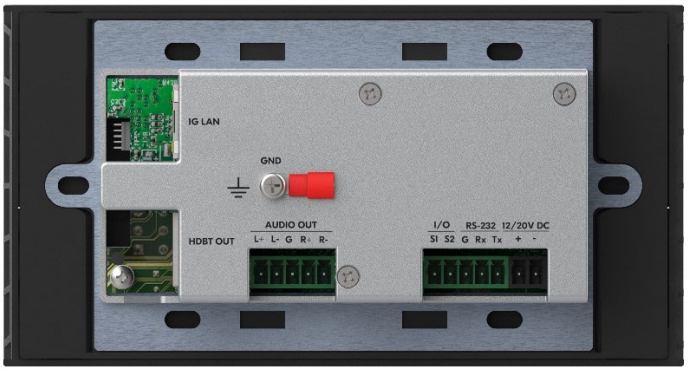
USER MANUAL

MODEL:

SWT3-22-HU-WP-T
2x2 4K60 USB-C/HDMI Wallplate Switcher Transmitter



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Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment.
- Review the contents of this user manual.

Go to https://www.kramerav.com/downloads/SWT3-22-HU-WP-T-EU/UK / https://www.kramerav.com/downloads/SWT3-22-HU-WP-T-US to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

Achieving Best Performance

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables).
- Do not secure the cables in tight bundles or roll the slack into tight coils.
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality.
- Position your Kramer SWT3-22-HU-WP-T away from moisture, excessive sunlight and dust.

Safety Instructions

Caution:

- This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.
- For products with relay terminals and GPI\O ports, please refer to the permitted rating for an external connection, located next to the terminal or in the User Manual.
- There are no operator serviceable parts inside the unit.

Warning:

- If using a power cord, only use the Kramer approved power cord.

Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and

recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at www.kramerav.com/quality/environment.

Overview

Congratulations on purchasing your Kramer SWT3-22-HU-WP-T 2x2 4K60 USB-C/HDMI Wallplate Switcher Transmitter.

SWT3-22-HU-WP-T is a high−performance auto−switcher transmitter with two inputs – one USB−C and one HDMI+USB Host, and independently routable HDMI and extended−range HDBaseT outputs. It extends 4K60Hz (4:4:4) HDMI, USB, Ethernet, RS−232, IR and power signals over twisted pair cable to a remote compatible receiver. The unit includes an active USB host and supports switching of local and remote USB peripherals, such as a room camera and microphone, making it ideal for hybrid meetings with both room and online participants.

SWT3-22-HU-WP-T-US device includes HDBT PoE Powering.

Exceptional Quality

- Hybrid-meeting Collaborative Switching - Controllable coupled–signals switching of both AV and USB host inputs, for concurrent connection with AV output and space USB devices, allows collaborative hybrid meeting where multiple meeting participants are switched to share their content with both room and online meeting participants.
- BYOD Ease and Convenience - Connect any DP−Alt−Mode−capable USB−C device as an AV presentation source, while providing the connected device with USB 2.0 and Ethernet connection, and (if PD−2.0−capable) up to 60 watts of power, via a single USB−C cable connection only.
- High Performance Standard Extender - Professional HDBaseT extender for providing extended–reach signals over twisted–pair copper infrastructures. SWT3-22-HU-WP-T is a standard extender that can be connected to any market–available HDBaseT–compliant extension product. For optimum extension reach and performance, use recommended Kramer cables.
- HDMI Signal Switching - HDCP 2.3 compliant, supporting deep color, x.v.Color™, CEC, HDMI uncompressed audio channels, Dolby TrueHD, DTS−HD, 2K, 4K, and 3D as specified in HDMI 2.0
- Flexible USB Switching and Extension- An active USB 3.2 host is connected to the switcher transmitter on either the transmitter or receiver sides. USB 2.0 signals are extended between the switcher transmitter and receiver sides, enabling connection and switching of the active USB host to both local USB 3.2 and remote USB 2.0 devices, such as camera and audio devices, or HID (Human Interface Devices) mouse or keyboard devices.
- I-EDIDPro™ Kramer Intelligent EDID Processing™ - Intelligent EDID handling, processing and pass−through algorithm that ensures Plug and Play operation.
- Multi–channel Audio Transmission - Up to 32 channels of digital stereo uncompressed signals for supporting studio–grade surround sound.
- Audio De-embedding - The digital audio output signal is de−embedded, converted to an analog signal and sent to the stereo balanced analog audio output. This enables playing the audio on a locally connected professional audio system

and speakers, in addition to playing it on the speakers connected to the AV acceptor device (such as TVs with speakers).

Advanced and User-friendly Operation

- K-Pair Support - Automatically switches upon connection or disconnection of a local or extended input.
- Auto Switcher Ease of Use - Automatically switches to a source when it is plugged in (according to user−configured preferences, such as last−connected input).
- Easy Online Meeting System Integrated Connectivity - Built–in flexible auto–disconnection operation of USB devices, such as room cameras and soundbars, enable detection of BYOD presenter disconnection by online meeting systems for their auto–activation, convenient integration, and ease of end–user operation according to space changing hybrid session needs.
- Display On/Off Operation - Meeting presentation is simplified by manually or automatically turning ON/OFF a CEC–enabled or serially−controlled display when the presentation source is plugged in / unplugged (with user–defined shut–down delay).
- Simple Control - Remote IP−controller connection, browser operation webpage, local panel buttons, or remotely connected contact−closure buttons, for easy and fully flexible user ports selection, signals routing, and switcher control.

Flexible Connectivity

- Built–in Intelligent Control Gateway - Remote IP–driven intelligent control of connected AV, USB and sensor devices via CEC, RS–232, IR or I/O. Eliminating the need for an external control gateway, this feature reduces installation complexity and costs, to enable easy integration with control systems, such as Kramer Control.
- Ethernet Extension - Ethernet interface data flows in both directions, allowing extension of up to 1 Gbps Ethernet connectivity for LAN communication and device control.
- Bidirectional RS–232 Extension - Serial interface data flows in both directions, allowing data transmission and device control.
- Secured Network Connection - Standard IT−grade 802.1x authentication for secured IT LAN connectivity.
- Comprehensive Management - Local panel indication LED to facilitate easy local maintenance and troubleshooting. Remote IP–driven firmware upgrade and management via user–friendly embedded web pages and optional whole site management system, ensure lasting and field proven deployment.
- Easy and Elegant Installation - Compactly fits into standard WW 2–gang in–wall box size, supporting decorative integration with room deployed user interfaces such as electrical switches. Wall–plate installation is fast and cost–effective.

Typical Applications

SWT3-22-HU-WP-T is ideal for the following typical applications:

- Enterprise and education hybrid meeting rooms and classrooms.
- Hybrid user connection element in advanced hybrid meeting solutions.

Controlling your SWT3-22-HU-WP-T device

Control your SWT3-22-HU-WP-T directly via the front panel push buttons, or via:

- A browser, using the built-in, user-friendly Web pages.
- RS-232 serial commands transmitted by a touch screen system, PC, or a serial controller.

Defining SWT3-22-HU-WP-T

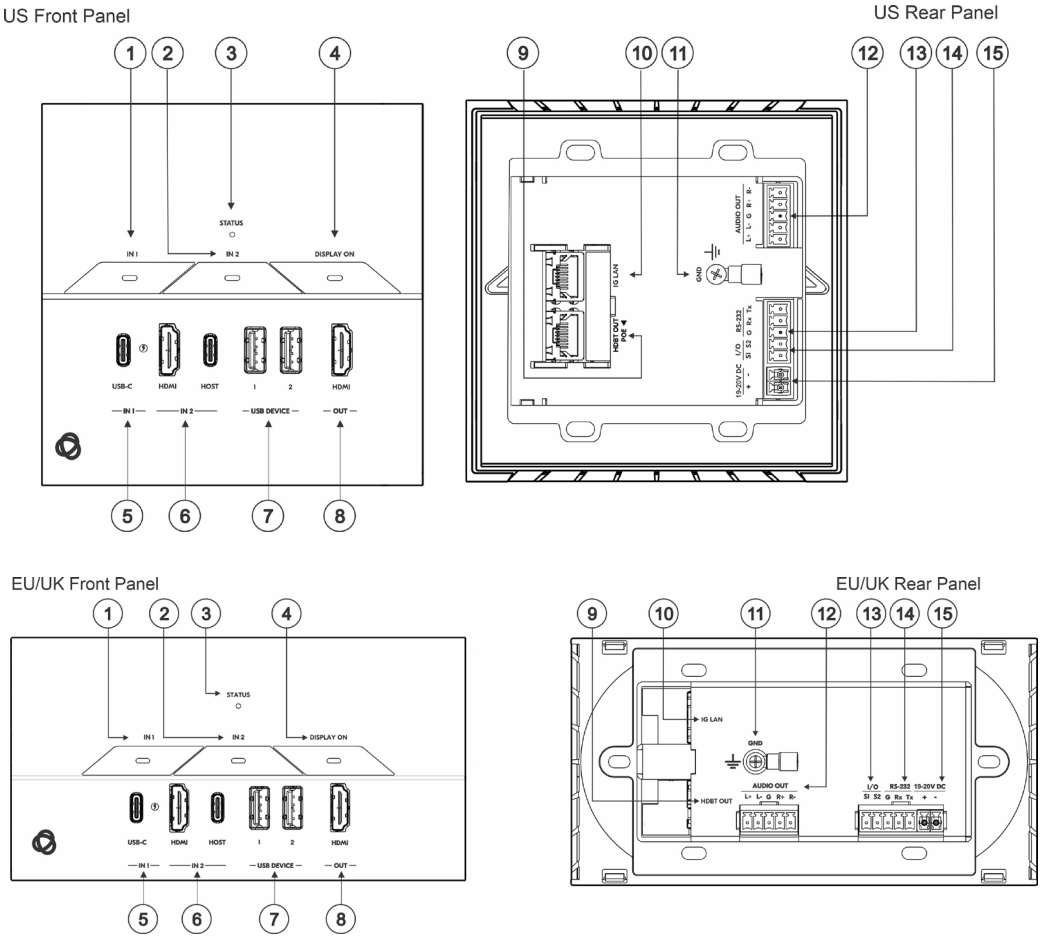


Figure 1: SWT3-22-HU-WP-T 2x2 4K60 USB-C/HDMI Wallplate Switcher Transmitter Front and Rear Panel

#	Feature	Function
1	IN 1 Button (USB-C)	Press to select the USB-C input port. The button lights white when an active signal is detected.
2	IN 2 Button (HDMI, USB-C Host)	Press to select HDMI port. Press to toggle between the HDMI and Host ports. The button lights white when an active signal is detected.
3	STATUS LED	Lights green when there is an HDBT link and an active input signal.
4	DISPLAY ON Button	Press to toggle the remote display on or off. The button lights white after instructing the display to turn on.
5	IN 1 USB-C Connector	Connect to the USB-C source (AV + USB Host + LAN): - that supports DisplayPort Alternate Mode, (for example, a laptop) to share content. - to connect to the LAN, using your USB-C wired connection. - to charge the connected sources (that supports USB Power Delivery 2.0).

			While charging, the charging icon (to the right of the connector) becomes visible and lights orange.
6	IN 2	HDMI Connector	Connect to a compatible HDMI display.
		USB-C Host	Connect to a USB-C host (for example, a room PC).
7	USB DEVICE USB A 3.1 Connector 1 & 2		Connect to the USB local peripheral devices (for example, a USB camera, a soundbar, microphone, a keyboard & mouse, and so on).
8	OUT HDMI		Connect to a compatible HDMI display.
9	HDBT OUT RJ-45 Connector		Connect to the HDBT IN RJ-45 connector on a receiver (for example, EXT3-XR-TR).
10	1G LAN RJ-45 Connector		Connect to a LAN to provide Network and Internet to the source device that is connected to the USB-C IN port, and/or Ethernet extension to the receiver.
11	GND Grounding Screw Ring Tongue Terminal		Connected to grounding wire.
12	AUDIO OUT 5-pin Terminal Block Connector		Connect to a balanced stereo analog audio acceptor.
13	I/O 2-pin Terminal Block		Connect to: • Input-triggering devices (for example, remote buttons or sensors), **OR** • Output-triggered devices (for example, remote alarm LED indication). Each GPIO port may be configured as a digital input, digital output, or analog input port.
14	RS-232 3-pin Terminal Block Connector		Connect to an RS-232 controlled device (for example, the connected PTZ USB camera), or to an RS-232 controller.
15	19/20V DC		Use the included 19V 6A power supply for powering the unit and charging the source device connected to the USB-C port. For SWT3-22-HU-WP-T-US only: - This power input may be left unconnected if the device is powered by a PoE PSE receiver unit. - In case of PoE powering, USB-C charging is not supported.

