

SW USB Series

USB Switchers



Extron

Safety Instructions

Safety Instructions • English

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Instructions de sécurité • Français

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Istruzioni di sicurezza • Italiano

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안전 지침 • 한국어

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VCCI-A

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

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

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

Conventions Used in this Guide

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The following notifications are used in this guide:

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

AVERTISSEMENT : Risque potentiel de blessure grave ou de mort.

CAUTION: Risk of minor personal injury.

ATTENTION : Risque de blessure mineure.

ATTENTION:

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

NOTE: A note draws attention to important information.

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 00300004000080000600 [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 slanted form as shown here:

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

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

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

Click the **OK** button.

Specifications Availability

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

Extron Glossary of Terms

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



Contents

Introduction 1

About this Guide.....	1
About the SW USB Series	1
Features	1
USB System Architecture	2
Application Diagrams.....	4

Installation 6

Rear Panel Features	7
Wiring the Power Connector.....	8
Wiring for RS-232 Communication	11
RS-232 Port	11
RS-232 Pass Thru Port.....	11
Setting Up Contact Closure Control.....	12
Controlling an Extron AV Switcher.....	12
Connecting Multiple SW USBs in a System	13

Operation 15

Front Panel Features.....	15
Operations.....	16
Powering on the System.....	16
Selecting an Input.....	16
Issuing Commands to an Extron AV Switcher via the RS-232 Pass Thru Port	17
Locking and Unlocking the Front Panel (Executive Mode)	20
Resetting	20
Host Emulation (SW4 USB Plus Only)	20
Troubleshooting	21
Peripheral Emulation (SW4 USB Plus Only)....	22
Updating Firmware	22

SIS Programming and Control 27

Host-to-Switcher Communication.....	27
Switcher-initiated Messages	27
Error Responses.....	28
Using the Command and Response Table	28
Command and Response Table for SIS Commands	29

Reference Information..... 31

Introduction

This section gives an overview of the Extron SW USB Series switchers. Topics include:

- [About this Guide](#)
- [About the SW USB Series](#)
- [Features](#)
- [USB System Architecture](#)
- [Application Diagrams](#)

About this Guide

This guide describes the Extron SW2 USB, SW4 USB, and SW4 USB Plus switchers and provides instructions on installing, configuring, and operating them. The terms “SW USB” and “switcher” are used throughout this guide to refer to all models.

About the SW USB Series

The SW USB Series switchers make it possible for two or four host computers to share and switch among up to four peripheral USB devices such as mass storage devices, keyboards, mice, and other human interface devices (HIDs). They function as USB hubs with switching and device emulation, so that connections are maintained between host computers and peripherals.

Features

A number of specialized features help to streamline system integration, including port status indication, RS-232 pass-through, front panel security lockout, and multiple control points.

- **Outputs** — Four female USB type A connectors act as a USB hub. Each port supplies the 500 mA, 5 V rating required in the USB specification.
- **USB 2.0 compatibility** — The SW USB switchers are backward compatible with all previous USB data rate standards, including low speed (1.5 Mbps), full speed (12 Mbps), and high speed (480 Mbps).
- **Mounting** — The SW USB Series switchers have compact 1U high, half-rack wide, 3 inches (7.6 cm) deep metal enclosures that can be mounted on a rack shelf or under or through furniture.
- **Host and peripheral emulation** — The SW4 USB Plus model provides increased system reliability by enabling an uninterrupted connection between host and peripheral devices.
 - **Host emulation:** When a keyboard or a mouse is connected to port 3 or 4 and the appropriate rear panel DIP switch is set to On, the SW USB switches to the connected keyboard or mouse instantly (see [Host emulation \(SW4 USB Plus only\)](#) on page 20 for more information).
 - **Peripheral emulation:** The SW USB provides problem-free boot-up by constantly emulating a keyboard and mouse to the computer or another input device, regardless of whether or not a keyboard or mouse is actually connected.

- **Power supply** — An external power supply provides worldwide compatibility.
- **RS-232 control and pass-through** — The SW USB switcher can be controlled by Simple Instruction Set (SIS) commands received via an RS-232 interface. These SIS commands can be sent to an RS-232 controllable Extron AV switcher attached to the SW USB RS-232 Pass Thru port (see [SIS Programming and Control](#) starting on page 27, for an explanation of the available SIS commands).
- **Contact closure control** — Connecting a push-button contact closure device to the SW USB Contact port or shorting pin 1, 2, 3, or 4 to the ground (⏚) pin of the Contact port provides an alternative method of input selection on the SW USB. Commands issued via contact closure can also be passed through the RS-232 Pass Thru port to an attached RS-232 controllable Extron switcher (see [Setting Up Contact Closure Control](#) on page 12 for more information).
- **Hot key switching** — (SW4 USB Plus only) When host emulation is enabled, inputs can be selected by a combination of key presses on a keyboard connected to port 3 or 4.
- **Front panel security lockout (executive mode)** — To prevent unauthorized access to the switchers, front panel lock mode can be enabled via front panel controls or SIS commands to disable all front panel controls.
- **Port status LEDs** — The Active USB LEDs provide visual indication of port status and activity for USB peripherals and all connected and active host devices.

USB System Architecture

A USB system architecture refers to the physical bus topology of USB devices connected to a host device. USB devices include USB hubs, USB peripheral devices, or compound devices (devices with a combination of USB hubs and USB peripheral devices built into it).

The system is organized in a tiered star topology to prevent multiple or circular attachments to the bus. Each tier represents a degree of separation from the host device. Per USB specifications, there are seven supported tiers, starting with the host device (or root hub) occupying the first tier.

NOTE: Do not connect more than five daisy-chained hubs to the root hub. The architecture does not support peripheral devices connected to USB hubs occupying the seventh tier.

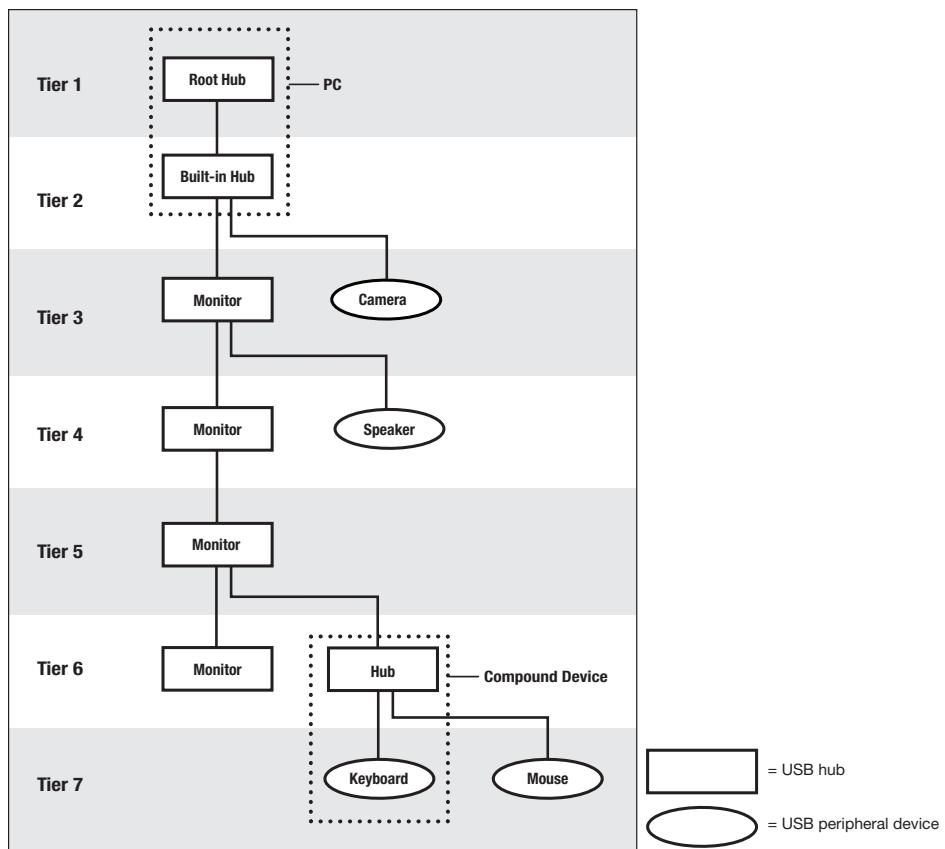


Figure 1. Tiered Star Topology Example for a Computer with Four Monitors

NOTE: Some computers include multiple hubs already connected to each other, occupying multiple tiers in the topology. For example, many computers with USB ports on the front and rear panels or computers with a built-in USB hub and a compound USB peripheral device (such as a touch display) occupy two tiers. For information about USB hubs used in Extron products, see the *USB Hub Usage Chart* at www.extron.com.

To review the USB system architecture, count all the cascading hubs (including USB hubs enclosed in computers and compound devices) between the host device and the last USB peripheral device.

NOTE: If the host device runs Windows® or macOS™ operating systems, use the following programs to view the hierarchical relationships between USB devices:

- **Windows:** Device Manager
- **macOS:** System Profiler or System Information

Application Diagrams

The following diagrams show examples of how an SW USB Series switcher can be connected.

