulled out.
- La longueur des câbles exposés est primordiale lorsque l'on entreprend de les dénuder. La longueur idéale est de 5 mm (3/16 inches). 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.

- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities.
- Sauf mention contraire, les adaptateurs AC/DC ne sont pas appropriés pour une utilisation dans les espaces d'aération ou dans les cavités murales.

1. Cut the DC output cord to the length needed.
2. Strip the jacket to expose 3/16 inches (5 mm) of the conductors.
3. Slide the leads into the supplied 2-pole captive screw plug, and use a small screwdriver to secure them.
4. To verify the power cord polarity before connecting the plug, connect the power supply with no load and check the output with a voltmeter.
5. Use the supplied tie wrap to strap the power cord to the extended tail of the connector.

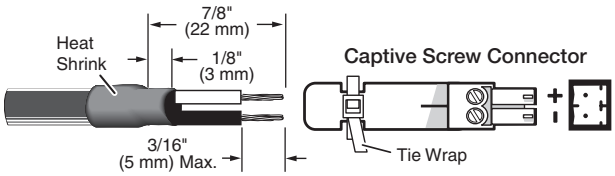


Figure 5. Wiring the Power Connector (SW2 and SW4 Only)

Wiring for RS-232 Control

Use a female 9-pin D-to-bare wire RS-232 cable or a universal control cable (UC50' or UC100') to connect your computer or control system to the RS-232 pins of the REMOTE connector.

1. Wire the unterminated end of the RS-232 cable to the provided 3-pole captive screw plug as described below. Connect the transmit, receive, and ground wires of the cable to the **first three pins** on the connector, starting at the left:
   - Connect the transmit wire to pin 1 which plugs into the `Tx` (transmit) port.
   - Connect the receive wire to pin 2 which plugs into the `Rx` (receive) port.
   - Connect the ground wire to pin 3 which plugs into the `G` (ground) port.
2. Plug the 3-pole connector into the REMOTE receptacle on the rear panel of the switcher.
3. Connect the other end of the cable to the appropriate computer or control system connector.

Figure 6 shows how to wire this shared connector for RS-232.

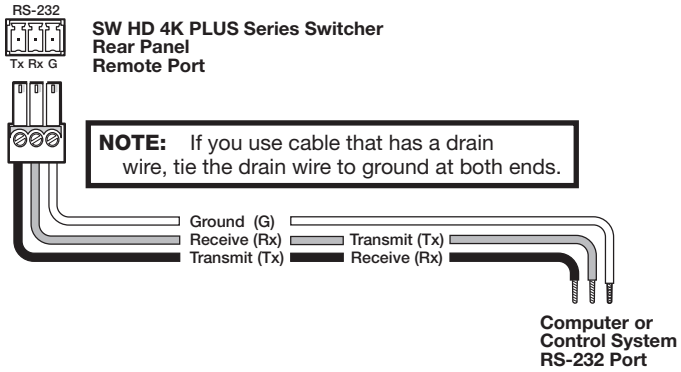


Figure 6. Remote Connector Pin Assignments

Wiring the CONTACT/TALLY Connectors

To enable input switching via contact closure, connect a push-button contact closure device to a Contact connector (see **figures 2 and 3**, G, on page 5).

To identify the currently selected input when the front panel buttons are not visible, connect a device such as an LED to the CONTACT/TALLY connector (G) and to the +V connector (D). When the input you are using is selected, the corresponding Tally Out pin shorts to ground, activating the connected indicator.

SW2 and SW4 CONTACT/TALLY Connectors

The CONTACT/TALLY panel on the SW2 and SW4 models contains one (SW2) or two (SW4) female captive screw connectors, each with two pairs of pins labeled C and T.

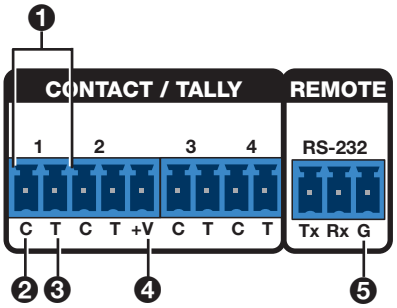


Figure 7. Contact/Tally and Remote RS-232 Ports on SW2 and SW4 Models

Each pin pair is labeled with the number of the HDMI input associated with it. (For example, in figure 7, 1, the number 1 indicates the contact and tally pins for input 1.) Wire devices to these connectors as follows:

1. **SW2** — Wire and connect the provided 5-pole plug to the 5-pole CONTACT/TALLY captive screw connector on the rear panel.

   SW4 — Wire and connect the provided **5-pole** plug to the CONTACT/TALLY connector on the **left** (containing pin pairs 1 and 2), and wire and connect the provided **4-pole** plug to the connector on the **right** (pin pairs 3 and 4).

2. Connect contact input and tally output devices to the pin pair for each input:

   - To enable input switching via contact closure, connect a push-button contact closure input device to pin C (2) and to the G (ground) pin (5) of the 3-pole RS-232 connector.
   - To identify the currently selected input when the front panel buttons are not visible, connect an indicator device, such as an LED, to tally output pin T of the same pair of pins (3).

     When the input you are using is selected, the corresponding tally out pin shorts to ground, which activates the connected indicator.

3. Insert the power wires for the contact indicator devices into the +V connector (4).
4. Press the button on the contact closure device to switch the connected input to the output.

SW6 and SW8 CONTACT IN/TALLY OUT Connectors

The REMOTE panel on the SW6 and SW8 models contains six (SW6) or eight (SW8) 3-pole captive screw connectors, each with three pins labeled C, G, and T, for contact closure and tally indicator devices. The panel also contains a 3-pole captive screw connector with three +V pins that provide power to the contact indicator devices connected to the tally (T) ports. (The REMOTE panel also contains the RS-232 connector, which is not used for contact closure on these models.)

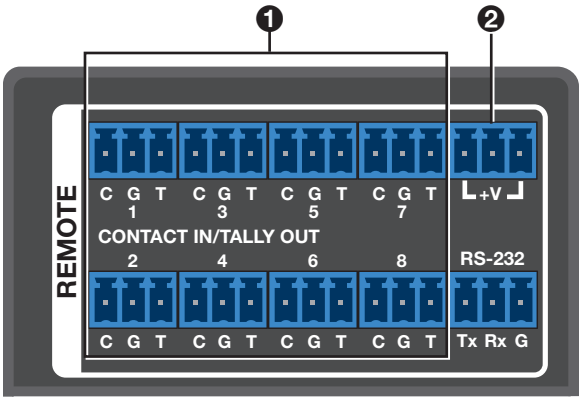


Figure 8. CONTACT IN/TALLY OUT Ports on SW6 and SW8 Models

1. Connect contact input and tally output devices to one or more of the 3-pole CONTACT IN/TALLY OUT connectors (see figure 8, ❶) as desired:
   - To enable input switching via contact closure, connect a push-button contact closure input device to pins C (contact) and G (ground).
   - To identify the currently selected input when the front panel buttons are not visible, connect an indicator device, such as an LED, to tally output pin T of the same 3-pole connector.

     When the input you are using is selected, the corresponding tally out pin shorts to ground, which activates the connected indicator.
2. Attach the power wires for your connected contact indicator devices to any of the three ports of the +V connector (❷).
3. Press the button on the contact closure device to switch the connected input to the output.

Connecting Using a Show Me Cable

The CONTACT/TALLY connectors can also be used with Extron Show Me cables. Figure 9 shows how to wire a Show Me cable to a contact input. For each Show Me cable:

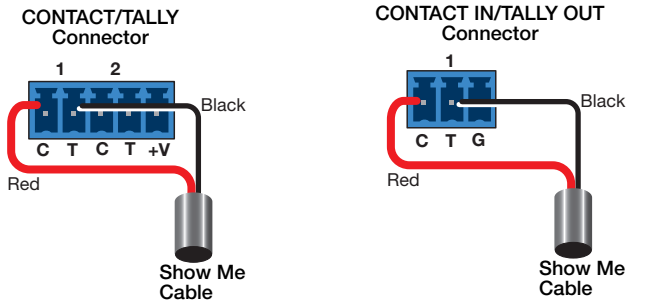


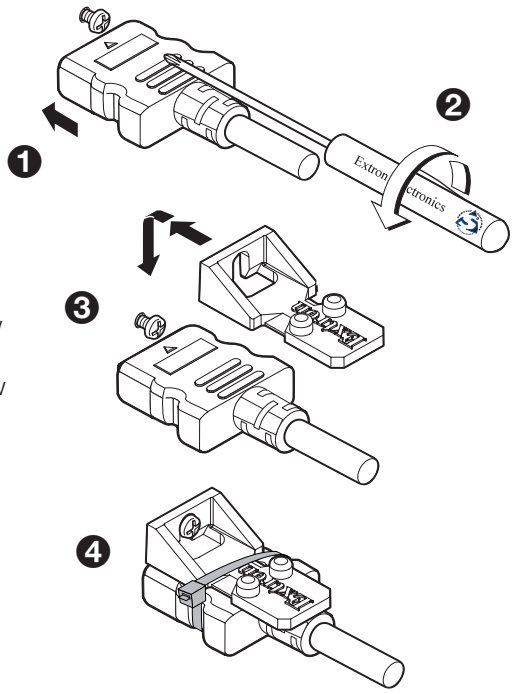
Figure 9. Connecting Contact and Tally Ports Using a Show Me Cable

- Connect the **red** pigtail to the C pin corresponding to the input being used.
- Connect the **black** pigtail to the T pin of the same input.

LockIt HDMI Cable Lacing Bracket Installation

The Extron LockIt lacing bracket secures a standard HDMI cable to most HDMI devices.

NOTE: The HDMI device must have an HDMI connection mounting screw for this bracket to be used.



To securely fasten an HDMI cable to a device:

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

ATTENTION:

- Do not overtighten the HDMI connection mounting screw. The shield to which it is fastened is very thin and can easily be stripped.
- Ne serrez pas trop la vis de montage du connecteur HDMI. Le blindage auquel elle est attachée est très fin et peut facilement être dénudé.

Operation

This section describes the operation of the SW HD 4K PLUS switchers. Topics include:

- **Front Panel Features**
- **Operations**

Front Panel Features

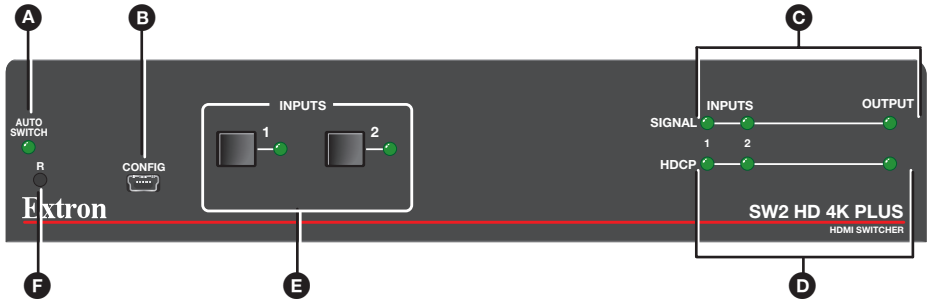


Figure 10. SW2 HD 4K PLUS Front Panel

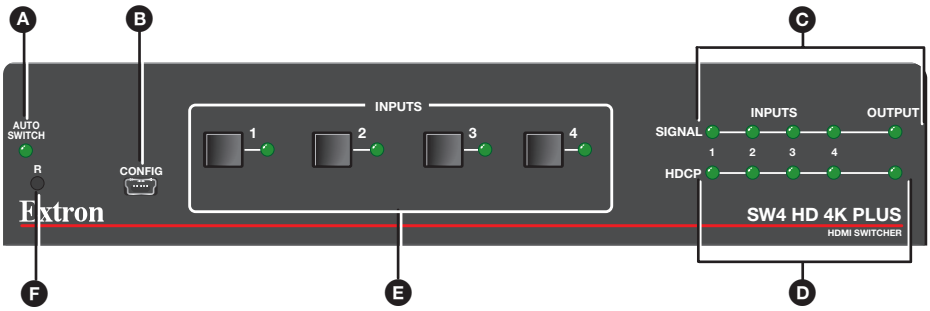


Figure 11. SW4 HD 4K PLUS Front Panel

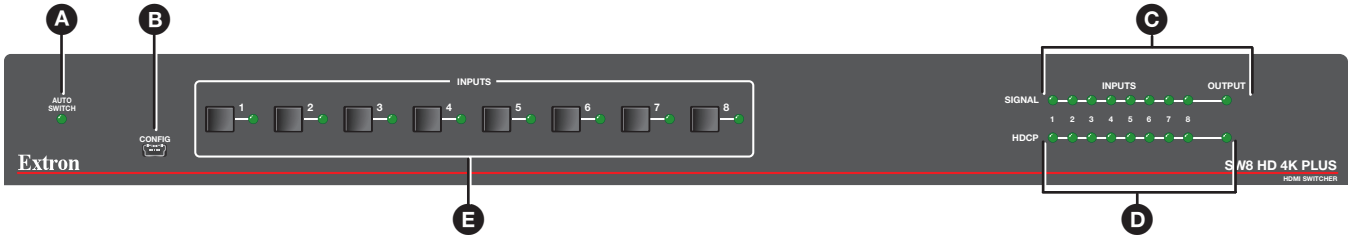


Figure 12. SW8 HD 4K PLUS Front Panel

- **A AUTO SWITCH LED**
- **B CONFIG port**
- **C Signal status LEDs**
- **D HDCP status LEDs**
- **E Input selection buttons and LEDs**
- **F Reset (R) button (SW2 and SW4 only)**

NOTE: The SW6 front panel is identical to that of the SW8 except that it has six input buttons, Signal LEDs, and HDCP LEDs.

