

User Manual



SCAM42TS

4x2 HDMI 2.0 Seamless Matrix Switcher



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Version: SCAM42TS_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 May, 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 overheating.
- 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.

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1. Product Introduction

Thanks for choosing the SCAM42TS 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 supports 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.

4x2 HDMI 2.0 Seamless Matrix Switcher

- 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	<ul style="list-style-type: none"> • 1x SCAM42TS 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)
HDBaseT Receiver	<ul style="list-style-type: none"> • 1x TPUH610SR HDBaseT Receiver • 2x Mounting Ears with 4 Screws • 4x Plastic Cushions • 1x 3-pin Terminal Block
	<ul style="list-style-type: none"> • 1x User Manual

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

2. Specification

2.1 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, supports 4K to 1080P down-scaling. HDBaseT: Up to 4Kx2K@60Hz 4:4:4
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	<0.3dB, 1KHz sine at 0dBFS 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 : >90dB, 20Hz~20 kHz bandwidth.

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	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 Separation	>70dB@1KHz.
Noise Level	SPDIF: -90dB; L+R: -85dB
Control Part	
Control Port	(1) Phantom (48V) Switch, (1) IR IN, (1) IR 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	HDBaseT
Transmission Distance	HDBaseT Output: 1080P@60Hz ≤ 230 feet (70 meters), 4K@60Hz ≤ 131 feet (40 meters)
Bandwidth	18Gbps
Operation Temperature	-5°C ~ +55°C
Storage Temperature	-25°C ~ +70°C
Relative Humidity	10%-90%
External Power Supply	Input: AC 100~240V, 50/60Hz; Output: 24V DC 2.71A
Power Consumption	55W (Max)
Dimension (W*H*D)	436.4mm x 44mm x 265mm
Net Weight	2.15KG

2.2 HDBaseT Receiver

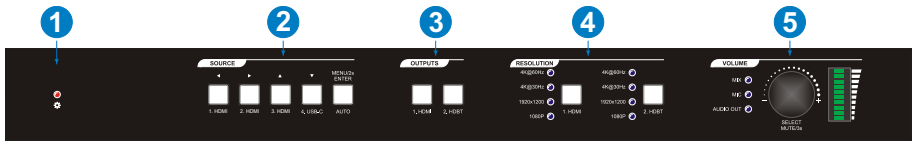
Video	
Input	(1) HDBT
Input Connector	(1) RJ45
Input Resolution	Up to 4Kx2K@60Hz 4:2:0
Output	(1) HDMI
Output Connector	(1) Type-A female HDMI
Output Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
Audio	
Input	(1) ARC Audio In
Input Connector	(1) Toslink Connector
Output	(1) Audio Breakout
Output Connector	(1) Toslink connector
Audio Format	Supports PCM, Dolby Digital, Dolby True-HD, DTS and DTS-HD.
Frequency Response	20Hz~20KHz, $\pm 3\text{dB}$
Max Output Level	2.0Vrms $\pm 0.5\text{dB}$. 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	< $\pm 0.5\text{dB}$ 20Hz~20KHz
Output Load Capability	1K Ω and higher (Supports 10x paralleled 10K Ω 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 $\leq 5\text{m}$, 4K@60Hz 4:2:0 $\leq 15\text{m}$, 1080P $\leq 20\text{m}$

4x2 HDMI 2.0 Seamless Matrix Switcher

Transmission Standard	HDBaseT
Transmission Distance	1080P@60Hz ≤ 230 feet (70 meters), 4K@60Hz ≤ 131 feet (40 meters)
Operation Temperature	-5°C ~ +55°C
Storage Temperature	-25°C ~ +70°C
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

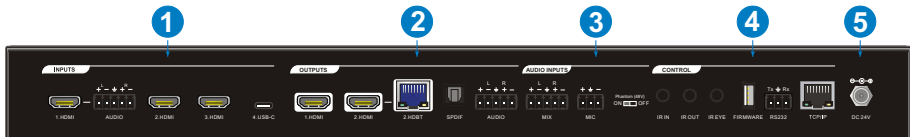
3. Panel Description

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.