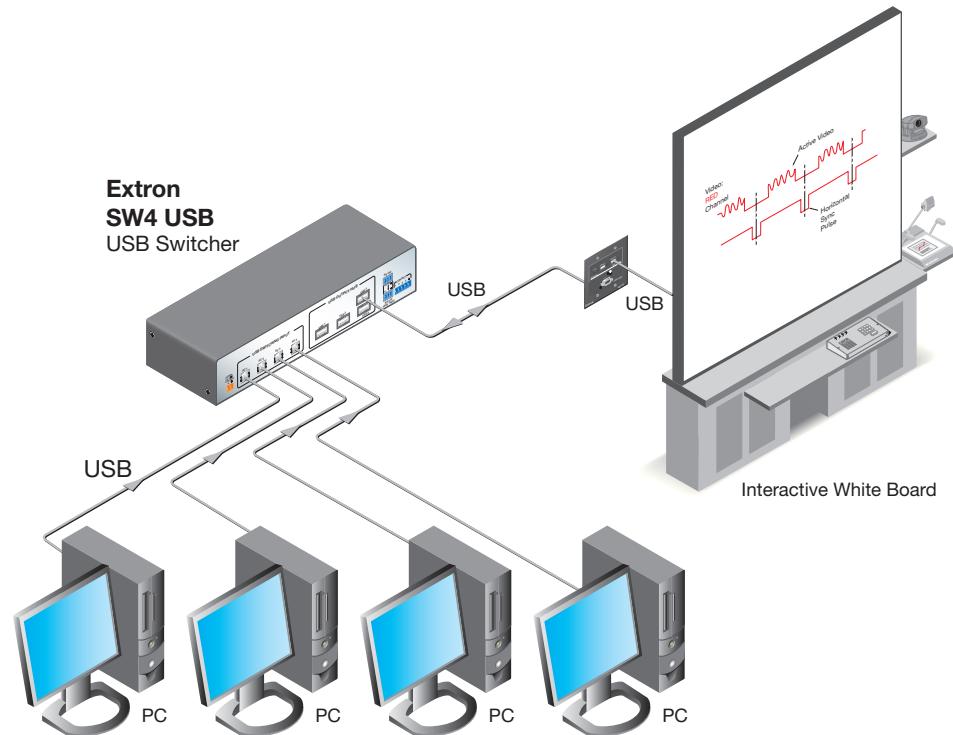


Figure 2. Connection Diagram for an SW4 USB Switcher with Interactive White Board

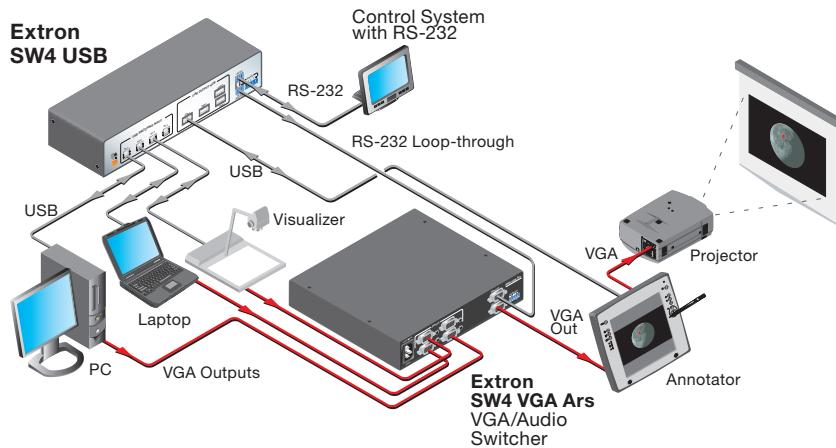


Figure 3. Connection Diagram for an SW4 USB Switcher with an SW VGA Series Switcher in an Annotator Application

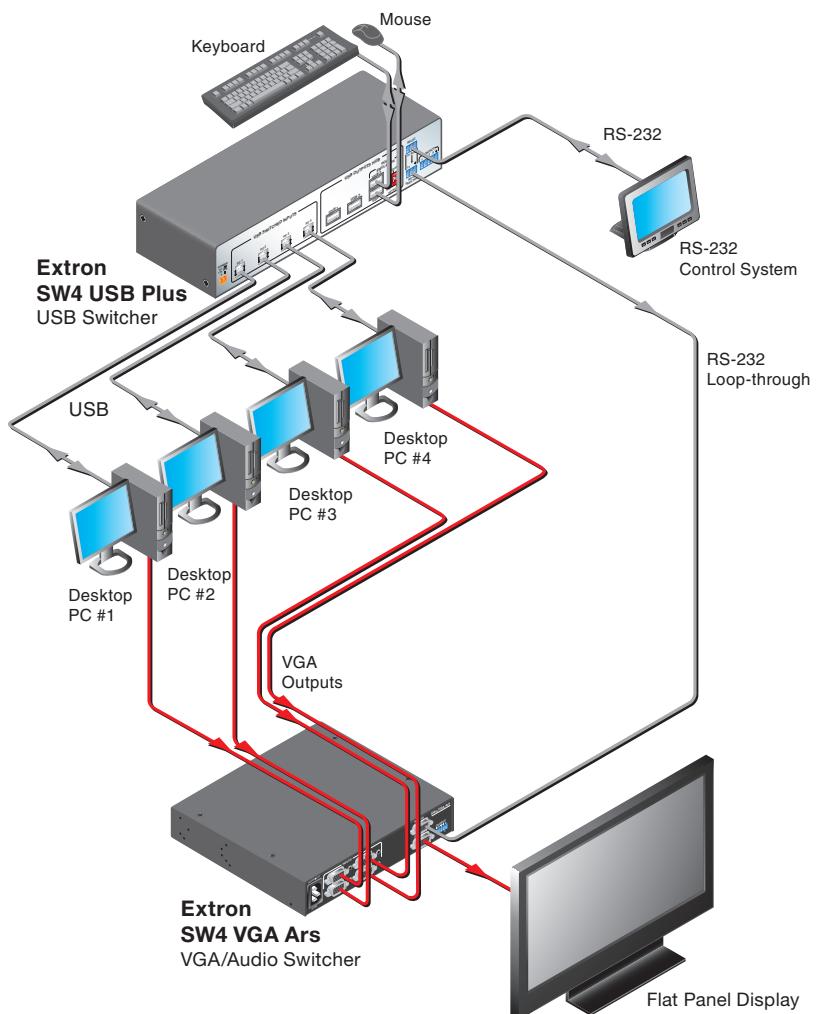


Figure 4. Connection Diagram for an SW4 USB Plus Switcher in a Keyboard-Video-Mouse (KVM) Switching Application

Installation

This section gives an overview of the steps to installing the SW USB Series switchers. It also provides a description of the rear panel connectors and instructions for cabling. The following topics are discussed:

- [Installation Overview](#)
- [Rear Panel Features](#)
- [Wiring the Power Connector](#)
- [Wiring for RS-232 Communication](#)
- [Setting Up Contact Closure Control](#)
- [Connecting Multiple SW USBs in a System](#)

Installation Overview

To install and set up the SW USB switcher:

1. (Optional) Mount the switcher to a rack shelf or furniture (see [Mounting the SW USB Series Switcher](#) on page 31).
2. Connect host devices to one or more SW USB Switched Input type B connectors, using cable lengths of up to 15 feet (4.5 m).
3. Connect one or more peripheral USB devices to the SW USB Output Hub type A connectors, using USB cable lengths of up to 15 feet (4.5 m).
4. (Optional) Connect an RS-232 cable between the SW USB RS-232 port and a host computer or control system (see [Wiring for RS-232 Communication](#) on page 11).

NOTE: The computer that you use for RS-232 control should **not** be one of the host devices connected to any of the input ports.

5. (Optional) Connect an external Extron AV switcher to the RS-232 Pass Thru port. You can then control this switcher via commands sent through this port.
6. (Optional) Wire one of the provided 3-pole or 5-pole captive screw plugs to a 2-button or 4-button contact closure device, and connect the device to the SW USB Contact port (see [Setting Up Contact Closure Control](#) on page 12).
7. If using a different power supply from the one that was provided, wire a 2-pole captive screw plug to the external power supply (see [Wiring the Power Connector](#) on page 8).
8. **SW4 USB Plus only:** If desired, attach a keyboard, a mouse, or both to output ports 3 or 4, and set the appropriate DIP switches for host emulation (see [Host emulation \(SW4 USB Plus only\)](#) on page 20).
9. Power on the USB peripheral devices, if applicable.
10. Power on the SW USB switcher.
11. Power on the host devices.

Rear Panel Features

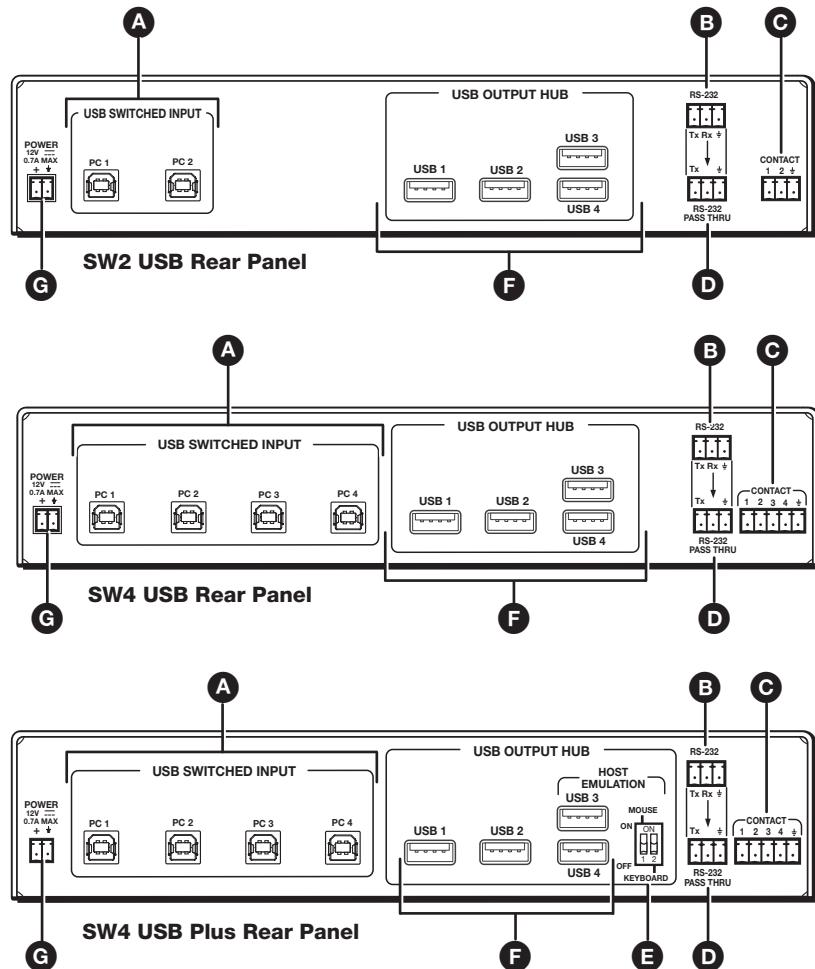


Figure 5. SW USB Rear Panels

- | | |
|--------------------------------|---------------------------------|
| A Input connectors | E Emulation DIP switches |
| B RS-232 port | F Output connectors |
| C Contact port | G Power connector |
| D RS-232 Pass Thru port | |

A **Input connectors** — Connect host devices, such as computers, to these female USB type B connectors, using cable lengths of up to 15 feet (4.5 m). Pinouts for these connectors follow the standard pinout defined in USB standards.

B **RS-232 port** — Connect a host to this 3-pole, 3.5 mm captive screw connector for RS-232 control and status feedback (see [Wiring for RS-232 Communication](#) on page 11). This port can also be used to update firmware.

NOTE: The computer that you use for RS-232 control should **not** be one of the host devices connected to any of the input ports.

C **Contact port** — If desired, connect a two- or four-button contact closure device to this 3-pole (SW2) or 5-pole (SW4 models), 3.5 mm captive screw connector to enable input selection via contact closure (see [Setting Up Contact Closure Control](#) on page 12).