Mounting the SWT3-22-HU-WP-T Devices

This section provides instructions for mounting SWT3-22-HU-WP-T. Before installing, verify that the environment is within the recommended range.

- Operation temperature – 0° to 40°C (32 to 104°F).
- Storage temperature – -40° to +70°C (-40 to +158°F).
- Humidity – 10% to 90%, RHL non-condensing.

Caution:

- Mount SWT3-22-HU-WP-T before connecting any cables or power.

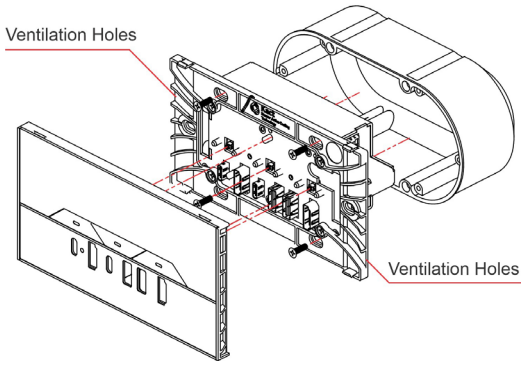
Warning:

- Ensure that the environment (e.g., maximum ambient temperature & air flow) is compatible with the device.
- Avoid uneven mechanical loading.
- Appropriate consideration of equipment nameplate ratings should be used for avoiding overloading of the circuits.
- Reliable earthing of rack-mounted equipment should be maintained.
- Maximum mounting height for the device is 2 meters.

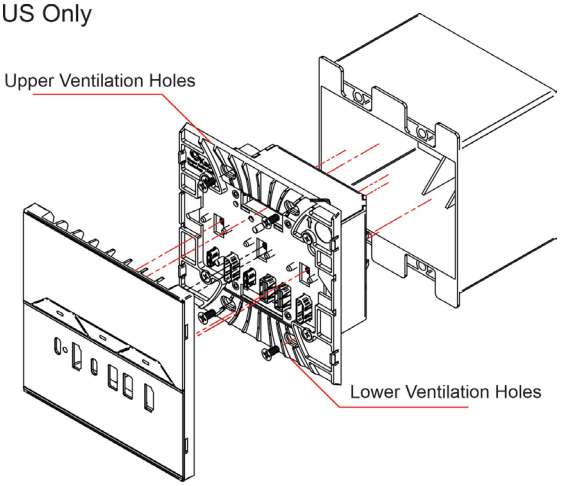
Insert the device into the in-wall box (note that first you need to connect the HDBT cable and power) and connect the parts as shown in the illustrations below.

Caution: When installing the device, take care not to obstruct the upper and lower ventilation holes.

EU/UK Only



US Only



Caution:

- EU: 2 gang in-wall junction box, with a cut-hole diameter of 2x68mm and depth that can fit in both the device and the connected cables (DIN 49073).
- UK: 2 gang in-wall junction box (BS 4662), 135x75mm (W, H) and depth that can fit in both the device and the connected cables.

Connecting SWT3-22-HU-WP-T

This section provides instructions for connecting the SWT3-22-HU-WP-T-EU/UK transmitter to a compatible receiver (for example, Kramer SWT3-31-HU-TR).

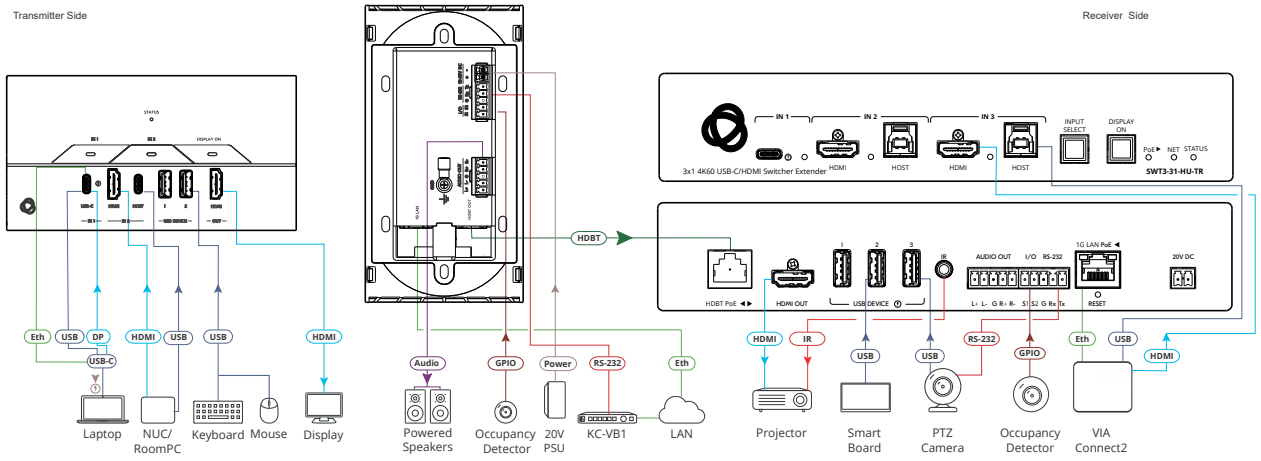


Figure 2: Connecting SWT3-22-HU-WP-T-EU/UK to SWT3-31-HU-TR

To connect SWT3-22-HU-WP-T-EU/UK as illustrated in the example in Figure 3:

1. Connect the inputs:

   Connect USB-C source (1) (for example, a server or a laptop) to the USB-C IN connector on the SWT3-22-HU-WP-T-EU/UK.

   Connect HDMI source (1) (for example, a NUC or Room PC) to the HDMI IN connector on the SWT3-22-HU-WP-T-EU/UK.

2. Connect the outputs:
   - Connect the HDMI OUT source (6) on the SWT3-22-HU-WP-T-EU/UK to HDMI devices (for example, a display).
   - Connect the AUDIO OUT 5-pin terminal block connector (11) on the SWT3-22-HU- WP-T-EU/UK to a balanced stereo audio acceptor (for example, an audio amplifier).
3. Connect the HDBT OUT port (8) on the SWT3-22-HU-WP-T to the HDBT IN on the SWT-31-HU-TR.
4. Connect the USB type A ports:
   - On the SWT3-22-HU-WP-T-EU/UK, connect a mouse and a keyboard to the two USB type A ports (7) .
   - On the SWT3-31-HU-TR, connect a PTZ camera, soundbar or smartboard to the USB type A ports.
5. Connect the control ports:
   - Connect the 1G LAN (PoE) RJ-45 port (9) on the SWT3-22-HU-WP-T-EU/UK to a LAN.
   - Connect the SWT3-22-HU-WP-T-EU/UK DATA RS-232 3-pin terminal block connector to a controller (13) (for example, Kramer KC-VC1).

- Connect the SWT3-22-HU-WP-T-EU/UK I/O 2-pin terminal block connector (12) to an occupancy detector.
- Connect the SWT3-31-HU-TR DATA RS-232 3-pin terminal block connector to an RS- 232 controlled device (for example, the PTZ camera).

6. Connect the power adapter to SWT3-22-HU-WP-T-EU/UK device.

Connecting the Audio/Input Output

The following are the pinouts for connecting the input/output to a balanced or unbalanced stereo audio acceptor:

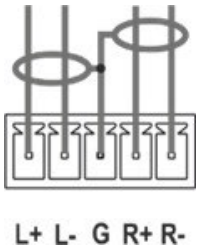


Figure 3: Connecting to a Balanced Stereo Audio Acceptor

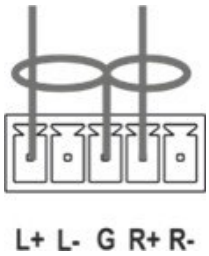


Figure 4: Connecting to an unbalanced Stereo Audio Acceptor

Connecting to a SWT3-22-HU-WP-T device with RS-232

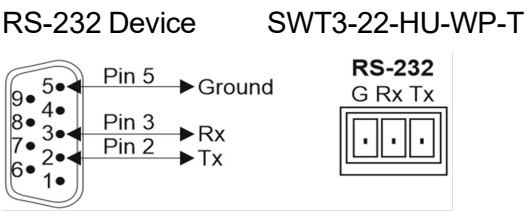
You can connect via an RS-232 connection or using, for example, a controller.

SWT3-22-HU-WP-T features an RS-232 3-pin terminal block connector to extend RS-232 signals via the SWT3-22-HU-WP-T transmitter to the connected receiver.

Connect the RS-232 terminal block on the rear panel of the to a device, as follows:

From the RS-232 9 pin D-sub serial port connect:

- Pin 2 to the TX pin on the SWT3-22-HU-WP-T RS-232 terminal block
- Pin 3 to the RX pin on the SWT3-22-HU-WP-T RS-232 terminal block
- Pin 5 to the G pin on the SWT3-22-HU-WP-T terminal block



Operating and Controlling SWT3-22-HU-WP-T

Principles of Operation

This section describes the following actions:

Coupled or Individual AV+USB Switching

SWT3-22-HU-WP-T multi-signal switching of any of the inputs to the AV output and connected USB devices, is configurable to use one of the following operation modes:

- USB follows AV coupled routing ( ) – Selecting an AV input, routes the AV signal to the AV output and connects, in parallel, the input-associated USB host with the connected USB devices.

- USB signal individual routing ( ) – Selecting an AV input, routes the AV signal to the AV output only. The USB host can be independently selected to connect with the connected USB devices (see Individual USB Host Routing.

See Routing AV and USB Host Signals on page 21.

This is very useful in hybrid sessions, for convenient switching between multiple presenters using either their BYOD laptops and/or connected space PC devices.

Flexible SWT3-22-HU-WP-T Auto Switching Policy

Set the switching policy to:

- Manual – Select an input manually and switching occurs whether a live signal is present on the input or not.
- Auto – Auto Switching selection is performed according to either the Last Connected or the Priority policy.

In Last Connected policy:

- If a signal is plugged in this mode, SWT3-22-HU-WP-T will switch to it.
- If the signal on the current input is lost, SWT3-22-HU-WP-T automatically reverts to the last connected input.

The auto-switching delay depends on the configurable signal-lost timeout.

In Priority policy:

- If a signal with a higher priority than the current one is plugged in this mode, SWT3-22-HU-WP-Twill switch to it.
- When the input sync signal is lost for any reason, the input with a live signal and next in priority is selected automatically.

The auto-switching delay depends on the configurable signal-lost timeout. Inputs priority is configurable; the default setting is USB-C1> HDMI 2

In both Last Connected and Priority modes, manually selecting an input (using the front panel, remote or web UI input select button) overrides automatic selection

See Using Embedded Web Pages on page 19

Online Meeting Systems Integration

USB device ports can be set to auto-disconnect following presenter disconnection, to allow smooth integration and auto-activation of connected online meeting room systems.

See Auto-disconnecting a USB Device on Inactive Host on page 29.

Flexible USB-C Mix of Signals

AV and USB signals mix are combined and the USB-C host port data rate, can be flexibly set to either one of:

- High USB 3.0 data rate and lower 4K60 4:2:0 AV resolution mix, or
- High 4K60 4:4:4 AV resolution and lower USB 2.0 data rate mix

See Setting USB-C Host Port Signals Mix on page 28.

