Extron
UCS SW 313 • Setup Guide

IMPORTANT NOTE:

Go to **www.extron.com** for the complete user guide, installation instructions, and specifications before connecting the product to the power source.


The UCS SW 313 is a three-input, one-output, 4K collaboration and presentation switcher with USB device connections for unified communications spaces. The inputs support USB-C and HDMI with USB. The USB-C input provides video, audio, USB data, and 60 watts of power from an internal power supply.

The switcher features two HDMI inputs, one USB-C input, and one HDMI output with CEC. The HDMI output enables resolutions up to 4K @ 60 Hz, and allows USB devices to connect at rates up to USB 10 Gbps. Five USB peripheral connections support USB cameras or mics. Three USB switched Host inputs and a built-in USB hub switch and share USB peripherals such as USB web cams, touch displays, and USB microphones. Audio can be extracted from any input. Other features include EDID Minder, HDCP 2.3, and configuration via Product Configuration Software (PCS) or Extron Simple Instruction Set (SIS) commands.

Auto input switching enables operation of collaboration spaces without a full control system, and it can be controlled via Ethernet, including RS-232 control to a local display. The UCS SW 313 allows integration of AV sources and USB cameras with Teams® and Zoom™ meetings in collaboration spaces.

The UCS SW 313 is housed in a 1U (1.75 inches or 44.4 mm) high, half rack (8.75 inches or 222 mm) wide, 6.0 inches (152 mm) deep enclosure. The compact enclosure mounts under a table or desk, or in an equipment rack.
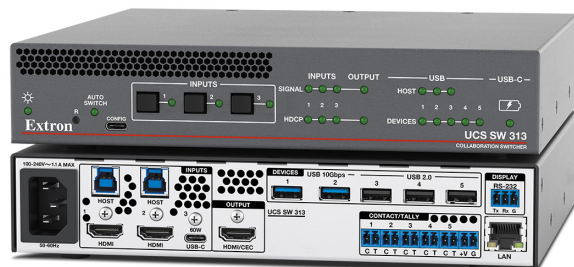
About this Guide

This guide provides instructions for an experienced installer to set up and operate this switching receiver. For full installation, configuration, and operation details, see the *UCS SW 313 User Guide*, available at **www.extron.com**. In this guide, the terms "UCS," "UCS SW 313," and "switcher" are used interchangeably to refer to the UCS SW 313.

Installation Steps

1. Turn off all of the equipment and disconnect the unit from the power source.

2. If desired, mount the switcher on a rack shelf or furniture (mounting kits are available at **www.extron.com**).

3. Make rear panel connections as needed:

   - **Inputs 1 and 2** — Connect an HDMI source and a supporting host device to one or both HDMI and associated host input connectors (see **figure 1**, **J** and **B** on the next page).

     > **NOTE:** LockIt cable lacing brackets are provided to secure the HDMI cables to the ports to reduce stress on the HDMI connectors and prevent signal loss due to loose cable connections (see **Installing LockIt HDMI Cable Lacing Brackets** on page 4).

   - **USB-C input** — Connect a USB-C source to the rear panel USB-C input connector (**I**).

   - **Video output** — Connect an HDMI display to the HDMI output (**C**) to display the transmitted digital image.

   - **USB peripheral devices** — Connect one or more peripheral USB devices (for example, keyboards or mice) to the USB 3.2 and 2.0 output device ports (**D** and **E**) as desired.

     > **NOTE:** These ports do not provide power if the connected device is getting power from an external power supply.

   - **RS-232 display control port** — Connect a display to this port (**F**) to control the display via RS-232.

   - **Control port** — Connect a computer to either of the following control ports to configure and control the UCS SW 313 via PCS or SIS commands:

     - **Ethernet port** — Connect a network to the USB SW 313 LAN port (**G**) via a standard Ethernet cable.

     - **USB-C CONFIG port** — Connect a a USB type A-to-USB-C cable between a USB port on the computer and the front panel USB-C connector.