- D RS-232 Pass Thru port** — If desired, connect an Extron AV switcher to this 3-pole, 3.5 mm captive screw connector (see [RS-232 Pass Thru port](#) on page 11). Commands issued via the front panel, contact closure, or an RS-232 interface on a PC or control system can be sent through this port to the connected AV switcher.

NOTE: Only Extron products can be controlled via this port.

- E Emulation DIP switches** — (SW4 USB Plus only) These DIP switches enable host emulation to a keyboard and mouse connected to output ports 3 and 4. Switch 1 enables host emulation to a mouse; switch 2 enables emulation to a keyboard.

When a keyboard or a mouse is connected to port 3 or 4, and the appropriate switch is set to On, the SW USB Plus switches to the connected keyboard or mouse instantly, without the delay that normally occurs while the computer recognizes a new peripheral device.

- F Output connectors** — Connect peripheral USB devices, such as keyboards, mice, storage drives, or webcams, to these female USB type A connectors, using cable lengths of up to 15 feet (4.5 m). All outputs supply the 500 mA, 5 V rating defined in USB standards.

NOTES:

- If your SW USB system contains multiple computers, drivers for all connected peripheral devices should be loaded on all computers.
- The four outputs act as a USB hub. Inputs cannot be routed to specific USB output connectors. All outputs are simultaneously connected to the selected input.
- On the SW USB Plus, output ports 3 and 4 can be used for host emulation with supported keyboards and mice only (see [Host emulation \(SW4 USB Plus only\)](#) on page 20 for more information).

- G Power connector** — Attach the provided external 12 VDC power supply to this 2-pole, 3.5 mm captive screw connector (see [Wiring the Power Connector](#) on page 8).

Wiring the Power Connector

If using an external power supply other than the one provided with the SW USB, you may need to wire the connector for it.

CAUTION:

ATTENTION :

- The two power cord wires must be kept separate while the power supply is plugged in. Remove power before wiring.
- Les deux cordons d'alimentation doivent être maintenus à l'écart tant que la source d'alimentation est branchée.

To wire the power connector:

1. Cut the DC output cord of the power supply to the length needed.
2. Strip the jacket to expose 3/16 inch (5 mm) of the conductors.

ATTENTION:

- The length of the exposed wires in the stripping process is important. The ideal length is 3/16 inches (5 mm). Any longer and the exposed wires may touch, causing a short circuit between them. Any shorter and the wires can be easily pulled out even if tightly fastened by the captive screws.
- La longueur des câbles exposés est importante lorsque l'on entreprend de les dénuder. La longueur idéale est de 5 mm (3/16 inches). S'ils sont trop longs, les câbles exposés pourraient se toucher et provoquer un court-circuit. S'ils sont trop courts, ils peuvent être tirés facilement, même s'ils sont correctement serrés par les borniers à vis.

3. Slide the exposed leads into a 2-pole captive screw plug and secure them by tightening the screws, using a small screwdriver.
4. To verify the polarity of the power cord before connecting it, plug in 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 6 shows how to wire the power connector.

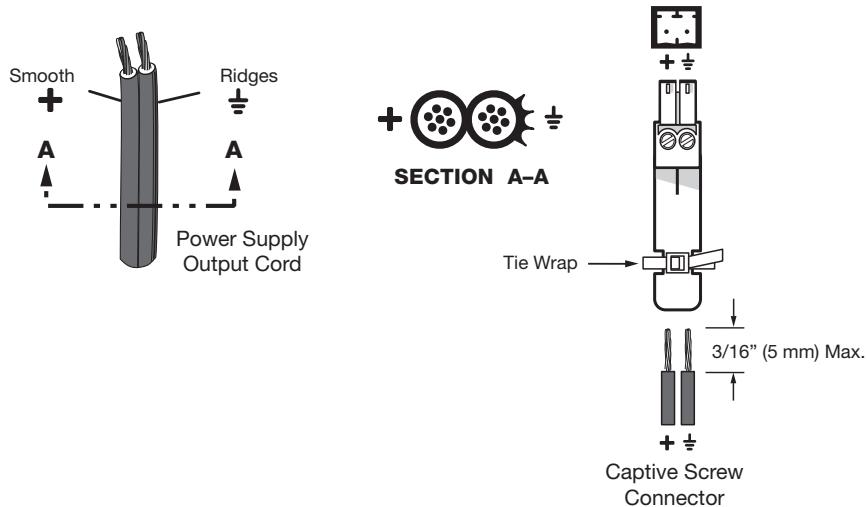


Figure 6. Power Connector Wiring

ATTENTION:

- When you are connecting the power supply, voltage polarity is extremely important. Applying power with incorrect voltage polarity could damage the power supply and the regenerator. Identify the negative lead by the ridges on the side of the cord (see figure 6). To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.
- Lorsque vous connectez la source d'alimentation, la polarité de la tension est extrêmement importante. Une alimentation avec une polarité de tension incorrecte peut endommager la source d'alimentation ainsi que l'interface. Il est essentiel d'identifier une connexion négative du cordon d'alimentation au niveau des stries sur les parties latérales du cordon. Pour vérifier la polarité avant la connexion, brancher l'alimentation hors charge et mesurer sa sortie avec un voltmètre.

- Do not tin the stripped power supply leads before attaching the captive screw connector. Tinned wires are not secure in the captive screw connectors and could be pulled out. They may also break after being bent several times.
- Ne pas étamer les conducteurs avant de les insérer dans le connecteur. Les câbles étamés ne sont pas aussi bien fixés dans le connecteur et pourraient être tirés. Ils peuvent aussi se casser après avoir été pliés plusieurs fois.
- The power supply shall not be permanently fixed to the building structure or similar structures.
- La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.
- Do not place the power supply within air handling spaces or the wall cavities.
- Ne pas installer la source d'alimentation dans des espaces d'aération ou dans des cavités murales.
- The installation must be in accordance with the applicable provisions of the National Electrical Code ANSI/NFPA 70, Article 725 and the Canadian Electrical Code, Part 1, Section 16.
- L'installation doit toujours être conforme aux dispositions applicables du Code américain de l'électricité (National Electrical Code) ANSI/NFPA 70, article 75, et du Code canadien de l'électricité, partie 1, section 16.
- The power supply must be located within the same vicinity as the Extron AV processing equipment in an ordinary location, pollution Degree 2, and secured to a podium, a desk, or an equipment rack within a dedicated closet.
- La source d'alimentation doit être située à proximité de l'équipement audiovisuel Extron dans un emplacement habituel, avec un degré de pollution 2, fixée à une estrade, un bureau, ou dans une baie technique à l'intérieur d'un placard dédié.
- Always use a power supply specified by Extron for an SW USB. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the power supply and the unit.
- Utilisez toujours une source d'alimentation fournie ou spécifiée par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute certification de 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 UL Listed power source marked with "class 2" or "LPS" and rated 12 VDC, minimum 0.7 A.
- Si le produit n'est pas fourni avec une source d'alimentation, il doit être alimenté par une source d'alimentation certifiée UL de classe 2 ou LPS, avec une tension nominale 12 Vcc, 0.7 A minimum.

Wiring for RS-232 Communication

RS-232 Port

The 3-pole, 3.5 mm captive screw connector labeled “RS-232” is used for optional RS-232 communication between the SW USB and a computer or control system. The control system plugged into this port can issue commands to the SW USB, which can pass the commands through to an Extron AV switcher that is plugged into the RS-232 Pass Thru port.

NOTE: The computer that you use for RS-232 control should **not** be one of the host devices connected to any of the input ports.

To connect your computer or control system to the RS-232 connector, use a female 9-pin D-to-bare-wire RS-232 cable, such as an Extron UC50 Universal Projector Control cable.

1. Wire the unterminated end of the RS-232 cable to one of the provided 3-pole captive screw plugs.
2. Plug the wired 3-pole connector into the RS-232 receptacle on the SW USB rear panel.

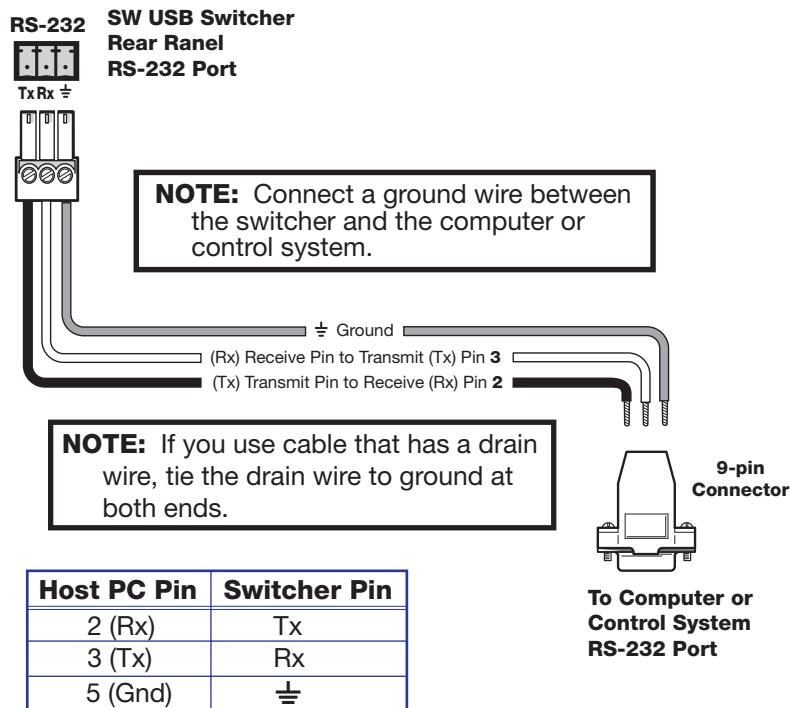


Figure 7. Wiring the RS-232 Connector

RS-232 Pass Thru Port

The RS-232 Pass Thru port loops the signal received at the SW USB RS-232 control port, the Contact (closure) port, or the front panel input buttons through the RS-232 Pass Thru port to send SIS commands to another Extron AV switcher.

NOTE: Only Extron products can be controlled via this port.

You can configure the SW USB to send SIS commands or input selections through the RS-232 Pass Thru port to the AV switcher. Two loop modes are available:

- **Loop mode 0:** The port passes through SIS commands from the computer, input selections made via contact closure, and input selections made by pressing front panel buttons.
- **Loop mode 1:** The port passes only SIS commands from your computer.

See [Issuing commands to an Extron A/V switcher via the RS-232 Pass Thru port](#) on page 17 for more information on the loop modes and SIS commands.

