KanexPro®

4x2 HDMI 2.0 Seamless Matrix Switcher

MPN: Version 2019V1.0

Preface

Read this user manual carefully before using the product. Pictures shown in this manual are for reference only. Different models and specifications are subject to real product.

This manual is only for operation instruction, please contact the local distributor for maintenance assistance. The functions described in this version were updated till March, 2019. In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.
Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

SAFETY PRECAUTIONS

- To ensure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.
- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Contents

1. Product Introduction

Thanks for choosing the SCU42TS 4x2 multi-format seamless presentation matrix switcher with one TPUH610SR receiver! The matrix switcher simplifies meeting room and presentation space system integration by providing three HDMI inputs, one USB-C input, one HDMI output and one HDBaseT output with one HDMI loop output. It also provides external one audio input to be embedded in the first HDMI input. Moreover, it provides one MIX audio input and one MIC audio input for global audio.

The matrix switcher provides true 4K scaling up to 4K@60Hz@4:4:4. Both inputs and outputs are capable of providing 4K@60Hz@4:4:4 signals. The HDBaseT output provides an innovative solution allowing transmission of HDMI 2.0 signals over a CATx cable while ensuring very high, original image quality. It is designed for use with the TPUH610SR receiver. The USB-C input is ideal for AV interfacing with newer MacBook, Chromebook, and Windows PC, as well as smart phones and tablets.

The matrix switcher supports auto switching on HDMI, HDBaseT with HDMI loop outputs based on TMDS activity signals sensing. It also allows users to control system functionality via Web GUI, RS232, IR and CEC.

The matrix switcher is designed to be the central component of AV system. It is ideal for applications where multiple signals with different resolutions must be optimized for displays. It is also suitable for presentation spaces where two displays are needed.

1.1 Features

- 4x2 HDMI 2.0 seamless presentation switcher with matrix outputs.
- HDMI 2.0 and HDCP 2.2 compliant. The video resolution can up to 4K@60Hz 4:4:4.
- Supports video resolution down-scaling and up-scaling, 1080P, 1920x1200P, 4K@30Hz, 4K@60Hz can be selected for HDMI and HDBaseT outputs.
- Supports auto switching.
- Features a mirrored HDMI output for HDBaseT output.
- Visually lossless video de-compression and compression for HDMI signals transmission up to 40m at 4K and 70m at 1080P on HDBaseT output.
- HDBaseT output support 24V PoC.
- One external L+R balanced audio input can be embedded in the first HDMI input.
- One MIX input and one MIC input for audio mixing.
- One L+R balanced audio output and one digital SPDIF audio output for audio de-embedding.

- MIX, MIC and output audio volume control.
- Supports ARC.
- Independent audio adjustment.
- Smart EDID management.
- Controllable via front panel buttons, RS232 local and pass-through, IR local and pass-through, TCP/IP, CEC and on OSD.

1.2 Package List

Matrix Switcher	• 1x SCU42TS 4x2 HDMI 2.0 Seamless Matrix Switcher • 2x Mounting Ears with 6 Screws • 4x Plastic Cushions • 1x IR Remote • 1x IR Receiver (for IR EYE) • 1x 3-pin Terminal Block • 3x 5-pin Terminal Blocks • 1x RS232 Cable (3-pin to DB9) • 1x Power Adaptor (24V DC 2.71A) • 1x Power Cord
HDBaseT Receiver	• 1x TPUH610SR HDBaseT Receiver • 2x Mounting Ears with 4 Screws • 4x Plastic Cushions • 1x 3-pin Terminal Block
	• 1x User Manual

Note: Please contact your distributor immediately if any damage or defect in the components is found.

2. Specification

2.1 SW-HDSC42D4K Matrix Switcher

Video Input	
Video Input	(3) HDMI, (1) USB-C
Video Input Connector	(3) Type-A female HDMI, (1) Type-C USB 3.0
Video Input Video Resolution	HDMI: Up to 4Kx2K@60Hz 4:4:4 8bit
	USB-C: Up to 4Kx2K@30Hz
Video Output	
Video Output	(1) HDMI, (1) HDBaseT with (1) HDMI loop
Video Output Connector	(2) Type-A Female HDMI, (1) RJ45
Video Output Video Resolution	HDMI: Up to 4Kx2K@60Hz 4:4:4
	Extender: Up to 4Kx2K@60Hz 4:4:4, supports 4K to 1080p down-scaling
HDMI Version	Up to 2.0
HDCP Version	Up to 2.2
Audio Input	
Audio Input	(1) External balanced audio (L+R) for 1.HDMI input port, (1) Balanced MIX audio, (1) MIC audio
Audio Input Connector	(2) 5-pin terminal blocks, (1) 3-pin terminal block
HDMI Input Audio Stream	PCM 7.1 audio, Dolby Atmos®, Dolby® TrueHD, Dolby Digital® Plus, DTS:X™, and DTS-HD® Master Audio™ pass-through.
Frequency Response	20Hz-20KHz, ±3dB
Max Input Level	2.0Vrms ± 0.5dB. 2V=16dB headroom above - 10dBV (316mV) nominal consumer line level signal.
L-R Level Deviation	<0.3 dB, 1KHz sine at 0dBFA Level (or max level before clipping)
Input Impedance	>10KΩ
Audio Output	
Audio Output	(1) Digital SPDIF audio, (1) Balanced audio (L+R)
Audio Output Connector	(1) Toslink connectors, (1) 5-pin terminal block
HDMI Output Audio Stream	PCM 2.0
SPDIF/Stereo Output Audio	PCM 2.0

Frequency Response	20Hz-20KHz, ±1dB
Max Output Level	**SPDIF:** ±0.05dBFS **L+R:** 2.0Vrms ± 0.5dB. 2V = 16dB headroom above - 10dBV (316mV) nominal consumer line level signal.
THD+N	<0.05% (-80dB), 20Hz - 20KHz bandwidth, 1KHz sine at 0dBFS level (or max level)
SNR	**SPDIF:** > 90sdB, 20Hz-20KHz bandwidth **L+R:** > 80dB, 20Hz-20KHz bandwidth
Crosstalk Isolation	**SPDIF:** <-70dB, 10KHz sine at 0dBFS level (or max level before clipping) **L+R:** <-80dB, 10KHz sine at 0dBFS level (or max level before clipping)
L-R Level Deviation	**L+R:** <0.05dB, 1KHz sine at 0dBFS level (or max level before clipping)
Frequency Response Deviation	<±0.5dB 20Hz-20KHz
Output Load Capability	**L+R:** 1KΩ and higher (Supports 10x paralleled 10KΩ loads)
Stereo Channel Seperation	>70dB@1KHz
Noise Level	**SPDIF:** -90dB; **L+R:** -80dB
Control Part	
Control Port	(1)Phantom (48V)Switch, (1)IR IN, (1)R OUT, (1)IR EYE, (1)FIRMWARE, (1)RS232, (1)TCP/IP
Control Connector	(1)2-pin DIP Switch, (3)3.5mm jacks,(1)Type-A USB, (1) 3-pin terminal blocks, (1)RJ45
General	
Transmission mode	Extender
Transmission Distance	Extender Output: 1080p@60Hz ≤ 230 feet (70 meters), 4K@60Hz ≤ 131 feet (40 meters)
Bandwidth	18Gbps
Operation Temperature	-5℃ ~ +55℃
Storage Temperature	-25℃ ~ +70℃
Reletive Humidity	10% - 90%
External Power Supply	Input: AC 100-240V, 50/60Hz; Output: 24V DC 2.71A
Power Consumption	71W (Max)
Dimension (W*H*D*)	436.4mm x 44mm x 265mm
Net Weight	2.15KG