4. Connect power to the IEC power connector (see figure 1, **A**).

5. Configure the switcher using PCS (see the *UCS SW 313 Help File*) or SIS commands (see the *UCS SW 313 User Guide*) as necessary for functions such as autoswitching, contact closure, and front panel lock mode.

6. Power on the host devices. The switcher is now ready for operation.

Rear Panel Connections
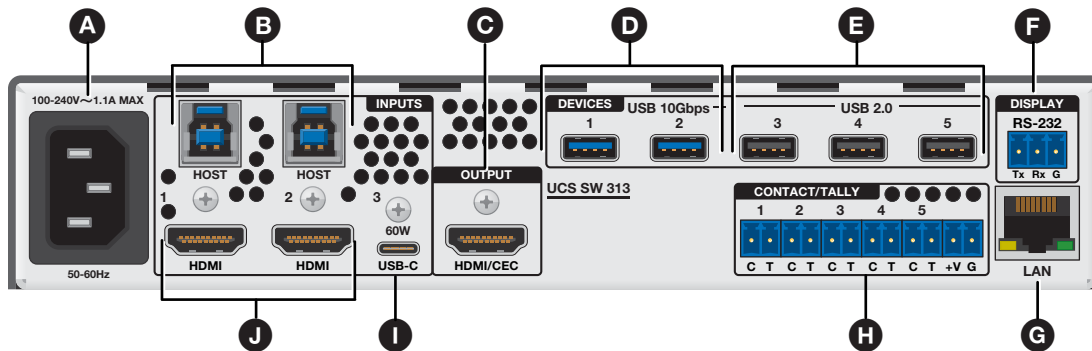
A IEC power connector	**D** USB 10 Gbps device ports	**G** LAN port		**J** HDMI inputs
B USB host ports	**E** USB 2.0 device ports	**H** Contact/Tally ports		
C HDMI output (with CEC)	**F** Display Control RS-232 port	**I** USB-C input		

Figure 1.   UCS SW 313 Rear Panel

A **IEC power connector** — Connect a 100-240 VAC IEC power cable to this connector to provide AC power to the switcher.

B **USB host ports** — Connect PCs or other USB host devices to these female USB type B connectors for USB 3.2 input in support of HDMI inputs 1 and 2 (**J**).

C **HDMI output (with CEC)** — Connect an HDMI or DVI (with an appropriate adapter) output device to this connector for HDMI video with CEC and embedded audio. The output supports resolutions up to 4096x2160 @ 60 Hz, 8-bit, with 4:4:4 chroma sampling.

> **NOTE:** Use the provided LockIt Pro Lacing Brackets to secure the HDMI connectors (see **Installing LockIt HDMI Cable Lacing Brackets** on page 4).

D **USB 10 Gbps device ports** — Connect USB 3.2, 2.0, or 1.*x* devices and HIDs (peripherals such as keyboards, mice, or storage drives) to these blue USB ports. USB 3.2 signals from the inputs are routed to these ports. Each port provides up to 5 V, 900 mA of power to the connected devices.

> **NOTE:** These ports do not provide power if the connected device is receiving power from a separate power supply.

E **USB 2.0 device ports** — Connect USB 2.0 or 1.*x* devices to these black USB Type A ports. USB 2.0 and 1.*x* signals from the inputs are routed to these ports. Each port provides up to 5 V, 500 mA of power.

> **NOTE:** These ports do not provide power if the connected device is receiving power from a separate power supply.

F **RS-232 Display control port** — Connect a display to this RS-232 port, which can be configured via PCS to control the display in modes 0, 1, or 2 (see the *UCS SW 313 User Guide* and the *UCS SW 313 Help File* for more information). The image at right shows how to wire this port.
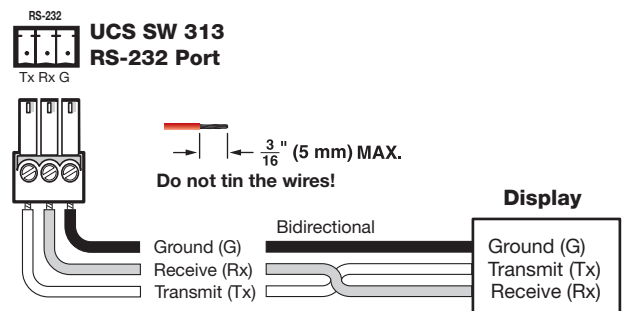
G **LAN port** (see **figure 1** on page 2) — Connect the switcher to an active network using an Ethernet cable terminated with an RJ-45 connector.