A **AUTO SWITCH LED** — This LED lights when auto-input switching is enabled (see **Auto-Input Switching** on page 16 for the procedure to set up automatic input selection).

B **CONFIG port** — Connect a USB cable (USB A to mini-B) between your computer and this female USB mini-B port to configure and control the switcher via SIS commands or PCS and to update the firmware.

C **Signal status LEDs**

- **Inputs** — Each input has a corresponding numbered Signal LED which lights when a source is connected to the input connector and TMDS clock activity is detected on it.

  NOTE: If the source device connected to the selected input is HDCP encrypted (requires HDCP authentication), the corresponding signal LED may not light unless HDCP has been authenticated.

- **Output** — The Output Signal LED lights when an active sink (output) device is connected to the HDMI output.

D **HDCP status LEDs**

- **Inputs** — Each input has a corresponding numbered HDCP LED. If the connected source requires HDCP, the corresponding LED lights when authentication is successful.

  NOTE: HDCP is authenticated on each input regardless of the currently selected source.

- **Output** — The Output HDCP LED lights if the currently selected input requires HDCP and the connected output device has been successfully authenticated.

  NOTE: HDCP is re-authenticated on the output whenever a new input is selected.

E **Input selection buttons and LEDs** — Press one of these buttons to select an input to switch to the output. The LED at the right of each button lights when the corresponding input is selected. If auto-input switching is in effect, these buttons are disabled, but the LEDs continue to light to indicate the selected input.

F **Reset (R) button (SW2 and SW4 only)** —The reset (**R**) button initiates three modes of reset for the switcher. For the different reset modes, press and **hold** the button while the switcher is running or while you power up the switcher (see **Resetting** on page 16 for details).

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is `extron`.

Operations

Powering on the Switcher

To power on the SW HD 4K PLUS:

1. Connect all input and output devices to the rear panel connectors on the switcher (see **Rear Panel Features** on page 5 for the rear panel connections).
2. Power on the display.
3. Power on the SW HD 4K PLUS. Plug the power supply into the 2-pole captive screw power connector on the switcher rear panel (SW2 and SW4), or connect the AC power connector to an AC power source (SW6 and SW8). During the boot process:
   a. The unit performs a self-test, during which the front panel AUTO SWITCH, INPUT, SIGNAL, and HDCP LEDs each blink once in sequence from left to right.
   b. The AUTO-SWITCH LED blinks for approximately 45 seconds. During this time, the switcher reads the available EDID information from the connected output device and writes it to memory on each input. When power is removed, these settings remain in memory and are in effect when power is reapplied.
   c. At the end of the boot process, the AUTO-SWITCH LED turns off, and the LED for the most recently selected input lights.
4. Power on the input devices.

Selecting an Input

To switch (tie) an input to the output, you have the following options:

- **Front panel buttons** — Press the desired input button on the front panel (ensure that auto-input switching is not enabled). The LED corresponding to the selected input button lights.
  - The appropriate front panel input LED lights to indicate the selected input. The LED remains lit until a new input is selected.
  - Only one input can be switched to the output at a time.
- **Contact closure** — Plug one of the provided 3-pole captive screw connectors into the rear panel Contact port. Wire either of the following to the port:
  - **Contact closure device** — If a push-button contact closure device is attached to the Contact port, press the button connected to the slot corresponding to the desired input.
  - **Jumper wire** — On the connector attached to a CONTACT/TALLY port, momentarily short one of the contact closure pins (C) to the ground pin (G) using a jumper wire. Input is switched immediately when the jumper contacts both pins.

    NOTE: If an input pin is latched permanently to the ground pin, input switching by any other method is disabled while those pins are connected.

See **Wiring the CONTACT/TALLY Connectors** on page 10 for more information.

Other ways to select an input include using SIS commands (see **Input Selection** on page 23) and the PCS program (see the *SW HD 4K PLUS Series PCS* help file).

Auto-input Switching

Auto-input switching allows the SW HD 4K PLUS to automatically select the active, connected input based on detection of an active video signal (TMDS clock activity). If two or more inputs are active, the highest-numbered input port with an active signal is selected (for example, input 4 on an SW4 HD 4K PLUS switcher).

When auto-input switching is in effect, the green AUTO SWITCH LED on the front panel lights and the front panel input buttons are disabled.

Auto-input switch modes

The SW HD 4K PLUS switchers provide three auto switch modes, which can be selected via SIS commands (see **Auto-input Switch Mode** commands on page 23) and PCS (see the PCS help file).

- **Mode 0 (disabled mode)** — Auto-input switching is disabled.
- **Mode 1 (user-assigned mode)** — The switcher selects the input to which you assign priority (via SIS commands). If no priority is assigned, the switcher selects the active input with the highest number (default user selection).
- **Mode 2 (input memory priority mode)** — The switcher selects the most recently applied input, and retains a history of the order in which active inputs are connected to the unit. If an active input is removed, the switcher switches to the most recently selected input.

  Mode 2 timeout — Using SIS commands, you can set the number of seconds (0 to 250) the switcher delays before selecting the most recent input.

Enabling and disabling auto-input switching (modes 0 and 1)

By default, auto-input switching is disabled. To toggle auto-input switching between mode 1 (on) and mode 0 (off):

1. Press and hold input button **1** on the front panel.
2. While holding button **1**, press and release input button **2**.

To enable input memory priority mode (mode 2) you must use SIS commands (see the **Auto-input Switch Mode commands**) or PCS (see the *SW HD 4K PLUS PCS* help file).

Resetting

Using a stylus or small screwdriver, press the recessed **R** button on the front panel to initiate three reset modes, depending on the length of time the button is pressed and held.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an **absolute system reset** (all settings are reset to factory defaults except the firmware), the passwords convert to the default, which is `extron`.

The **Reset Mode Summary table** on the next page describes the three reset modes and the number of button presses to enable each one.

Reset Mode Summary			
Mode	**Activation**	**Result**	**Notes**
Reset System Settings	Press and hold down the **R** button until the all the front panel LEDs blink once (at 3 seconds). Then, press **R** again momentarily (for less than 1 second).	The unit returns to factory defaults except for the firmware version and IP settings.	Use this mode to return all system settings to factory defaults while retaining all IP settings and the current firmware version. This is equivalent to the Esc ZXXX← SIS command (see **Reset all device settings to factory defaults** on page 28).
Reset IP and System Settings	Press and hold down the **R** button until all the front panel LEDs blink twice (approximately 10 seconds). Then, press **R** again momentarily (for less than 1 second).	The device reverts to the factory defaults except for the firmware version. • All system settings revert to the factory defaults. • All user modifiable configurations are reset to default values, including IP settings (IP address, subnet mask, gateway address, unit name, DHCP setting, and port mapping) and real-time adjustments. • All user loaded files are deleted. **NOTE:** This reset also removes the initial serial number passwords and sets them to `extron`.	Use this mode to reset all IP and system settings to factory defaults while retaining the current firmware version. This is equivalent to the SIS command ZQQQ (see **Absolute system reset** on page 28).
Reset All Settings to Factory Defaults	Using an Extron Tweeker or other small screwdriver, press and hold in the recessed **R** (Reset) button while connecting power to the switcher.	The device reverts to the factory-installed firmware version.	Use this mode to restart with the default configuration.

EDID Minder

EDID Minder ensures that a source device connected to the SW HD 4K PLUS input continuously recognizes the EDID of a sink device, even if the sink is not physically connected. By default, the EDID is set to 1080p @ 60 Hz with 2-channel audio.

EDID can be set to match output rate, a custom user-defined EDID, or a factory setting. A variety of EDID are available to be loaded via PCS and assigned to the inputs (see the *SW HD 4K PLUS PCS Help* file, provided with the PCS program, for information on assigning EDID).

Remote Configuration and Control

This section describes remote operation of the SW HD 4K PLUS switchers. Topics include:

Using Simple Instruction Set (SIS) Commands

The SW HD 4K PLUS can be remotely set up and controlled via Extron SIS commands that are issued from a host computer or other device, such as a control system. SIS commands can be issued via RS-232 from the computer serial port to the switcher rear panel Remote port (see **Wiring for RS-232 Control** on page 9), USB from a computer USB port to the switcher front panel Config port, or Telnet (IP) from a computer Ethernet port to the switcher rear panel LAN port.

Host-to-switcher Communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. You can enter these commands from your computer using a communication software program such as Extron DataViewer or HyperTerminal. When the switcher determines that a command is valid, it executes the command and sends a response to the host device.

Responses from the SW HD 4K PLUS to the host computer 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.

Switcher-initiated Messages

When a local event such as a front panel selection or change in signal status takes place, the switcher responds by sending a message to the host, indicating what change has occurred. No response is required from the host.

The switcher sends the following message when it is first powered on:

`(C) Copyright 20nn, Extron Electronics, SW HD 4K PLUS, Vn.nn, 60-160n-01`

`20nn` is the year in which the copyright for the firmware was registered, `Vn.nn` is the firmware version number, and `60-160n-01` is the switcher part number.

NOTE: This message is displayed at power-up only with an RS-232 or USB connection.

Error Responses

If the switcher is unable to execute a command it receives because the command is invalid or contains invalid parameters, the switcher returns an error response to the host. The following error response codes can be sent:

`E01` – Invalid input channel (out of range)
`E06` – Invalid input during auto-input switching
`E10` – Invalid command
`E13` – Invalid value (out of range)
`E24` – Privilege violation

Using the Command and Response Table

The **Command and Response Table for SIS Commands**, starting on page 23, lists valid ASCII and hexadecimal command codes, the switcher responses to the host, and a description of the command function or the results of executing the command.

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

ASCII to Hex Conversion Table

Space →	20	!	21	"	22	#	23	$	24	%	25	&	26	'	27
(	28	)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F
0	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

Figure 13. ASCII to Hex Conversion Table

Symbol Definitions

↵ = CR/LF (carriage return with line feed) (hex `0D 0A`)

← or | = Soft carriage return (no line feed)

• = Space

Esc or `W` = Escape

NOTE: Unless otherwise indicated, commands are **not** case-sensitive.

X1 = Input number
`0` through the maximum number of inputs on the unit
`0` = Deselect (mute) all inputs
For auto-input switching:
`1` through maximum number of inputs available.

X2 = On and off, or audio mute status
`0` = Off or unmuted
`1` = On or muted

X3 = Video color bit depth mode
`0` = Automatically truncate based on output (default)
`1` = Force truncation to 8-bit

X5 = Current EDID information in hexadecimal format (128 or 256 bytes of hex data)

X6 = Native resolution and refresh rate

X7 = Unit name. The name can have up to 24 alphanumeric characters including hyphens (-), with no spaces. The first character must be a letter, and the last character cannot be a hyphen. The default is SW-HD-4K-SERIES.

X8 = Auto-input switch mode
0 = Disabled — Manual switching (default)
1 = User-defined priority mode — The switcher selects the input to which the user assigns priority. If no priority is assigned, the switcher selects the active input with the highest number.
2 = Input memory priority mode — The switcher selects the most recently applied input, and retains a history of the order in which active inputs are connected to the unit. If an active input is removed, the switcher switches to the most recently prioritized input.