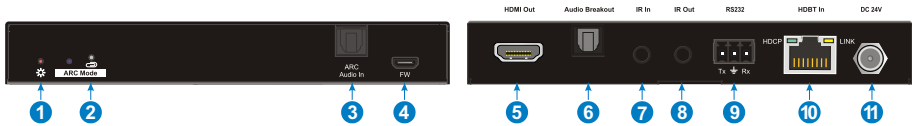
Put the Phantom (48V) switch in **OFF** position, the 3-pin terminal block to connect dynamic microphone.

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 Receiver Front and Rear Panel



- ① **Power LED:** The LED illuminates red when power is applied.
- ② **ARC Mode:** Press the button with paper clip or other sharp tool to enable the ARC mode, and then the left LED illuminates blue. Press it again to exit the ARC mode and the LED is off. The ARC mode also be enabled/disabled by sending RS232 command.
- ③ **ARC Audio In:** Toslink connector to connect ARC audio source device (e.g.TV).
- ④ **FW:** Micro-USB port for firmware upgrade.
- ⑤ **HDMI Out:** Type-A female HDMI output port to connect HDMI display (e.g.TV).
- ⑥ **Audio Breakout:** If the ARC mode is OFF, the Toslink connector is connected to speaker or amplifier for HDMI source audio de-embedding. Note that if the 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 by CATx Ethernet cable. The LINK LED illuminates orange when there is a valid HDBaseT 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 doesn't need to connect power adaptor due to the HDBT output port of switcher/transmitter supports 24V PoC output.

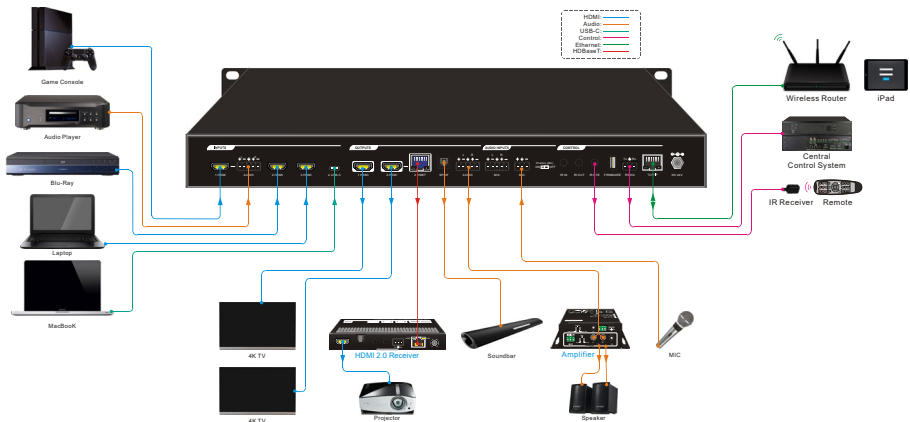
4. System Connection

4.1 Usage Precaution

- Make sure all components and accessories included before installation.
- 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 power on.

4.2 System Diagram

The following diagram illustrates the typical input and output connection of the switcher:



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 below:

- ① Connect PC to the RS232 port of switcher to control the switcher by sending RS232 commands. Please refer to the chapter **8.RS232 Control** for more details.
- ② Connect PC to the RS232 port of receiver to control the switcher by sending RS232 commands.

- ③ Connect PC to the RS232 port of switcher to control the far-end third-party device (e.g. Projector) which is connected to the RS232 port of receiver by sending RS232 commands.
- ④ Connect PC to the RS232 port of receiver to control the local third-party device which is connected to the RS232 port of switcher by sending RS232 commands.
- ⑤ Connect a third-party device to the RS232 port of switcher, the third-party device can be controlled by sending RS232 commands via the RS232 Control tab of GUI. Please refer to the chapter **7.7 RS232 Control Tab** for more details.

4.4 IR Connection

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

- ① Connect the IR receiver to the IR EYE port of switcher to control the switcher by the IR remote.
- ② Control the far-end display device: Connect the IR receiver to the IR IN port of switcher, and then connect the IR emitter to the IR Out port of receiver. The display device which is connected to the receiver can be control by its IR remote from the local switcher position.
- ③ Control the local source device: Connect the IR receiver to the IR In port of receiver, and then connect the IR emitter to the IR OUT port of switcher. The source device which is connected to the switcher can be control by its IR remote from the far-end receiver position.