Default LAN port settings (if DHCP is not enabled)**:**

- **Rear panel LAN IP address** — 192.168.254.254

- **Subnet mask** — 255.255.255.0

- **Gateway** — 0.0.0.0

- **DNS** — 127.0.0.1

- **Front panel USB-C port IP address** — 203.0.113.22 at port 22023

- **Username** — admin

- **Password** — The product unit serial number. If an absolute system reset (for example, the ⌷Esc⌷ZQQQ↵ SIS command) is performed, all passwords on this device are reset to extron.

NOTES:

- DHCP is disabled by default.

- If the UCS is set as a DHCP client and cannot locate a DHCP server, the port is set to a link local address.

- All Ethernet interfaces on the UCS SW 313 support up to 10/100/1000 Mbps (Gigabit Ethernet).

To wire the LAN connector (see figure 2):

- Use a straight-through cable for connection to a switch, hub, or router.

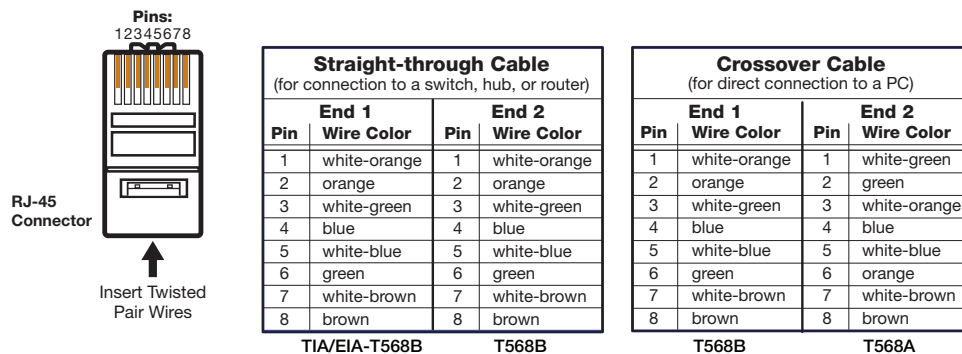- Use a crossover cable or a straight-through cable for connection directly to a PC.

Pins:
12345678

RJ-45 Connector

Insert Twisted Pair Wires

Straight-through Cable (for connection to a switch, hub, or router)				Crossover Cable (for direct connection to a PC)			
End 1		**End 2**		**End 1**		**End 2**	
Pin	Wire Color	Pin	Wire Color	Pin	Wire Color	Pin	Wire Color
1	white-orange	1	white-orange	1	white-orange	1	white-green
2	orange	2	orange	2	orange	2	green
3	white-green	3	white-green	3	white-green	3	white-orange
4	blue	4	blue	4	blue	4	blue
5	white-blue	5	white-blue	5	white-blue	5	white-blue
6	green	6	green	6	green	6	orange
7	white-brown	7	white-brown	7	white-brown	7	white-brown
8	brown	8	brown	8	brown	8	brown
TIA/EIA-T568B		T568B		T568B		T568A	

**Figure 2.** **Wiring for Ethernet Control**

H **Contact/Tally ports** — (Optional) Wire a push-button switch or other contact closure device to pin **C** (contact, see **❷** in the image below, right) and pin **G** (ground, **G**) of the 2-pole connectors (see the image below right). These ports are configured via PCS or SIS commands.

- To make input selections via contact closure, short the **C** pin of each port momentarily to the G (ground) pin (**❺**). Input switching occurs immediately on contact, and not on the release.

  Alternatively, wire a Show Me (SM) cable to the **C** and **T** pins.