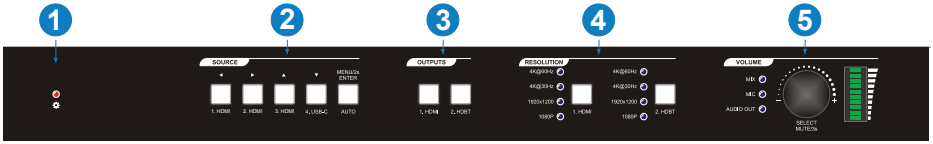
2.2 Extender Receiver

Video	
Input	(1) HDBT
Input Connector	(1) RJ45
Input Resolution	Up to 4Kx2K@60Hz 4:2:0
Output	(1) HDMI
Output Connector	(1) Type-A female HDMI
Output Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit HDR10
Audio	
Input	(1) ARC Audio In
Input Connector	(1) Toslink Connector
Output	(1) Audio Breakout
Output Connector	(1) Toslink connector
Audio Format	Supports PCM, Dolby Digital, Dolby True-HD, DTS and DTS-HD
Frequency Response	20Hz – 20KHz, ±3dB
Max Output Level	2.0Vrms ± 0.5dB. 2V = 16dB headroom above - 10dBV (316mV) nominal consumer line level signal
THD+N	<0.05% (-80dB), 20Hz - 20KHz bandwidth, 1KHz sine at 0dBFS level (or max level)
SNR	> 85dB, 20Hz-20 kHz bandwidth
Crosstalk Isolation	> 70dB, 10KHz sine at 0dBFS level (or max level before clipping)
L-R Level Deviation	< 0.3dB, 1KHz sine at 0dBFS level (or max level before clipping)
Frequency Response Deviation	< 3 0.5dB 20Hz - 20KHz
Output Load Capability	1KΩ and higher (Supports 10x paralleled 10KΩ loads)
Stereo Channel Separation	>70dB@1KHz
Control	
Control Part	(1) ARC Mode button, (1) FW, (1) IR In, (1) IR Out, (1) RS232
Control Connector	(1) Micro-USB port, (2) 3.5mm jacks, (1) 3-pin terminal block
General	
Bandwidth	18Gbps
HDMI Standard	2.0

HDCP Version	2.2, 1.4 compliant
CEC	Pass-through
Bidirectional PoC	Supported
HDMI 2.0 Cable Length	4K@60Hz 4:4:4 ≤ 5m, 4K@60Hz 4:2:0 ≤ 15m, 1080P ≤ 20m
Transmission Standard	Extender
Transmission Distance	1080P@60Hz ≤ 230 feet (70 meters), 4K@60Hz ≤ 131 feet (40 meters)
Operation Temperature	5℃ ~ +55℃
Storage Temperature	-25℃ ~ +70℃
Relative Humidity	10%-90%
Power Supply	Input:100V~240V AC; Output:24V DC 1.25A
Power Consumption	12W (Max)
Dimension (W*H*D)	40mm x 19.5mm x 84mm
Net Weight	290g

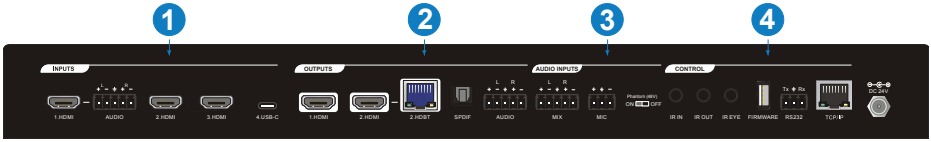
3. Panel Description

3.1 Matrix Switcher Front Panel



1. **Power LED:** The LED illuminates red when the device is powered on.
2. **SOURCE:** Total five buttons with blue backlight.
   - 1. HDMI input selector / Left Key for On Screen Display control (OSD).
   - 2. HDMI input selector / Right Key for OSD.
   - 3. HDMI input selector / Up Key for OSD.
   - 4. USB-C input selector / Down Key for OSD. Auto switching mode selector. Press this to enter or exit auto switching mode. / Press and hold it at least 2 seconds to enable OSD menu.
3. **OUTPUTS:** Two buttons with blue backlight.
   - 1. HDMI output selector.
   - 2. HDBT output selector.
4. **RESOLUTION:** Two output video resolution selectors. Press the
   - 1. HDMI or
   - 2. HDBT button repeatedly to cycle through the four video resolutions. A series of four LEDs, one of which illuminates blue to indicate which resolution is selected.
5. **VOLUME:**
   - Press the volume knob in to toggle among MIX, MIC and AUDIO OUT audio control, and the corresponding LED will illuminate blue.
   - Rotate the knob to increase or decrease the volume of the selected audio.
   - Press and hold the knob at least three seconds to mute the selected audio. Rotate the knob to unmute.

3.2 Matrix Switcher Rear Panel



1. **INPUTS:** Total four video inputs and one audio input.
   - **1. HDMI:** Type-A female HDMI port to connect the HDMI source. One external balanced audio input (5-pin) can be embedded in the HDMI input.
   - **2. HDMI:** Type-A female HDMI port to connect the HDMI source.
   - **3. HDMI:** Type-A female HDMI port to connect the HDMI source.
   - **4. USB-C:** Type-C USB port to connect the device with SlimPort output, e.g. Macbook.
2. **OUTPUTS:**
   - **1. HDMI:** Type-A female HDMI port to connect the display device.
   - **2. HDBT:** RJ45 port to connect the TPUH610SR receiver to transmit AV signal, IR and RS232 control signal. The HDBT output supports 24V PoC.
   - **2. HDMI:** Type-A female HDMI loop output port to connect the display device.

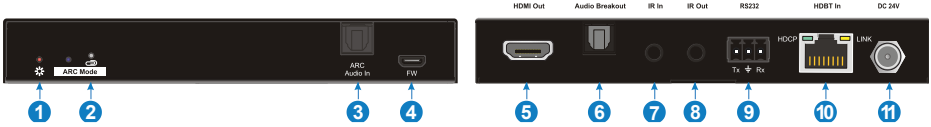
     Note: The 2.HDMI and 2.HDBT ports output the same signal.
   - **SPDIF:** Toslink connector to connect speaker or amplifier for HDMI OUT (default) or HDBT OUT audio de-embedding, or it is used for ARC audio output from TPUH610SR receiver.
   - **AUDIO:** 5-pin terminal block to connect speaker or amplifier for HDMI OUT (default) or HDBT OUT audio de-embedding.
3. **AUDIO INPUTS:**
   - **MIX:** 5-pin terminal block to connect the audio source for global audio mixing.
   - **MIC:** Microphone audio input for global audio mixing.

     Put the Phantom (48V) switch in ON position, the 3-pin terminal block to connect condenser microphone.

     Put the Phantom (48V) switch in OFF position, the 3-pin terminal block to connect dynamic microphone.

4. **CONTROL:**
    - **IR IN:** 3.5mm jack to connect the IR receiver for IR pass-through.
    - **IR OUT:** 3.5mm jack to connect the IR emitter for IR pass-through.
    - **IR EYE:** 3.5mm jack to connect IR receiver to control the switcher by the IR remote.
    - **FIRMWARE:** Type-A USB port for firmware upgrade.
    - **RS232:** 3-pin terminal block to connect the control device (e.g. PC) to control the switcher by sending RS232 commands. It also supports RS232 pass-through control.
    - **TCP/IP:** RJ45 port to connect the control device (e.g. PC) to control the switcher by GUI.
5. **DC 24V:** DC connector for the power adapter connection.

3.3 Extender Receiver Front and Rear Panel



1. **Power LED:** The LED illuminates red when power is applied.
2. **ARC Mode:** Press the button with a paper clip or other sharp tool to enable ARC mode, then the left LED will illuminate blue. Press it again to exit ARC mode and the LED will turn off. ARC mode also can be enabled/disabled by sending RS232 commands.
3. **ARC Audio In:** Toslink connector to connect ARC audio source device (e.g.,TV)
4. **FW:** Micro-USB port for firmware upgrades
5. **HDMI Out:** Type-A female HDMI output port to connect to a display (e.g.TV)
6. **Audio Breakout:** When ARC mode is OFF, the Toslink connector should be connected to speakers or an amplifier for HDMI source audio de-embedding. Note that if ARC mode is ON, this port has no audio output.
7. **IR In:** 3.5mm jack to connect the IR receiver for IR pass-through
8. **IR Out:** 3.5mm jack to connect the IR emitter for IR pass-through
9. **RS232:** 3-pin terminal block to connect the RS232 control device (e.g., PC) or a third-party device to be controlled
10. **HDBT In:** RJ45 port to connect the HDBT output port of switcher/transmitter via CATx Ethernet cable. The LINK LED will illuminate orange when there is a valid Extender link between the switcher/transmitter and the receiver. The HDCP LED illuminates green when the video contains HDCP content.
11. **DC 24V:** DC connector for the power adapter connection. If the switcher/transmitter is connected to the power adaptor, the receiver does not need to connect to the power adaptor since the HDBT output port of the switcher/transmitter supports 24V PoC output.