5. Button Control

5.1 Manual Switching

When the switcher is in manual switching mode, the AUTO button LED goes out. Please follow the below steps to switch input source to output channel.

- 1) Press any one of four input buttons to select input source, and the corresponding button LED turns blue.
- 2) Press either **1.HDMI** or **2.HDBT** output button to select output channel, and the corresponding button LED turns blue.
- 3) Press the input button again to confirm switching setting, otherwise, it will automatically confirm after three seconds.

5.2 Auto Switching

Please follow the below steps to enable auto switching mode for **1.HDMI** or **2.HDBT** output.

- 1) Press **AUTO**, and the button LED turns blue.
- 2) Press either **1.HDMI** or **2.HDBT** output button, and the corresponding button LED turns blue.
- 3) Press **AUTO** button again to confirm the setting, otherwise, it will automatically confirm after three seconds.
- 4) Repeat the above three steps can exit auto mode, but 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 to 4.*
- *New input: The switcher will automatically select the new input once detecting a new input.*
- *Reboot: If power is restored to the switcher, it will automatically reconnect the input before powered off.*
- *Source removed: When an active source is removed, the switcher will switch to the first available active input starting at **1.HDMI** input.*
- *In auto mode, the input source also can be switched by the manual switching steps.*

5.3 Switching Status Query

- Press any input button can get its corresponding output channel.
- Press any output button can get its corresponding input channel.

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

Press **2.HDMI** input button, and then the **2.HDMI** source button and the **1.HDMI** output button illuminate blue and last for 3 seconds.

Press **1.HDMI** output button, and then the **2.HDMI** source button illuminates blue and last for 3 seconds.

5.4 Resolution Selection

Press the **1.HDMI** or **2.HDBT** button on RESOLUTION area repeatedly to cycle through the four video resolutions. A series of four LEDs, one of which illuminates blue to indicate which resolution is selected.

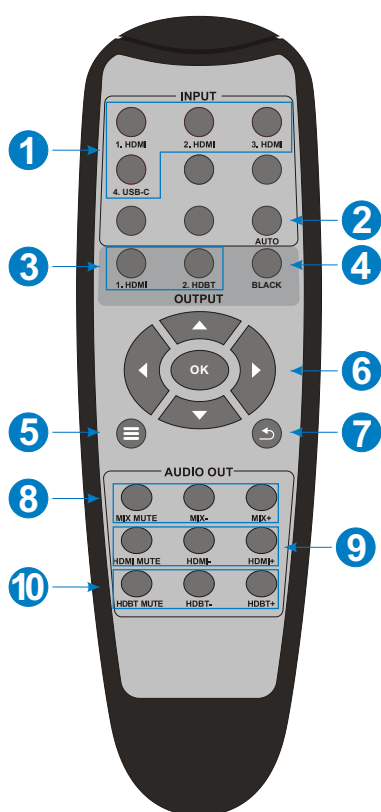
5.5 Sound Volume Control

Press volume knob to choose **MIX**, **MIC** or **AUDIO OUT** audio needs to be adjusted, the corresponding LED will turn blue and keep on.

- *Adjusting the knob in clockwise direction to increase sound volume.*
- *Adjusting the knob in anti-clockwise direction to decrease sound volume.*
- *Press and hold the knob at least three seconds to mute the selected audio. Rotate the knob to unmute.*

6. IR Remote Control

Connect IR receiver to the **IR EYE** port, the switcher can be controlled by the following IR remote.



- ① Select input source
- ② Press **AUTO** to enable auto switching mode, and then select output channel.
- ③ Select output channel
- ④ Press **BLACK**, and then select output channel to make it output black screen.
- ⑤ Enable/Disable OSD menu.
- ⑥ Confirm and Navigation buttons: OK, UP, DOWN, LEFT and RIGHT for 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.