  The contact closure ports have the following functions:

Port Number	Function	Pin Number	Function
1	Input 1	4	AUX
2	Input 2	5	AUX
3	Input 3	G	Ground

❶

CONTACT/TALLY
1   2   3   4   5
C T C T C T C T C T +V G
❷   ❸ ❹ ❺
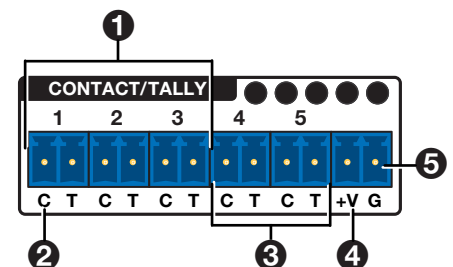
- **Ports 1 - 3** — (See **❶** in the Contact/Tally ports diagram, above right) These ports can be configured as a mutually exclusive input group to allow for input switching via SM cables. The selected input tally lights steadily when displayed, or blinks when muted. Optionally, successive contact closures of the current input can be configured to toggle A/V mute or output sync mute.

  If **None** is selected, contact events broadcast unsolicited SIS responses for action via external control system. Tally ports are configured via an external control system.

- **Ports 4 and 5** — (**3**) These contact ports can be configured as follows via PCS:
  - **None** — Contact events broadcast unsolicited SIS responses for action via an external control system. Tally ports are configured via external control system.
  - **Single switch** — Individual contact input triggers user-defined events (such as `Volume Up`), along with an optional repeat rate for press and hold actions (such as ramping volume up several steps). The Tally illuminates when the contact port is closed.
  - **Toggle switch** — Individual contact input toggles between two sets of user-defined events (such as mute and unmute). The Tally illuminates when the contact port is closed.
  - **Group switch** — Pairs two contact inputs to act as a mutually exclusive pair, which trigger events such as system on vs. system off. The tally on the last activated contact remains illuminated.
- **+V connector** — (**4**) The +V pin constantly outputs +5 VDC power with 200 mA total (shared between pins). Use this pin when power is needed for external Tally LEDs, such as those on the Extron CCB 30 contact closure remote.

See the *UCS SW 313 User Guide*, available at **www.extron.com**, for information on contact closure.

I **USB-C input** — Connect a USB-C source device, such as a laptop or PC, to this USB-C port.

This port provides up to 60 watts of power to the connected source. If the source requires more than 60 watts, this port keeps the device functioning but does not charge it. If the source is connected to an external power supply, the UCS SW 313 does not send power to it.

J **HDMI inputs** — Connect HDMI (or DVI with appropriate adapters) video input sources to these female HDMI ports for HDMI video with embedded audio.

> **NOTE:** LockIt cable lacing brackets secure the HDMI cables to the ports to reduce stress on the HDMI connectors and prevent signal loss due to loose cable connections (see "Installing LockIt HDMI Cable Lacing Brackets" for installation instructions).

## Installing LockIt Pro HDMI Cable Lacing Brackets

Use the included LockIt Pro lacing brackets to securely fasten the HDMI cables to the UCS SW 313 HDMI connectors as follows.

1. Plug the HDMI cable into the rear panel connection.
2. Loosen the HDMI connection mounting screw from the panel enough to allow the LockIt cable 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.

> **ATTENTION:**
> - Do not overtighten the HDMI connector mounting screw. The shield it fastens to 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.

4. Loosely place the included tie wrap around the HDMI connector and the LockIt cable lacing bracket as shown.
5. While holding the connector securely against the lacing bracket, use pliers or similar tools to tighten the tie wrap, then remove any excess length.
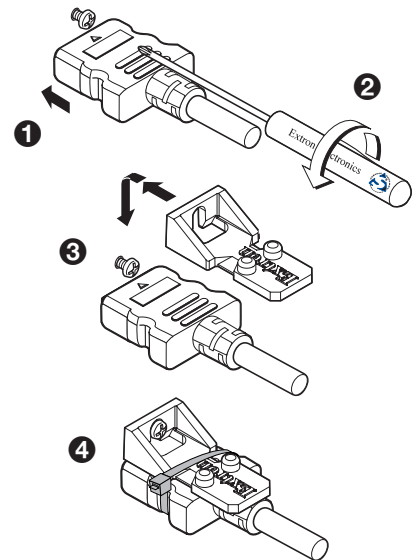
Configuration

The following options are available to configure the UCS SW 313:

- **Product Configuration Software (PCS)** — Extron PCS is available at **www.extron.com**. Download and install the latest version to a PC connected to the switcher either via Ethernet or the front panel USB CONFIG port (see figure 3, Ⓐ). For full instructions while PCS is running, press <F1> on the keyboard, click the **?** button in PCS, or select the **Help File** option from the PCS Device Tab drop-down list to view the *UCS SW 313 Help File*.