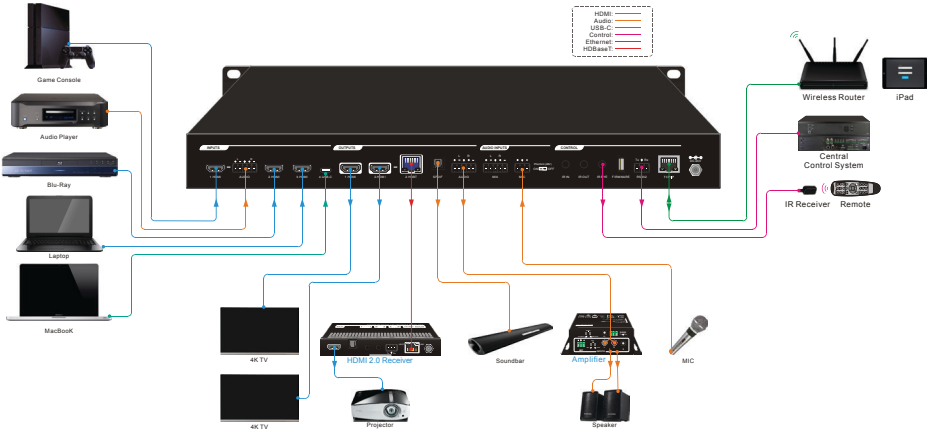
4. System Connection

4.1 Usage Precautions

- Make sure all components and accessories are included before installation.
- The system should be installed in a clean environment with proper temperature and humidity.
- All of the power switches, plugs, sockets, and power cords should be insulated and safe.
- All devices should be connected before turning on power.

4.2 System Diagram

The following diagram illustrates the switcher's input and output connections:



4.3 RS232 Connection

The switcher supports RS232 local control and RS232 pass-through, and the receiver supports RS232 pass-through. There are five modes of RS232 control connection as described below:

1. Connect a PC to the switcher's RS232 port to control the switcher by sending RS232 commands. Please refer to chapter 8. RS232 Control for more details.
2. Connect a PC to the receiver's RS232 port to control the switcher by sending RS232 commands.
3. Connect a PC to the switcher's RS232 port to control, via RS232 commands, a far-end third-party device (e.g., projector) which is connected to the receiver's RS232 port.
4. Connect a PC to the receiver's RS232 port to control, via RS232

commands, a local third-party device which is connected to the switcher's RS232 port.
5. Connect a third-party device to the switcher's RS232. The third-party device can be controlled by sending RS232 commands via the GUI's RS232 Control tab. Refer to section 7.7 RS232 Control Tab for more details.

4.4 IR Connection

The switcher provides an IR EYE port for switcher control and provides IR IN and IR OUT ports to be used together with the receiver's IR In and IR Out ports for source or display device control.

1. Connect the IR receiver to the switcher's IR EYE port to control the switcher via the IR remote.
2. Control the far-end display device: Connect the IR receiver to the switcher's IR IN port, then connect the IR emitter to the receiver's IR Out port. A display device that is connected to the receiver can be controlled from the local switcher by its IR remote.
3. Control the local source device: Connect the IR receiver to the receiver's IR In port, then connect the IR emitter to the switcher's IR OUT port. A source device that is connected to the switcher can be controlled from the far-end receiver by its IR remote.

5. Button Control

5.1 Manual Switching

When the switcher is in manual switching mode, the AUTO button's LED turns off. Follow these steps to select the output channel's input source.

1. Press any one of the four input buttons to select the input source. The corresponding button's LED turns blue.
2. Press either the 1.HDMI or 2.HDBT output button to select an output channel. The corresponding button's LED turns blue.
3. Press the input button again to confirm the selected setting; otherwise, it will automatically confirm after three seconds.

5.2 Auto Switching

Follow these steps to enable auto switching mode for 1.HDMI or 2.HDBT output.
1. Press AUTO. The button's LED will turn blue.
2. Press either the 1.HDMI or 2.HDBT output button. The corresponding button's LED will turn blue.
3. Press the AUTO button again to confirm the selected setting; otherwise,

it will automatically confirm after three seconds.
4. Repeat the preceding three steps to exit auto mode. The input source will remain the current setting.

Note: The AUTO button LED illuminates blue when the 1.HDMI output is in auto mode or the 2.HDBT output in auto mode.

When in auto mode, the switcher will switch according to the following rules:

- The switcher will switch to the first available active input starting at input 1.
- New input: The switcher will automatically select the new input after it detects a new input.
- Reboot: If power is restored to the switcher, it will automatically reconnect to the input that was selected before the switcher was powered off.
- Source removed: When an active source is removed, the switcher will switch to the first available active input starting at the 1.HDMI input.
- In auto mode, the input source also can be switched by following the manual switching steps.

5.3 Switching Status Query

- Press any input button to determine its corresponding output channel.
- Press any output button to determine its corresponding input channel.

Example: The 2.HDMI input is switched to HDMI OUT.

Press the 2.HDMI input button. The 2.HDMI source button and the 1.HDMI output button will illuminate blue for 3 seconds.
Press the 1.HDMI output button. The 2.HDMI source button will illuminate blue for 3 seconds.

5.4 Resolution Selection

Press the 1.HDMI or 2.HDBT button in the RESOLUTION area repeatedly to cycle through the four video resolutions. This will illuminate one of the four blue LEDs to indicate which resolution is selected.

5.5 Volume Control

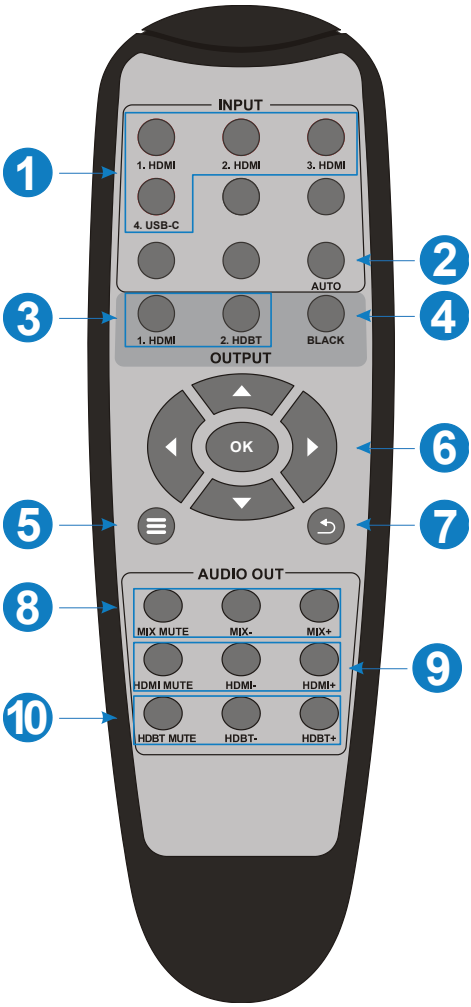
Press the volume knob to select MIX, MIC, or AUDIO OUT for audio adjustment. The corresponding LED will illuminate blue and stay illuminated.

- Turn the volume knob in a clockwise direction to increase the sound volume.
- Turn the volume knob in a counter-clockwise direction to decrease the sound volume.

- Press and hold the volume knob at least three seconds to mute the selected audio. Rotate the volume knob to unmute the selected audio.

6. IR Remote Control

Connect the IR receiver to the IR EYE port. Use the IR remote as described below to control the switcher.



1. Select the input source.
2. Press AUTO to enable auto switching mode, then select the output channel.
3. Select the output channel.
4. Press BLACK, then select the output channel to make it output a black screen.
5. Enable/Disable the OSD menu.
6. Confirm and Navigation buttons: OK, UP, DOWN, LEFT, and RIGHT for the OSD menu
7. Return to the previous OSD menu.
8. MIX input audio control: Mute, Volume Down, and Volume Up
9. HDMI output audio control: Mute, Volume Down, and Volume Up
10. HDBT output audio control: Mute, Volume Down, and Volume Up

7. GUI Control

A GUI allows the switcher to be controlled via TCP/IP. The default IP settings are:

IP Address: 192.168.0.178
Subnet Mask: 255.255.255.0

Type 192.168.0.178 in an internet browser to display the following log-in webpage:

Username: admin
Password: admin

Type the username and password, then click Login to display the video switching webpage.

7.1 Video Switching Tab

- **HDMI OUTPUT:** Switch the selected input source to HDMI output. Click AUTO to enable/disable auto switching mode.
- **HDBT OUTPUT:** Switch the selected input source to HDBT output. Click AUTO to enable/disable auto switching mode.
- **Preset:** Save the current routing status to preset 1~6, or recall a previously saved preset.

7.2 Resolution Selection Tab

- HDMI OUTPUT: Select the HDMI output video resolution.
- HDBT OUTPUT: Select the HDBT output video resolution.
- Confirm: Click Confirm to save your selected HDMI OUTPUT and HDBT OUTPUT settings.