The diagram below shows how to wire the SW USB RS-232 Pass Thru port for use with an Extron AV switcher. The RS-232 Pass Thru port does not have a receive pin; therefore, it does not receive responses from the connected switcher.

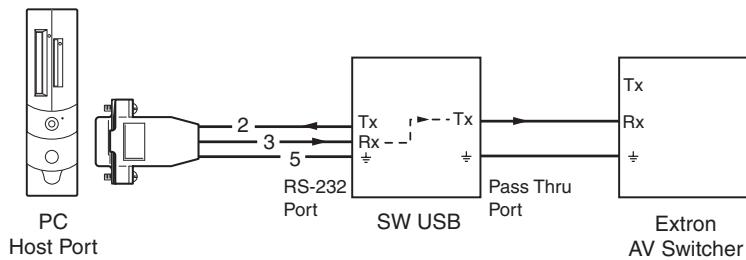


Figure 8. Connections for RS-232 Loop-through

Setting Up Contact Closure Control

Contact closure is another method of input selection. To enable input selection by contact closure, connect a push-button contact closure device (such as an Extron CCR 2BLB, CCR 4BLB, or CCR 204) to the SW USB Contact port.

Alternatively, you can manually short one of the pins to ground (the ground [\textequiv] pin is pin 3 for SW2 and pin 5 for SW4 models) using a jumper. Shorting pin 1 to ground selects input 1, pin 2 selects input 2, and so forth.

Controlling an Extron AV Switcher

For applications in which the SW USB is connected to an Extron AV switcher that can be controlled via RS-232, inputs can be selected on both switchers by contact closure.

To set up for contact closure control of an AV switcher:

1. If desired, connect a contact closure device to the SW USB Contact port.
2. Connect the SW USB RS-232 Pass Thru port to the RS-232 port on the AV switcher (see [figure 7](#) on the next page).
3. Issue the SIS command `Esc 0LOOP ←` to the SW USB to enable loop 0 mode (see [Selecting the loop mode](#) on page 18 for more information).

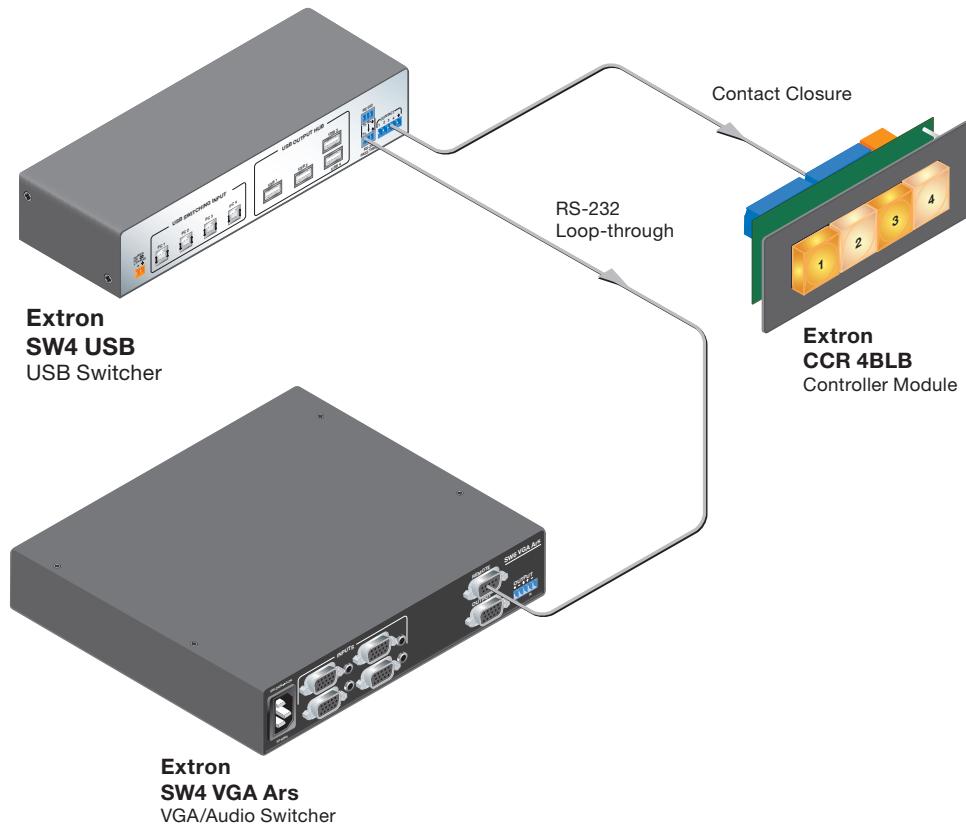


Figure 9. Using the SW USB with a Contact Closure Device and an AV Switcher

Connecting Multiple SW USBs in a System

The USB specification states that a maximum of five hubs (or five SW USBs) can be connected in a series.

NOTE: Do not exceed five cascaded hubs and a total of 127 peripheral devices in the entire system.

Figure 9 on the next page shows an example of a single host with the maximum of five SW USB switchers cascaded in a series.

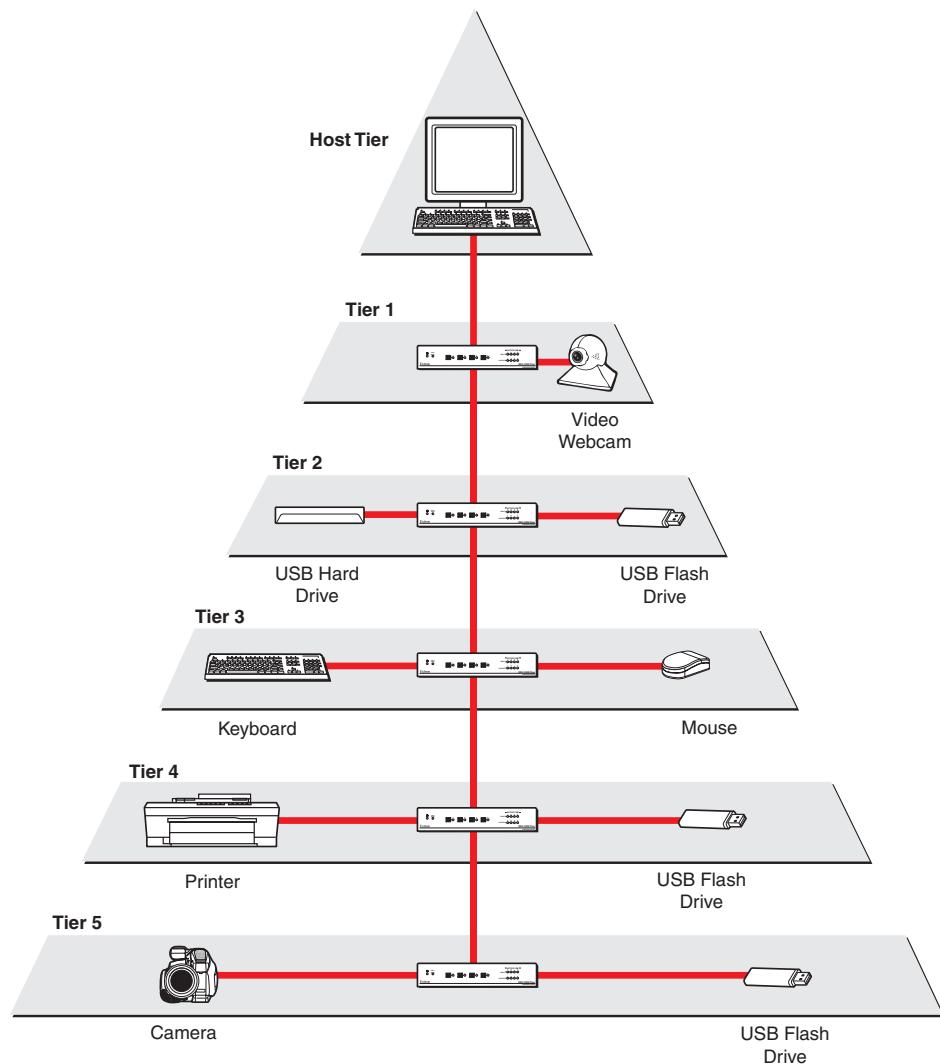


Figure 10. Example of a Host with Five SW USB Switchers Cascaded in a Series

Operation

This section provides a description of the SW USB front panel features and describes the procedures for performing the functions that are accessed from the front panel. The following topics are covered:

- **Front Panel Features**
- **Operations**
- **Updating Firmware**

Front Panel Features

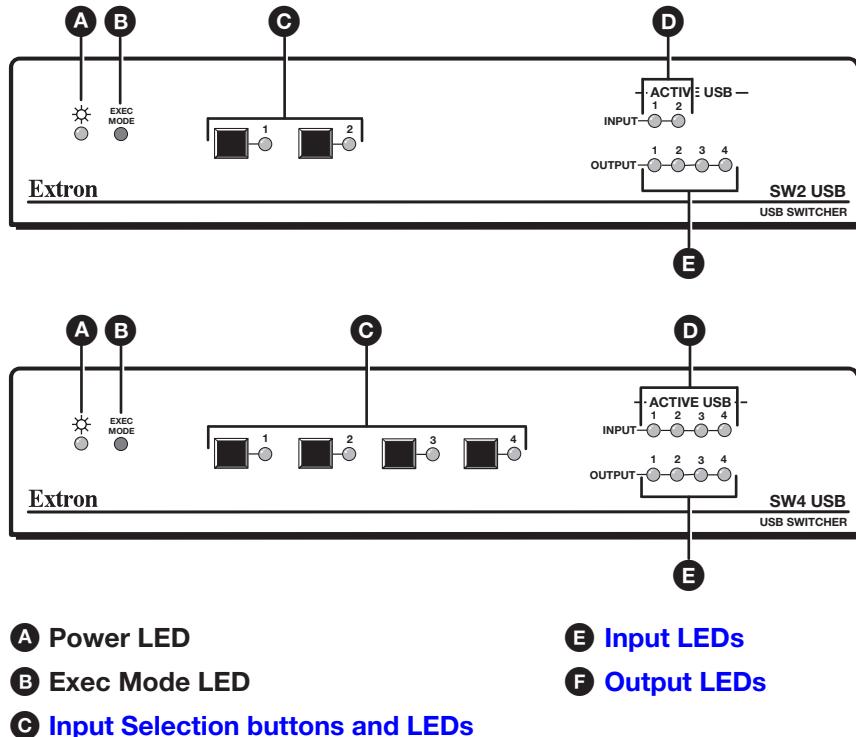


Figure 11. SW USB Series Front Panels

- **A Power LED** — This green LED lights when the SW USB has power.
- **B Exec Mode LED** — This red LED lights when the SW USB is in front panel lock mode, indicating that input selections cannot be made from the front panel (see **Locking and Unlocking the Front Panel (Executive Mode)** on page 20).
- **C Input Selection buttons and LEDs** — Press these buttons to select inputs 1 and 2 (SW2) or 1 through 4 (SW4 and SW4 Plus). The green LED at the right of each button lights when the corresponding input has been selected. These buttons also can be used to initiate front panel lock mode and to reset the unit (see **Locking and Unlocking the Front Panel (Executive Mode)** on page 20 and **Resetting** on page 20).