- **Simple Instruction Set (SIS) commands** — The UCS SW 313 can be configured and controlled via SIS commands when connected to a host computer or other device (such as a control system). Attach the host device to the rear panel LAN connector (see **figure 1**, Ⓖ on page 1), or to the front panel USB-C CONFIG port (Ⓐ). For a list of SIS commands and variables, see the *UCS SW 313 User Guide*, available at **www.extron.com**.

- **Internal web pages** — The factory-installed web pages can be used to view device status, perform certain configuration functions, and set a password. To view this page in a web browser, connect the UCS to a LAN. The default IP address is 192.168.254.254. A password is required the first time the page is opened and remains in effect until changed or removed.

> **NOTE:** The factory configured passwords for all accounts on this device have been set to the device serial number. An absolute system reset changes the password setting to extron. Passwords are case sensitive.

Firmware Updates

When new firmware versions become available, download the updates from the Extron website. New firmware versions can be uploaded using PCS, the internal web page, SIS commands, and the Firmware Loader software, available at **www.extron.com** (see the *UCS SW 313 User Guide* for details).

Front Panel Features

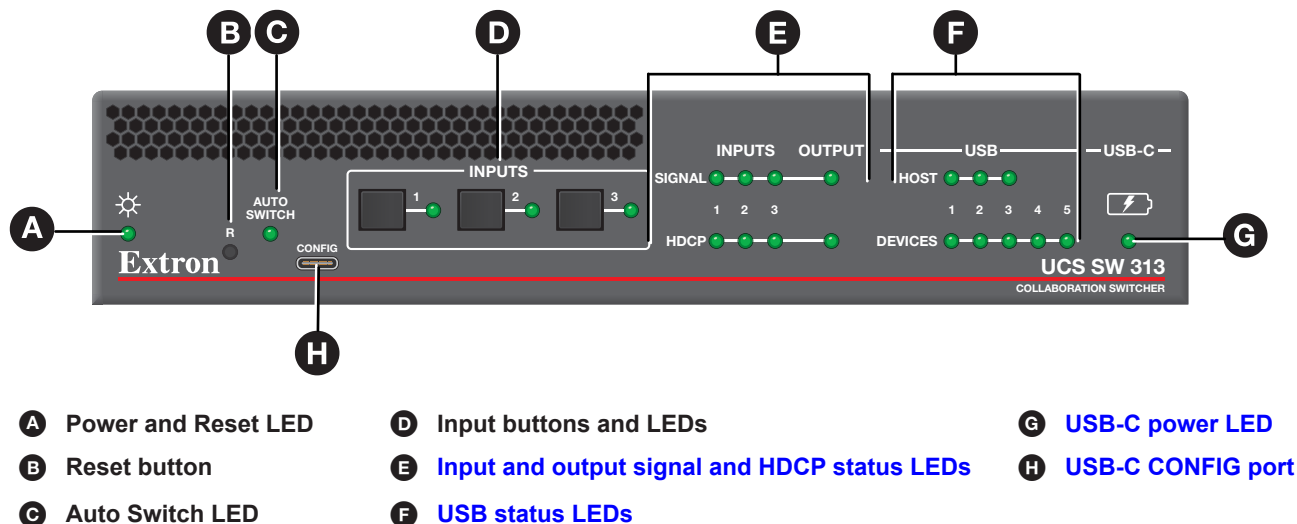|		
Ⓐ **Power and Reset LED**	Ⓓ **Input buttons and LEDs**	Ⓖ **USB-C power LED**
Ⓑ **Reset button**	Ⓔ **Input and output signal and HDCP status LEDs**	Ⓗ **USB-C CONFIG port**
Ⓒ **Auto Switch LED**	Ⓕ **USB status LEDs**	

Figure 3. UCS SW 313 Front Panel

Ⓐ **Power and reset LED** — Lights when the unit has power. When the R (reset) button (see figure 3, Ⓑ) is pressed and held, this LED blinks every 3 seconds to indicate the level of reset that is initiated if the button is released and momentarily pressed again at that point.