X9 = Auto-input switch mode 2 timeout
1-250 = Number of seconds the switcher delays before switching to the most recently applied input.
0 = Immediate switch (no delay)

X10 = Firmware version (to the second decimal place)

X11 = TMDS output format
0 = Auto (default)
1 = DVI RGB 444
2 = HDMI RGB "Full"
3 = HDMI RGB "Limited"
4 = HDMI YUV 444 "Limited"
5 = HDMI YUV 422 "Limited"

X12 = Verbose mode
0 = None (default for Telnet connection)
1 = Verbose mode (default for RS-232 and USB connections)
2 = Tagged responses for queries
3 = Verbose mode and tagged responses for queries

NOTES:

- In **verbose response** mode, the switcher responds with unsolicited responses for value and setting changes that may result from a signal change, or a setting adjustment made via another interface.
- For example, the switcher can send out a notice of a change in some setting without receiving a query via a PC or a control system. That change could have been a result of an internal process, a selection made from the front panel, or a selection made via PCS. This is an example of a verbose (wordy) relationship between the controller and a connected device.
- If **tagged responses** are enabled, all View type commands return the command string plus the data, the same as in responses for setting a value. For example:
  Command: Esc CN ←
  Response: Ipn • X7 ↵ (tagged response)
  or X7 ↵ (untagged response)

X13 = Video mute
0 = Video mute disabled
1 = Video mute enabled (TMDS)
2 = Video and sync mute

X14 = Output 5 V mode
0 = Auto: 5 V is enabled only when a source with 5 V is present.
1 = 5 V is always enabled (default).

X15 = Input HDCP status
0 = No source detected
1 = Source with HDCP detected
2 = Source without HDCP detected

X16 = Output HDCP status
0 = No sink detected
1 = Sink with HDCP detected
2 = Sink without HDCP detected

X17 = Output HDCP mode
0 = (Default) Encrypt as required by input.
For HDMI sinks, perform continuous trials.
For DVI sinks, attempt for 10 seconds, then fail.
1 = Always encrypt.
For HDMI sinks, perform continuous trials.
For DVI sinks, attempt for 10 seconds, then fail.
2 = Encrypt as required by input. Continuous trials for HDMI and DVI sinks.
3 = Always encrypt. Continuous trials for HDMI and DVI sinks.

X18 = Tally pin mode for channel mute indicator
0 = Always on (default)
1 = Off when muted
2 = Blink when muted

X19 = Local date and time (to set): *MM/DD/YY-HH:MM:SS*

X20 = Local date and time (displayed): *Ddd, DD Mmm YYYY HH:MM:SS*

X21 = IP address (*nnn.nnn.nnn.nnn*) Leading zeros in each of the four octets are optional in setting values and are suppressed in returned values.

X22 = Hardware media access code (MAC) address (*00-05-A6-XX-XX-XX*). The MAC address is view-only and cannot be changed.

X23 = Subnet mask (*nnn.nnn.nnn.nnn*)

X24 = Gateway IP address (*nnn.nnn.nnn.nnn*)

X25 = Domain name system (DNS) server IP address (*nnn.nnn.nnn.nnn*)

X26 = Administrator password

X27 = User password

NOTES:

- In response to the `View administrator password` and the `View user password` commands, X26 and X27 are displayed as `****` if a password exists. An empty line is displayed if extron exists.
- The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is extron.

X28 = Network Time Protocol (NTP) IP address or URL

X34 = Time zone code
The code is an acronym for the time zone (2-6 letters) (see the **List all time zones command** on page 30 to view a list of available time zones).

X35 = Time zone description.
This is the UTC equivalent for a particular time zone as well as a general description of the geographical area. The description is formatted as *UTC offset : location name*.

X36 = Unit part number:
SW2 HD 4K PLUS: `60-1603-01`
SW4 HD 4K PLUS: `60-1604-01`
SW6 HD 4K PLUS: `60-1605-01`
SW8 HD 4K PLUS: `60-1606-01`

Symbol definitions for CEC communications commands

X37 = CEC mode
- 0 = Disable CEC operations for this IO port (default)
- 2 = Enable insertion (unidirectional)
- 4 = Enable insertion and publish received CEC messages (bidirectional) (recommended mode)

X38 = CEC status
- 0 = CEC mode 0 disabled
- 2 = CEC mode 2 enabled but no device detected (unidirectional)
- 3 = CEC mode 2 enabled and device detected (unidirectional)
- 4 = CEC mode 4 enabled but no device detected (bidirectional)
- 5 = CEC mode 4 enabled and device detected (bidirectional)

X39 = Source logical address (our pseudo): 0 through 15 (-1 = not found or port not enabled)

X40 = Destination logical address (theirs): 0 through 15 (-1 = not found or port not enabled)

CEC Logical Addresses

Address	Device
0	TV
1	Recording Device 1
2	Recording Device 2
3	Tuner 1
4	Playback Device 1
5	Audio System
6	Tuner 2
7	Tuner 3
8	Playback Device 2
9	Recording Device 3
10	Tuner 4
11	Playback Device 3
12	Reserved
13	Reserved
14	Free Use
15	Unregistered (as initiator address) Broadcast (as destination address)

X41 = CEC command: Predefined actions as strings within double quotes: "PwrOn" or "PwrOff"

X42 = CEC send result
- 0 = Failed (NAK)
- 1 = Success (ACK) of entire message
- 2 = Unable to send

X43 = CEC physical address: 4 hexadecimal digits (Example: %10%00 for 1000)

X45 = CEC data: User selected elements (0 to 15) in the form of percent sign followed by two hex digits (Example: %2A%07%FF)

X46 = CEC address byte: In the form of percent sign followed by 2 hex digits
Example: %E0 = Extron output (14) to TV (0)

Command and Response Table for SIS Commands

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
Input Selection			
Select input (audio and video)	X1!	InX1•All↵	Select input X1.
View input	!	X1↵ *In verbose modes 2 and 3:* IN X1 • All↵	View the selected input (X1).
KEY: X1 = Input number		0 through the highest numbered input on the unit (2 through 8, depending on the model) 0 = deselect all inputs (disable output)	
Muting			
Video mute	X13B	VmtX13↵	Mute the video signal. For X13:
Query video mute status	B	X13↵ *In verbose modes 2 and 3:* VmtX13↵	Show video mute status X13.
Mute embedded audio	EscX2AFMT←	AfmtX2↵	Mute or unmute (X2) the embedded audio signal.
View embedded audio mute status	EscAFMT←	X2↵ *In verbose modes 2 and 3:* AfmtX2↵	Show embedded audio mute status X2.
KEY: X2 = Audio mute setting X13 = Video mute setting		0 = unmuted (default), 1 = muted 0 = unmuted (default), 1 = video muted, 2 = video and sync muted	
Auto-input Switch Mode			
Set the auto-input switch mode	EscX8AUSW←	AuswX8↵	Set the auto-input switch mode to X8.
View auto-input switch mode	EscAUSW←	X8↵ *In verbose modes 2 and 3:* AuswX8↵	View current auto-input switch mode X8.
Set user priority order for auto-input switch mode 1	EscPX1•X1•...•X1AUSW←	AuswPX1•X1•...•X1↵	Set the priority switching order of the inputs.
View mode 1 priority order	EscP AUSW←	X1•X1•...•X1↵ *In verbose modes 2 and 3:* AuswPX1•X1•...•X1↵	View the order in which the inputs will be selected in auto-switch mode 1.
KEY: X1 = Input number		1 through the highest numbered input on the unit (2 through 8, depending on the model)	
X8 = Auto-input switch mode		0 = Disabled — Manual switching (default) 1 = User-defined priority mode — The switcher selects the input to which the user assigns priority. If no priority is assigned, the switcher selects the active input with the highest number. 2 = Input memory priority mode — The switcher selects the most recently applied input, and retains a history of the order in which active inputs are connected to the unit. If an active input is removed, the switcher switches to the most recently prioritized input.	

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
Auto-input Switch Mode (continued)			
Set time-out duration for mode 2	Esc T X9 AUSW←	Ausw TX9↵	Set the number (X9) of seconds (0 - 250) the switcher delays before switching to the most recently applied input. 0 = immediate switch (no delay)
View mode 2 timeout duration	Esc T AUSW←	X9↵ *In verbose modes 2 and 3:* Ausw TX9↵	View the mode 2 timeout X9.
KEY: X9 = Auto-input switch mode 2 timeout duration		1-250 = Number of seconds the switcher delays before switching to the most recently selected input. 0 = Immediate switch (no delay)	
Video Color Bit Depth			
Set video color bit depth mode	Esc V X3 BITD←	BitdVX3↵	Select color bit depth mode X3.
View video color bit depth mode	Esc V BITD←	X3↵ *In verbose modes 2 and 3:* BitdVX3↵	View the video color bit depth.
KEY: X3 = Video color bit depth mode		0 = Automatically truncate based on the EDID of the connected output (default) 1 = Force truncation to 8-bit	
Signal Status			
Request status of all signals	Esc LS←	X2•X2•...•X2•X2*X2↵ *In verbose modes 2 and 3:* SigX2•X2•...•X2*X2↵	View signal status X2 of all inputs, followed by the output (*X2).
KEY: X2 = Input and output signal status		0 = no signal detected (default), 1 = signal detected	
Output 5 V Mode			
Set output 5 V mode	Esc M X14 HPLG←	Hplg MX14↵	Select output 5 V mode X14.
View output 5 V mode status	Esc MHPLG←	X14↵ *In verbose modes 2 and 3:* Hplg MX14↵	View current output 5 V mode.
KEY: X14 = Output 5 V mode		0 = Auto: 5 V is enabled only when a source with 5 V is present. 1 = 5 V is always enabled (default).	
Front Panel Lockout (Executive Mode)			
Enable or disable lock mode	X2X	ExeX2↵	Select front panel lock mode X2.
Query lockout status	X	X2↵ *In verbose modes 2 and 3:* ExeX2↵	Show executive mode status.
KEY: X2 = Front panel lock mode		0 = lock mode off (default), 1 = lock mode on	

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
HDCP Commands			
HDCP Status			
View HDCP status for an input	Esc I X1 HDCP ←	X15 ↵ *In verbose modes 2 and 3:* Hdcp I X15 ↵	Show HDCP status X15 for input X1. X1 = 1 through {*maximum number of inputs*}.
View HDCP status for all inputs	Esc IHDCP ←	X15•X15•...•X15 ↵ *In verbose modes 2 and 3:* Hdcp I X15•X15•...•X15 ↵	Show HDCP status X15 for all the inputs.
View output HDCP status	Esc OHDCP ←	X16 ↵ *In verbose modes 2 and 3:* Hdcp O X16 ↵	Show HDCP status X16 for the output.
HDCP Input Authorization			
HDCP authorization per input	Esc E X1 * X2 HDCP ←	Hdcp E X1 * X2 ↵	Set HDCP authorization for input X1 to X2.
Enable or disable HDCP authorization for all inputs	Esc E X2 HDCP ←	Hdcp E X2 ↵	Set HDCP authorization to X2 for all inputs.
View HDCP authorization status for all inputs	Esc EHDCP ←	X2•X2•...•X2 ↵ *In verbose modes 2 and 3:* HdcpE X2•X2•...•X2 ↵	View the current HDCP authorization setting X2 for all the inputs.
Output HDCP Mode			
Set the output HDCP mode	Esc S X17 HDCP ←	Hdcp S X17 ↵	Set the output HDCP mode to X17.
View the output HDCP mode	Esc SHDCP ←	X17 ↵ *In verbose modes 2 and 3:* Hdcp S X17 ↵	View HDCP mode X17 for the output.

KEY:

- X1 = Input number — 1 through the highest numbered input on the unit (2 through 8, depending on the model)
- X2 = Enable or disable HDCP — 0 = Disable HDCP authorization, 1 = Enable HDCP authorization (default) authorization
- X15 = Input HDCP status — 0 = No source detected, 1 = Source with HDCP detected, 2 = Source without HDCP detected
- X16 = Output HDCP status — 0 = No sink detected, 1 = Sink with HDCP detected, 2 = Sink without HDCP detected
- X17 = Output HDCP mode — 0 = (Default) Encrypt as required by input:
  For HDMI sinks, perform continuous trials.
  For DVI sinks, attempt for 10 seconds, then fail.
  1 = Always encrypt:
  For HDMI sinks, perform continuous trials.
  For DVI sinks, attempt for 10 seconds, then fail.
  2 = Encrypt as required by input: continuous trials for HDMI and DVI sinks.
  3 = Always encrypt: continuous trials for HDMI and DVI sinks.