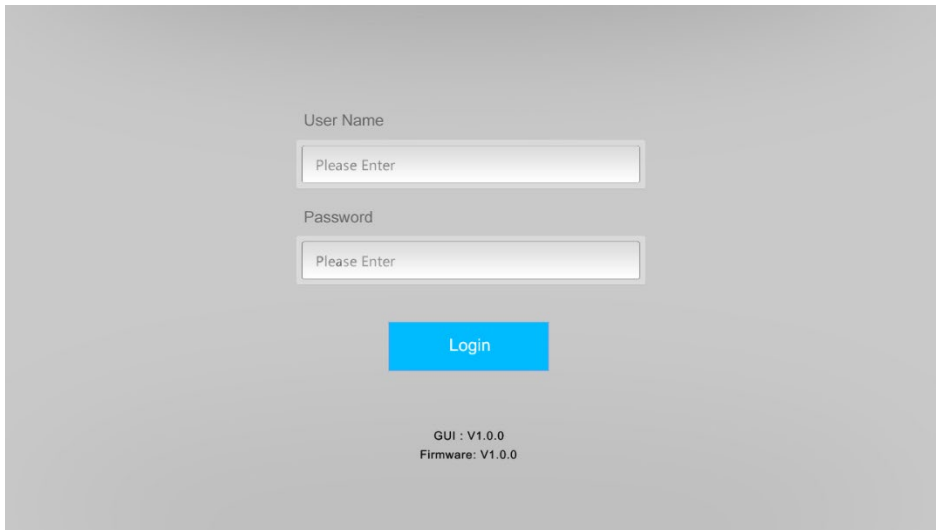
7. GUI Control

The switcher can 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 the internet browser, it will enter the below log-in webpage:



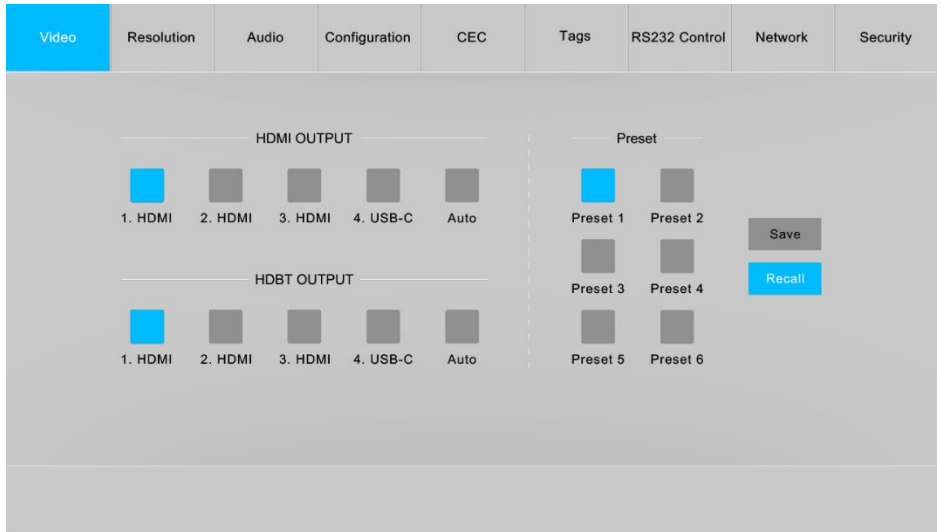
The image shows a login webpage with a light gray background. At the top, there is a label "User Name" above a text input field containing the placeholder text "Please Enter". Below this is a label "Password" above another text input field, also containing the placeholder text "Please Enter". Centered below the input fields is a blue rectangular button with the word "Login" in white text. At the bottom of the page, the text "GUI : V1.0.0" and "Firmware: V1.0.0" is displayed.

Username: admin

Password: admin

Type the user name and password, and then click **Login** to enter the section for video switching.

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 the previously saved preset.

7.2 Resolution Selection Tab

Video	Resolution	Audio	Configuration	CEC	Tags	RS232 Control	Network	Security
-------	------------	-------	---------------	-----	------	---------------	---------	----------