7.3 Audio Control Tab

7.3.1 Audio Input

- **HDMI IN:**
  1. **Source:** Select the HDMI audio stream of the source device for the 1.HDMI input.
  2. **Embedded:** Select the external balanced audio (5-pin) to be embedded in the 1.HDMI input.
- **MIX:** MIX input audio volume control (Volume Down, Volume Up, Mute/Unmute).
- **MIC:** MIC input audio volume control (Volume Down, Volume Up, Mute/Unmute).

7.3.2 Audio Output

- **HDMI Output:** Select the MIX or MIC input audio to mix with the HDMI output audio, then use the volume bar and buttons to control the audio output.
- **HDBT Output:** Select the MIX or MIC input audio to mix with the HDBT output audio, then use the volume bar and buttons to control the audio output.
- **SPDIF Output:** Select the audio source for the SPDIF output.
  1. **RX ARC:** Select the ARC audio from the receiver.
  2. **HDMI OUT:** Select the HDMI OUT audio to be de-embedded by the SPDIF output port.
  3. **HDBT OUT:** Select the HDBT OUT audio to be de-embedded by the SPDIF output port.
- **L+R Output:** Select the HDMI OUT or HDBT OUT audio to be de-embedded by the L+R audio output port.

7.4 Configuration

7.4.1 PoC Setting

- Turn on or turn off PoC for the HDBT Output port.

7.3.2 Audio Output

- Select the compatible built-in EDID for the selected input source.
- To upload user-define EDID, follow these steps:
  Step 1: Prepare the EDID file (.bin) on the control PC.
  Step 2: Select **User-defined**.
  Step 3: Click the .bin box, then select the EDID file (.bin) to upload.
  Step 4: Click Confirm to upload the user-defined EDID.

7.5 CEC Control Tab

If the input source devices and display devices support CEC, they can be controlled by the following control buttons.

1. Source Control

- Select the input source which needs to be controlled, then press the desired function buttons.

2. Display Control

- Select the output display which needs to be controlled, then press the desired function buttons.

3. User-defined CEC Functions

The switcher supports user-define CEC functions. A CEC command can be edited and saved in each Trigger box.

- Select the input source, then type a CEC command in the Trigger 1 or Trigger 2 box to control the selected source.
- Select the output display, then type a CEC command in the Trigger 1 or Trigger 2 box to control the selected display.

7.6 Tags Setting Tab

- **INPUTS:** You can modify the label for each input source.
- **Preset:** You can modify the label for each preset.

7.7 RS232 Control Tab

- Select **Local** or **HDBT Out** control mode.
- **Local:** Send RS232 commands to control the local third-party device that is connected to the RS232 port of the switcher.
- **HDBT Out:** Send RS232 commands to control the far-end third-party device (e.g., projector) that is connected to the RS232 port of the Extender Receiver.
- Select **HEX** or **ASCII** format.
- **Baud Rate:** Select a baud rate of 2400, 4800, 9600, 19200, 38400, 57600, or 115200.
- **Command Ending:** Select NULL, CR, LF, or CR+LF.
- **Command:** Type a command in this textbox that will be sent to the third-party device. Click Send to send the command to the third-party device.
- **Trigger On:** Type a Power On command in this textbox to turn on the third-party device. Click Send to send the Power On command to the third-party device.
- **Trigger Off:** Type a Power Off command in this textbox to turn off the third-party device. Click Send to send the Power Off command to the third-party device.
- **Save:** Click Save to save the RS232 Control settings.

7.8 Network Setting Tab

- Select **DHCP** (Dynamic Host Configuration Protocol) or **Static IP**.
- When **Static IP** is selected, you can modify the static IP Address, Subnet Mask, and Gateway.

7.9 Security Setting Tab

- **Credentials:** Use the **Password** box to modify the login password. Click **Confirm** to change the password.
- **Front Panel Lock:** Select **ON** or **OFF** to lock or unlock the front panel buttons.

7.10 GUI Upgrade

Visit http://192.168.0.178:100 to upgrade the GUI.

Type the username and password (the same as the GUI log-in setting; if you modified the password, it will be active only after rebooting) to login to the configuration interface. Then, click **Administration** in the source menu to access **Upload Firmware** as shown below:

Select the desired firmware update file and press Apply. This will start the upgrade process.

8. RS232 Control

Use an RS232 cable to connect the RS232 port to a control device (e.g., PC). The switcher can be controlled by sending RS232 commands.

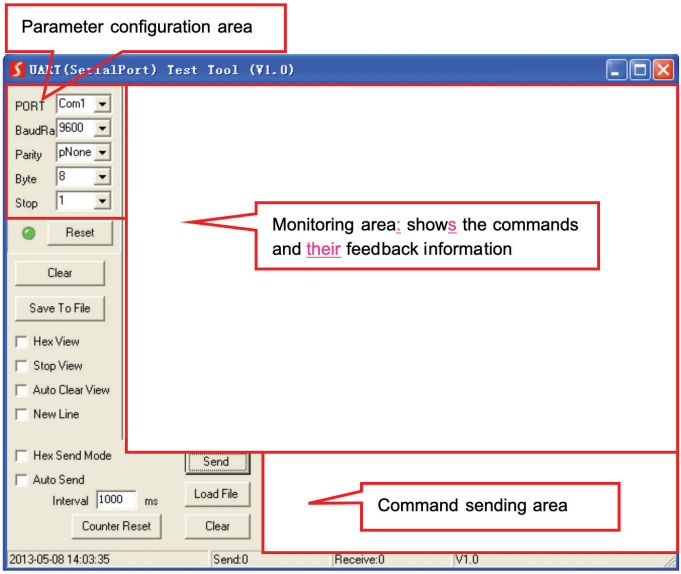
8.1 RS232 Control Software

- **Installation:** Copy the control software file to the control PC.
- **Uninstallation:** Delete all the control software files in the corresponding file path.

Basic Settings:
Connect all of the desired input devices and output devices to the switcher. Then connect the switcher to a PC on which the RS232 control software is installed. On the PC, double-click the appropriate software icon to run the RS232 control software.

Here is an example that uses the **CommWatch.exe** software:

The **CommWatch.exe** main view is shown below:



Set the appropriate parameters for the COM number, bound rate, data bit, stop bit, and parity bit. Next, use the command sending area to send commands via RS232.

8.2 RS232 Commands

Communication protocol: RS232 Communication Protocol
Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none

Note:

- In the commands, "["and "]" surround user-selected portions of a command. Do not type these brackets during actual operation.
- Type each command carefully; they are case-sensitive.

8.2.1 System Control

Command	Description	Command Example and Feedback
#SYS_SET_DEVICE_MODLE ****	Rename the system's model to ****.	#SYS_SET_DEVICE_MODLE SCU42TS
		SCU42TS
#SET_PWR_STATE ON	Turn on the system.	@PWR_STATE PWON
#SET_PWR_STATE OFF	Put the system in standby mode.	@PWR_STATE PWOFF
#GET_PWR_STATE	Get the system's power status.	@PWR_STATE PWON
#SET_KEYPAD_LOCK ON	Lock the front panel buttons.	@PWR_STATE PWOFF
#SET_KEYPAD_LOCK OFF	Unlock the front panel buttons.	@KEYPAD_LOCK ON
#GET_KEYPAD_LOCK	Get the front panel buttons' locking status.	@KEYPAD_LOCK OFF
#GET_DEVICE_TYPE	Get the system's model.	@KEYPAD_LOCK ON
#GET_DEVICE_IPADDR	Get the GUI's IP address.	@KEYPAD_LOCK OFF
#FACTORY_RESET	Reset the system to factory default values.	SCU42TS
#GET_DEVICE_FIRMWAREINF	Get the system's firmware version.	@IP_ADDR: 192.168.0.178