Routing IP-Driven Control Signals via Built-in Control Gateway

Using the LAN, remote IP connected clients can send and receive CEC, RS-232, I/O and IR commands via SWT3-22-HU-WP-T's built-in control gateway, to control devices connected to these control ports. The built-in control gateway sends the control commands (converted from the client received IP messages) to the connected controlled devices, and distributes the responses received from the connected controlled devices to all connected clients.

See Setting Control Gateway Properties on page 29.

Flexible Remote Buttons Control

Remote contact-closure buttons can be connected to the I/O ports, for easy end-user control of device functions by button press and release operation. Flexible configuration of button press/release actions and latching (default) or momentary operation mode, enable simple and custom control according to user needs.

See Configuring Remote Buttons on page 36.

Controlling Display Power On/Off

SWT3-22-HU-WP-T communicates with the remote HDMI display that is connected to the HDBaseT receiver, via the pass-through CEC channel. Use the DISPLAY ON button on the SWT3-22-HU-WP-T to turn the receiver's display on or off.

The DISPLAY ON button LED lights blue when display on the receiver side is powered on.

SWT3-22-HU-WP-T supports CEC functionality and has been tested and verified with many display models. However, Kramer cannot guarantee CEC compatibility with all CEC displays due to command variations and proprietary commands implemented by some manufacturers in some of their displays.

See Associating CEC Commands to DISPLAY ON/OFF on page 38.

Using Front Panel Buttons

SWT3-22-HU-WP-T front panel buttons enable the following actions:

- Selecting an INPUT.
- Turning the display on or off via the DISPLAY ON or sending on or off commands that are configured via the UI (see Using Embedded Web Pages on page 19).

Operating via Ethernet

You can connect toSWT3-22-HU-WP-T via Ethernet using either of the following methods:

- Directly to the PC using a crossover cable (see Configuring the Ethernet Port on page 17).
- Via a network switch or router, using a straight through cable (see Connecting Ethernet Port via a Network Switch on page 17

If you want to connect via a router and your IT system is based on IPv6, speak to your IT department for specific installation instructions.

Connecting Ethernet Port Directly to a PC

You can connect the Ethernet port of SWT3-22-HU-WP-T directly to the Ethernet port on your PC using a crossover cable with RJ 45 connectors.

This type of connection is recommended for identifyingSWT3-22-HU-WP-T with the factory configured default IP address.

After connecting SWT3-22-HU-WP-T to the Ethernet port, configure your PC as follows:

1. Click **Start > Settings > Network and Sharing Center.**
2. Click **Change Adapter Settings.**

3. Highlight the network adapter you want to use to connect to the device and click **Change settings of this connection**.
   The **Local Area Connection Properties** window for the selected network adapter appears as shown in Figure 8.

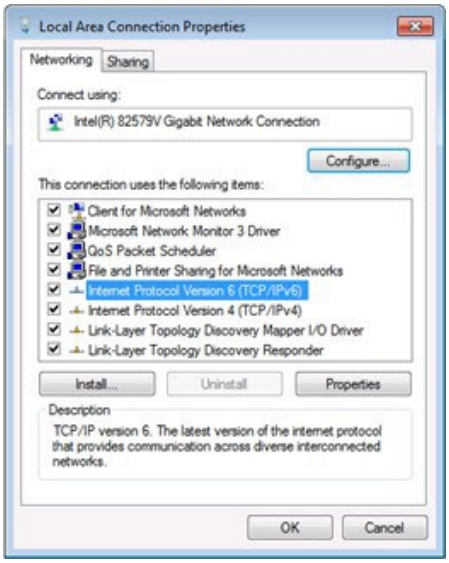


Figure 5: Local Area Connection Properties Window

4. Highlight either **Internet Protocol Version 6 (TCP/IPv6)** or **Internet Protocol Version 4 (TCP/IPv4)** depending on the requirements of your IT system.
5. Click **Properties**.

   The Internet Protocol Properties window relevant to your IT system appears as shown in Figure 6 and Figure 7.

Figure 6: Internet Protocol Version 4 Properties Window

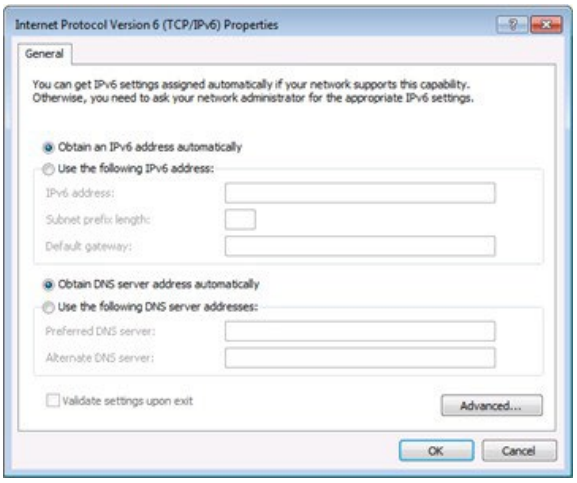


Figure 7: Internet Protocol Version 6 Properties Window

6. Select **Use the following IP Address** for static IP addressing and fill in the details as shown in Figure 8.

   For TCP/IPv4 you can use any IP address in the range 192.168.1.1 to 192.168.1.255 (excluding default 192.168.1.39 fallback address) that is provided by your IT department.

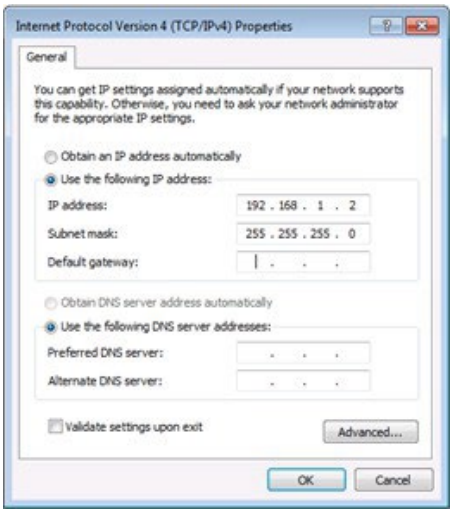


Figure 8: Internet Protocol Properties Window

7. Click **OK**.
8. Click **Close**.

Connecting Ethernet Port via a Network Switch

You can connect the Ethernet port of SWT3-22-HU-WP-T to the Ethernet port on a network switch or router using a straight through cable with RJ 45 connectors.

Configuring the Ethernet Port

You can set the Ethernet parameters via the embedded web pages (requires a network hub or switch connection).

SWT3-22-HU-WP-T includes IP address auto acquiring policy via LAN-connected DHCP server by default. When no DHCP server is detected, a fallback static IP address of 192.168.1.39, and 255.255.255.0 subnet mask (class C), is assigned until an IP address is acquired via the DHCP server.

Using Embedded Web Pages

SWT3-22-HU-WP-T enables you to configure settings via Ethernet using built-in, user-friendly web pages. The Web pages are accessed using a Web browser and an Ethernet connection.

To apply a USB-C type changes, the device must be power cycled.

USB-C Ethernet connection is disabled by default and is enabled only by API command (See Protocol 3000 on page 46

Before attempting to connect:

- Perform the procedure in (see Operating via Ethernet on page 15).

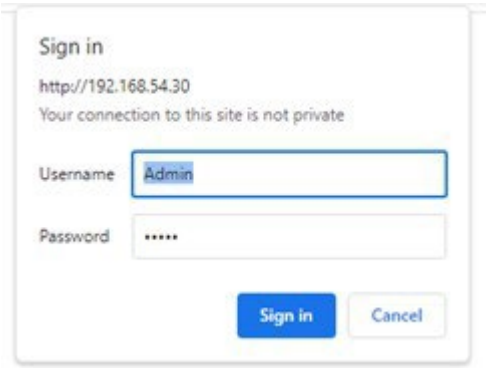
If a web page does not update correctly, clear your Web browser's cache.

Check that Security/firewalls are not blocking HTTP traffic between the device and the user PC.

To access the web pages:

1. Enter the IP address of the device in the address bar of your internet browser (default = 192.168.1.39).

If security is enabled, the Login window appears.



1. Enter the Username (default = Admin) and Password (default = Admin) and click **Sign in**. The default web page appears.

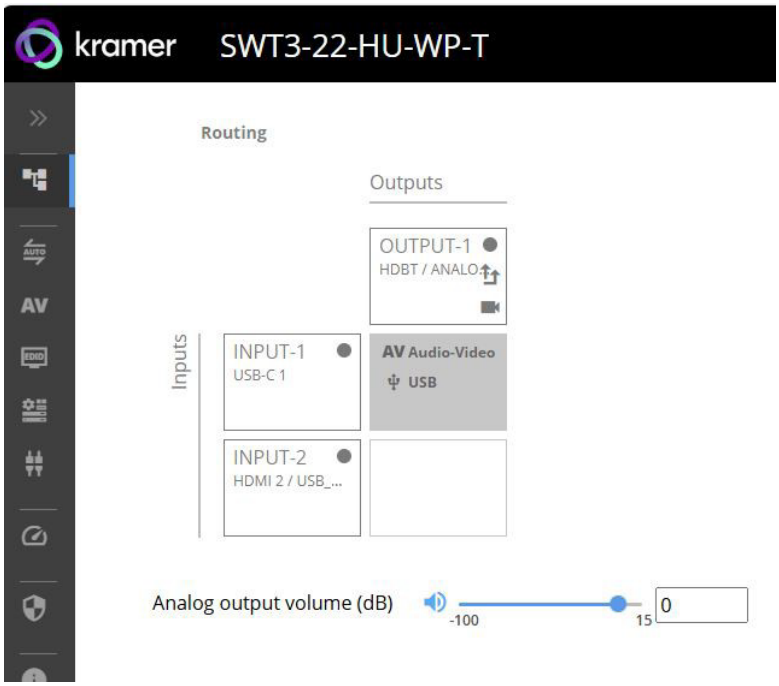


Figure 9: Default Landing Page

2. Click the arrow at the top of the navigation list to view the menu items in detail.

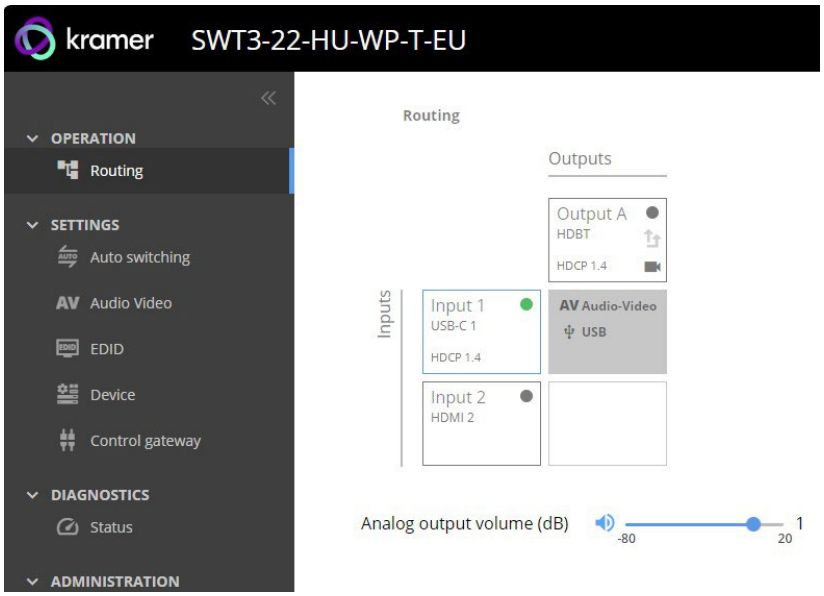


Figure 10: Pages and Tabs Navigable List

3. Click the Navigation Pane on the left side of the screen to access the relevant web page.

SWT3-22-HU-WP-T web pages enable performing the following actions:

Routing Signals

This section details the following actions:

Routing a Video Input to an Output

You can set each inputs to route the AV signal together with its USB signal (USB follows video coupled routing) or to route each individual signal independently.