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
TMDS Output Format			
Set the output format	Esc X11 VTPO ←	Vtpo X11 ↵	Set the TMDS output format X11.
View the output format setting	Esc VTPO ←	X11 ↵ *In verbose modes 2 and 3:* Vtpo X11 ↵	Show TMDS output setting X11.
KEY: X11 = Output format		0 = Auto (default), 1 = DVI RGB 444 2 = HDMI RGB "Full" 3 = HDMI RGB "Limited" 4 = HDMI YUV 444 "Limited" 5 = HDMI YUV 422 "Limited"	
Unit Name			
Set unit name[24]	Esc X7 CN ←	Ipn•X7 ↵	Assign name X7 for the switcher. X7 can
Set name to factory default[24]	Esc•CN ←	Ipn•SW*n*-HD-4K-PLUS-*XX*-*XX*-*XX* ↵	SW*n* = SW2, SW4, SW6, or SW8 *xx-xx-xx* = Last 6 characters of the switcher MAC address.
View unit name	Esc CN ←	X7 ↵ *In verbose modes 2 and 3:* Ipn•X7 ↵	Show the current switcher name X7.
KEY: X7 = Unit name		Consists of up to 24 alphanumeric characters, including the hyphen (-).	
Channel Mute Mode — via contact and tally pins			
Set mode	Esc X2 * X18 MUTM ←	Mutm X2 * X18 ↵	Mute (deselect) or unmute (select) the connected contact input and set the tally pin mode (X18) for the input). Set the behavior of the connected tally indicator to X18 when the output mute X2 is set to 1.
View mode	Esc MUTM ←	X2 * X18 ↵ *In verbose modes 2 and 3:* Mutm X2 * X18 ↵	View channel mute mode X2 and tally mode X18.
KEY: X2 = Audio mute setting		0 = Unmute the contact input channel. (Selects 0 for X18.) 1 = Mute the contact input channel.	
X18 = Video mute setting		0 = Always unmuted (default), 1 = Off when muted, 2 = Blink when muted	

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
Information Requests			
Request information	I	In[X1]•Ausw[X8]•Afmt[X2]•Vmt[X13]↵	View selected input [X1], auto-input switch mode [X8], Audio mute status [X2], and video mute status [X13].
Query model name	1I	SW*n*•HD•4K•PLUS•Series↵ *In verbose modes 2 and 3:* Inf01*SW*n*•HD•4K•PLUS•Series↵	Show the switcher model name. SW*n* = SW2, SW4, SW6, or SW8.
Query model description	2I	HDMI•SWITCHER*n*•SUPPORT•4K60↵ *In verbose modes 2 and 3:* Inf02*HDMI•SWITCHER*n*•SUPPORT•4K60↵	Show the switcher signal type, number of inputs, and 4K support. SWITCHER*n* = number of inputs on the unit (2, 4, 6, or 8).
Query part number	N	60-*nnnn-nn*↵	Show part number [X36] of the switcher.
Query firmware version	Q	[X9]↵	Show firmware build number [X9], to the second decimal place.
Example:	Q	1.01↵	
View EDID in hex format	[Esc]R[X1]EDID←	[X5]↵ *In verbose modes 2 and 3:* [X1] [X5]↵	View the current EDID assignment for input [X1] in hexadecimal (128 or 256 bytes). [X5] = current EDID information in hex.
View EDID native resolution	[Esc]N[X1]EDID←	[X6]↵	Show native resolution and refresh rate [X6] of the EDID currently applied to input [X1].
Example	[Esc]N[X1]EDID←	1600x1200 @ 60.0 Hz↵	

KEY:

- [X1] = Input number — 1 through the highest numbered input on the unit (2 through 8, depending on the model)
- [X2] = Audio mute status — 0 = Unmuted, 1 = Muted
- [X5] = Current EDID information in hex — 128 or 256 bytes of raw hex data
- [X6] = Current EDID native resolution and refresh rate
- [X8] = Auto-input switch mode
  - 0 = Disabled — Manual switching (default)
  - 1 = User-defined priority mode — The switcher selects the input to which the user assigns priority. If no priority is assigned, the switcher selects the active input with the highest number.
  - 2 = Input memory priority mode — The switcher selects the most recently applied input, and retains a history of the order in which active inputs are connected to the unit. If an active input is removed, the switcher switches to the most recently prioritized input.
- [X9] = Auto-input switch mode 2 timeout
  - 1-250 = Number of seconds the switcher delays before switching to the most recently applied input.
  - 0 = Immediate switch (no delay)
- [X13] = Video mute status — 0 = Unmuted (default), 1 = Muted, 2 = Video and sync muted
- [X36] = Switcher part number
  - **SW2 HD 4K PLUS:** 60-1603-01
  - **SW4 HD 4K PLUS:** 60-1604-01
  - **SW6 HD 4K PLUS:** 60-1605-01
  - **SW8 HD 4K PLUS:** 60-1606-01

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
Verbose Mode			
Set verbose mode	Esc X12 CV←	Vrb X12 ↵	Set the verbose mode to X12.
View verbose mode	Esc CV←	X12 ↵ *In verbose modes 2 and 3:* Vrb X12 ↵	View current verbose mode X12.

KEY: X12 = Verbose mode

0 = None (default for IP connection)
1 = Verbose mode (default for USB and RS-232 connections)
2 = Tagged responses for queries
3 = Verbose mode and tagged responses for queries
See the **Verbose mode symbol definition** for details on these modes.

Resetting			
Reset all device settings to factory defaults	Esc ZXXX←	Zpx↵	Reset product-specific settings to factory default values. Does not affect IP settings or user files.
IP system reset	Esc 1ZQQQ←	Zpq1↵	Reset only IP settings to factory values.
Reset all settings except IP settings	Esc ZY←	Zpy↵	Reset all device settings to factory defaults except IP settings (communication is preserved). This command is recommended for after a firmware update.
Absolute system reset	Esc ZQQQ←	Zpq↵	Reset all device settings to factory default except firmware version.

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is extron.

IP Configuration			

NOTE: After adjusting any IP setting, enter the network reboot command Esc 2BOOT← for the command to take effect.

Set date and time[24]	Esc X19 CT←	Ipt•X20↵	Set date and time X19 in the format *MM/DD/YY-HH:MM:SS* (*month/day/year-hour/minutes/seconds*) *Example:* 06/22/17-10:07:14. In this example, the date is June 22, 2017, and the time is 10:07 and 14 seconds. The unit responds with X20.

NOTE: When power is cycled to the unit, the date and time are reset to the factory default values.

View date and time	Esc CT←	X20↵ *In verbose modes 2 and 3:* Ipt X20↵	Show current date and time X20 in the format: *Ddd, DD Mmm YYYY HH:MM:SS*
Set IP address[24]	Esc X21 CI←	Ipi•X21↵	Set IP address X21.

KEY:
X19 = Local date and time (to set) — Format *MM/DD/YY-HH:MM:SS*
X20 = Local date and time (displayed) — Format *Ddd, DD Mmm YYYY HH:MM:SS*
X21 = IP address — Format *nnn.nnn.nnn.nnn*

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
IP Configuration (continued)			
Set DHCP mode[24]	Esc X2 DH ←	Idh X2 ↵	Set Dynamic Host Configuration Protocol (DHCP) to X2 to enable or disable automatic assigning of IP addresses. For X2: 0 = Disable DHCP 1 = Enable DHCP
View DHCP mode[24]	Esc DH ←	X2 ↵ *In verbose modes 2 and 3:* Idh X2 ↵	View DHCP status X2.
View hardware (MAC) address	Esc CH ←	X22 ↵ *In verbose modes 2 and 3:* Iph•X22 ↵	View media access code (MAC) hardware address X22 for the unit.
Set subnet mask[14,24]	Esc X23 CS ←	Ips•X23 ↵	Set subnet mask X23 for the unit.
View subnet mask	Esc CS ←	X23 ↵ *In verbose modes 2 and 3:* Ips X23 ↵	View subnet mask X23 for the unit.
Set gateway IP address	Esc X24 CG ←	Ipg•X23 ↵	Set gateway address X24 for the unit (*nnn.nnn.nnn.nnn*).
View gateway IP address	Esc CG ←	X24 ↵ *In verbose modes 2 and 3:* Ipg X24 ↵	View gateway address X24 for the unit.
Set DNS server IP address	Esc X25 DI ←	Ipd•X25 ↵	Set the domain name server (DNS) IP address to X25 (*nnn.nnn.nnn.nnn*).
View DNS server IP address	Esc DI ←	X25 ↵ *In verbose modes 2 and 3:* Ipd X25 ↵	View DNS IP address X25.
Get connection listing	Esc CC ←	{*number of connections*} ↵ *In verbose modes 2 and 3:* Icc {*number of connections*} ↵	View the number of connections to the unit.

KEY:

X2	= DHCP status	0 = DHCP disabled, 1 = DHCP enabled
X22	= Media access code (MAC)	00-05-A6-*XX-XX-XX*
X23	= Subnet mask	Format *nnn.nnn.nnn.nnn*
X24	= Gateway IP address	Format *nnn.nnn.nnn.nnn*
X25	= Domain name server (DNS) IP address	Format *nnn.nnn.nnn.nnn*

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
IP Configuration (continued)			
List all time zones	Esc *TZON ←	{*Multiple* X34*X35 ↵}	View a list of available time zones (X34) and their descriptions (X35).
Set time zone	Esc X34*TZON ←	Tzon•X34*X35 ↵	Set the time zone. The time zone code (X34) is followed by an asterisk (*) in the response.
NOTE: Use the `List all time zones` command to determine the desired time zone code (X34).			
View current time zone	Esc TZON ←	X34*X35 ↵ *In verbose modes 2 and 3:* Tzon•X34*X35 ↵	View the set time zone X34 followed by zone description X35.
KEY: X34 = Time zone code — An acronym for a time zone (2-6 letters) X35 = Time zone description — The UTC equivalent of a particular time zone as well as a general description of the geographical area.			
Passwords			
NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is `extron`.			
Set administrator password[24]	Esc X26CA ←	Ipa•X26 ↵	Set administrator password X26.
Clear administrator password[24]	Esc•CA ←	Ipa•↵	Remove the administrator password.
View administrator password[24]	Esc CA ←	X26 ↵ *In verbose modes 2 and 3:* IpaX26 ↵	View the administrator password. For the view password command only: X26 = **** if a password exists, an empty line if extron exists.
Set user password[14,24]	Esc X27CU ←	Ipu•X27 ↵	Set user password X27.
Clear user password[24]	Esc•CU ←	Ipu•↵	Remove user password X27.
View user password[24]	Esc CU ←	X27 ↵ *In verbose modes 2 and 3:* IpuX27 ↵	View the user password. For the view password command only: X27 = **** if a password exists, an empty line if extron exists.
KEY: X26 = Administrator level password X27 = User level password **NOTE:** In response to the `View administrator password` and the `View user password` commands, X26 and X27 are displayed as **** if a password exists. An empty line is displayed if extron exists.			

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
IP Configuration (continued)			
Network Time Protocol (NTP)			
Enable or disable NTP for setting the time[24]	Esc X2 NTEN ←	Nten X2 ↵	Enable or disable (X2) NTP to set the unit time.
Sync NTP now	Esc 2NTEN ←	Nten2 ↵	Sync the NTP server to NTP.
View NTP status	Esc NTEN ←	X2 ↵ *In verbose modes 2 and 3:* Nten X2 ↵	View NTP Enabled or Disabled status X2.
Set a single NTP IP address[24]	Esc X21 NTIP ←	Ntip X21 ↵	Set IP address X21 for one NTP server.
Set multiple NTP IP addresses[24]	Esc X21 * X21 * . . . * X21 NTIP ←	Ntip X21 * X21 * . . . * X21 NTIP ↵	Set IP addresses (X21) for multiple NTP servers.
NOTE: Up to four NTP addresses, separated by *, can be set.			
Clear all NTP IP addresses[24]	Esc • NTIP ←	NTIP ↵	Remove all NTP server IP addresses.
View NTP IP addresses	Esc NTIP ←	X21 * X21 * . . . * X21 ↵ *In verbose modes 2 and 3:* Ntip X21 * X21 * . . . * X21 NTIP ↵	
KEY: X2 = NTP status; 0 = NTP disabled, 1 = NTP enabled X21 = NTP server IP address; Format *nnn.nnn.nnn.nnn*			
System Reboot			
Reboot system (1)	Esc 1BOOT ←	Boot1 ↵	Reboot the system. A firmware update requires this command to complete.
Reboot system (2)	Esc 2BOOT ←	Boot2 ↵	Reboot the system. Changes made to the IP address, subnet mask, DHCP setting, or gateway address do not take effect until this command is issued.