<table>
<tr><td>#SET_PORT_RELAY 01 ON</td><td>Turn on PoC for the HDBT output port. This causes the receiver to be powered by the switcher via PoC.</td><td>@PORT_RELAY 01 ON</td></tr>
<tr><td>#SET_PORT_RELAY 01 OFF</td><td>Turn off PoC for the HDBT output port.</td><td>@PORT_RELAY 01 OFF</td></tr>
<tr><td>#GET_PORT_RELAY 01</td><td>Get the system's PoC status.</td><td>@PORT_RELAY 00
@PORT_RELAY 01</td></tr>
<tr><td>#SET_BADURATE_MODE [PARAM]</td><td>Set the baud rate of the switcher to [PARAM].
[PARAM]=01~07
<table><tr><th>[PARAM]</th><th>Baud Rate</th></tr><tr><td>01</td><td>2400</td></tr><tr><td>02</td><td>4800</td></tr><tr><td>03</td><td>9600</td></tr><tr><td>04</td><td>19200</td></tr><tr><td>05</td><td>38400</td></tr><tr><td>06</td><td>57600</td></tr><tr><td>07</td><td>115200</td></tr></table></td><td>#SET_BADURATE_ MODE 05</td></tr>
<tr><td>#UPDATE_MODE MAIN [PARAM]</td><td>Upgrade the 3458 IC of port [PARAM].
[PARAM]=01~04 (input port).
[PARAM]=05~06 (output port).</td><td></td></tr>
<tr><td>#UPDATE_MODE HDCP22 [PARAM]</td><td>Upgrade the HDCP 2.2 of port [PARAM].
[PARAM]=01~04 (input port).
[PARAM]=05~06 (output port).</td><td></td></tr>
</table>

8.2.2 Video Switching

<table>
<tr><th>Command</th><th>Description</th><th>Command Example and Feedback</th></tr>
<tr><td rowspan="2">#SET_AUTO_SWITCH [PARAM] ON</td><td rowspan="2">Enable the auto switching mode for the HDMI or HDBT output.
[PARAM] = 01 (HDMI)/02 (HDBT)</td><td>#SET_AUTO_SWITCH 01 ON</td></tr>
<tr><td>@AUTOSWITCH 01 ON</td></tr>
</table>

Command	Description	Command Example and Feedback
#SET_AUTO_SWITCH [PARAM] OFF	Disable the auto switching mode for the HDMI or HDBT output. [PARAM] = 01 (HDMI)/02 (HDBT)	#SET_AUTO_SWITCH 01 OFF
		@AUTOSWITCH 01 OFF
#GET_AUTO_SWITCH	Get the auto switching mode of the HDMI and HDBT outputs.	@AUTOSWITCH 01 ON @AUTOSWITCH 02 OFF
#SET_AV [INPARAM] TO [OUTPARAM1] [OUTPARAM2]...	Switch input [INPARAM] to output [OUTPARAM1] [OUTPARAM2]... [INPARAM]=01 ~ 04 [OUTPARAM1] [OUTPARAM2]...= 01 ~ 02, ALL	#SET_AV 01 TO 02 #SET_AV 01 TO 01 02 #SET_AV 04 TO ALL
		@AV 01 TO 02 @AV 01 TO 01 02 @AV 04 TO ALL
#GET_AV	Get the input channel on output channel one by one.	@Video&Audio OUT 01 02 IN 04 04
#GET_AV OUT [PARAM]	Get the input channel on output [PARAM]. [PARAM]=01~02.	#GET_AV OUT 01
		@AV 01 TO 01
#GET_AV IN [PARAM]	Get the output channel on input [PARAM]. [PARAM]=01~04.	#GET_AV IN 01
		@AV 01 TO 01 02

8.2.3 Preset Settings

Command	Description	Command Example and Feedback
#SAVE_PRESET_MODE [PARAM]	Store the current switching status in preset [PARAM]. [PARAM]=01~ 10.	#SAVE_PRESET_MODE 01
		@SAVE_PRESET_MODE 01
#RECALL_PRESET_MODE [PARAM]	Recall preset [PARAM]. [PARAM]=01~ 10.	@RECALL_PRESET_ MODE 04 @Video&Audio OUT 01 02 IN 01 03
#CLR_PRESET_MODE [PARAM]	Clear preset [PARAM]. [PARAM]=01~ 10.	#CLR_PRESET_MODE 01
		@CLEAR_PRESET_MODE 01

8.2.3 Preset Settings

Command	Description	Command Example and Feedback
#SAVE_PRESET_MODE [PARAM]	Store the current switching status in preset [PARAM]. [PARAM]=01~ 10.	#SAVE_PRESET_MODE 01
		@SAVE_PRESET_MODE 01
#RECALL_PRESET_MODE [PARAM]	Recall preset [PARAM]. [PARAM]=01~ 10.	#RECALL_PRESET_MODE 04
		@RECALL_PRESET_ MODE 04 @Video&Audio OUT 01 02 IN 01 03
#CLR_PRESET_MODE [PARAM]	Clear preset [PARAM]. [PARAM]=01~ 10.	#CLR_PRESET_MODE 01
		@CLEAR_PRESET_MODE 01

8.2.4 Audio Control

Command	Description	Command Example and Feedback
#SET_IIS_SEL [PARAM]	Set the audio source of the audio output (L+R) port to [PARAM]. [PARAM]=01 ~ 02 01=HDMI output audio 02=HDBT output audio	#SET_IIS_SEL 01
		@IIS_AUDIO 01
#GET_IIS_SEL	Get the audio source of the audio output (L+R) port.	@IIS_AUDIO 01
#SET_SPDIF_SEL [PARAM]	Set the audio source of the SPDIF output port to [PARAM]. [PARAM]=01 ~ 03 01=HDMI output audio 02=HDBT output audio 03=ARC audio from receiver	#SET_SPDIF_SEL 01
		@SPDIF_AUDIO 01
#GET_SPDIF_SEL	Get the audio source of the SPDIF output port.	@SPDIF_AUDIO 01

Command	Description	Command Example and Feedback
#SET_AUDIO_ARC ON	Enable ARC mode for the TPUH610S receiver.	@SET_AUDIO_ARC ON
#SET_AUDIO_ARC OFF	Disable ARC mode for the TPUH610S receiver.	@SET_AUDIO_ARC OFF
#SET_AV_MUTE [PARAM] ON	Mute the audio [PARAM]. [PARAM]=01~05, ALL 01=HDMI output audio 02=HDBT output audio 03=MIX audio 04=MIC audio 05=L+R audio ALL=All audio	#SET_AUDIO_MUTE 01 ON #SET_AUDIO_MUTE ALL ON
		@AUDIO_MUTE 01 ON @AUDIO_MUTE ALL ON
#SET_AV_MUTE [PARAM] OFF	Unmute the audio [PARAM]. [PARAM]=01~05, ALL 01=HDMI output audio 02=HDBT output audio 03=MIX audio 04=MIC audio 05=L+R output audio ALL=All audio	#SET_AUDIO_MUTE 01 OFF #SET_AUDIO_MUTE ALL OFF
		@AUDIO_MUTE 01 OFF @AUDIO_MUTE ALL OFF
#GET_AV_MUTE [PARAM]	Get the output status of [PARAM] audio. [PARAM]=01~05, ALL 01=HDMI output audio 02=HDBT output audio 03=MIX audio 04=MIC audio 05=L+R output audio ALL=All audio	#GET_AUDIO_MUTE 01 #GET_AUDIO_MUTE ALL
		@AUDIO MUTE 01 ON @AUDIO MUTE OUT 01 02 03 04 05 STA 01 01 01 01 01
#SET_VOL [PARAM1] [PARAM2]	Set the volume of [PARAM1] audio to [PARAM2]. [PARAM1]=01~05 01=HDMI output audio 02=HDBT output audio 03=MIX audio 04=MIC audio 05=L+R output audio [PARAM2]=0~60	#SET_VOL 01 60
		@VOL HDMI 60