To route the video inputs to the outputs:

1. Go to the Routing Settings page.

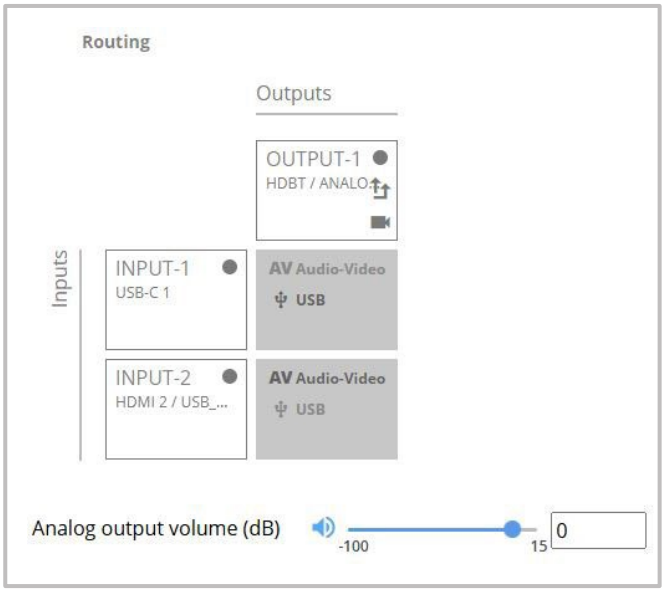


Figure 11: Routing Page

2. Perform the following functions:

- Click an Input/Output cross-point (see Routing AV and USB Host Signals below).

A green light on a button indicates a connected source/acceptor.

- Click to activate USB following video coupled routing.
- Click to stop/play the video.

An input is routed to the output.

Routing AV and USB Host Signals

SWT3-22-HU-WP-T enables switching any of the inputs to the output in one of the following modes:

- USB follows AV coupled routing ( ) – Selecting an input, routes the AV signal to the output and associates the USB devices to that selected USB host.

- USB signal individual routing ( ) – Selecting an input, routes only the AV signal to the output. The USB host can be selected separately from any of the other inputs.

Individual USB Host Routing

In the following example, USB routing does not follow video, so you can individually select the AV signal on input 1 and the USB signal on input 2. This means that the HDMI input 2 AV signal is routed to the output and the USB devices are associated with the USB-C host (Input 1).

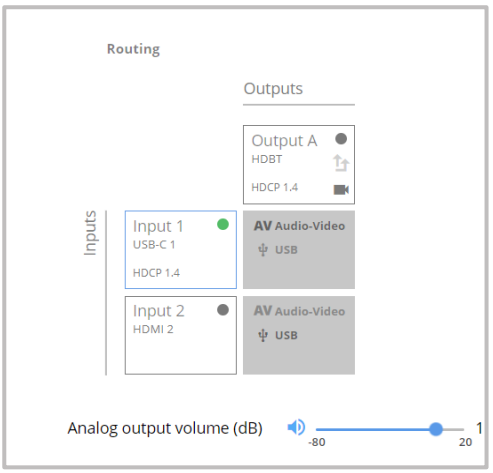


Figure 12: Selecting AV Signal on Input1 and USB Signal on Input 2

Setting the Analog Audio Output Level

To set the audio output level:

1. Go to the Routing Settings page.
2. Under Analog Outputs click .
3. Set the audio level using the slider next to Analog output volume (dB, from -80 to 20). Audio level is set.

Figure 13: Setting Audio Volume

Setting AV Properties

This section details the following actions:

Setting the Auto-Switching Policy

To set the auto-switching policy:

1. Go to the Auto switching page.
2. Next to the Selection Mode drop-down box, select the auto switching policy: **Manual**, **Last Connected** or **Priority**.

Switching policy is set.

To change input priorities:

1. Go to the Auto switching page.
2. Next to the Selection Mode drop-down box, select **Priority**.
3. Click and drag an input between high and low to change the priorities.

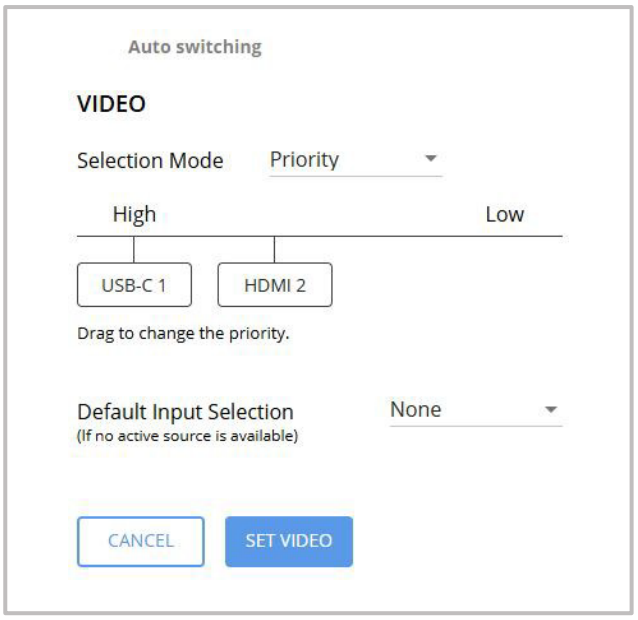


Figure 14: Changing Input Priorities

4. Click **SET VIDEO**.

Input priorities are set.

To select default input selection:

1. Next to the Default Input Selection drop-down box, select the desired input to be selected if no active source is available.

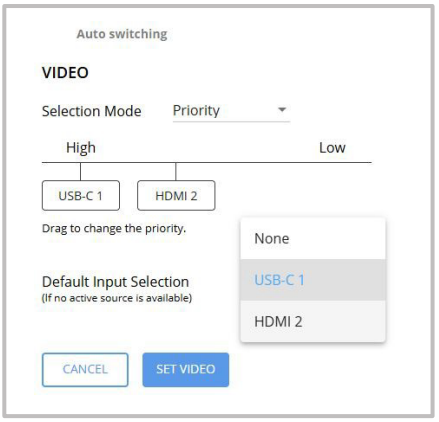


Figure 15: Selecting Default Input Source

2. Click **SET VIDEO**.

Default input is selected when no source is available.

Configuring AV Settings

SWT3-22-HU-WP-T enables configuring the device's audio and video settings.

To configure audio and video settings:

1. Go to the Audio Video Settings page. The Audio Video Settings page appears.

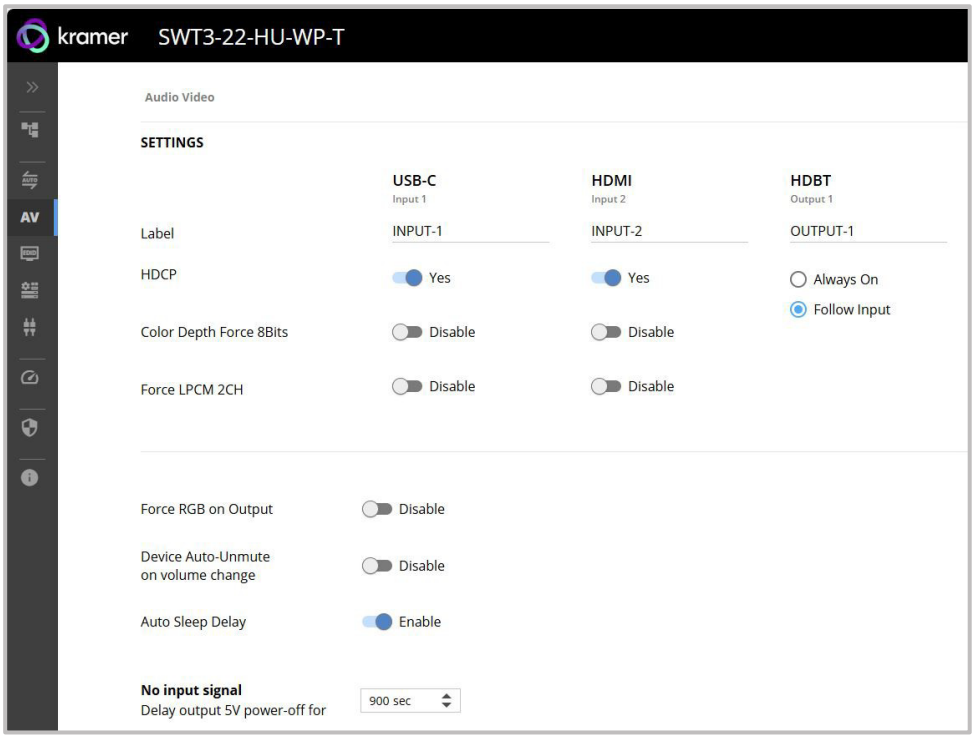


Figure 16: Audio Video Settings

2. Perform the following actions:

- Label – Change the name of an input or the output as it appears on the Routing page and EDID management page.
- HDCP – For the inputs, select the **Yes** (default) **/No** switch to enable/disable HDCP on that input. For the output, select **Always On** to keep HDCP enabled at all times, or **Follow Input** (default) to define the output HDCP setting according to the HDCP setting on the active input.
- Color Depth Force 8Bits – **Enable** or **Disable** (default) on each input.
- Force LPCM 2CH – **Enable** or **Disable** (default) on each input.
- Force RGB on Output – **Enable** or **Disable** (default).
- Device Auto-Unmute on volume change – When enabled changing the volume will auto-unmute the audio output.
- Auto Sleep Delay – When no input signal is detected, the display automatically goes into sleep mode, and output is set to off. When this setting is enabled (default), it delays sleep mode for an amount of time specified in **TIMEOUT** setting (see below).
- No input signal (active when Auto Sleep Delay is enabled) – Set the number of seconds (30 to 60,000 seconds; default = 900 seconds) after there is no signal detected, until the display goes into sleep mode. Click **SET TIMEOUT** after defining this setting.

Audio and video settings are configured.

Managing EDID

SWT3-22-HU-WP-T enables you to copy an EDID from one of several different sources to the inputs.

To copy the EDID to the inputs:

1. Go to the EDID Management page.

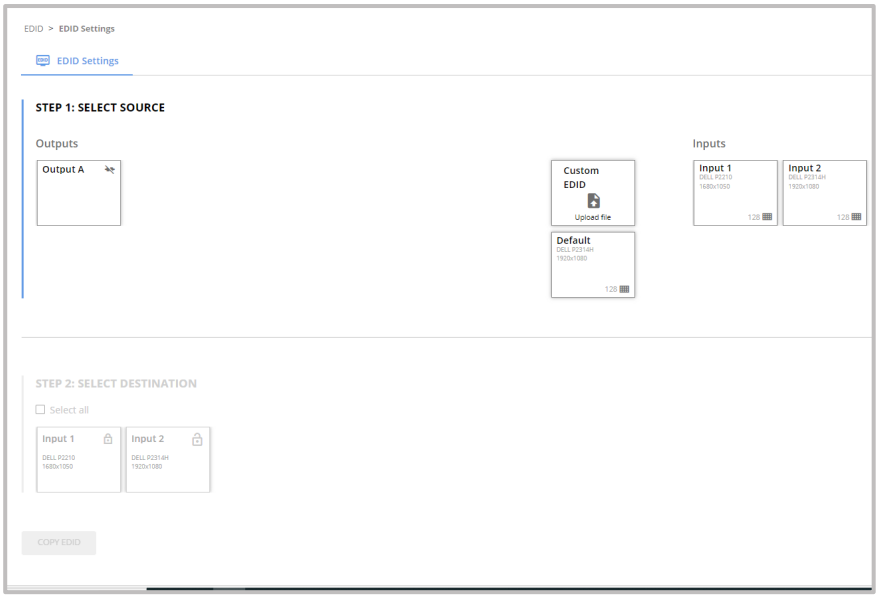


Figure 17: EDID Management Page

2. Under Step 1, select the EDID source (the output, any of the inputs, default or custom EDID.
3. Under Step 2, select one or more inputs as the destination for copying the EDID.
4. Click **COPY EDID**.

The EDID is copied.

Setting Device Properties

This section details the following actions:

Device Profile and Maintenance

Changing Device Name

SWT3-22-HU-WP-T enables you to change the DNS name of the device.