Command and Response Table for CEC Communications SIS Commands

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
CEC Enable/Disable			
Enable or disable one output CEC	Esc 01*X37 CCEC ←	Ccec01*X37 ↵	
Enable or disable all outputs CEC	Esc 0X37*CCEC ←	Ccec0X37 ↵	
View output CEC status	Esc 01CCEC ←	X38*X39*X40 ↵	
	Verbose mode 2/3	Ccec01*X38*X39*X40 ↵	
Send CEC Commands			
Default discovered target logical address			
Send CEC data to Output (downstream sink)	Esc 01*X41 DCEC ← or Esc 01*X45 DCEC ←	Dcec01*X46X45*X42 ↵	The response is always in a hex representation (X45), for example: %2A%07%FF.
Broadcast to all devices			
Send CEC data to Output (downstream sink)	Esc 01*15*X41 DCEC ← or Esc 01*15*X45 DCEC ←	Dcec01*X46X45*X42 ↵	

NOTE: Attempting to send a CEC command to an input or output that is disabled returns an E14 error.

KEY:

X37 = CEC mode
- 0 = Disable CEC operation for this IO port (default)
- 2 = Enable insertion and break CEC connection input to output (unidirectional)
- 4 = Enable insertion and publish received CEC messages (bidirectional)

X38 = CEC status
- 0 = CEC mode 0 disabled;
- 2 = CEC mode 2 enabled but no device detected (unidirectional)
- 3 = CEC mode 2 enabled and device detected (unidirectional)
- 4 = CEC mode 4 enabled but no device detected (bidirectional)
- 5 = CEC mode 4 enabled and device detected (bidirectional)

X39 = Source logical address (our pseudo): 0 through 15 (-1 = not found or port not enabled)

X40 = Destination logical address (theirs): 0 through 15 (-1 = not found or port not enabled)
(see **CEC Logical Addresses** on page 22)

X41 = CEC command — Predefined actions as strings within double quotes: "PwrOn", "PwrOff", or "ShowMe"

X42 = Send result — 0 = Failed (NAK) device not detected, 1 = Success (ACK) device detected, 2 = Unable to send

X45 = CEC data — User selected elements (0 to 15) in the form of percent sign followed by two hex digits (Example: %2A%07%FF)

X46 = CEC address byte — In the form of percent sign followed by 2 hex digits
Example: %E0 = Extron output (14) to TV (0)

Command	ASCII Command (Host to Switcher)	Response (Switcher to Host)	Additional Description
CEC Usage Examples:			
Unidirectional Mode — No CEC received data messages (including answers to queries) desired			
Set mode	Esc O1*2CCEC←	CcecO1*2↵	Power on TV on output 1.
Send data	Esc O1*"PwrOn"DCEC← or Esc O1*%04DCEC←	DcecO1*%E0%04*1↵	
Bidirectional Mode — CEC received data messages desired			
Set mode	Esc O1*4CCEC←	CcecO1*4↵	Switch TV on output 1 to our signal (HDMI 2 on TV).
Send data	Esc O1*"ShowMe"DCEC← or Esc O1*15*%82%20%00DCEC←	Dcec O1*%EF%82%20%00*1↵	
Examples of possible unsolicited messages		Ceco1*%0F%32%65%6E%67*1↵ Ceco1*%0E*1↵	 TV broadcast command to set the menu language to English (“eng”). TV pings us to confirm we are still there.
NOTE: Asynchronous received data messages from CEC in bidirectional mode (4) format: Ceco1*X54X43*X42↵			
Other CEC Commands			
Rediscover device on output	Esc O1QCEC←	QcecO1*1↵ QcecO1*0*X42↵ ... QcecO1*13*X42↵	
Report physical address of output port	Esc O1PCEC← *Verbose mode 2/3* *Example*	X43↵ PcecO1*X43↵ %10%00	 For 1000 (usually first HDMI input on TV).

KEY:

X42 = Send result	0 = Failed (NAK) device not detected, 1 = Success (ACK) device detected, 2 = Unable to send
X43 = CEC physical address	Four hexadecimal digits in the form of *%xx%xx* (Example: %32%00)
X54 = CEC address byte	In the form of percent sign followed by 2 hex digits Example: %E0 = Extron output (14) to TV (0)

Downloading the SW HD 4K PLUS Firmware

Extron periodically updates product firmware in conjunction with the release of new software revisions. Before updating any Extron product to the latest revision level, be sure to read the supplied release notes or contact Extron Technical Support to determine if your product requires a firmware update. To obtain the latest version of firmware for the SW HD 4K PLUS:

1. Go to **www.extron.com**, hover the mouse pointer over the **Download** tab at the top of the page, then slide the pointer to the **Downloads** column, and click the **Firmware** link (see figure 14, ❶).

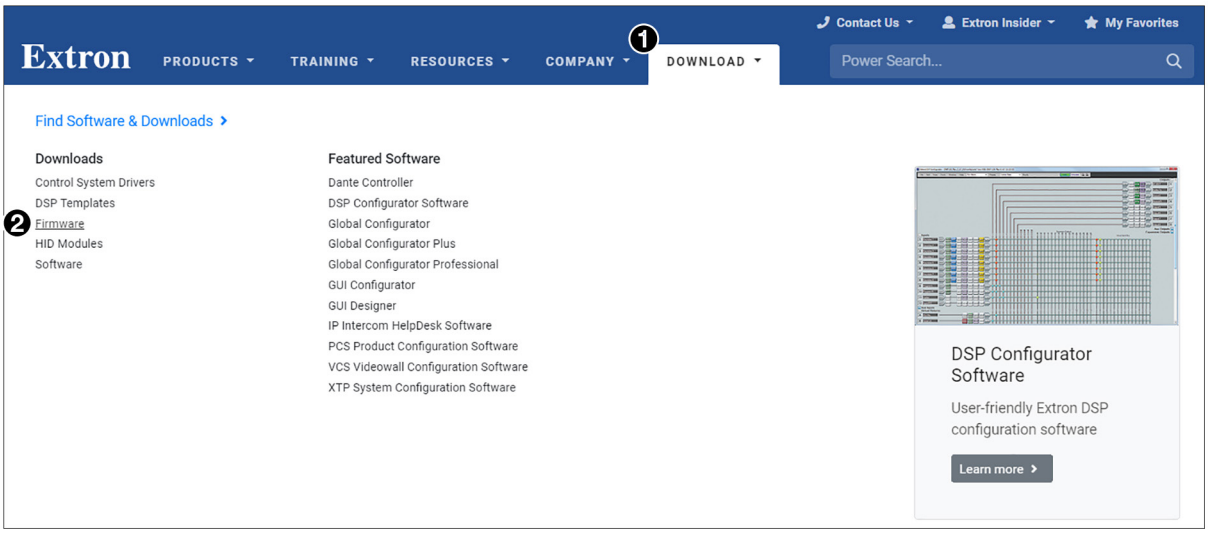


Figure 14. Firmware Link on the Download Tab

Alternatively, click the **Downloads** tab (see figure 15, ❶), then click the **Firmware** button (❷).