Active USB (port status) LEDs:

- D Input LEDs** — Each of these green LEDs lights when a host or PC is connected to the corresponding USB input port on the switcher and is detected by the SW USB, whether or not the input is selected.
- E Output LEDs** — Each of these green LEDs lights when a peripheral device is connected to the corresponding output port on the SW USB and has been enabled by the selected input device or host PC.

Operations

Powering on the System

To power on the SW USB and connected devices:

1. Connect all input and output devices to the rear panel connectors on the switcher (see [Rear Panel Features](#) on page 7 for more information).
2. If desired, connect a host PC to the RS-232 port (see [Wiring for RS-232 Communication](#) on page 11).
3. Plug the power supply into the 2-pole captive screw power connector on the rear panel. The unit performs a self-test, during which the Exec Mode LED and the front panel Input LEDs each blink once in succession from left to right. If the self-test completes with no errors, the LED for the most recently selected input remains lit.
4. Select each input and power up the host device connected to it (see [Selecting an Input](#) on page 16).

Selecting an Input

SW USB inputs can be selected by using:

- The front panel buttons
- Contact closure
- SIS commands
- Keyboard (“hot key switching,” SW4 USB Plus only)

Selecting an input from the front panel

To select an input from the front panel, press the desired input button. The LED adjacent to the button lights. After an input is selected, its LED remains lit until a new input is selected or the SW USB is powered off.

Selecting an input using contact closure

Use one of the following methods to select inputs on the SW USB and the AV switcher (if connected) using contact closure (see [Setting Up Contact Closure Control](#) on page 12 for connection information):

- **Using a contact closure device:** If a two- or four-button contact closure device is connected to the SW USB Contact port, press the button on the device that corresponds to the SW USB input that you want to select. The first button on the left selects input 1, the second button selects input 2, and so forth.

- **Using a jumper wire:** On the Contact port, use a jumper wire to connect the ground (⏚) pin to one of the other pins in the Contact connector (the ground [⏚] pin is pin 3 for SW2 and pin 5 for SW4 models). Connecting pin 1 to ground selects input 1, pin 2 selects input 2, and so forth.
- **Using an IR 102:** See the *IR 102 User's Manual* to use the IR 102 with a switcher.

Selecting an input on an AV Switcher via contact closure

To make input selections on a connected AV switcher via contact closure, you must place the SW USB in **loop 0** mode. When the ground pin of the Contact port is connected to one of its other pins by one of the methods described on the previous page, the SW USB sends the input selection SIS command **[X1]**! (where **[X1]** is the input number) through the RS-232 Pass Thru port to the AV switcher. The AV switcher then switches to the selected input (see “Issuing Commands to an Extron AV Switcher via the RS-232 Pass Thru Port,” below).

Selecting an input using SIS commands

You can also select an input via an RS-232 connection using SIS commands (see **SIS Programming and Control** starting on page 27 for a list of available SIS commands and their explanations). If an Extron AV switcher is connected to the RS-232 Pass Thru port, the SIS commands that you enter can also be passed through to the connected switcher, even if the connected switcher has more inputs than the SW USB (see “Issuing Commands to an Extron AV Switcher via the RS-232 Pass Thru Port,” below).

Selecting an input using the keyboard (SW4 USB Plus only)

When a keyboard is connected to an emulation port and the keyboard emulation DIP switch (switch 2) is set to On, you can switch to a desired input by pressing **<Ctrl> + <Shift> + <input number>** (for example, to switch to input 3, press **<Ctrl> + <Shift> + <3>**).

See **Host emulation (SW4 USB Plus only)** starting on page 20 for information on setting up the SW4 USB Plus for host emulation.

NOTE: If you want to use the **<Ctrl> + <Shift> + <input number>** key combination for another purpose, you can disable the keyboard switching feature using the SIS command **[Esc] H [X2] USBC ←** (see **Hot Key Switch Commands** on page 29).

Issuing Commands to an Extron AV Switcher via the RS-232 Pass Thru Port

To configure the SW USB to pass commands through the RS-232 Pass Thru port to a connected AV switcher, you must select a loop mode. The loop mode determines which types of commands are passed through this port. The two loop modes are:

- **Loop 1 mode** — In this mode, SIS commands sent to the SW USB via an RS-232 interface are passed through the RS-232 Pass Thru port to the AV switcher. The RS-232 interface is the **only** method of issuing commands to the AV switcher.
- **Loop 0 mode** (default) — In this mode, in addition to passing through SIS commands sent from the computer RS-232 interface, the SW USB also passes input selections entered via contact closure or the front panel buttons through the RS-232 Pass Thru port to the AV switcher.

NOTE: You can issue commands to the SW USB using the front panel buttons, RS-232, or contact closure in **both** loop modes. The loop mode selection affects only commands going through the RS-232 Pass Thru port to the AV switcher.

Selecting the loop mode

To select the loop mode, enter one of these commands:

- **For loop 1 mode:** `[Esc] 1LOOP ↵`
- **For loop 0 mode:** `[Esc] 0LOOP ↵` command.

Loop Mode	SIS Command	Commands Passed Through to an AV Switcher
Loop 1	<code>[Esc] 1LOOP ↵</code>	Only SIS commands received via the RS-232 control port
Loop 0 (Default Mode)	<code>[Esc] 0LOOP ↵</code>	<ul style="list-style-type: none"> • Input selections made via contact closure or the front panel buttons • SIS commands sent via the RS-232 interface (loop 1 functionality)

See the [Command and Response Table for SIS Commands](#) starting on page 29 for an explanation of all supported SIS commands.

SIS command processing

When an AV switcher is connected to the RS-232 Pass Thru port, SIS commands are processed in one of the following ways:

- Passed through to the AV switcher **without** being acted on by the SW USB
- Performed by the SW USB and **not** passed through to the AV switcher
- Performed by the SW USB and passed to the AV switcher, which also performs them. This applies only to the input selection command `[X1]!`, where `[X1]` is the input number.

The table below shows how the SIS commands are handled by an SW USB with a connected AV switcher. (Unless otherwise indicated, commands are **not** case-sensitive.)

SIS Command	SW USB Function	SW USB Response to Host
!	Performed and passed through	<code>Chn [X1] ↵</code>
^	Performed, not passed through	<code>Usb [X1] ↵</code>
E (any)	Performed, not passed through	See the SIS command table .
X	Performed, not passed through	<code>[X3] ↵</code>
N	Performed, not passed through	<code>60-95n-02 ↵</code>
Q	Performed, not passed through	<code>n.nn ↵</code>
*Q	Performed, not passed through	<code>n.nn.nnnn ↵</code>
I	Performed, not passed through	<code>Chn[X1]•InACT [X4]OutACT[X4] ↵</code>
0V – 100V	Passed through, not performed*	<code>CMD ↵</code>
&	Passed through, not performed*	<code>CMD ↵</code>
%	Passed through, not performed*	<code>CMD ↵</code>
1B, 0B	Passed through, not performed*	<code>CMD ↵</code>
1M, 0M	Passed through, not performed*	<code>CMD ↵</code>
1Z, 0Z	Passed through, not performed*	<code>CMD ↵</code>
\$	Passed through, not performed*	<code>CMD ↵</code>

* For explanations of commands that are passed through to the AV switcher and **not** performed by the SW USB, see your AV switcher user guide.

Example: When a control system issues an SIS input selection command 1! (select input 1), 2! (select input 2), 3! (select input 3), or 4! (select input 4), the SW USB switches to the corresponding input. The SW USB also passes the SIS input selection command through the RS-232 Pass Thru port, causing the same input to be selected on the AV switcher.

Commands that cannot be passed through

The following SIS commands **cannot** be passed through to the AV switcher:

- **Information requests:** View part number (N), Request information (I), and Query firmware version (Q)
- **Change loop mode** (`Esc nLOOP`)
- **Upload firmware** (`Esc Upload`)

See the [Command and Response Table for SIS Commands](#) starting on page 29 section for explanations of SIS commands that are performed by the SW USB.

Sending commands to an AV switcher using contact closure

In loop 0 mode, you can select an input on the SW USB by shorting the equivalent pin on the Contact port to ground (either by pressing a button on a connected contact closure device or by connecting a jumper between pin 1, 2, 3, or 4 and \pm [ground]). Shorting the pin to ground issues an input selection command to the SW USB, which passes an SIS input selection command through its RS-232 Pass Thru port to the AV switcher. The switcher then switches to the corresponding input.

Example: If you want to select input 1 on the AV switcher, short pin 1 to ground on the SW USB Contact port. The SW USB switches to input 1 and, simultaneously, the RS-232 Pass Thru port passes the SIS command 1! to the AV switcher, which also switches to input 1.

The following table shows the SIS commands that are issued when inputs are selected by contact closure:

Contact Closure Selection	SIS Command Sent via RS-232 Pass Thru	Function on the AV Switcher
Pin 1 to \pm	1!	Select input 1
Pin 2 to \pm	2!	Select input 2
Pin 3 to \pm	3!	Select input 3
Pin 4 to \pm	4!	Select input 4

Locking and Unlocking the Front Panel (Executive Mode)

Front panel lock mode (executive mode) disables all front panel controls, locking out the user from those functions. Putting the switcher in this mode enhances security by protecting against inappropriate or accidental changes to settings. When the SW USB is in lock mode, RS-232 and contact closure remain available.

- **To lock the front panel:** Press input buttons 1 and 2 simultaneously and hold them until the red Exec Mode LED lights (approximately 5 seconds).

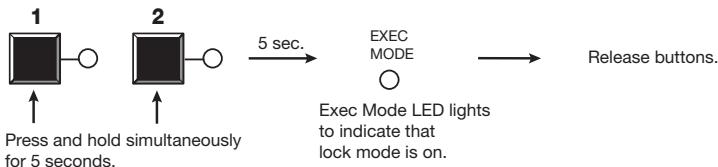


Figure 12. Enabling Lock Mode

- **To exit lock mode:** Repeat the procedure described above. When the SW USB is no longer in lock mode, the Exec Mode LED turns off.