To change the device name:

1. Go to the Device > General page.

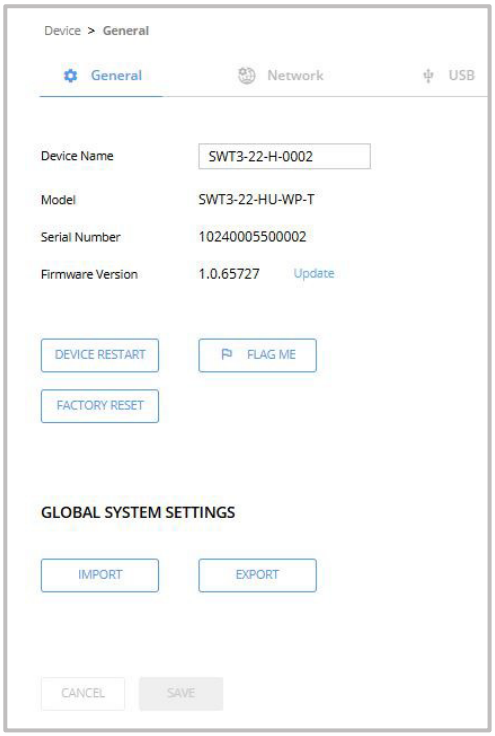


Figure 18: Device>General Page

2. Under General Preferences, change the device name and click **SAVE**.

The device's name is changed.

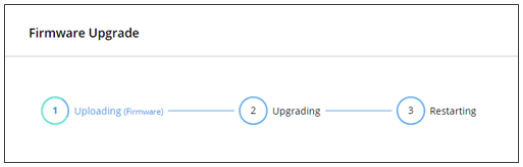
Upgrading Firmware

To upgrade the device firmware:

1. Go to the **Device** > **General** page (Figure 18).
2. Under General, click **Update**, open the relevant firmware file, and follow the instructions. The upgrade takes approximately 30-60 seconds.

During FW upgrade, the device continues to operate, but the device UI and protocol 3000 communication are inactive. When device restarts, the status LED is lit, and HDMI output signal is disconnected until restart completes.

Firmware is updated.



Resetting and Restarting Device

Two types of resets can be performed:

- Restart – Reboots your device and keeps all your device settings, including the IP address and password.

- Reset – Reboots your device and restores all factory settings including input/output definitions, switching configuration, IP address and password (a DHCP-acquired IP address is retained).

To restart the device:

- Click **DEVICE RESTART** on the **Device** > **General** page (Figure 18).

To perform a factory reset on the device, use one of the following actions:

- Click **FACTORY RESET** on the **Device** > **General** page (Figure 18).
- Using protocol 3000 commands, send the FACTORY command then RESET commands.
- On the rear panel, press and hold the RESET button while connecting the power for several seconds.

Exporting and Importing a Configuration File

SWT3-22-HU-WP-T enables you to export and store a configuration file, which records all current device settings except the routing operation setup. The stored file can then be imported to the same or different SWT3-22-HU-WP-T device to load the recorded settings, for configuration backup and/or solution-replication purposes.

Exporting a Configuration File

To export a configuration file of the current device settings:

1. Go to the **Device** > **General** page (Figure 18).
2. Under Global System Settings, click **EXPORT**.
3. Select the storage location on your computer to save the configuration file and click **SAVE**.

The configuration file is exported and saved.

Importing a Configuration File

To import a configuration file of the current device settings:

1. Go to the **Device** > **General** page (Figure 18).
2. Under Global System Settings, click **IMPORT**.
3. Select the relevant configuration file from your computer storage and click **SAVE**.

   The configuration file is imported and the device restarts with the settings from the configuration file.

Identifying Your Device

To identify the device:

1. Go to the **Device** > **General** page (Figure 18).
2. Under Global System Settings, click **FLAG ME**. NET LED flashes.

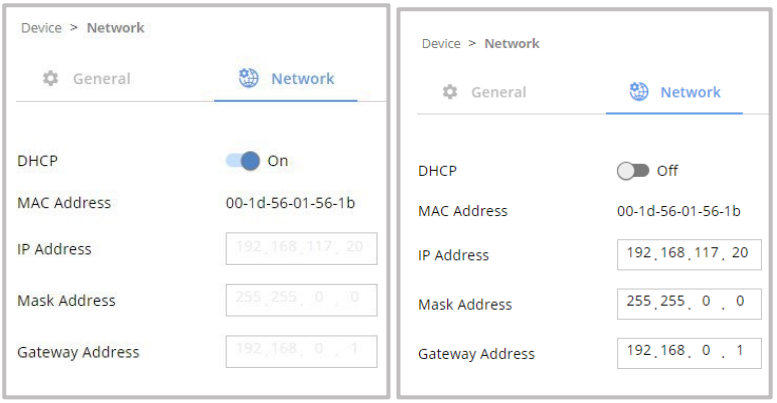
Settings Networking Properties

By default, DHCP is set to on. The IP address shows the actual IP address acquired from the DHCP server, or the auto-acquired fallback IP address when there is no DHCP server detection.

To configure network settings:

1. Go to the **Device** > **General** page (Figure 18).
2. Select the **Network** tab.

   The network page appears.



3. Change settings as needed.

   If required, set to **DHCP** (default) or static IP address resolution mods.
4. When in Static IP mode, perform the following actions:

- Change the IP address.
- Change the Mask address.
- Change the Gateway address.

Network settings are defined.

Setting USB-C Host Port Signals Mix

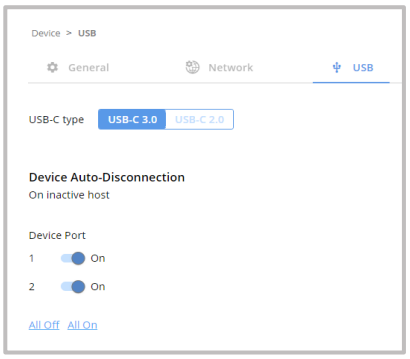
AV and USB combine and the USB-C host port data rate, can be flexibly set.

To apply the USB-C type change, the device must be power cycled.

USB-C ethernet connection is disabled by default and is enabled only by API command (see Protocol 3000 on page 46).

To select USB-C host port signal combining:

1. Go to the **Device** > **General** page (Figure 21).
2. Select the USB tab.
3. Disconnect the USB-C cable from the device.



4. For the USB-C type, select one of the following:
   - **USB-C 3.0** - Higher USB data rate (10Gbps); lower AV resolution (4K60 4:2:0).
   - **USB-C 2.0** – Higher AV resolution (4K60 4:4:4); lower USB data rate (480Mbps).
5. Before you Click **SAVE**, disconnect the USB--C cable from the unit. Click **SAVE** and wait until the web screen re-appears (may take 1 min).
6. Power cycle the device, while the USB-C is still disconnected from the device.
7. After unit power up, verify the new USB setup took place (USB-C 2.0 or USB-C 3.0). At this stage you can connect the USB-C cable to the device.

USB-C host signal combination configuration is set.

Auto-disconnecting a USB Device on Inactive Host

1. Go to the **Device** > **General** page (Figure 21).
2. Select the USB tab (Figure above).
3. For each USB Device Port, set the auto disconnection status to **On** or **Off**. You can also Select **All Off** or **All On** to set all device ports to off or on, respectively.
4. Click **SAVE**.

USB devices are set.

Setting Control Gateway Properties

This section details the following actions:

Setting Serial Port Properties

The serial ports serve as one of the following:

- RS-232 extension – From panel port, via HDBT RS-232 channel, to control a peripheral connected to the HDBT paired unit RS-232 port (see Extending the RS-232 via the SWT3-22-HU-WP-T).
- External peripheral IP control – Remote IP control of port-connected peripheral, via device built-in control gateway (see Controlling the SWT3-22-HU-WP-T).

- Device management and control – Device service and control using P3000 commands (see Controlling an External Device via IP Messages).

Extending the RS-232 via the SWT3-22-HU-WP-T

Setting the HDBT Extension Mode:

Set the HDBT as an RS-232 extender to control the remote peripheral device.

To set the HDBT extension mode:

1. Go to the Control Gateway page. The Serial Ports tab appears.

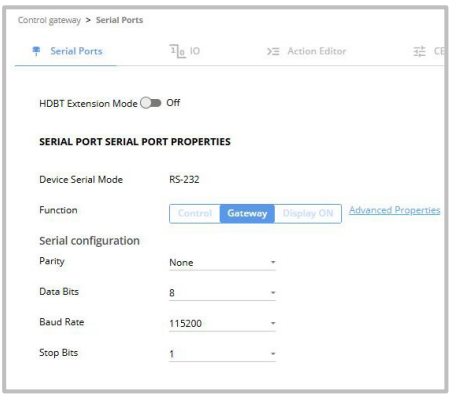


Figure 19: Control Gateway Page

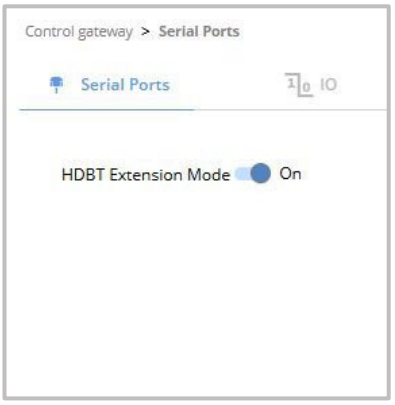


Figure 20: Enabling HDBT Extension Mode

2. Enable **HDBT Extension Mode** to ON (OFF is default mode).
   - SWT3-22-HU-WP-T is set to operate as an RS-232 extender, with end-to-end extension between RS-232 panel port and HDBT RS-232 channel.

In extension mode, no configuration of port properties and functions are available (Figure 20).

Controlling the SWT3-22-HU-WP-T

To set the RS-232 port to control the SWT3-22-HU-WP-T:

1. Go to the Control Gateway page. The Serial Ports tab appears.

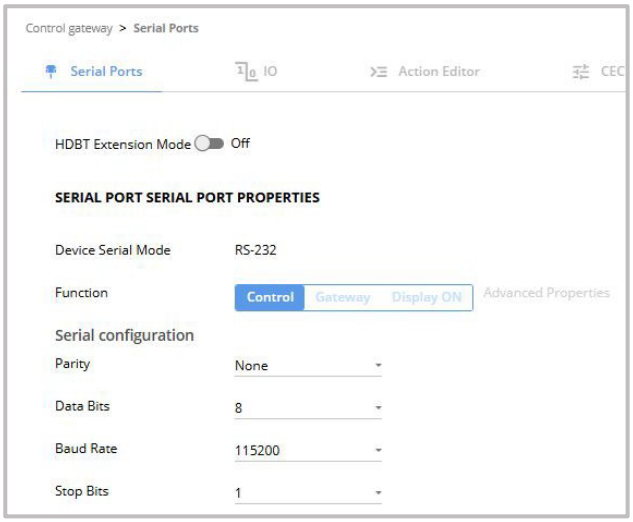


Figure 21: RS-232 Device Control

2. Next to Tunneling, select **Control**.
3. Click **SAVE**.

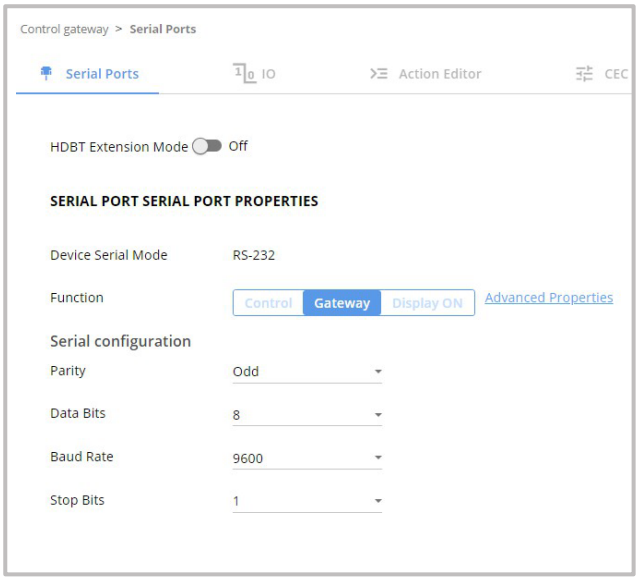
RS-232 port controls the SWT3-22-HU-WP-T.