#GET_VOL [PARAM]	Get the audio volume of output [PARAM]. [PARAM]= HDMI, HDBT, ALL.	#GET_VOL HDMI #GET_VOL ALL
		@VOL HDMI 60 @VOL HDBT 60 @VOL MIX 60 @VOL MIC 30 @VOL L+R 30
#SET_AUDIO_EMBEDDED ON	Select the external balanced audio (5-pin) to be embedded in the 1.HDMI input.	@AUDIO_EMBEDDED ON
#SET_AUDIO_EMBEDDED OFF	Select the internal HDMI audio stream of the source device for the 1.HDMI input.	@AUDIO_EMBEDDED OFF
#GET_AUDIO_EMBEDDED 01	Get the audio source of the 1.HDMI input.	@AUDIO_EMBEDDED ON @AUDIO_EMBEDDED OFF
#SET_AUDIO_MIX [PARAM1] [PARAM2]	Enable/disable the output [PARAM1] audio to mix with the MIX audio. [PARAM1]=01~02, ALL 01=HDMI Output 02=HDBT Output ALL=All outputs [PARAM2]=ON/OFF	#SET_AUDIO_MIX 01 ON #SET_AUDIO_MIX ALL ON
		@AUDIO_MIX 01 ON @AUDIO_MIX 01 OFF @AUDIO_MIX ALL OFF @AUDIO_MIX ALL ON
#GET_AUDIO_MIX [PARAM]	Get the MIX audio status of output [PARAM]. [PARAM]=01~02, ALL 01=HDMI Output 02=HDBT Output ALL=All outputs	#GET_AUDIO_MIX 01 #GET_AUDIO_MIX ALL
		@AUDIO_MIX 01 ON @AUDIO_MIX 02 OFF
#SET_AUDIO_MIC [PARAM1] [PARAM2]	Enable/disable the output [PARAM1] audio to mix with the MIC audio. [PARAM1]=01~02, ALL 01=HDMI Output 02=HDBT Output ALL=All outputs [PARAM2]=ON/OFF	#SET_AUDIO_MIC 01 ON #SET_AUDIO_MIC ALL ON
		@AUDIO_MIC 01 ON @AUDIO_MIC 01 OFF @ AUDIO_MIC ALL OFF @AUDIO_MIC ALL ON
#GET_AUDIO_MIC [PARAM]	Get the MIC audio status of output [PARAM]. [PARAM]=01~02, ALL 01=HDMI Output 02=HDBT Output ALL=All outputs	#GET_AUDIO_MIC 01 #GET_AUDIO_MIC ALL
		@AUDIO_MIC 01 OFF @AUDIO_MIC 02 OFF

8.2.5 Output Resolution Settings

<table>
<tr><th>Command</th><th>Description</th><th>Command Example and Feedback</th></tr>
<tr><td rowspan="2">#SET_OUTPUT_RES [PARAM1] TO [PARAM2]</td><td rowspan="2">Set the output resolution of output [PARAM2] to [PARAM1].
• [PARAM2]=01~02
<table>
<tr><th>[PARAM2]</th><th>Output</th></tr>
<tr><td>01</td><td>HDMI</td></tr>
<tr><td>02</td><td>HDBT</td></tr>
</table>
• [PARAM1]=1~10
<table>
<tr><th>[PARAM1]</th><th>Resolution</th></tr>
<tr><td>01</td><td>4K@60HZ 4:4:4</td></tr>
<tr><td>02</td><td>4K@30Hz 4:4:4</td></tr>
<tr><td>03</td><td>1920X1200@60Hz</td></tr>
<tr><td>04</td><td>1080P@60Hz</td></tr>
<tr><td>05</td><td>1080P@50Hz</td></tr>
<tr><td>06</td><td>1600x1200@60Hz</td></tr>
<tr><td>07</td><td>1360x768@60Hz</td></tr>
<tr><td>08</td><td>1024x768@60Hz</td></tr>
<tr><td>09</td><td>720P@60Hz</td></tr>
<tr><td>10</td><td>720P@50Hz</td></tr>
</table></td><td>#SET_OUTPUT_ RES 01 TO 01</td></tr>
<tr><td>@OUTPUT_RES 4k@60 TO 01</td></tr>
<tr><td>#GET_OUTPUT_RES [PARAM]</td><td>Get the video resolution of output [PARAM].
[PARAM]=01~02, ALL</td><td>#GET_OUTPUT_RES 01</td></tr>
<tr><td></td><td></td><td>@OUTPUT RES 1080@60 TO 01</td></tr>
</table>

8.2.6 EDID Management

<table>
<tr><th>Command</th><th>Description</th><th>Command Example and Feedback</th></tr>
<tr><td rowspan="2">#SET_EDID_MODE CAL:[PARAM1] TO [PARAM2]</td><td rowspan="2">The HDMI input [PARAM2] invokes built-in EDID [PARAM1].
[PARAM1]=01~03 (EDID)
[PARAM2]=01~03 (1.HDMI IN~3. HDMI IN)

<table><tr><th>[PARAM1]</th><th>EDID</th></tr><tr><td>01</td><td>1080P@60Hz 2CH</td></tr><tr><td>02</td><td>4K@30Hz 4:4:4 2CH</td></tr><tr><td>03</td><td>4K@60Hz 4:4:4 2CH</td></tr></table></td><td>#SET_EDID_MODE CAL:01 TO 02</td></tr>
<tr><td>@EDID_MODE CAL:01 TO 02</td></tr>
<tr><td rowspan="2">#SET_EDID_MODE LRN: [PARAM1] TO [PARAM2]</td><td rowspan="2">Set the EDID data of output [PARAM1] to input [PARAM2].
[PARAM1]=01~02 (HDMI/HDBT OUT)
[PARAM2]=01~03 (1.HDMI IN~3. HDMI IN)</td><td>#SET_EDID_MODE UPL:01</td></tr>
<tr><td>@EDID_MODE UPL:01
@EDID_MODE UP-L:Please Send Edid Data in 15s</td></tr>
<tr><td rowspan="2">#GET_EDID_MODE [PARAM]</td><td rowspan="2">Get the EDID data of input [PARAM].
[PARAM]=01~04.</td><td>#GET_EDID_MODE 01</td></tr>
<tr><td>@EDID_MODE UPL:01</td></tr>
</table>

8.2.7 CEC Control

If the input source devices and display devices support CEC, they can be controlled by sending CEC commands.
Use the following command format to send specific command to control the input source or display devices.

#SEND_CECCMD [port]:[command]

- The **[port]** represents the port number. The input ports are 01-03; the output ports are 04-06.

[port]	Description
01	1.HDMI input
02	2.HDMI input
03	3.HDMI input
04	1.HDMI output
05	2.HDMI output (Loop)
06	2.HDBT output

- The "**[command]**" represents a specific command from the following table.

√ **Control the input source:**

Command	Description	Command Example and Feedback
#SEND_CECCMD [port]:00	Confirm operation (Enter)	#SEND_CECCMD 03:00
		[CEC]: blue ray OK.
#SEND_CECCMD [port]:01	UP	#SEND_CECCMD 03:01
		[CEC]: blue ray up.
#SEND_CECCMD [port]:02	DOWN	#SEND_CECCMD 03:02
		[CEC]: blue ray down.
#SEND_CECCMD [port]:03	LEFT	#SEND_CECCMD 03:03
		[CEC]: blue ray left.
#SEND_CECCMD [port]:04	RIGHT	#SEND_CECCMD 03:04
		[CEC]: blue ray right.
#SEND_CECCMD [port]:09	Back to submenu	#SEND_CECCMD 03:09
		[CEC]: blue ray menu.

Command	Description	Command Example and Feedback
#SEND_CECCMD [port]:0D	Exit	#SEND_CECCMD 03:0D
		[CEC]: blue ray Exit.
#SEND_CECCMD [port]:41	Volume Up	#SEND_CECCMD 03:41
		#SEND_CECCMD 03:42
	Volume Down	#SEND_CECCMD 03:42
#SEND_CECCMD [port]:42		[CEC]: blue ray Volume Down
#SEND_CECCMD [port]:44	Play	#SEND_CECCMD 03:44
		[CEC]: blue ray play.
#SEND_CECCMD [port]:45	Stop	#SEND_CECCMD 03:45
		[CEC]: blue ray stop.
#SEND_CECCMD [port]:46	Pause	#SEND_CECCMD 03:46
		[CEC]: blue ray pause.
#SEND_CECCMD [port]:48	Rewind	#SEND_CECCMD 03:48
		[CEC]: blue ray back-ward.
#SEND_CECCMD [port]:49	Fast Forward	#SEND_CECCMD 03:49
		[CEC]: blue ray forward.
#SEND_CECCMD [port]:4B	Forward	#SEND_CECCMD 03:4B
		[CEC]: blue ray skid forward.
#SEND_CECCMD [port]:4C	Backward	#SEND_CECCMD 03:4C
		[CEC]: blue ray skid backward.
#SEND_CECCMD [port]:6C	Power Off	#SEND_CECCMD 03:6C
		[CEC]: Source Power off.
#SEND_CECCMD [port]:6D	Power On	#SEND_CECCMD 03:6D
		[CEC]: Source Power on.