HDMI OUTPUT

☒ 4K@60Hz 4:4:4

☐ 4K@30Hz 4:4:4

☐ 1920x1200

☐ 1080P@60Hz

☐ 1080P@50Hz

☐ 1600x1200

☐ 1360x768

☐ 1024x768

☐ 720P@60Hz

☐ 720P@50Hz

HDBT OUTPUT

☒ 4K@60Hz 4:4:4

☐ 4K@30Hz 4:4:4

☐ 1920x1200

☐ 1080P@60Hz

☐ 1080P@50Hz

☐ 1600x1200

☐ 1360x768

☐ 1024x768

☐ 720P@60Hz

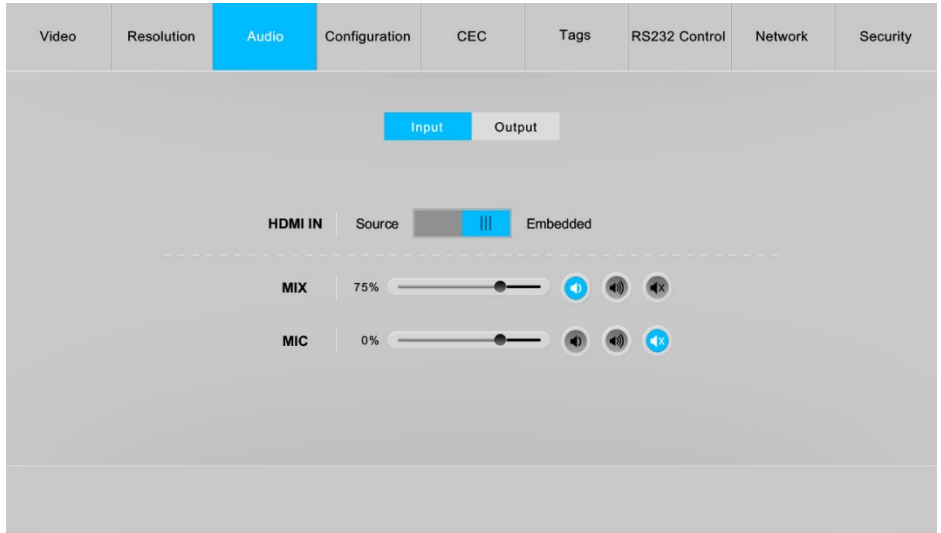
☐ 720P@50Hz

Confirm

- **HDMI OUTPUT:** Select the HDMI output video resolution.
- **HDBT OUTPUT:** Select the HDBT output video resolution.