Controlling an External RS-232 Device via IP Messages

Control an external RS-232 device via an IP-connected Controller (for example SL-240C that is connected via LAN)

To set the RS-232 port to control an external device:

1. Go to the Control Gateway page. The Serial Ports tab appears.
2. Next to Function, select **Gateway**.



3. Define the external device RS-232 settings (Parity, Data Bits, Baud Rate and Stop Bits).
4. Click **Save**.

   The TUNNELING ADVANCED PROPERTIES Settings tab appears.

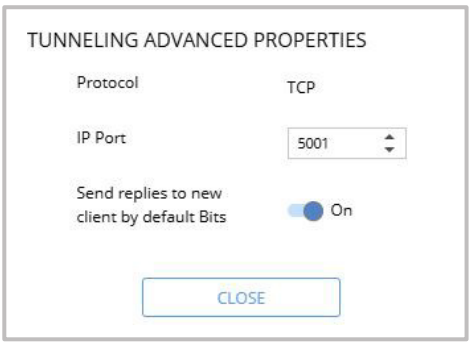


Figure 22: Setting Advanced Tunneling Properties

5. Click up/down arrows to select IP Port.
6. Press to toggle ON Send replies to new clients by default Bits.
7. Click **Close**.
8. Click **SAVE**.

RS-232 port controls an external device.

Controlling SWT3-22-HU-WP-T Connected Display

Control an external device via a Controller (for example SL-240C that is connected via LAN).

To set the RS-232 port to control an external device:

1. Go to the Control Gateway page. The Serial Ports tab appears.
2. Next to Tunneling, select **Display ON**.

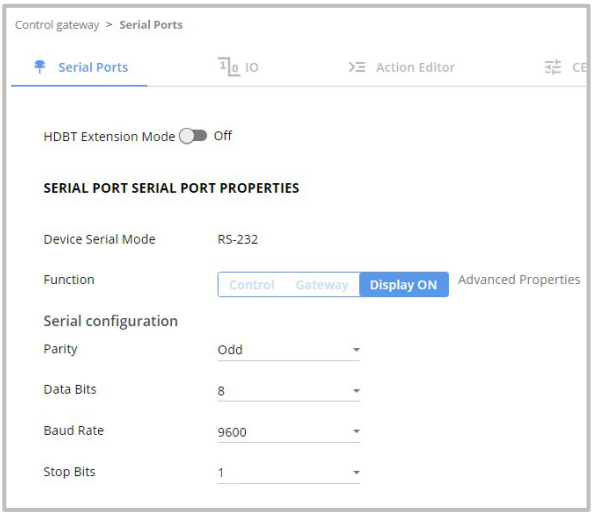


Figure 23: RS-232 Control for Display on/off

3. Define the display RS-232 settings (Parity, Data Bits, Baud Rate and Stop Bits).
4. Click **SAVE**.

RS-232 port controls the DISPLAY ON/OFF.

Configuring I/O (GPIO) Ports

The 2 I/O ports can control devices such as sensors, door locks, remote contact-closure buttons, audio volume and lighting control devices and can be configured via the webpages.

To enable I/O operations, Remote Button must be set to Off.

To configure an I/O port:

1. In the Navigation pane, click **Control Gateway**. The Serial Ports tab in the Device Settings page appears.
2. Select the IO tab. The IO tab appears.

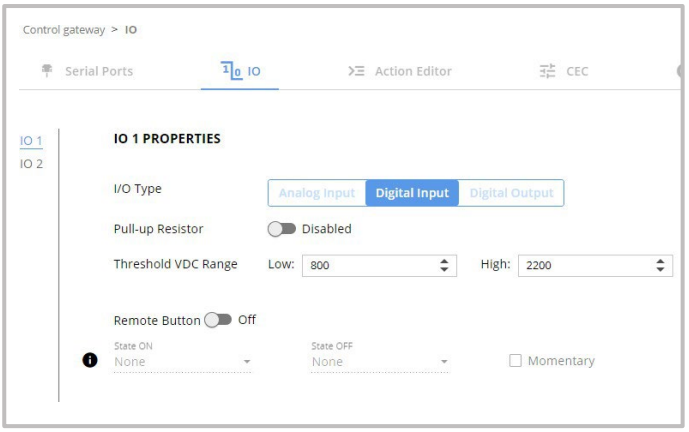


Figure 24: Digital Output I/O Type

3. Select the I/O port to be configured (IO 1 or IO 2).
4. Select one of the following I/O types:
   - Digital Input (default setting) (see Configuring a Digital Input I/O Type below).
   - Digital Output (see Configuring a Digital Output I/O Type on the next page).
   - Analog Input (see Configuring an Analog Input I/O Type on page 35).

   The settings available on the page change depending on which trigger type is selected.

5. Click **SAVE** after setting the selected I/O type.

Configuring a Digital Input I/O Type

The Digital Input trigger mode reads the digital input of an external sensor device that is connected to the I/O port. It detects High (upon passing the High threshold from a Low state) or Low (upon passing Low threshold from a High state) states according to the user-defined threshold levels.

To configure a digital input I/O type:

1. On the GPIO page, select Digital Input next to I/O Type.

   The Digital Input options appear (Figure 26).

2. Select one of the following for the Pull-up resistor setting:
   - **Disabled** – When the pull-up resistor is disabled, the port state must be triggered (pulled high or low) by the externally connected sensor. This is suitable, for example, for a high temperature alarm with logic levels according to the defined voltage thresholds. For example, the externally connected alarm sensor may be in a low state under normal conditions, and when the temperature rises above a certain level, it goes to a high state (or visa-versa).

- **Enabled** – When the pull-up resistor is enabled, the port detects an open circuit as High, and a short to ground as Low. This is suitable, for example, for a pushbutton switch (connecting one terminal of the switch to ground, and the other to the input) or for an alarm closing a relay.

Set the Threshold VDC Low and High Range (threshold voltage at which the port changes state).

3. Click **Read** to refresh port status information.
4. Click **SAVE**.

Digital input I/O type is configured.

Configuring a Digital Output I/O Type

To configure a digital output I/O type:

1. On the GPIO page, select Digital Output next to I/O type.

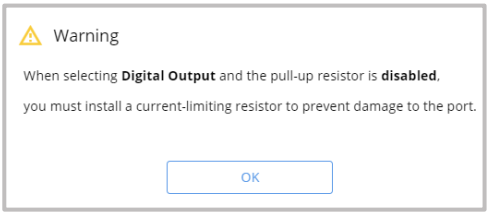


Figure 25: Digital Output Warning

2. Make sure to follow the instructions in this warning.
3. Click **OK**. The Digital Output options appear.

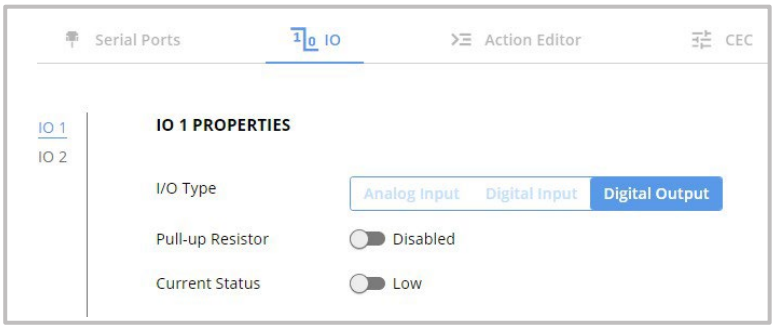


Figure 26: GPIO Settings Page – Digital Output I/O Type

4. Select one of the following for the Pull-up resistor setting:
   - Pullup resistor set to **Enabled**:

     The port can be used for controlling devices that accept a TTL signal such as for powering LEDs. The voltage output is TTL positive logic: high: >2.4V; low: < 0.5V.
   - Pullup resistor **Disabled**:

     The port is used for controlling external devices such as room or light switches. The external source device determines the voltage output; the maximum voltage is 30V DC and the maximum current is 100mA.

Make sure that the current in this configuration does not exceed 100mA.

5. The Current Status switch may be used to manually change the GPIO output state.
6. Click **SAVE**.

Digital Output I/O type is configured.

Configuring an Analog Input I/O Type

When selecting the Analog Input I/O type, the port is triggered by an external analog device, such as a volume control device. The trigger is activated once when the detected voltage is within the 0 to 30V DC voltage range.

To configure an analog input I/O type:

1. On the GPIO page, select Analog Input next to I/O type.

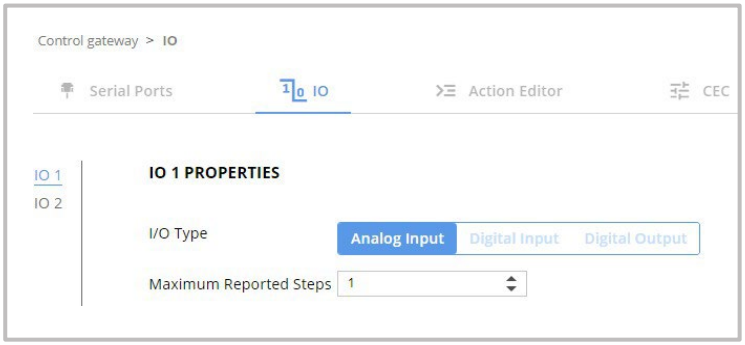


Figure 27: GPIO Port Settings Page Analog Input

2. Enter or use the arrows to scroll to a value (1–100) for the Maximum reported steps.
   This value is the number of steps that the analog input signal is divided into. To calculate the voltage of each step, use the following formula:
   Voltage of one step = 30V / number of steps.
3. Click **SAVE**.

Analog input I/O type is configured.

Defining and Testing Commands via Action Editor

Use action editor to create and test control commands via CEC, UART or IR control interfaces. You can create up to 5 commands.

To add an action:

1. In the navigation pane, select **Control Gateway**. The Serial Ports tab opens.
2. Select the **Action Editor** tab. The Action Editor appears.

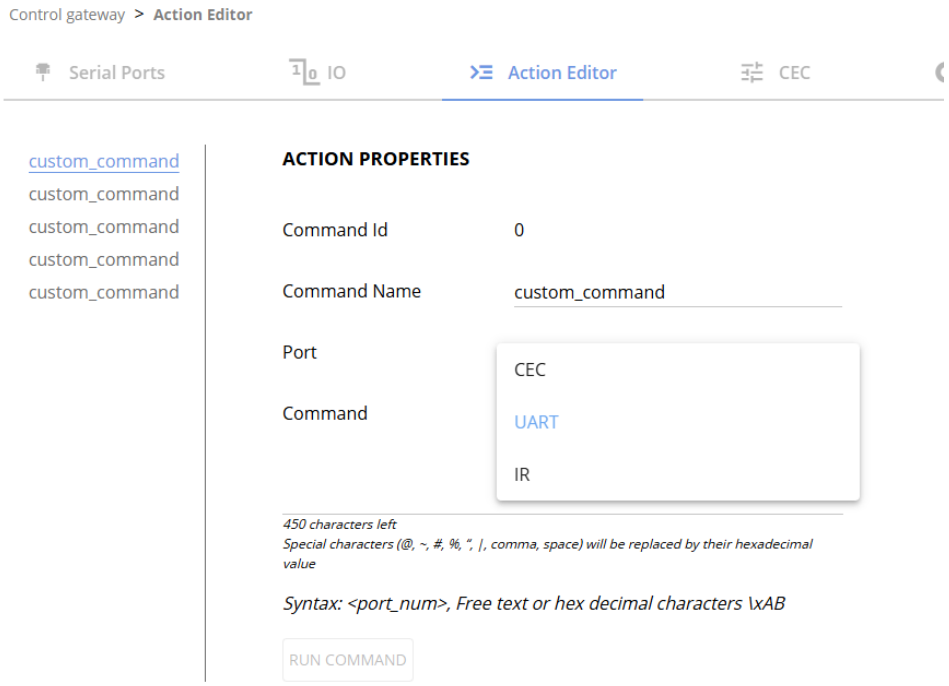


Figure 28: Action Editor Tab

3. Select a command name on the left side of the window.
4. Change the command name, if required.
5. Select the port (CEC, UART or IR).
6. Enter the appropriate command line, such as one of the following Display On sample commands:
   - For CEC - 1,1,tv-on,2,E004

   The command to power on a TV can vary depending on the specific TV model and manufacturer. However, above is a common example of a standard command to power on a TV.