√ **Control the output display:**

Command	Description	Command Example and Feedback
#SEND_CECCMD [port]:34	Input channel selection	#SEND_CECCMD 04:34
		[CEC]: TV input select

Command	Description	Command Example and Feedback
#SEND_CECCMD [port]:41	Volume Up	#SEND_CECCMD 04:41
		[CEC]: TV VOL +
#SEND_CECCMD [port]:42	Volume Down	#SEND_CECCMD 04:42
		[CEC]: TV VOL -
#SEND_CECCMD [port]:43	Mute	#SEND_CECCMD 04:43
		[CEC]: TV VOL Mute
#SEND_CECCMD [port]:36	Power Off	#SEND_CECCMD 04:36
		[CEC]: TV Power off
#SEND_CECCMD [port]:04	Power On	#SEND_CECCMD 04:04
		[CEC]: TV Power on

8.2.8 Third Party Device Control

The switcher supports RS232 pass-through control. A third-party device can be controlled by RS232 commands using the command format shown below:

<table>
<tr><th>Command</th><th>Function</th><th>Command Example</th></tr>
<tr><td rowspan="2">#SEND_[PARAM1]_
[PARAM2]_
[PARAM3]:XXXX</td><td>Send an ASCII or HEX command to control a third-party device.
• [PARAM1]=A/H: Represents the command format.
<table>
<tr><th>[PARAM1]</th><th>Command Format</th></tr>
<tr><td>A</td><td>ASCII</td></tr>
<tr><td>H</td><td>HEX</td></tr>
</table>
• [PARAM2]=01~02: Represents the RS232 port.
<table>
<tr><th>[PARAM2]</th><th>RS232 Port</th></tr>
<tr><td>01</td><td>The switcher's RS232 port.</td></tr>
<tr><td>02</td><td>The far-end Extender Receiver's RS232 port.</td></tr>
</table>
• [PARAM3]=01~07: Represents the baud rate of the third-party device
<table>
<tr><th>[PARAM3]</th><th>Baud Rate</th></tr>
<tr><td>01</td><td>2400</td></tr>
<tr><td>02</td><td>4800</td></tr>
<tr><td>03</td><td>9600</td></tr>
<tr><td>04</td><td>19200</td></tr>
<tr><td>05</td><td>38400</td></tr>
<tr><td>06</td><td>57600</td></tr>
<tr><td>07</td><td>115200</td></tr>
</table>
• XXXX: ASCII or HEX characters.</td><td>#SEND_A_01_05:123456789

Explanation: Send the ASCII command “123456789” to the third-party device that is connected to the switcher's RS232 port. The baud rate of the third-party device is 38400.</td></tr>
<tr><td>#SEND_H_02_05:30 31 32 33 34

Explanation: Send the HEX command “30 31 32 33 34” to the third-party device that is connected to the Extender Receiver's RS232 port. The baud rate of the third-party device is 38400.</td></tr>
</table>

<table>
<tr><th>Command</th><th>Function</th><th>Command Example</th></tr>
<tr><td rowspan="2">#SET_ON_
[PARAM1]_
[PARAM2]_
[PARAM3]:XXXX</td><td>When the system is powered on, automatically send an ASCII or HEX command to a third-party device.
• [PARAM1]=A/H: Represents the command format.
<table><tr><th>[PARAM1]</th><th>Command Format</th></tr><tr><td>A</td><td>ASCII</td></tr><tr><td>H</td><td>HEX</td></tr></table>• [PARAM2]=01~02: Represents the RS232 port.
<table><tr><th>[PARAM2]</th><th>RS232 Port</th></tr><tr><td>01</td><td>The switcher's RS232 port.</td></tr><tr><td>02</td><td>The far-end Extender Receiver's RS232 port.</td></tr></table>• [PARAM3]=01~07: Represents the baud rate of the third-party device.
<table><tr><th>[PARAM3]</th><th>Baud Rate</th></tr><tr><td>01</td><td>2400</td></tr><tr><td>02</td><td>4800</td></tr><tr><td>03</td><td>9600</td></tr><tr><td>04</td><td>19200</td></tr><tr><td>05</td><td>38400</td></tr><tr><td>06</td><td>57600</td></tr><tr><td>07</td><td>115200</td></tr></table>• XXXX: ASCII or HEX characters.</td><td>#SET_ ON_A_01_03:123456789

Explanation: Automatically send the ASCII command “123456789” to the third-party device that is connected to the switcher's RS232 port. The baud rate of the third-party device is 9600.</td></tr>
<tr><td>#SET_ON_H_02_03:30 31 32 33 34

Explanation: Automatically send the HEX command “30 31 32 33 34” to the third-party device that is connected to the Extender Receiver's RS232 port. The baud rate of the third-party device is 9600.</td></tr>
</table>

<table>
<tr><th>Command</th><th>Function</th><th>Command Example</th></tr>
<tr><td rowspan="2">#GET_ON_
[PARAM1]_
[PARAM2]</td><td>Get the command that will be sent to a third-party device when the system is powered on.

• [PARAM1]=01~02: Represents the RS232 port.

<table><tr><th>[PARAM1]</th><th>RS232</th></tr><tr><td>01</td><td>The switcher's RS232 port.</td></tr><tr><td>02</td><td>The far-end Extender Receiver's RS232 port.</td></tr></table>
• [PARAM2]=01~07: Represents the baud rate of the third-party device.

<table><tr><th>[PARAM2]</th><th>Baud Rate</th></tr><tr><td>01</td><td>2400</td></tr><tr><td>02</td><td>4800</td></tr><tr><td>03</td><td>9600</td></tr><tr><td>04</td><td>19200</td></tr><tr><td>05</td><td>38400</td></tr><tr><td>06</td><td>57600</td></tr><tr><td>07</td><td>115200</td></tr></table></td><td>#GET_ON_02_03

Explanation: Gets the command that will be sent to a third-party device that is connected to the Extender Receiver's RS232 when the system is powered on. The baud rate of the third-party device is 9600.</td></tr>
<tr><td>third-party device is 9600.</td></tr>
</table>

<table>
<tr>
<td>#SET_OF_
[PARAM1]_
[PARAM2]_
[PARAM3]:XXXX</td>
<td>When the system is powered off or the system enters standby mode, automatically send an ASCII or HEX command to a third-party device.

• [PARAM1]=A/H: Represents the command format.

<table>
<tr><th>[PARAM1]</th><th>Command Format</th></tr>
<tr><td>A</td><td>ASCII</td></tr>
<tr><td>H</td><td>HEX</td></tr>
</table>

• [PARAM2]=01~02: Represents the RS232 port.

<table>
<tr><th>[PARAM2]</th><th>RS232 Port</th></tr>
<tr><td>01</td><td>The switcher's RS232 port.</td></tr>
<tr><td>02</td><td>The far-end Extender Receiver's RS232 port</td></tr>
</table>

• [PARAM3]=01~07: Represents the baud rate of the third-party device.

<table>
<tr><th>[PARAM3]</th><th>Baud Rate</th></tr>
<tr><td>01</td><td>2400</td></tr>
<tr><td>02</td><td>4800</td></tr>
<tr><td>03</td><td>9600</td></tr>
<tr><td>04</td><td>19200</td></tr>
<tr><td>05</td><td>38400</td></tr>
<tr><td>06</td><td>57600</td></tr>
<tr><td>07</td><td>115200</td></tr>
</table>

• XXXX: ASCII or HEX characters.</td>
<td>#SET_
OF_A_01_03:123456789

Explanation: Automatically send the ASCII command "123456789" to the third-party device that is connected to the switcher's RS232. The baud rate of the third-party device is 9600.

#SET_OF_H_02_03:30 31 32 33 34

Explanation: Automatically send the HEX command "30 31 32 33 34" to the third-party device that is connected to the Extender Receiver's RS232 port. The baud rate of the third-party device is 9600.</td>
</tr>
</table>

<table>
<tr><th>Command</th><th>Function</th><th>Command Example</th></tr>
<tr><td>#GET_OF_
[PARAM1]_
[PARAM2]</td><td>Get the command that will be sent to a third-party device when the system is powered off or enters standby mode.

• [PARAM1]=01~02: Represents the RS232 port.

<table><tr><th>[PARAM1]</th><th>RS232 Port</th></tr><tr><td>01</td><td>The switcher's RS232 port.</td></tr><tr><td>02</td><td>The far-end Extender Receiver's RS232 port.</td></tr></table>
• [PARAM2]=01~07: Represents the baud rate of the third-party device.

<table><tr><th>[PARAM2]</th><th>Baud Rate</th></tr><tr><td>01</td><td>2400</td></tr><tr><td>02</td><td>4800</td></tr><tr><td>03</td><td>9600</td></tr><tr><td>04</td><td>19200</td></tr><tr><td>05</td><td>38400</td></tr><tr><td>06</td><td>57600</td></tr><tr><td>07</td><td>115200</td></tr></table></td><td>#GET_OF_1_03

Explanation: Gets the command that will be sent to a third-party device that is connected to the switcher's RS232 when the system is powered off or enters standby mode. The baud rate of the third-party device is 9600.</td></tr>
</table>

9. OSD Control

The SW-HDSC42D4K provides a powerful OSD (On Screen Display) operation menu that contains three parts: optional settings, image settings, and system settings.