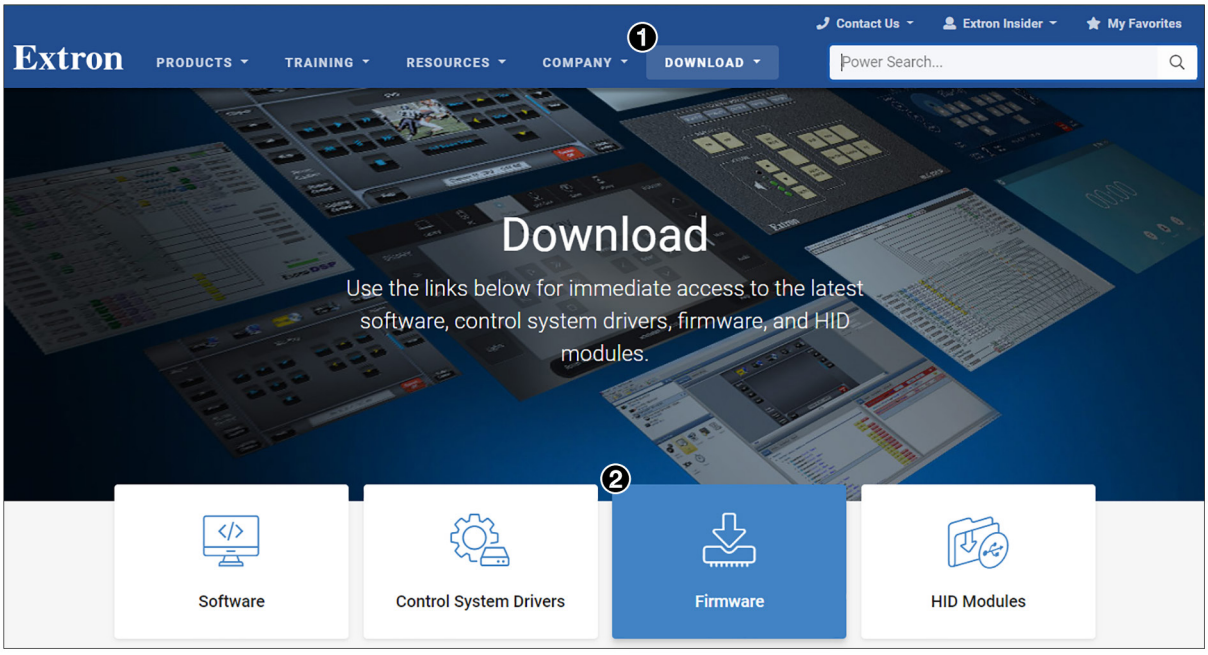


Figure 15. Firmware Button on Download Screen

2. On the `Download Center` screen, click one of the **`S`** links (see figure 16, ❶).

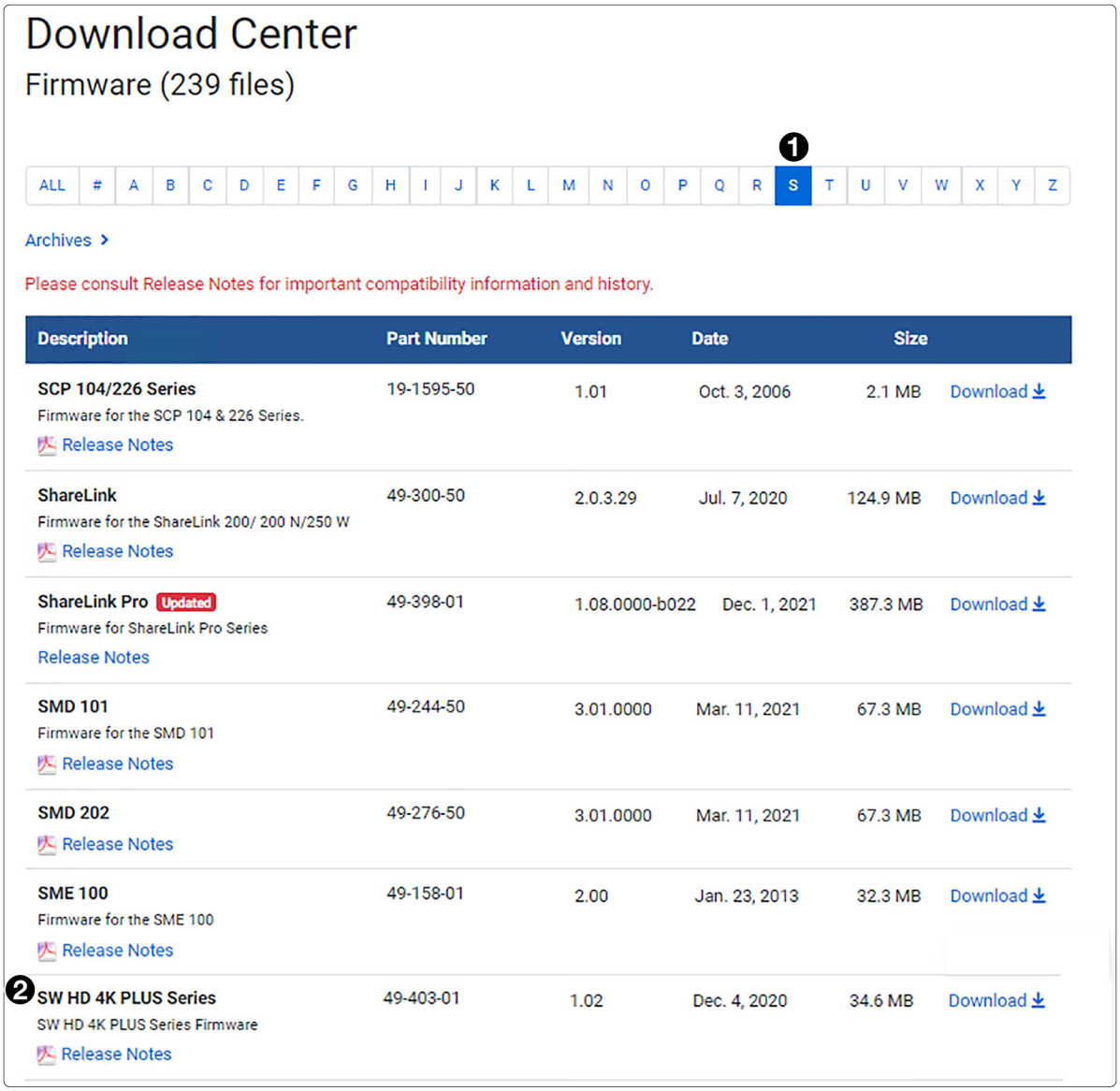


Figure 16. Download Center Page for Firmware

3. Scroll to locate the desired firmware (`SW2/4 HD 4K PLUS` or `SW6/8 HD 4K PLUS`) and click the **`Download`** link at the right.
4. On the login page that appears next, fill in the required information to log into the **www.extron.com** website (if you need an Extron Insider ID number, see your Extron representative).
5. Follow the instructions on the subsequent screens to complete the firmware installation.
6. Follow the instructions on the rest of the download screens to save the executable firmware file to your computer. Note the folder to which the file was saved.

NOTE: When downloaded from the Extron website, by default the firmware is placed in a folder at `C:\Program Files (x86)\Extron\Firmware\SW HD 4K PLUS`.

7. Locate the downloaded executable file on your computer and open it.
8. Follow the instructions on the Installation Wizard screens to install the new firmware on your computer. A Release Notes file, providing information on changes in the new firmware version, and a set of instructions for updating the firmware are also loaded.

Accessing the Product Configuration Software

The Extron Product Configuration Software offers another way to control the switchers via Ethernet or USB. The graphical interface includes many of the same functions as those available via the device front panel and SIS commands. PCS is compatible with most Microsoft® Windows operating systems.

The software is available at **www.extron.com**. This section provides instructions for downloading, installing, and opening the software. For detailed information about configuring the device using PCS, see the *SW HD 4K PLUS Help* file, provided with the software.

Downloading and Installing PCS

To download PCS from the **Extron website**, locate it on the `Download Center` page or go to the `PCS` product page.

Downloading PCS from the Download Center page

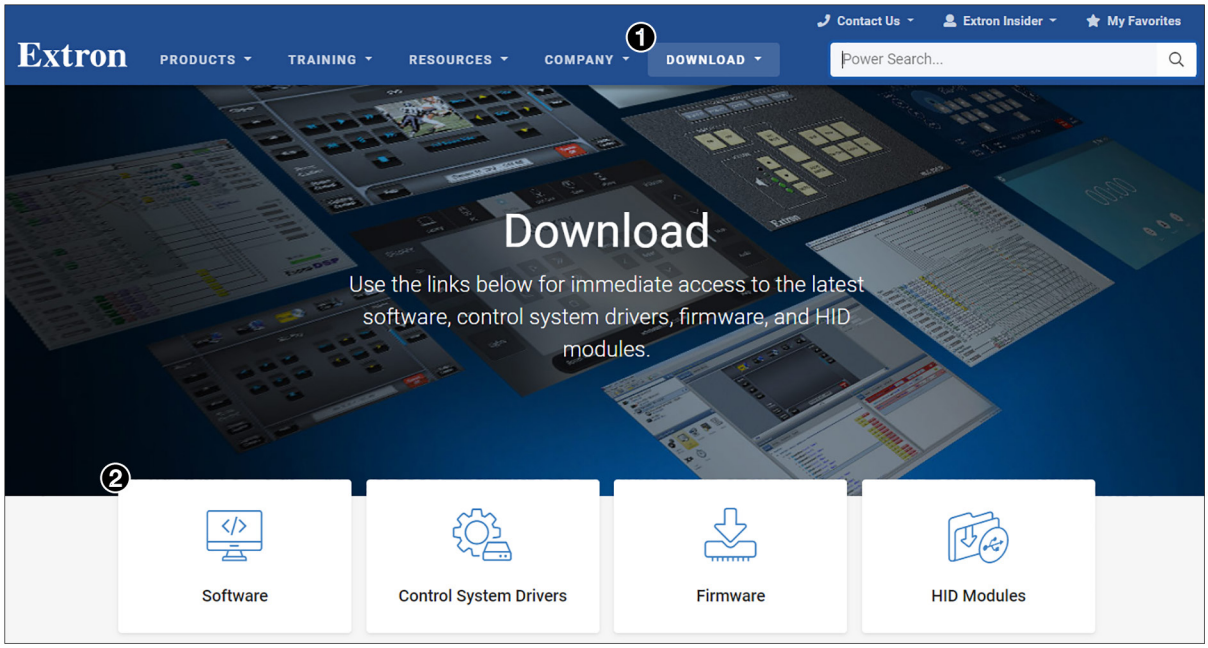


Figure 17. Download Tab and Software Button on the Download Screen

1. On the Extron website, select the **`Download`** tab (see figure 17, ❶), then click the **`Software`** button (❷).

   Alternatively, hover the mouse pointer over the **`Download`** tab, then move the pointer to the **`Software`** link in the `Downloads` column and click it.

2. Click the **P** link (see figure 18, ❶).

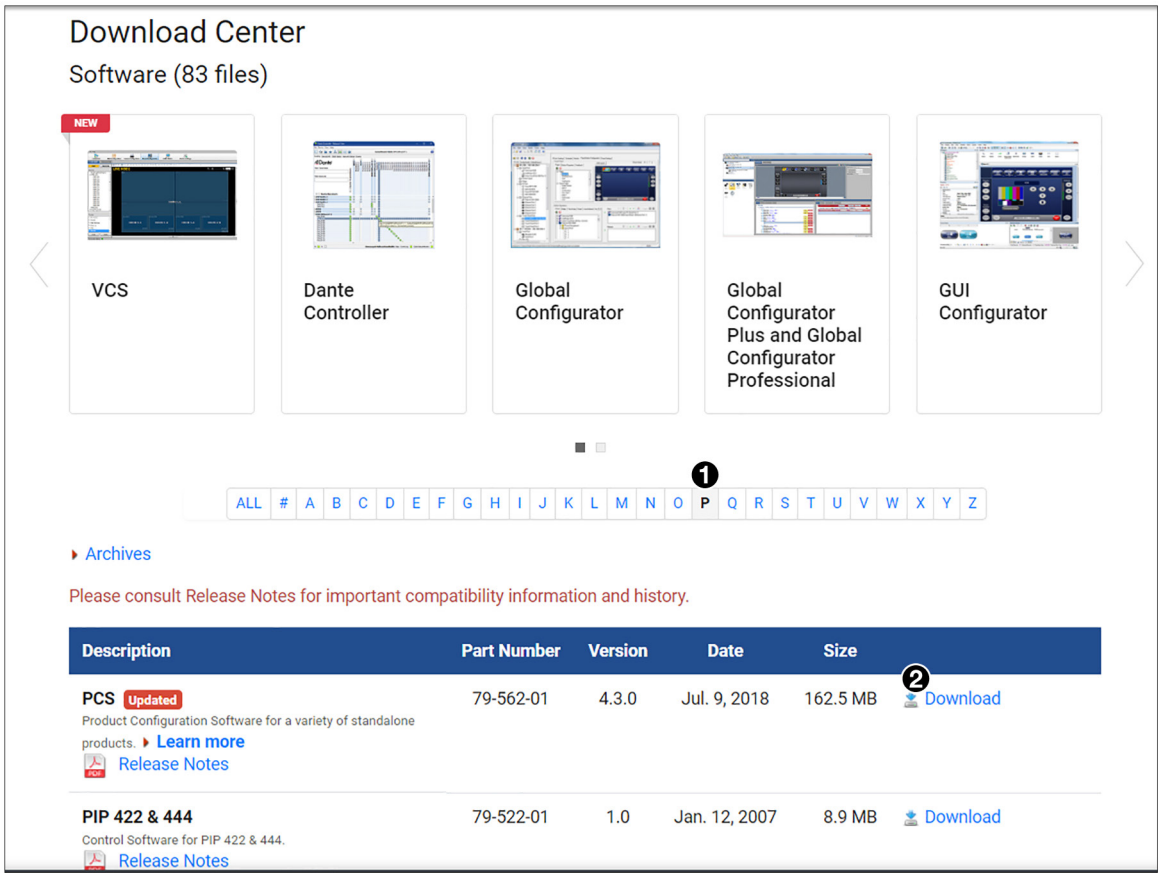


Figure 18. PCS Link on Download Center Screen

3. Locate PCS on the list of available software programs and click the **Download** link (❷) to the right of the name.
4. On the login page that appears next, fill in the required information to log into the **www.extron.com** website (if you need an ID number, see your Extron representative).
5. Follow the instructions on the subsequent screens to complete the software program installation.
6. Submit any required information to start the download. Note where the file is saved.
7. Open the executable (.exe) file from the save location.
8. Follow the instructions that appear on the screen to install the program.

Using the PCS product page

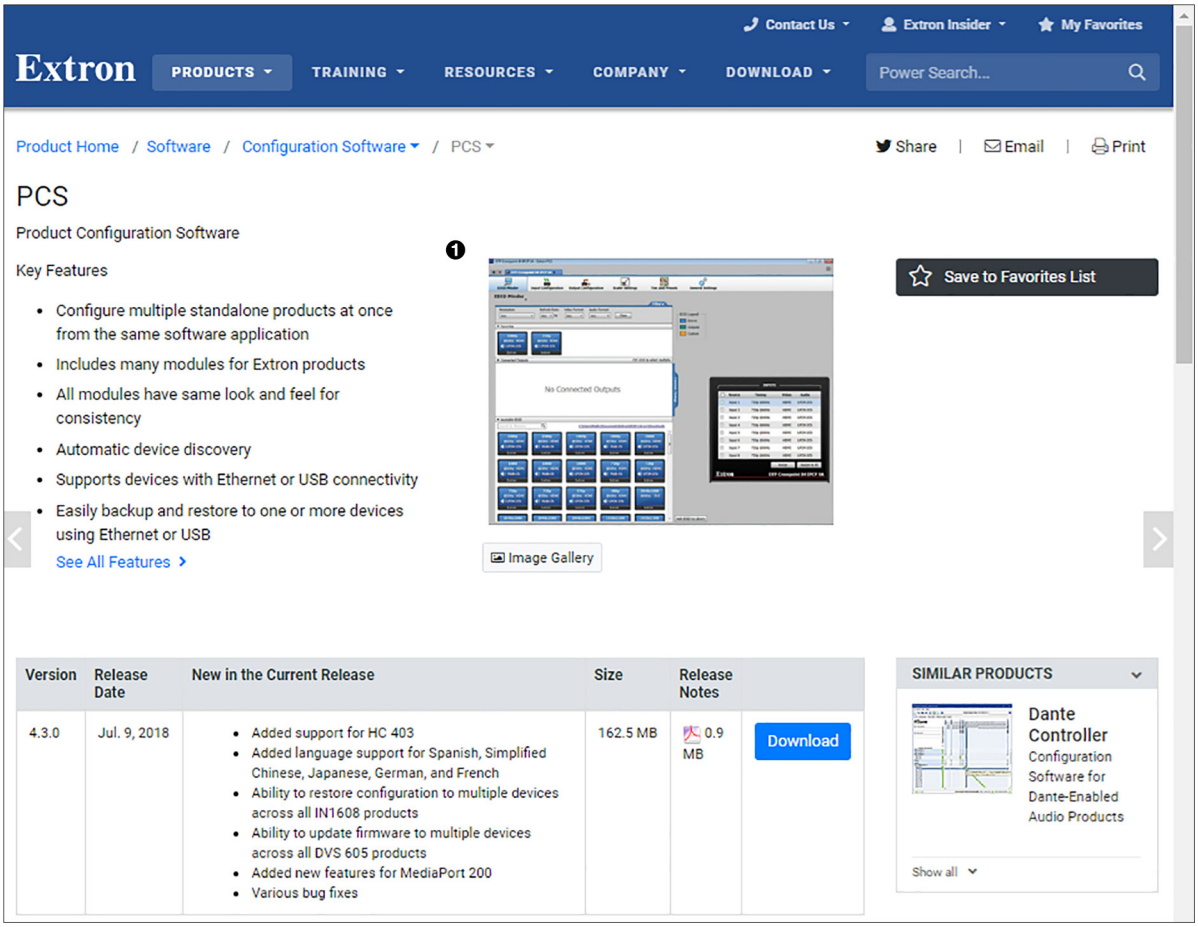


Figure 19. PCS Product Page

1. In the `Power Search` field (see figure 19, ❶), type `PCS`. A drop-down menu of selected search results appears under the field.
2. Press <**`Enter`**> on the keyboard or select **`PCS`** from the drop-down menu.
3. Click the **`Download`** button (❷).
4. Submit any required information to start the download. Note where the file is saved.
5. Open the executable (`.exe`) file from the save location.
6. Follow the instructions that appear on the screen. By default, the installation creates a directory in the `Program Files` or `Program Files` (x86) folder.