   - For UART (RS232) - PON
   - For IR - 1,1,TVON,1,1,1,0000,006f,0022,0002,014d,00a6,0015,0015,0014,0015,0013,0014,0015,0015,0014,0014,0014,0014,0015,0015,0014,003e,0016,003d,0014,003f,0014,003e,0015,003f,0013,003f,0014,003e,0015,003f,0013,0016,0013,0015,0014,0015,0013,0016,0013,003f,0013,003e,0015,0015,0013,003e,0015,003f,0013,003f,0013,003e,0015,003e,0015,0015,0014,0015,0013,003f,0014,0015,0013,0014,0015,05c9,014d,0053,0015,0e0a
7. Click **SAVE**.
8. Click **RUN COMMAND** to run the command test.

An action is entered and can be run.

Configuring Remote Buttons

You can connect remote button to the GPIO ports and define the actions to be performed when the GPI is triggered.

To Configure Remote Buttons:

1. In the Navigation pane, click Control Gateway. The Serial Ports tab in the Device Settings page appears.
2. Select the IO tab. The IO tab appears.

3. Press to toggle Remote Button to On.
4. Configure defined control actions, for button on/off states, using the **State ON**, **State OFF** drop-down boxes.

- Button default operation mode is latching. For momentary mode, check the Momentary checkbox.

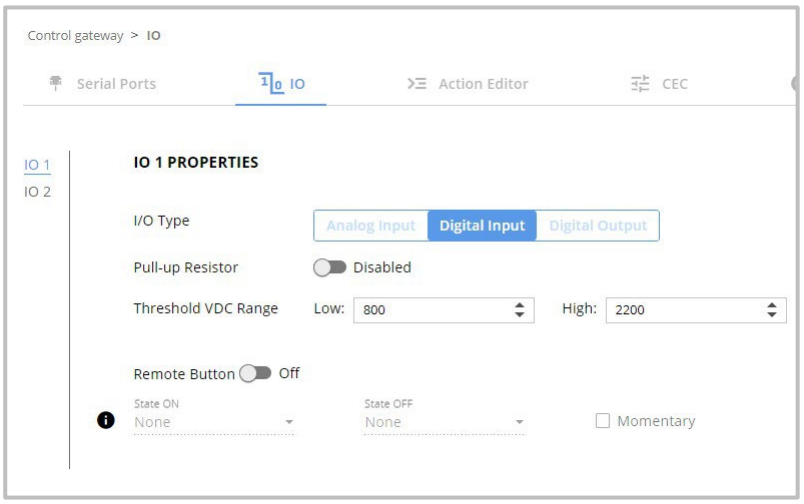


Figure 29: I/O ports settings tab – Configuring Remote Buttons

5. Click **Save**.

A control action remote button can now be remotely operated.

Defining CEC Gateway Settings

SWT3-22-HU-WP-T built-in CEC gateway enables IP control, via CEC messages, on the HDMI ports. The Members address list shows the logical addresses of connected CEC-enabled devices.

By-default, the CEC gateway is enabled.

To disable the CEC gateway feature:

1. In the navigation pane, select **Control Gateway**. The Serial Ports tab opens.
2. Select the **CEC** tab. The CEC Gateway page appears.
3. Click CEC gateway **OFF**.

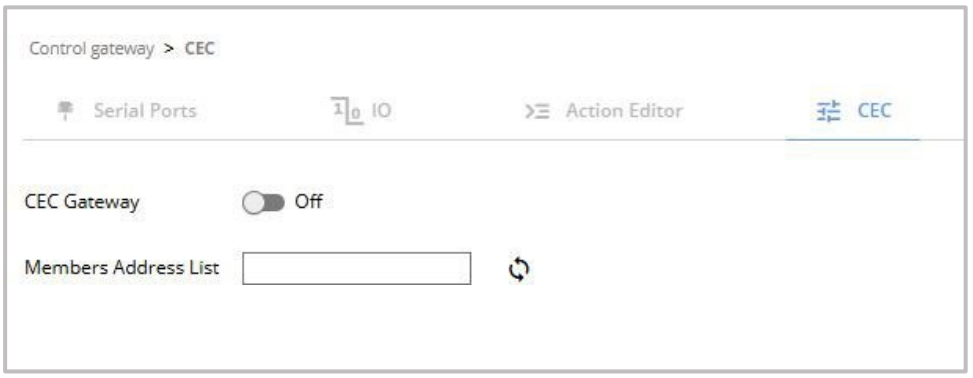


Figure 30: CEC Gateway Enable/Disable Tab

CEC gateway is disabled.

You can view the logical addresses of CEC-enabled devices connected to the HDMI port on SWT3-22-HU-WP-T. Click **Refresh** to refresh the list.

Associating CEC Commands to DISPLAY ON/OFF

Configure CEC commands to send via the DISPLAY ON button.

To add an action:

1. In the navigation pane, select **Control Gateway**. The Serial Ports tab opens.
2. Select the **Display On** tab. The Display ON settings appears.

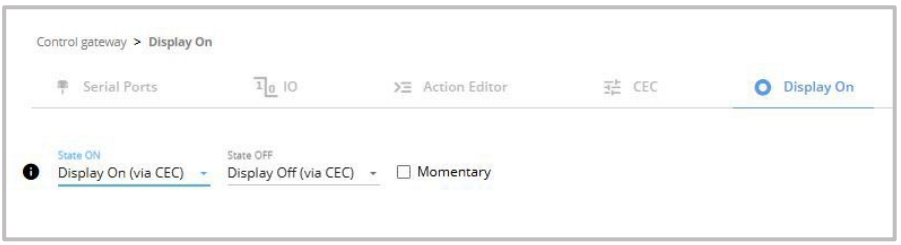


Figure 31: Action Editor Tab

3. Define the State On and State Off commands.
4. Check **Momentary** for the button to send a command on the press of a button.
5. Click **SAVE**.

DISPLAY ON button is configured.

Viewing Device Status

View the device status.

To view the device status:

1. In the navigation pane, select Status.
2. Select the Devices tab. The Devices Status appears.

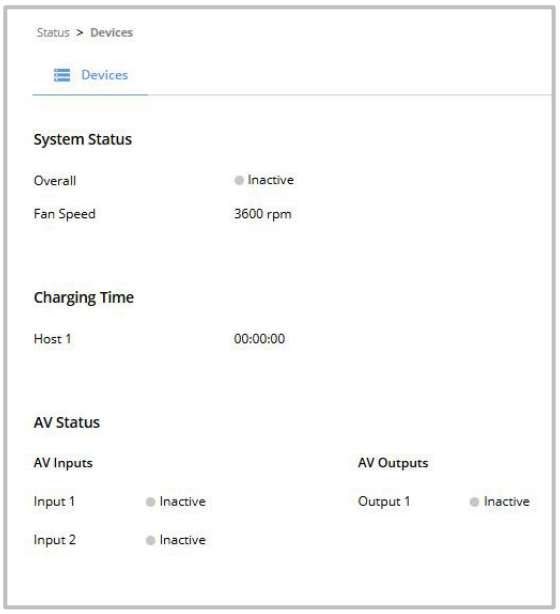


Figure 32: Device Status Page

3. View device status.

Device status can be viewed.

Setting Security Properties

This section details the following actions:

Changing Security Status

By default, security status is set to On.

Setting Security Status to Off

To set security status to Off:

1. Go to the Security page (Figure 33).
2. Select the Security tab. The Security settings appears.

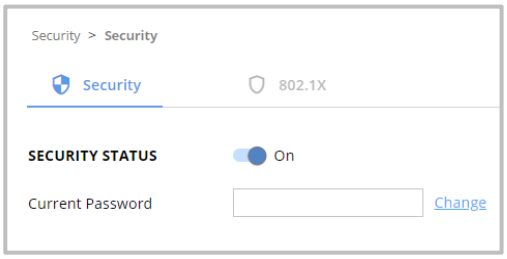


Figure 33: Security – Security Tab

3. Set **SECURITY STATUS** to **Off**. The Security Status window appears.

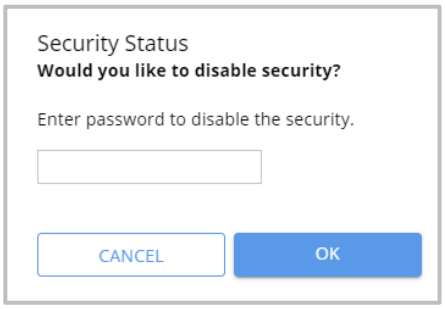


Figure 34: Security Status Message

4. Enter the current password.
5. Click **OK**.

Security status is set to Off.

Setting Security Status to On

To set security status to on:

1. Go to the **Security** > **Security** (Figure 33).
2. Set **SECURITY STATUS** to **On**.

Security status is set to On.

Changing Web Pages Access Password

To change the password for accessing the embedded web pages:

1. Go to the Security page (Figure 33).
2. Select the Security Tab. The Security settings appear (Figure 35).
3. Enter the Current Password and click **Change**. The new password settings appear.

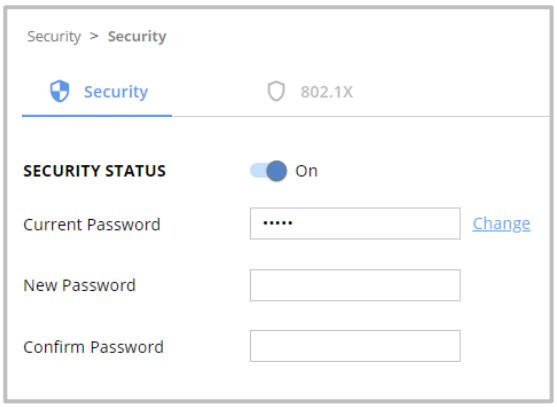


Figure 35: Device Settings – Changing the Password

4. Enter the new password and confirmation password and click **SAVE**.

The password is changed.

Defining 802.1X Authentication

802.1x security standard supports IT networking authentication based on LAN port and MAC address.

To configure security:

1. In the Navigation pane, click **Security**. The Security settings tab in the Security page appears.
2. Select **802.1X** tab. The 802.1X settings tab appears (see below).

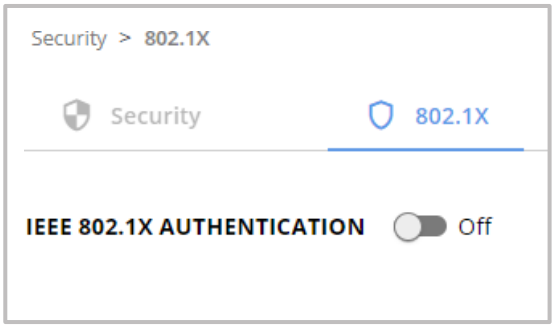


Figure 36: 802.1X Tab

3. For 802.1x authentication, click **ON** to enable 802.1x authentication service. 802.1x supports authentication based on port and MAC address.
4. When set to ON check one standard authentication method to set its security attributes.
   - **PEAP-MSCHAP V2** – Enter:
     - Username - up to 24 alphanumeric characters, including "_" and "-" characters within the username, and
     - Password - up to 24 ASCII characters

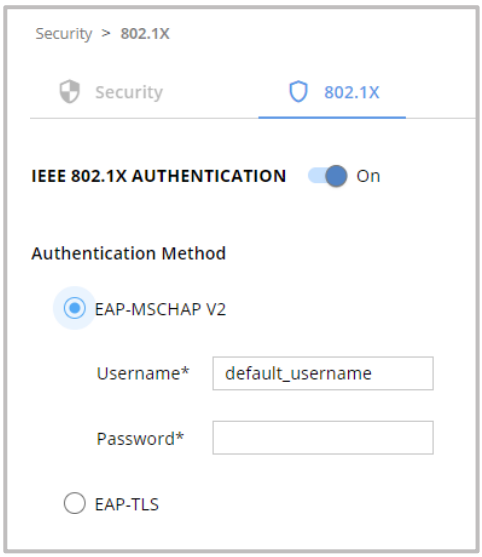


Figure 37: Security Tab – EAP-MSCHAP V2 Authentication

- **EAP-TLS** – To submit certificate from the server for authentication:
  - Enter Username,
  - Click to upload certificates and keys

File format must be pem.