Resetting

To reset the switcher to its factory default settings from the front panel:

1. Disconnect power from the SW USB.
2. Press and hold the Input 1 button while reapplying power to the unit.

The Input LEDs blink three times to indicate that a reset has occurred. The input selection defaults to input 1, and the Input 1 LED lights.

Host Emulation (SW4 USB Plus Only)

The SW4 USB Plus model provides host emulation to peripheral devices on two of its output ports. If a keyboard, mouse, or both are connected to output port 3 or 4, and the Host Emulation DIP switches are set to On, the SW USB emulates a host PC to the connected peripheral device. The keyboard or mouse connected to port 3 or 4 still responds as if it were attached directly to the computer on the selected input.

Host emulation allows instant communication of the emulated ports when the SW USB switches to another input, by eliminating the delay that normally occurs while a computer recognizes a new device and establishes communication with it.

Setting up for host emulation

To enable host emulation:

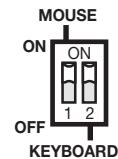
1. Connect a keyboard, a mouse, or both to output port 3, 4, or both. The SW4 USB Plus can emulate a keyboard and a mouse simultaneously. Either type of device can be connected to either or both of the two emulation ports (3 and 4).

NOTE: The SW USB can emulate a host through ports 3 and 4 if a hub or an extender with an internal hub is connected to either of these ports. Only a single hub or extender is supported. If a second hub or a second extender is connected, host emulation is disabled on one of the ports.

- 2.** Place the Host Emulation DIP switches on the rear panel in the appropriate position to enable emulation for the connected device. The table below shows the switch positions for keyboard and mouse emulation.

Switch 1 (Mouse)	Switch 2 (Keyboard)	Emulation
Off (down)	Off (down)	No emulation
On (up)	Off (down)	Emulate mouse only.
Off (down)	On (up)	Emulate keyboard only.
On (up)	On (up)	Emulate keyboard and mouse.

Example: In the example at right, the DIP switches are set to enable emulation of both a mouse and a keyboard (up).



NOTES:

- If two mice or two keyboards are connected to output ports 3 and 4, and the appropriate emulation DIP switch is set to On, the switcher emulates a host to only one port.
- When one or both DIP switches are set to On (up), host emulation follows the attached peripheral device:
- When the Mouse DIP switch (switch 1) is set to On (up), the switcher emulates a host to any standard mouse that is connected to either of the emulation output ports (3 or 4).
- When the Keyboard DIP switch (switch 2) is set to On, the switcher emulates a host to any standard keyboard that is connected to an emulation port.
- When both DIP switches are set to On, the switcher emulates a host to any connected standard mouse or keyboard that is connected to port 3 or 4.

Supported peripheral devices

The SW4 USB Plus can emulate a host only to a standard keyboard and a standard mouse. The emulation feature is **not** supported with non-standard keyboards or mice, such as devices that require additional drivers.

For example, the SW USB does not support host emulation for RF/Bluetooth keyboards and mice, hubs, extenders with internal hubs, or any peripherals connected to those types of devices. If these devices are connected to output ports 3 and 4 when the DIP switches are set to On, the devices are switched through to the input.

Alternatively, you can set the Host Emulation DIP switches to Off when using these devices.

Troubleshooting

If the SW USB detects a non-standard keyboard or mouse, an error condition may occur in which the Exec Mode LED blinks and the SW USB reboots in a repeating cycle. If this happens, and rebooting does not resolve the issue, set the host emulation DIP switches to Off, and then wait for the switcher to reboot. You are not able to use host emulation with that keyboard or mouse.

Peripheral Emulation (SW4 USB Plus Only)

In addition, the SW4 USB Plus emulates a mouse and keyboard to the computer or other input device that is connected to the selected input port. This emulation of peripheral devices is constant, whether or not a keyboard or mouse is actually connected to the ports, facilitating problem-free boot-up. Keyboard and mouse emulation is always present on the inputs of the switcher.

Updating 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.

You can find out what version of firmware is currently loaded on your switcher by entering the SIS Q command via the RS-232 interface (see [Query firmware version](#) on page 29).

New firmware versions for the SW USB can be downloaded from the Extron web page. After you install the new firmware on your computer, you can upload it to the switcher using either SIS commands (see the [Command and Response Table for SIS Commands](#) starting on page 29) or the Firmware Loader software (see [Updating Firmware](#) on page 22).

The Firmware Loader utility, which enables you to update the SW USB firmware, is available free of charge at www.extron.com.

NOTE: For further information on using Firmware Loader, select **Help** from the **Help** menu on the **Firmware Loader** window or press the <F1> key.

To update the firmware using Firmware Loader:

1. If necessary, download the Firmware Loader software from the Extron website:
 - a. On the Extron web page, select the **Download** tab.
 - b. On the **Download Center** page, select the **Software** link from the left column.
 - c. Locate the Firmware Loader and click the **Download** link at the far right.
 - d. Follow the on-screen instructions to download the Firmware Loader program to your computer.
2. From the Extron website, download the latest firmware file and install it on your computer.
 - a. On the Extron web page, select the **Download** tab.
 - b. On the Download Center page, click the **Firmware** link in the left column.
 - c. On the list of available firmware files, locate the SW USB and click the **Download** link at right.

• SW USB Firmware for the SW2 USB, SW4 USB, and SW4 USB Plus. 	19-2096-01	2.02	Oct 29, 2009	2.1 MB	
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- d. On the login page that appears next, fill in the required information to log in to www.extron.com (if you need an Insider Account, see your Extron representative).
- e. Follow the instructions on the subsequent screens to complete the firmware program installation. By default, the firmware file is stored on your computer at C:\Program Files(x86)\Extron\Firmware\DS401.

3. If there is not already an **Extron** folder in your **Program Files x86** folder, the installation program creates it as well. From the **Start** menu on your computer, select **All Programs > Extron > Firmware Loader > Firmware Loader**. The Firmware Loader window opens with the Add Device window in front of it.
4. On the Add Device window, select your SW USB model from the **Device Names** drop-down menu.

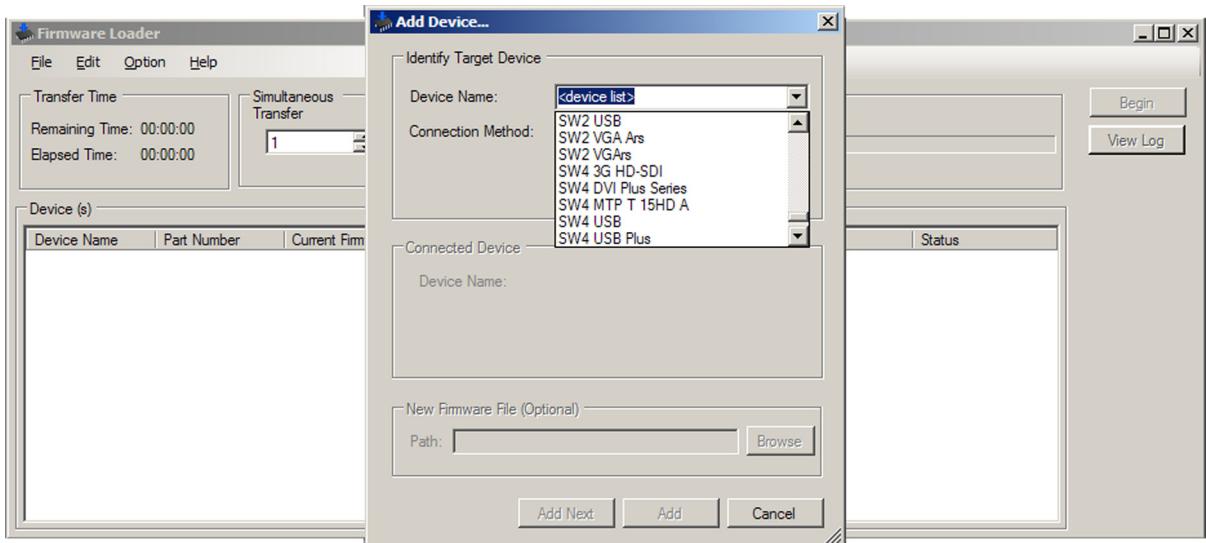


Figure 13. Device Name Drop-down Menu on the Add Device Window

5. From the **Connection Method** drop-down menu, select **RS-232** (the only option).
6. Select the appropriate options from the **Com Port** and **Baud Rate** menus (this information is provided by your system administrator).
7. Click **Connect**. If the connection is successful, the name of your SW USB model is displayed in green and followed by a check mark in the Connected Device section.
8. Click the **Browse** button in the New Firmware File (Optional) section.
9. On the Open window, navigate to the new firmware file, which has a **S19** extension, and double-click it.

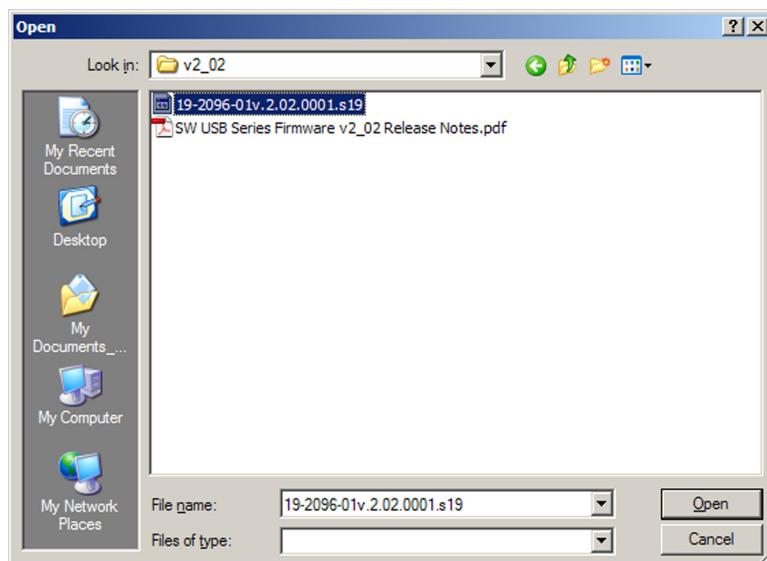


Figure 14. Open Window for Firmware Loader

ATTENTION:

- Valid firmware files must have the file extension **S19**. A file with any other extension is not a firmware upgrade for this product and could cause the switcher to stop functioning.
- Les fichiers firmware valides doivent contenir l'extension fichier .S19. Un fichier avec n'importe quelle autre extension n'est pas une mise à jour de firmware pour cet appareil et l'appareil pourrait arrêter de fonctionner.