Starting PCS

Start PCS as follows:

1. Click **Start** > **Programs** > **Extron Electronics** > **Extron Product Configuration Software** > **Extron Product Configuration Software**. The Product Configuration Software opens with the **Device Discovery** window (see figure 20).

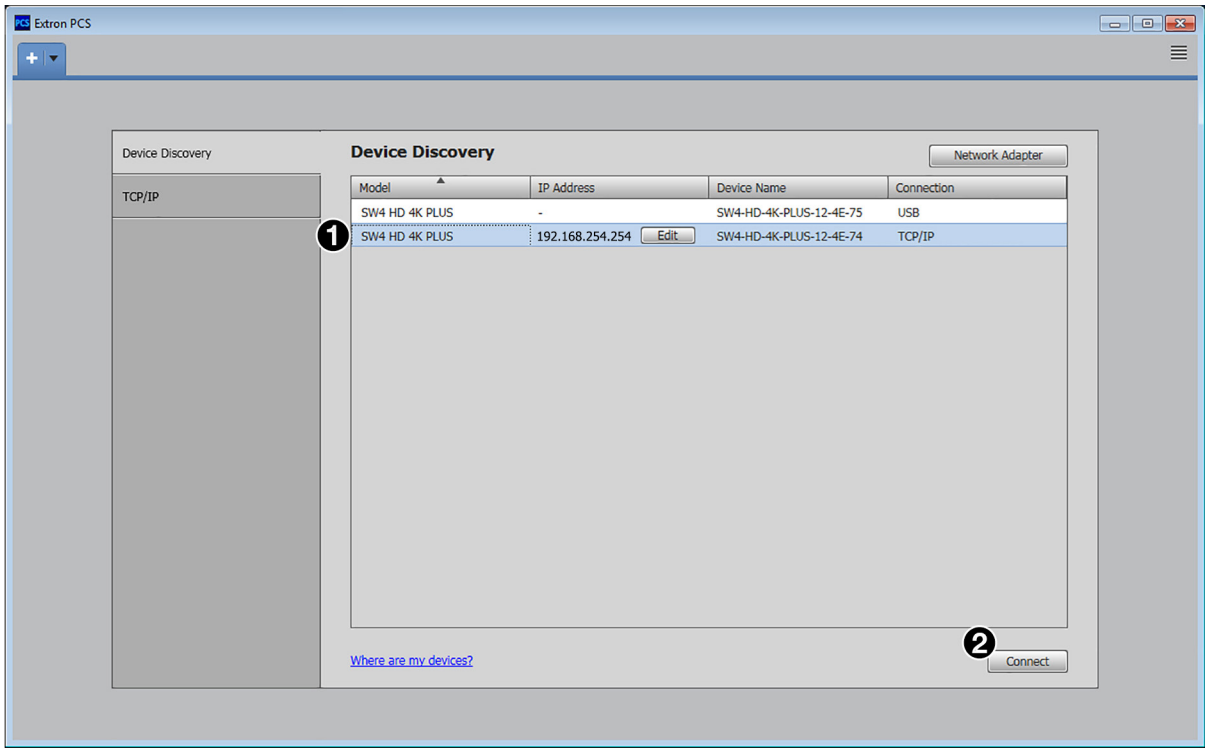


Figure 20. Device Discovery Window

2. Select a device (one of the switchers in the SW HD 4K PLUS series) on the network or the USB port (see figure 20, ❶)
3. Click **Connect** (❷).

   The Product Configuration Software opens with the **Input/Output Configuration** window (see figure 21).

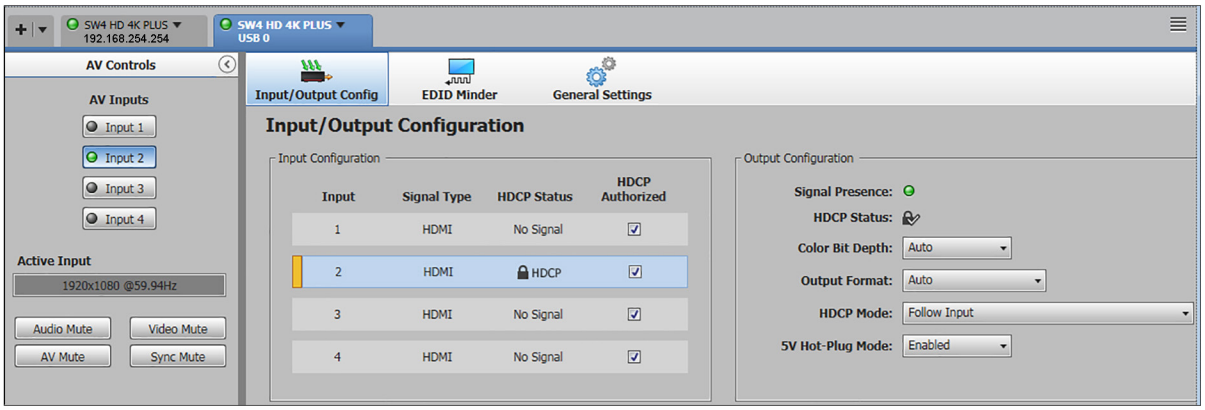


Figure 21. Input/Output Configuration Window

Internal Web Page

This section provides procedures for accessing and using the SW HD 4K PLUS series internal web page. Topics in this section include:

- **Access the Web Page**
- **Web Page Overview**

The internal web page displays information about the device and provides basic configuration options. For more detailed configuration options, use SIS commands or the Extron Configuration Product Configuration software (PCS) (see **Remote Configuration and Control**, beginning on page 18, or the *PCS Help File*).

Access the Web Page

To access the internal web page:

1. Connect the switcher to a LAN or WAN using the rear panel LAN connector (see Ⓕ **LAN (Ethernet) connector** on page 6).

   NOTE: If the Ethernet connection to the switcher is unstable, try turning off the proxy server in the web browser.

2. On a connected PC, open a web browser.

   NOTE: The internal web page does not support compatibility mode in Microsoft Internet Explorer®.

3. Enter the IP address of the device in the browser **Address** field.

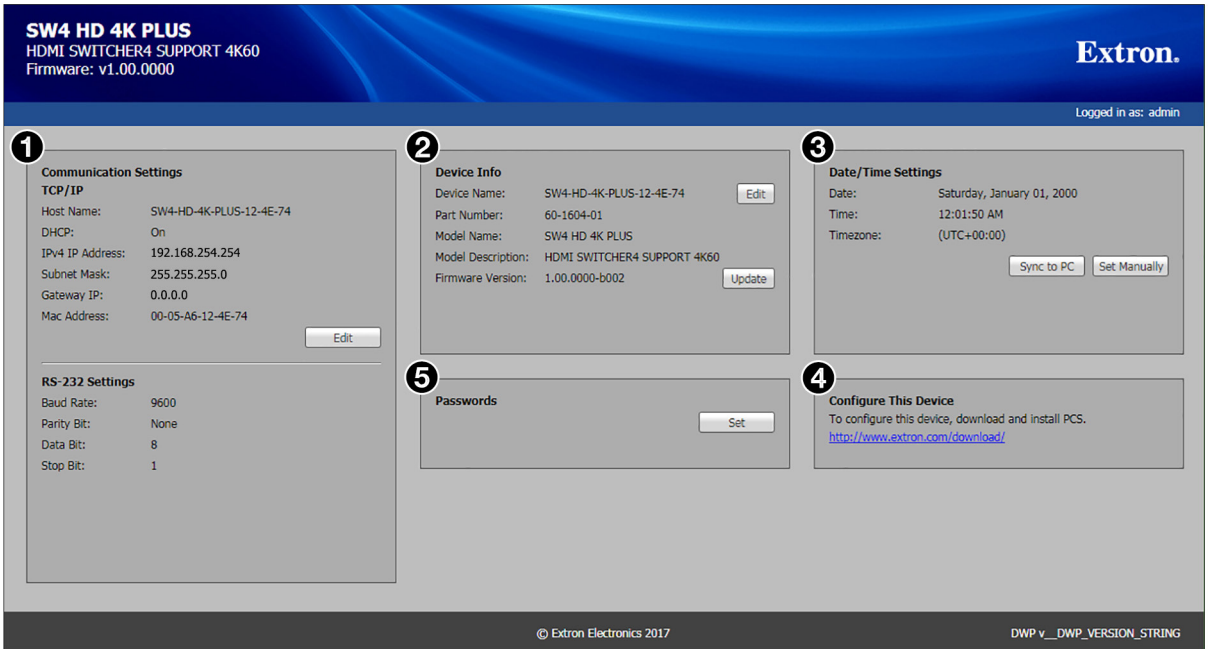
   NOTE: The default IP address is 192.168.254.254.

4. Press the <**Enter**> key on the keyboard.
5. The switcher checks if the device is password-protected and performs one of the following:
   - If the device is not password-protected, the web page opens.
   - If the device is password-protected, enter a user name (`user` or `admin`) in the **User Name** field and the password in the **Password** field when prompted.

     NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is `extron`.

6. Click the **OK** button.

Web Page Overview



❶ Communication Settings Panel
❷ Device Info Panel
❸ Date/Time Settings Panel
❹ Configure This Device Panel
❺ Passwords Panel

Figure 22. Internal Web Page (SW4 HD 4K PLUS Example)

Communication Settings Panel

The `Communication Settings` panel (see figure 22, ❶) lets you configure TCP/IP settings and displays the current RS-232 settings. To configure the TCP/IP settings, click **`Edit`** in the `Communication Settings` panel. The `Communication Settings` dialog box opens.

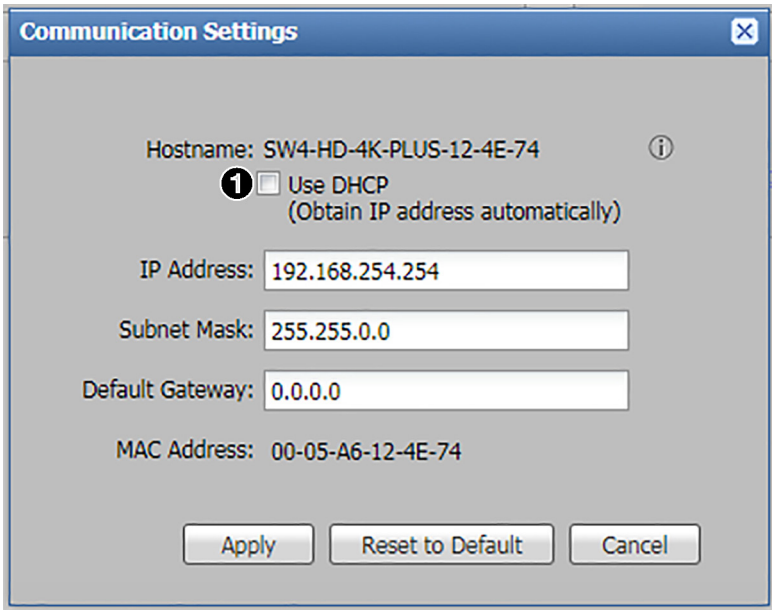


Figure 23. Communication Settings Dialog Box

NOTE: The hostname is generated from the device name. To change it, see **Device name** on the next page.