  - Enter the private key password (assigned by IT administrator),
  - Set Server Certificate **On**

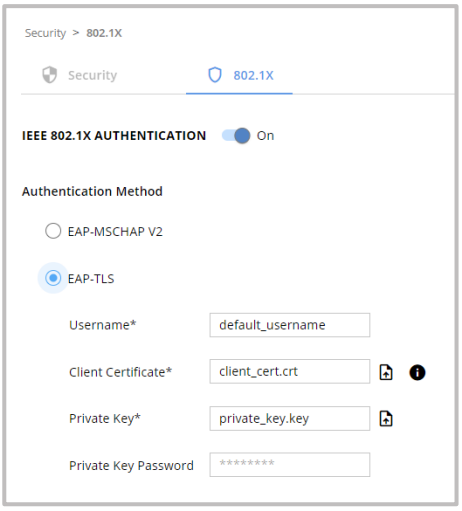


Figure 38: EAP-TLS – Certificates and Password

5. Click **APPLY**.

802.1x authentication security is configured.

Viewing the About Page

View the firmware version and Kramer Electronics Ltd details in the About page.

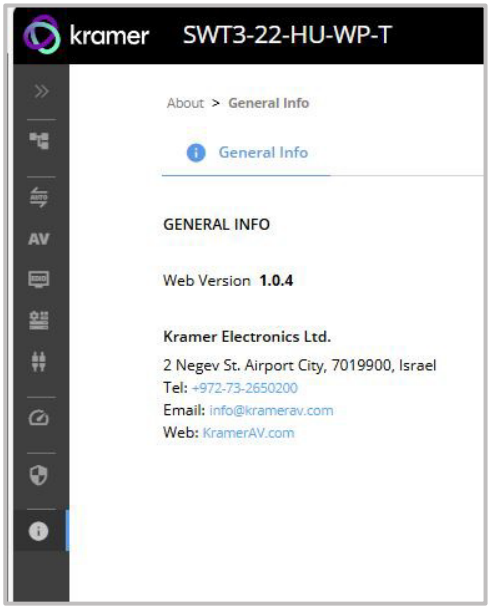


Figure 39: About Page

Upgrading Firmware

Use the Kramer K-UPLOAD software to upgrade the firmware via ethernet or the RS-232 port, allowing RS-232 to control/program the device). The device continues to operate and once FW upload complete, you are asked to Restart no or later.

The latest version of K-UPLOAD and installation instructions can be downloaded from our website at: www.kramerav.com/support/product_downloads.asp.

Note that in order to use the micro USB port, you need to install the Kramer USB driver, available at www.kramerav.com/support/product_downloads.asp.

Technical Specifications

Inputs	1 DP Alt Mode & PD 3.0 USB-C		On a USB type–C female connector
	1 HDMI		On an HDMI female connector
Outputs	1 HDBT PoE accepting	For SWT3-22-HU-WP-T-US Only	On an RJ–45 female connector
	1 HDBT	For SWT3-22-HU-WP-T-UK/EU Only	
	1 HDMI		On an HDMI female connector
	1 Balanced Stereo Audio Line		On 5–pin terminal block connector
Ports	2 USB 3.2 Host		On a USB–C female connectors
	2 USB 3.2 Device		On USB type–A female connectors
	1 PoE accepting 1000BaseT Ethernet	For SWT3-22-HU-WP-T-US Only	On an RJ–45 female connector for LAN connection & extension
	1000BaseT Ethernet	For SWT3-22-HU-WP-T-UK/EU Only	
	1 RS–232		On a 3–pin terminal block
	2 GPIO		On a 2–pin terminal block
Extension Line	Reach		Up to 100m (330ft), using Kramer HDBaseT cables
	Standard Compliance		HDBaseT 3.0
Video	Max Data Rate		18Gbps bandwidth (6Gbps per graphic channel)
	Max Resolution		4K@60Hz (4:4:4) resolution
	Content Protection		HDCP 2.3
	HDMI Support		Deep Color, 3D, HDR as specified in HDMI 2.0b
USB Features	Integrated USB Hubs		1
	Standards Compliance		USB 3.2 GEN 2, 2.0 and 1.1
Extended USB	USB 2.0 Data Rate		Up to 480Mbps
	Transmitted Data Bandwidth		Up to 300Mbps
	Standards Compliance		USB 2.0 and 1.1
Extended Ethernet	Max Data Rate		1 Gbps
Extended RS-232	Baud Rate		300 to 115200

Analog Audio	Max Output Signal Level	15dBu	
	Impedance:	500Ω	
	Bandwidth	20Hz — 20kHz	
	THD + N	0.002% @1kHz at nominal level	
	S/N Ratio	–93dB, 20Hz — 20kHz	
	Coupling	DC	
Power	Power Adaptor	Source	20VDC 6A
		Consumption:	4.4A
		Max. Power	84W
	PoE (For SWT3-22-HU-WP-US Only)	Consumption	144mA
		Compliance	802.3at, Type 1
		Max. Power	7.8W
	USB-C Charging	Max. Power	60W
		Compliance	PD 3.0
	USB Device Charging	Max. Total Current	2A
Environmental Conditions	Operating Temperature	0° to +40°C (32° to 104°F)	
	Storage Temperature	–40° to +70°C (–40° to 158°F)	
	Humidity	10% to 90%, RHL non–condensing	
Regulatory Compliance (Standards Compliance)	Safety	CE, UL	
	Environmental	RoHs, WEEE	
Enclosure	Size	WW 2 Gang	
	Material	Aluminum	
	Cooling	Fan Ventilation	

Default Communication Parameters

RS-232	
Baud Rate:	115.200
Data Bits:	8
Stop Bits:	1
Parity:	None
Command Format:	ASCII

Example (Route video input 2 to the output):	#ROUTE␣1,1,2<CR>…
Ethernet	
To reset the IP settings to the factory reset values go to: Menu->Setup -> Factory Reset-> press Enter to confirm	
Fallback IP Address:	192.168.1.39
Fallback Subnet mask:	255.255.255.0
Fallback gateway:	192.168.0.1
Default username:	Admin
Default password:	Admin
Full Factory Reset	
P3K	"#FACTORY" command. After receiving "FACTORY OK" perform one of the following to restart the device and complete the procedure: - Power cycle - Send command "#RESET"
Embedded webpages	Go to: Device>General and click FACTORY RESET

Protocol 3000

Kramer devices can be operated using Kramer Protocol 3000 commands sent via serial or Ethernet ports.

Understanding Protocol 3000

Protocol 3000 commands are a sequence of ASCII letters, structured according to the following.

- **Command Format:**

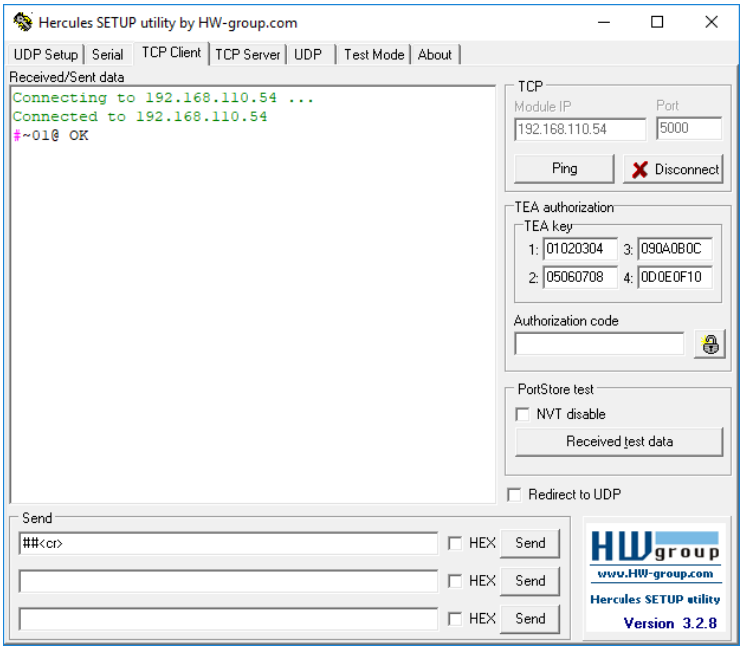
Prefix	Command Name	Constant (Space)	Parameter(s)	Suffix
#	Command	␣	Parameter	<CR>

- **Feedback Format:**

Prefix	Device ID	Constant	Command Name	Parameter(s)	Suffix
~	nn	@	Command	Parameter	<CR><LF>

- **Command parameters** – Multiple parameters must be separated by a comma (,). In addition, multiple parameters can be grouped as a single parameter using brackets ([and]).
- **Command chain separator character** – Multiple commands can be chained in the same string. Each command is delimited by a pipe character (|).
- **Parameter attributes** – Parameters may contain multiple attributes. Attributes are indicated with pointy brackets (<…>) and must be separated by a period (.).

The command framing varies according to how you interface with SWT3-22-HU-WP-T. The following figure displays how the # command is framed using terminal communication software (such as Hercules):



Result and Error Codes

Syntax

In case of an error, the device responds with an error message. The error message syntax:

- **~NN@ERR XXX<CR><LF>** – when general error, no specific command
- **~NN@CMD ERR XXX<CR><LF>** – for specific command
- **NN** – machine number of device, default = 01
- **XXX** – error code

Error Codes

Error Name	Error Code	Description
P3K_NO_ERROR	0	No error
ERR_PROTOCOL_SYNTAX	1	Protocol syntax
ERR_COMMAND_NOT_AVAILABLE	2	Command not available
ERR_PARAMETER_OUT_OF_RANGE	3	Parameter out of range
ERR_UNAUTHORIZED_ACCESS	4	Unauthorized access
ERR_INTERNAL_FW_ERROR	5	Internal FW error
ERR_BUSY	6	Protocol busy
RR_WRONG_CRC	7	Wrong CRC
ERR_TIMEDOUT	8	Timeout
ERR_RESERVED	9	(Reserved)
ERR_FW_NOT_ENOUGH_SPACE	10	Not enough space for data (firmware, FPGA…)
ERR_FW_NOT_ENOUGH_SPACE	11	Not enough space – file system
ERR_FS_FILE_NOT_EXISTS	12	File does not exist
ERR_FS_FILE_CANT_CREATED	13	File can’t be created
ERR_FS_FILE_CANT_OPEN	14	File can’t open
ERR_FEATURE_NOT_SUPPORTED	15	Feature is not supported
ERR_RESERVED_2	16	(Reserved)
ERR_RESERVED_3	17	(Reserved)
ERR_RESERVED_4	18	(Reserved)
ERR_RESERVED_5	19	(Reserved)
ERR_RESERVED_6	20	(Reserved)
ERR_PACKET_CRC	21	Packet CRC error
ERR_PACKET_MISSED	22	Packet number isn't expected (missing packet)
ERR_PACKET_SIZE	23	Packet size is wrong
ERR_RESERVED_7	24	(Reserved)
ERR_RESERVED_8	25	(Reserved)

ERR_RESERVED_9	26	(Reserved)
ERR_RESERVED_10	27	(Reserved)
ERR_RESERVED_11	28	(Reserved)
ERR_RESERVED_12	29	(Reserved)
ERR_EDID_CORRUPTED	30	EDID corrupted
ERR_NON_LISTED	31	Device specific errors
ERR_SAME_CRC	32	File has the same CRC – not changed
ERR_WRONG_MODE	33	Wrong operation mode
ERR_NOT_CONFIGURED	34	Device/chip was not initialized

P/N: 2900-301654QS Rev: 3

SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing

For the latest information on our products and a list of Kramer distributors, visit our website where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

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info@kramerav.com