NOTES:

- The original factory-installed firmware is permanently available on the SW USB. If the attempted firmware upload fails for any reason, the switcher reverts to the factory-installed firmware.
- When downloaded from the Extron website, the firmware is placed in a folder at C:\Program Files (x86)\Extron\Firmware\SW USB.

10. On the Add Device window, the path to the new firmware file is displayed in the **Path** field.

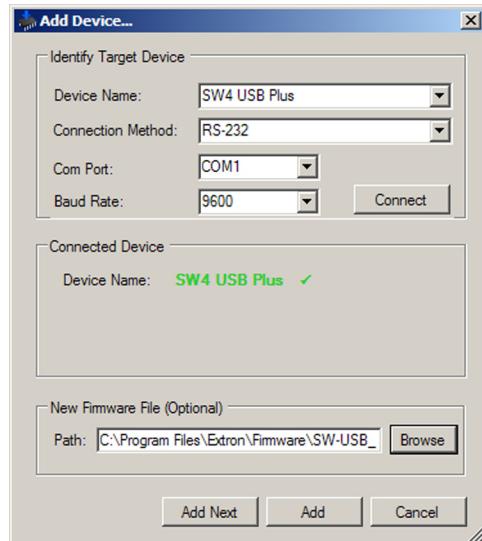


Figure 15. Add Device Window with an SW USB Switcher and Firmware File Selected

- 11.** Click **Add**. The Add Device window closes, and your SW USB name and information appear in the Devices panel of the Firmware Loader window.

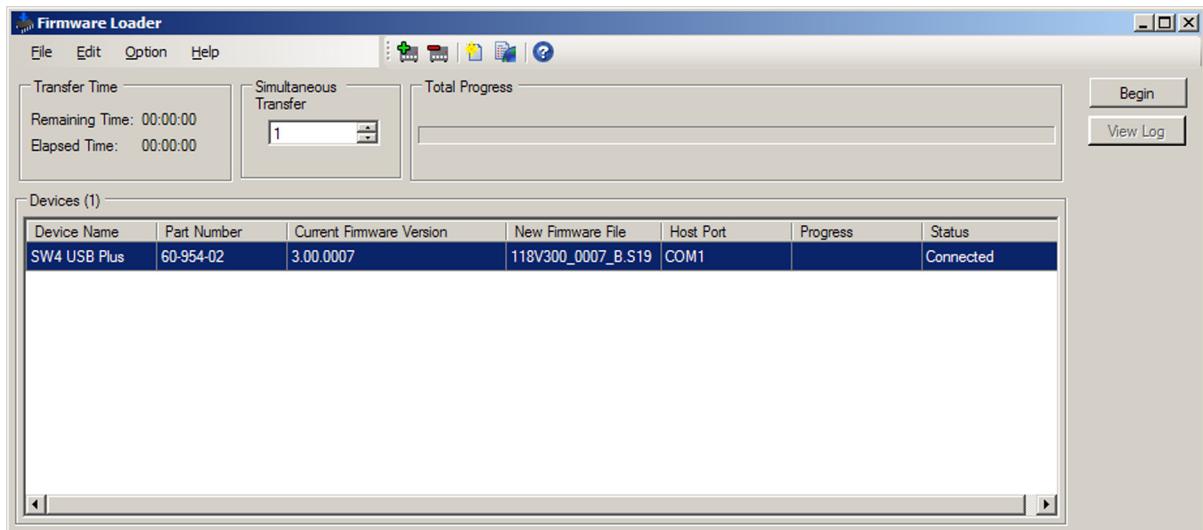


Figure 16. Firmware Loader Window with SW USB Device Added

- 12.** Click **Begin**. The following indicators on the Firmware Loader window show the progress of the update:

- The Transfer Time panel shows the amounts of remaining and elapsed time for the update.
- The Total Progress panel displays a progress bar with **Uploading...** above it.
- In the Devices panel, the Progress column displays an incrementing percentage and another progress bar. The Status column displays **Uploading**.

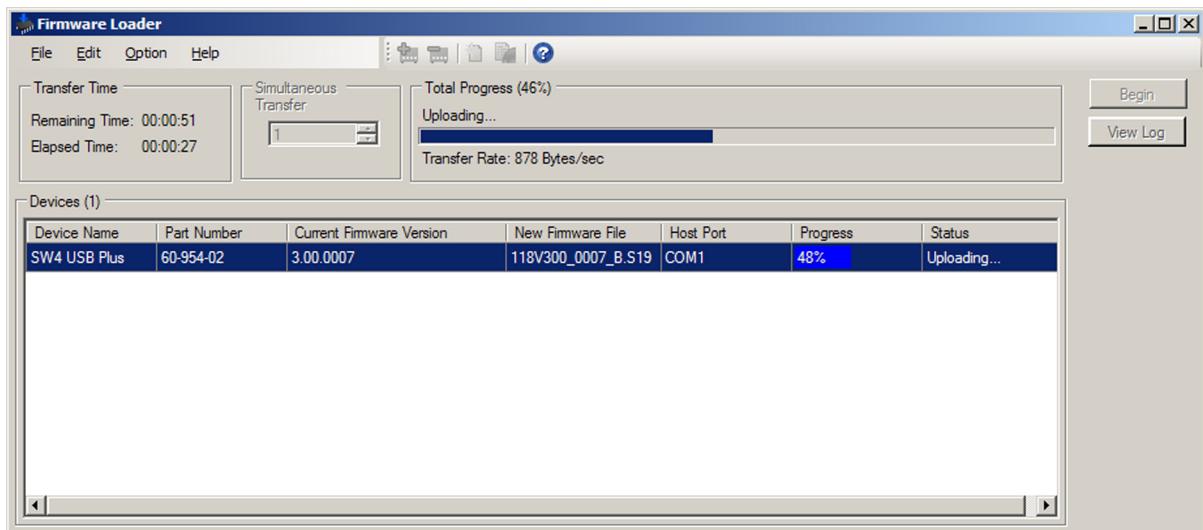


Figure 17. Firmware Upload in Progress

When the upload is complete, the **Remaining Time** panel shows **00.00.00**, the **Progress** column shows **100%**, and **Completed** is displayed above the progress bar and in the **Status** panel.

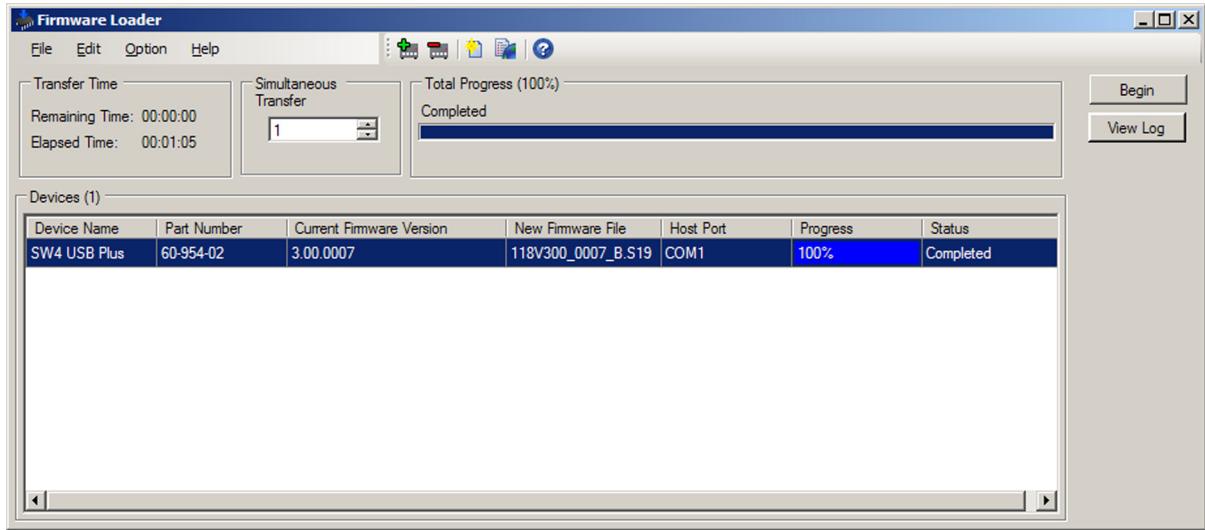


Figure 18. Firmware Upload Complete

13. When the firmware upload and unit reset are complete, close the Firmware Loader window.

SIS Programming and Control

This section describes the connection through which the SW USB switchers can be configured and controlled remotely via SIS commands, and describes the commands that are available. Topics include:

- **Host-to-Switcher Communication**
- **Using the Command and Response Table**
- **Command and Response Table for SIS Commands**

The SW USB can be remotely set up and controlled via a host computer or other device (such as a control system) that is attached to the rear panel RS-232 port (see [Wiring for RS-232 Communication](#) on page 11 for information on connecting to this port). You can issue Simple Instruction Set (SIS) commands to the switcher using your computer RS-232 interface with a communication software program such as Extron DataViewer.

Host-to-Switcher Communication

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command sequence. When the SW USB determines that a command that was entered is valid, it executes the command and sends a response to the host device.

Most responses from the SW USB 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 takes place, the switcher responds by sending a message to the host, indicating what selection was entered. No response is required from the host.

The switcher sends the following copyright message when it first powers on.

© Copyright 20nn, Extron Electronics SWn USB [Plus], Vn.nn

where **SWn** is the switcher model number as well as the number of inputs, and **Vn.nn** is the firmware version number.

NOTE: This message is displayed only when power is applied to the switcher while it is connected to the computer.

Error Responses

If the switcher is unable to execute a command it receives because the command is invalid or contains invalid parameters, the SW USB returns an error response to the host. Error response codes and their descriptions are:

E01 – Invalid input channel number (out of range)

E10 – Invalid command

E13 – Invalid value (out of range)

Using the Command and Response Table

The **Command and Response Table** on the next page lists valid ASCII command codes, the responses of the switcher to the host, and descriptions of the command functions or the results of executing the commands. The ASCII to Hex 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
Ø	30	1	31	2	32	3	33	4	34	5	35	6	36	7	37
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
@	40	A	41	B	42	C	43	D	44	E	45	F	46	G	47
H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F
P	50	Q	51	R	52	S	53	T	54	U	55	V	56	W	57
X	58	Y	59	Z	5A	[5B	\	5C]	5D	^	5E	-	5F
`	60	a	61	b	62	c	63	d	64	e	65	f	66	g	67
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F
p	70	q	71	r	72	s	73	t	74	u	75	v	76	w	77
x	78	y	79	z	7A	{	7B		7C	}	7D	~	7E	DEL	7F

Symbol Definitions

- ↔ = CR/LF (carriage return and line feed) (hex 0D 0A)
- ← = Soft carriage return (no line feed)
- = Space
- Esc** = Escape key
- X1** = Input number: 0 through the maximum number of inputs (2 or 4)
0 = all inputs disconnected
1 = input 1
2 = input 2
3 = input 3
4 = input 4
- X2** = Hot key status
0 = disabled
1 = enabled
- X3** = On and off, signal, or front panel lock status
0 = Off or signal not present
1 = On or signal present
- X4** = **X3 X3 X3 X3**
The **X3**s represent inputs 1, 2, 3, and 4 in succession.
- X5** = Position of the mouse emulation DIP switch (SW4 USB Plus only)
0 = Mouse emulation off (DIP switch 1 is down.)
1 = Mouse emulation on (DIP switch 1 is up.)
- X6** = Position of the keyboard emulation DIP switch (SW4 USB Plus only)
0 = Keyboard emulation off (DIP switch 2 is down.)
1 = Keyboard emulation on (DIP switch 2 is up.)