Ⓑ **Reset button** — Using an Extron Tweeker (provided) or other small screwdriver or stylus, press the R button to reset the unit. There are three available reset modes:

- Press and hold the **Reset** button for 3 seconds to return all settings to the factory default, excluding IP settings.

- Press and hold the **Reset** button for 6 seconds to return all settings to default, including IP settings.

- Press and hold the **Reset** button while applying power to return all settings to default, and revert the firmware to the factory installed version.

Ⓒ **Auto Switch LED** — Lights when auto-switching is in effect. The switcher can be configured via SIS commands or PCS to automatically select the lowest to highest numbered input with an active signal.

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

E **Input and output signal and HDCP status LEDs** (see **figure 3** on page 5) — These stacked green LEDs light as follows:

- **SIGNAL LEDs** — Light when active video content is detected on the corresponding input or the output.
- **HDCP LEDs** — Light when the corresponding input or the output signal is HDCP encrypted.

> **NOTES:**
> - HDCP is authenticated on each input regardless of the currently selected source.
> - 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.

F **USB status LEDs** — These stacked green LEDs light as follows:

- **HOST LEDs** — Light to indicate the USB host status for the corresponding input.
- **DEVICES LEDs** — Light to indicate the status for the corresponding USB device port.

G **USB-C power LED** — Lights to indicate switcher power delivery to the connected USB-C source.

H **USB-C CONFIG port** — Connect the computer to this USB-C port for product configuration using Extron SIS commands or PCS.

Application Example

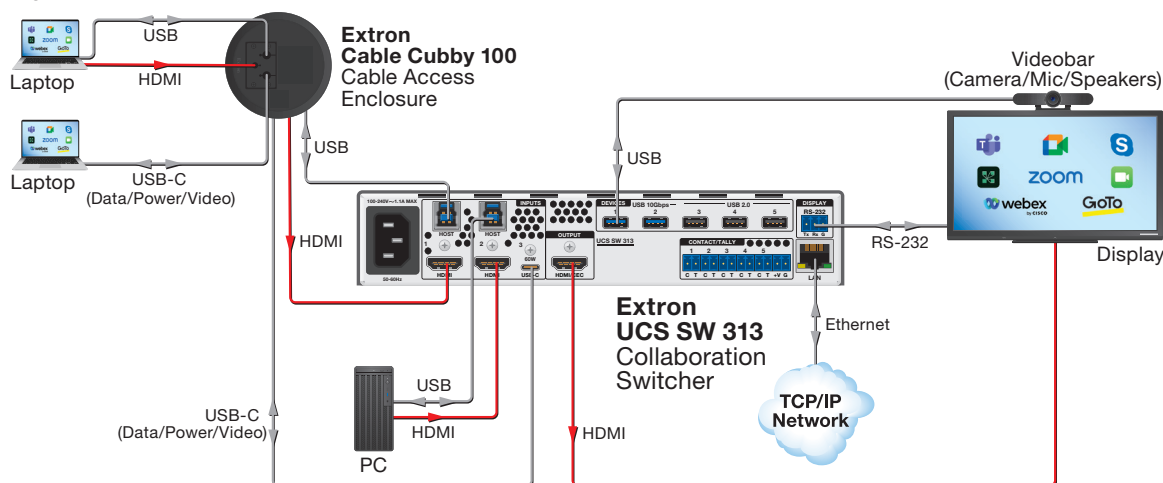Figure 4 shows an example of how the UCS SW 313 can be connected.

Figure 4.   Application Example for UCS SW 313