To obtain an IP address automatically:

1. Select the **Use DHCP** checkbox (see **figure 23**, ❶, on the previous page).
2. Click the **Apply** button. The dialog box closes.

To set a static IP address:

1. Ensure the **Use DHCP** checkbox is not selected.
2. In the **IP Address** field, enter an IP address.
3. In the **Subnet Mask** field, enter the subnet mask if required.
4. In the **Default Gateway** field, enter the default gateway if required.
5. Click the **Apply** button. The dialog box closes.

To reset all communication settings to the default values:

Click the **Reset to Default** button. The following settings are set:

- DHCP is disabled.
- The IP address is set to `192.168.254.254`.
- The subnet mask is set to `255.255.0.0`.
- The default gateway is set to `0.0.0.0`.

To cancel pending changes:

Click the **Cancel** button. The dialog box closes.

Device Info Panel

The `Device Info` panel (see **figure 22**, ❷, on the previous page) displays information about the device with options to edit the device name and update firmware.

Device name

To edit the device name or hostname, click the **Edit** button in the `Device Info` panel. The `Device Name` dialog box opens.

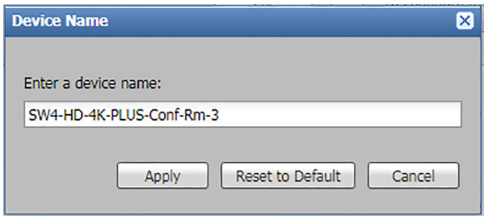


Figure 24. Device Name Dialog Box

To change the name:

1. In the **Name** field, enter the desired name.
2. Click the **Apply** button. The dialog box closes.

To reset the name to the factory default value:

1. Click the `Reset to Default` button.
2. Click the **Apply** button. The dialog box closes.

To cancel pending changes:

Click the **Cancel** button. The dialog box closes.

Firmware update

NOTE: If necessary, download firmware updates from **www.extron.com** (see **Downloading the SW HD 4K PLUS Firmware** on page 34 for instructions).

To update the firmware,

To update the firmware:

1. Click the **Update** button in the Device Info panel. The Firmware Update dialog box opens.
2. Click the **Browse** button. An Open dialog box opens.
3. Navigate to the location of the firmware file. Valid firmware files have an .eff extension.
4. Select the file and click the **Open** button. The Open dialog box closes, and the path to the firmware file is displayed in the **Firmware** field.

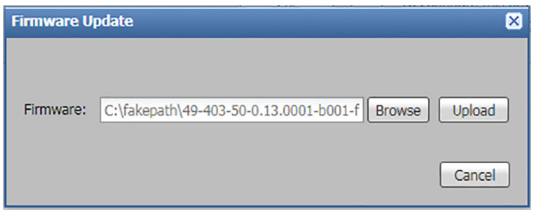


Figure 25. Firmware Update Dialog Box

5. Click the **Upload** button. The firmware file begins to upload to the switcher. When the upload is complete, the Firmware Update dialog box closes.

To cancel pending changes:

Click the **Cancel** button. The dialog box closes.

Date/Time Settings Panel

The Date/Time Settings panel (see **figure 22**, ❸, on page 41) displays the date and time on the device and provides options to set the device date and time automatically or manually.

Automatic date and time update

This method sets the device date and time to the same date and time of the PC. To do this, click the **Sync to PC** button (see figure 26, ❶) in the Date/Time Settings panel.

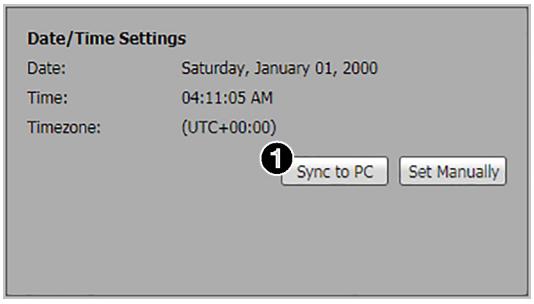


Figure 26. Setting Automatic Date and Time Update

Manual date and time update

With this method, each value of the date and time must be set. To edit the date and time manually, click the **Set Manually** button in the Date/Time Settings panel. The Date and Time Settings dialog box opens.

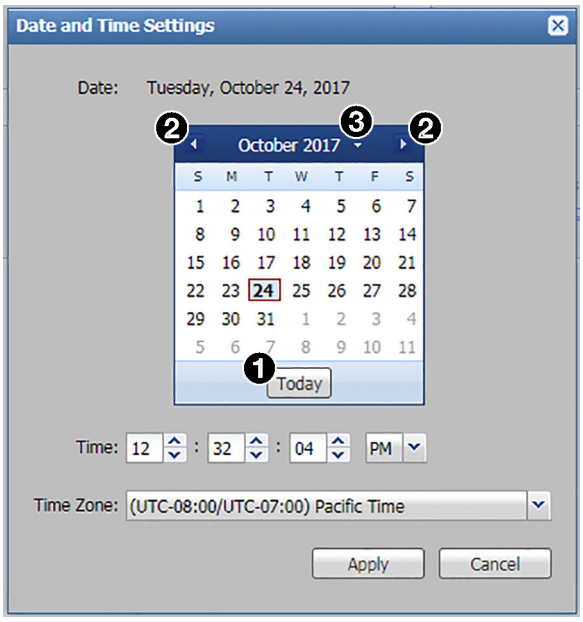
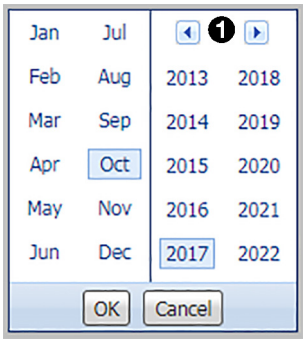


Figure 27. Date and Time Settings Dialog Box

To set the date and time:

1. Set the date by one of the following methods:
   - Click the **Today** button to set the date to the current date on the PC (see figure 27, ❶).
   - Select the date from the calendar by doing either of the following:
     - Click the left and right arrow buttons in the calendar header bar (❷).
     - Click the down arrow next to the calendar month and year (❸) to display the date drop-down menu. Click the desired month and year.

       To display additional years, click the right and left arrows at the top of the menu (see ❶ in the illustration at right). Click the **OK** button to accept the selected settings or the **Cancel** button to cancel pending selections.



2. To set the time, click the up and down arrow buttons for each field to set the hours, minutes, seconds, and **AM** or **PM** as desired.
3. Select the time zone from the Time Zone drop-down list.
4. Click the **Apply** button. The dialog box closes.

To cancel pending changes:

Click the **Cancel** button. The dialog box closes.

Configure This Device Panel

This panel enables you to download PCS which enables you to configure the SW HD 4K PLUS series switcher. Click the **http://www.extron.com/download/** link to open the `Download` page of the Extron website (see **Downloading and Installing PCS** on page 34 for further instruction).

Passwords Panel

NOTE: The factory configured passwords for all accounts on this device have been set to the device serial number. In the event of an absolute system reset, the passwords convert to the default, which is `extron`.

The `Passwords` panel (see **figure 22**, ❺ on page 41) provides an option to set administrator or user passwords. To assign passwords, click the **`Set`** button in the `Passwords` panel. The `Passwords` dialog box opens.

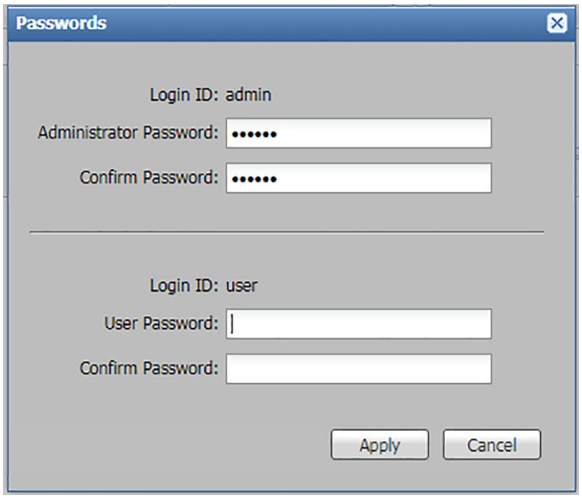


Figure 28. Passwords Dialog Box

To assign an administrator password:

1. In the **`Administrator Password`** field, enter the new password.
2. In the **`Confirm Password`** field directly under the **`Administrator Password`** field, enter the same password from the field above.
3. Click the **`Apply`** button. The dialog box closes.

To assign a user password:

1. Ensure an administrator password is assigned.
2. In the **`User Password`** field, enter the new password.
3. In the **`Confirm Password`** field directly under the **`User Password`** field, enter the same password from the field above.
4. Click the **`Apply`** button. The dialog box closes.

To remove a password:

1. In either the **`Administrator Password`** or **`User Password`** field, delete any existing password, leaving the field blank.
2. In the corresponding **`Confirm Password`** field, press the <**`Space`**> key.
3. Click the **`Apply`** button. The dialog box closes.

To cancel pending changes:

Click the **`Cancel`** button. The dialog box closes.

Reference Information

Mounting the SW HD 4K PLUS Switchers

The SW HD 4K PLUS switchers can be set on a table, mounted on a rack shelf, or mounted under a desk, podium, or table.

ATTENTION:

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

Rack Mounting

The SW HD 4K PLUS units can be mounted on a 9.5-inch, 6-inch, or 3.5-inch deep rack shelf. They can also be mounted vertically to the front or back rack support. For mounting procedures, see the instructions provided with the mounting option.

UL rack mounting guidelines

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the SW HD 4K PLUS enclosure in a rack.

CAUTION:

- **Elevated operating ambient temperature** — If the equipment is installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install the equipment in an environment compatible with the maximum ambient temperature (TMA = +122 °F, +50 °C) specified by Extron.
- **Reduced air flow** — Install the equipment in a rack so that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical loading** — When mounting the equipment in the rack, ensure that uneven mechanical loading does not cause a hazardous condition.
- **Circuit overloading** — When connecting the equipment to the supply circuit, consider the effect that circuit overloading might have on overcurrent protection and supply wiring. Consider equipment nameplate ratings when addressing this concern.
- **Reliable earthing (grounding)** — Maintain reliable grounding of rack-mounted equipment. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).

Consignes UL pour le montage en rack

Les consignes UL (« Underwriters Laboratories ») suivantes concernent l'installation en rack d'un boîtier SW HD 4K PLUS :

ATTENTION :

- **Température ambiante élevée** — En cas d'installation de l'équipement dans un rack fermé ou composé de plusieurs unités, la température du rack peut être supérieure à la température ambiante. Par conséquent, il est préférable d'installer l'équipement dans un environnement qui respecte la température ambiante maximale (Tma) spécifiée par Extron.
- **Réduction du flux d'air** — Si l'équipement est installé dans un rack, veillez à ce que le flux d'air nécessaire pour un fonctionnement sécurisé de l'équipement soit respecté.
- **Charge mécanique** — Installez l'équipement en rack de manière à éviter toute situation dangereuse causée par le déséquilibre de la charge mécanique.
- **Surcharge électrique** — Lorsque vous connectez l'équipement au circuit d'alimentation, observez la connexion de l'équipement et étudiez les effets possibles d'une surcharge du circuit sur les protections contre les surintensités et les conducteurs d'alimentation. Consultez à cet égard les indications de la plaque d'identification de l'équipement.
- **Mise à la terre** — Assurez-vous que l'équipement est correctement mis à la terre. Accordez une attention particulière aux connexions électriques autres que les connexions directes au circuit de dérivation (ex. : les multiprises).

Furniture Mounting

The SW HD 4K PLUS switchers can be mounted under a desk, table, or podium using an optional under-desk mounting kit, available at **www.extron.com** (see the mounting instructions provided with the kit).

Tabletop Use

Four self-adhesive rubber feet are included with the SW HD 4K PLUS units. For tabletop use, attach one foot at each corner on the bottom of the unit, and place the switcher where desired.

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

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

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 and 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 Electronics 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 Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics 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.