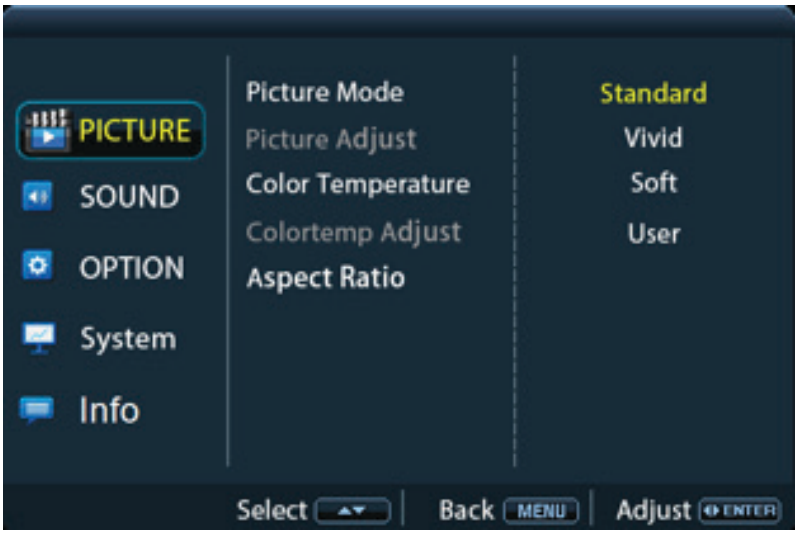
There are two ways to enter the OSD menu:

1. Press and hold the front panel's **MENU/2s** button  for at least two seconds.
2. Press the **MENU** button  on the IR Remote.

Operation:

- Press direction buttons on the IR Remote or on the front panel to switch between menu options and menu pages.
- Press OK on the IR Remote or the ENTER button on the front panel to confirm a selection.

Options include PICTURE, SOUND, OPTION, System, and Info.

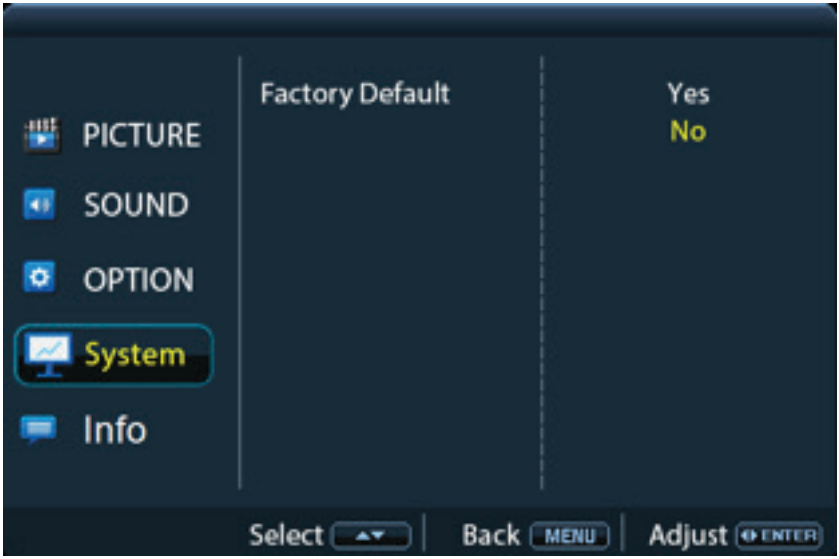


PICTURE MENU

Note: When you set the Picture Mode to **User**, the Picture Adjust and Colortemp Adjust options are available.

SOUND MENU

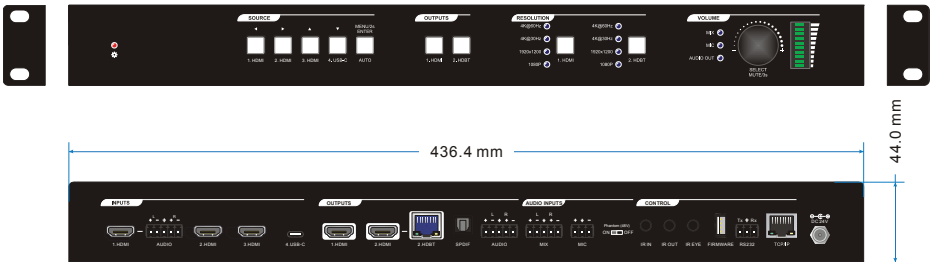
OPTION MENU



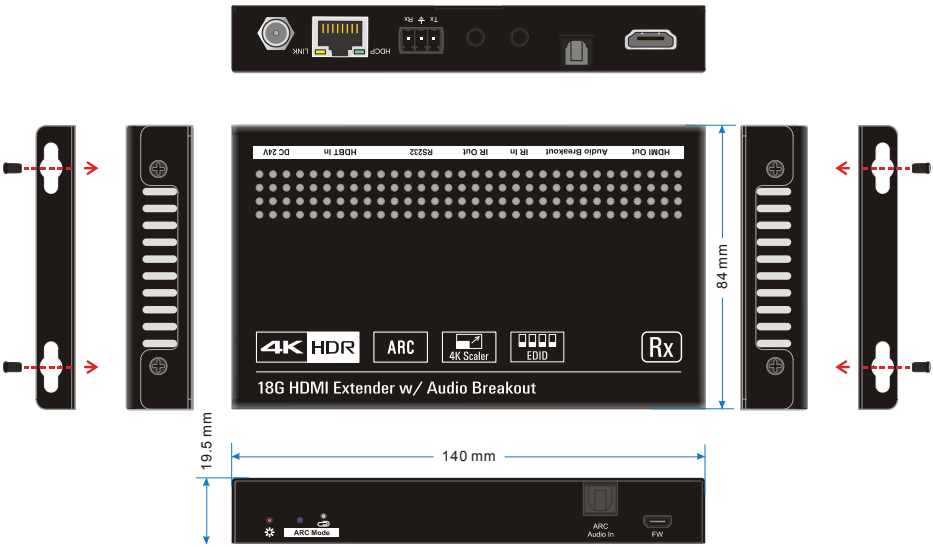
SYSTEM MENU

INFO MENU

10. Panel Drawings



SW-HDSC42D4K Matrix Switcher



Extender Receiver

11. Troubleshooting and Maintenance

Problems	Potential Causes	Solutions
Output image contains white noise	Bad quality connecting cable	Try another high-quality cable.
	Failed or loose connection	Make sure the connection is good.
No output image when switching	No signal at the input / output end	Use an oscilloscope or multimeter to check whether there is any signal at the input/output end.
	Failed or loose connection	Make sure the connection is good.
	The switcher is broken	Send the switcher to an authorized dealer for repairs.
POWER indicator doesn't work or the system does not respond to any operation	Failed connection of power cord	Make sure the power cord connection is good.
Cannot control a device with the control system (e.g. a PC) through the RS232 port	Wrong RS232 communication parameters	Type in the correct RS232 communication parameters.
	Broken RS232 port	Send the device to an authorized dealer for testing

Note: If your problem persists after following the above troubleshooting steps, seek further help from an authorized dealer or our technical support team.

12. Customer Service

The return of a product to our Customer Service implies the full agreement of the terms and conditions hereinafter. There terms and conditions may be changed without prior notice.

1. Warranty
The limited warranty period of the product is three years.

2. Scope
These terms and conditions of Customer Service apply to the customer service provided for the products or any other items sold only by an authorized distributor.

3. Warranty Exclusions

- Warranty expiration
- The factory-applied serial number has been altered or removed from the product.
- Damage, deterioration, or malfunction caused by:

  √ Normal wear and tear.
  √ Use of supplies or parts not meeting our specifications.
  √ No certificate or invoice as the proof of warranty.
  √ The product model shown on the warranty card does not match the model of the product to be repaired or has been altered.
  √ Damage caused by major force.
  √ Servicing not authorized by the distributor.
  √ Any other causes which do not relate to a product defect.

- Shipping fees, installation, or labor charges for installation or configuration of the product.

4. Documentation

Customer Service will accept defective product(s) that are within the scope of warranty coverage on the sole condition that the defect has been clearly defined, and upon receipt of the documents or copy of invoice, indicating the date of purchase, the type of product, the serial number, and the name of the distributor.

Remarks: Please contact your local distributor for further assistance or solutions.