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

Command and Response Table for SIS Commands

Command	ASCII Command (Host to Unit)	Response (Unit to Host)	Additional Description
Input Selection			
Select input	[X1]!	Chn [X1] ↵	Select input [X1] for both the SW USB and the attached AV switcher (if any). [X1] = 1, 2, 3, or 4.
Select SW USB input only	[X1]^	Usb [X1] ↵	Select input [X1] on the SW USB only (not passed through).
Hot Key			
Enable and disable hot key	[Esc] H [X2] USBC ↵	UsbcH [X2] ↵	Enable and disable the hot key function. For [X2]: 1 = enabled 0 = disabled
View hot key status	[Esc] H USBC ↵	[X2] ↵	Display current hot key status [X2].
Configure RS-232 Pass-through			
Send SIS commands via computer RS-232 interface	[Esc] 1LOOP ↵	Loop1 ↵	Pass SIS commands through the RS-232 Pass Thru port to the AV switcher only if the commands are sent to the SW USB via the computer RS-232 interface.
Send input selection commands via contact closure, front panel, or the RS-232 interface	[Esc] ØLOOP ↵	LoopØ ↵	Pass all SIS commands sent from the computer RS-232 interface, and only input selection commands sent via the front panel or contact closure, to the AV switcher via the RS-232 Pass Thru port.
View loop-through setting	[Esc] LOOP ↵	Loop [X3] ↵	View pass-through setting [X3]. For [X3]: 0 = Loop 0 mode is enabled. 1 = Loop 1 mode is enabled.
Front Panel Lockout (Executive Mode)			
Enable executive mode	1X	Exe1 ↵	Lock the front panel.
Disable executive mode	ØX	Exe0 ↵	Unlock the front panel.
Lockout status	X	[X3] ↵	Show executive mode on/off status. For [X3]: 1 = on, 0 = off
Information Requests			
Request information	I	Chn [X1] • InACT [X4] • OutACT [X4] • Emul [X5] [X6] ↵	Show the selected input and output. [X4] = Activity of all inputs and outputs For SW USB Plus only: [X5] = Mouse emulation switch position [X6] = Keyboard emulation switch position For [X5] and [X6]: 0 = off (down); 1 = on (up)
Request part number	N	60-95n-nn ↵	Show the SW USB part number. SW2 = 60-952-02, SW4 = 60-953-02, SW4 USB Plus = 60-954-02.
Query firmware version	Q	n.nn ↵	Show firmware version, expressed to the second decimal place.
Example:	Q	1.01 ↵	The unit firmware version is 1.01.
Query version and build	*Q	n.nn.nnnn ↵	Show firmware version and build number.

Command	ASCII Command (Host to Unit)	Response (Unit to Host)	Additional Description
Reset			
Reset	[Esc] ZXXX ↵	Zpx ↵	Reset the switcher to factory default values.
Upload Firmware			
Upload firmware	[Esc] Upload ↵	...go ↵ Up1 ↵	Up1 appears after the upload is complete (see Updating Firmware on page 22 for information on the firmware updating process).

Reference Information

Mounting the SW USB Series Switcher

The SW USB Series switcher can be set on a table, mounted on a rack shelf, or mounted under a desk, podium, or table.

Tabletop Use

Four adhesive rubber feet are included with the SW USB switcher. For tabletop use, attach one foot at each corner on the bottom of the unit, and place the switcher in the desired location.

Rack Mounting

UL rack mounting guidelines

The following Underwriters Laboratories (UL) guidelines pertain to the safe installation of the equipment in a rack.

1. **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 ($TMA = +122^{\circ}\text{F}$, $+50^{\circ}\text{C}$) specified by Extron.
2. **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.
3. **Mechanical loading** — When mounting the equipment in the rack, ensure that uneven mechanical loading does not cause a hazardous condition.
4. **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.
5. **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).

Rack mounting procedure

To rack mount the SW USB, you can use one of the Extron 19-inch rack shelf mounting options (go to www.extron.com for part numbers).

1. If feet were previously attached to the bottom of the switcher, remove them.
2. Mount the SW USB Series switcher on the rack shelf, using two 4-40 x 3/16 inch screws in opposite (diagonal) corners to secure the unit to the shelf.

- 3.** Install blank panels or other units on the rack shelf as desired.
- 4.** Install the shelf in the rack.

The illustrations below show examples of how the SW USB can be mounted on different sized rack shelves.

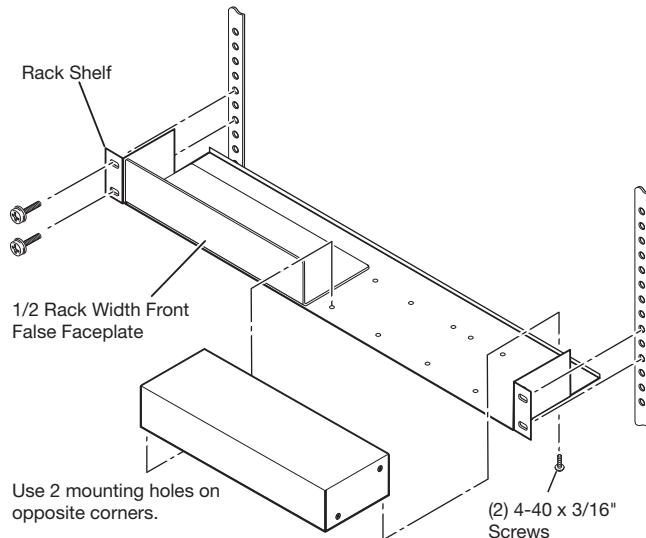


Figure 19. Mounting an SW USB Switcher on a 3.5-inch Deep Rack Shelf

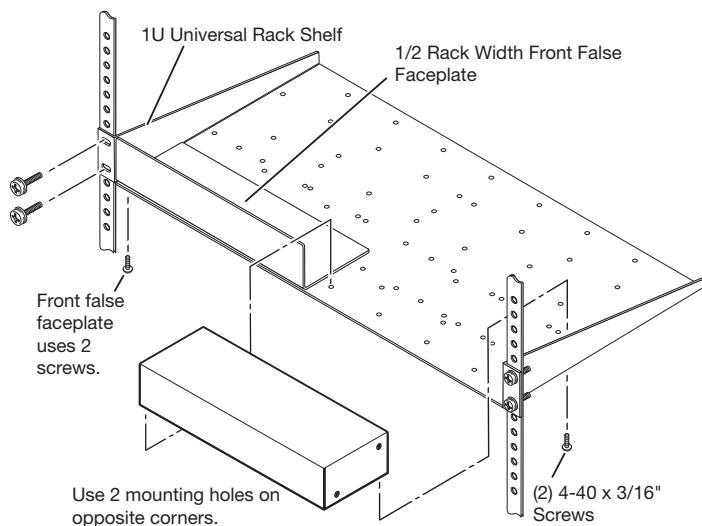


Figure 20. Mounting an SW USB Switcher on a Standard 9.5-inch Deep Rack Shelf

Furniture Mounting

To mount the SW USB switcher under a desk, table, or podium, use the optional MBU 123 Mini Under-Desk Mounting Kit, as follows:

- 1.** If rubber feet were previously attached to the bottom of the unit, remove them.
- 2.** Remove the two screws from one side of the SW USB. Retain the screws for possible later reassembly.
- 3.** Attach the brackets to the sides of the unit, using the provided machine screws.

4. Hold the unit with the attached brackets against the underside of the table or other furniture. On the mounting surface, mark the location of the screw holes in the bracket.
5. Drill 3/32 inch (2 mm) diameter pilot holes, 1/4 inch (6.3 mm) deep, into the mounting surface at the marked screw locations.
6. Insert #8 wood screws into the four pilot holes. Tighten each screw into the mounting surface until slightly less than 1/4 inch of the screw head protrudes.
7. Align the mounting screws with the slots in the brackets and place the unit against the surface, with the screws through the bracket slots.

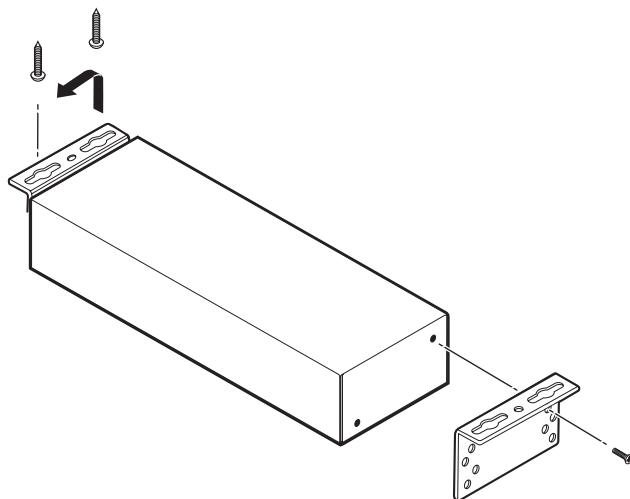


Figure 21. Mounting the SW USB under Furniture

8. Slide the unit slightly forward or back, then tighten all four screws to secure it in place.

Extron Warranty

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

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

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

Asia:

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

Japan:

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

Europe:

Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:

Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Middle East:

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

Africa:

Extron South Africa
3rd Floor, South Tower
160 Jan Smuts Avenue
Rosebank 2196, South Africa

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

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

USA: 714.491.1500 or 800.633.9876

Asia: 65.6383.4400

Europe: 31.33.453.4040 or 800.3987.6673

Japan: 81.3.3511.7655

Africa: 27.11.447.6162

Middle East: 971.4.299.1800

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

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

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