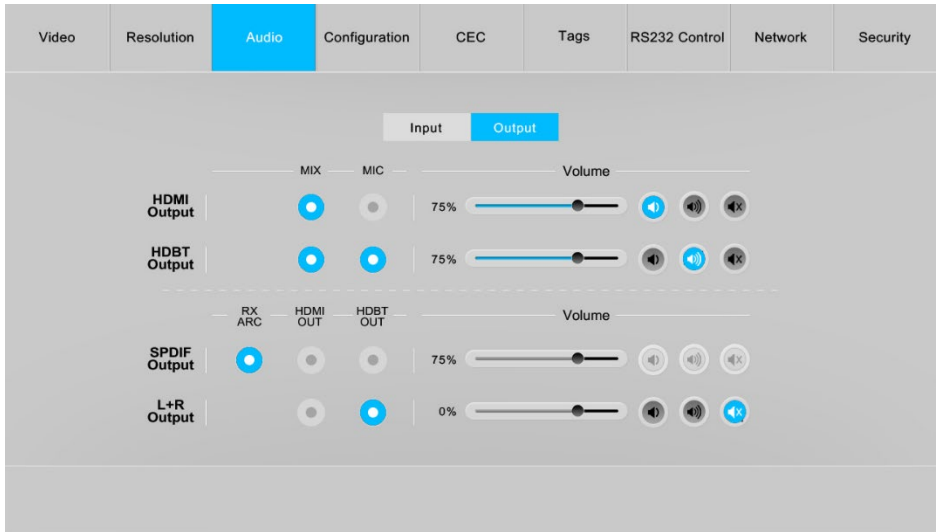
7.3 Audio Control Tab

7.3.1 Audio Input



- **HDMI IN:**
 - ✓ **Source:** Select the HDMI audio stream of source device for 1.HDMI input.
 - ✓ **Embedded:** Select the external balanced audio (5-pin) to be embed in 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 MIX or MIC input audio to mix with the HDMI output audio, and then control the global output audio by volume bar and buttons.
- **HDBT Output:** Select MIX or MIC input audio to mix with the HDBT output audio, and then control the global output audio by volume bar and buttons.
- **SPDIF Output:** Select the audio source for the SPDIF output.
 - ✓ **RX ARC:** Select the ARC audio from the TPUH610SR, and the ARC audio volume cannot be adjusted.
 - ✓ **HDMI OUT:** Select HDMI OUT audio to be de-embedded by the SPDIF output port. The SPDIF output audio volume will automatically follow the volume of HDMI output audio. When adjusting the HDMI output audio volume, the volume bar of SPDIF output audio will automatically be changed.
 - ✓ **HDBT OUT:** Select HDBT OUT audio to be de-embedded by the SPDIF output port. The SPDIF output audio volume will automatically follow the volume of HDBT output audio. When adjusting the HDBT output audio volume, the volume bar of SPDIF output audio will automatically be changed.
- **L+R Output:** Select HDMI OUT or HDBT OUT audio to be de-embedded by the L+R audio output port.

7.4 Configuration Tab

7.4.1 PoC Setting

Video	Resolution	Audio	Configuration	CEC	Tags	RS232 Control	Network	Security
<div> <input checked="" type="radio"/> PoC <input type="radio"/> EDID </div> <hr/> <div> <div>On</div> <div>Off</div> <div>HDBT Output</div> <div> <input checked="" type="radio"/> <input type="radio"/> </div> </div> <div>Confirm</div>								

- Turn on or off PoC for HDBT output port.

7.4.2 EDID Management

Video	Resolution	Audio	Configuration	CEC	Tags	RS232 Control	Network	Security
<div> <input type="radio"/> PoC <input checked="" type="radio"/> EDID </div> <hr/> <div> <div>1. HDMI</div> <div>2. HDMI</div> <div>3. HDMI</div> <div>4. USB-C</div> </div> <div> <div>4K@60Hz 2CH <input type="radio"/></div> <div>HDMI Output EDID Copy <input type="radio"/></div> <div>4K@30Hz 2CH <input type="radio"/></div> <div>HDBT Output EDID Copy <input type="radio"/></div> <div>1080P 2CH <input type="radio"/></div> <div>User-defined <input checked="" type="radio"/> <input type="text" value=".bin"/></div> </div> <div>Confirm</div>								

- Select the compatible built-in EDID for the selected input source.
- Upload user-defined EDID by the below steps:

Step 1: Prepare the EDID file (.bin) on the control PC.

Step 2: Select the **User-defined**.

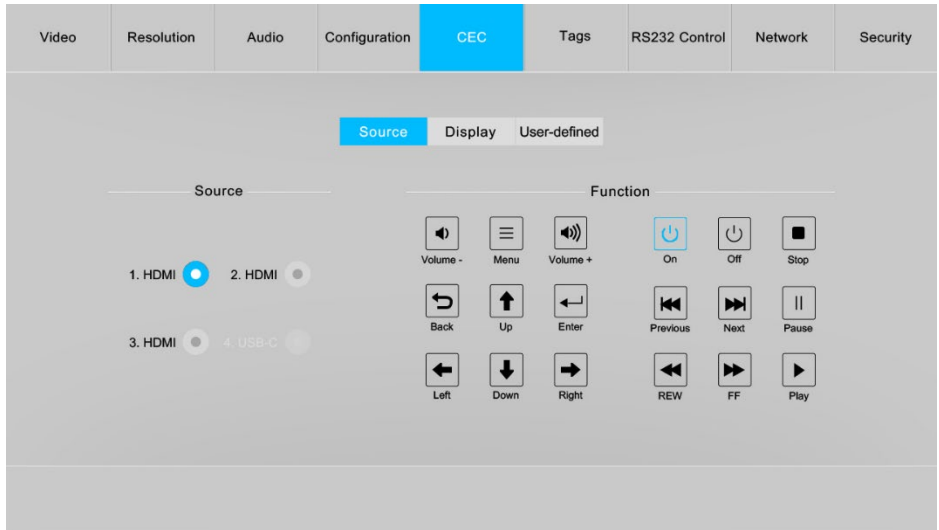
Step 3: Click the box , and then select the EDID file (.bin) according the tooltip.

Step 4: Click **Confirm** to upload the user-defined EDID.

7.5 CEC Control Tab

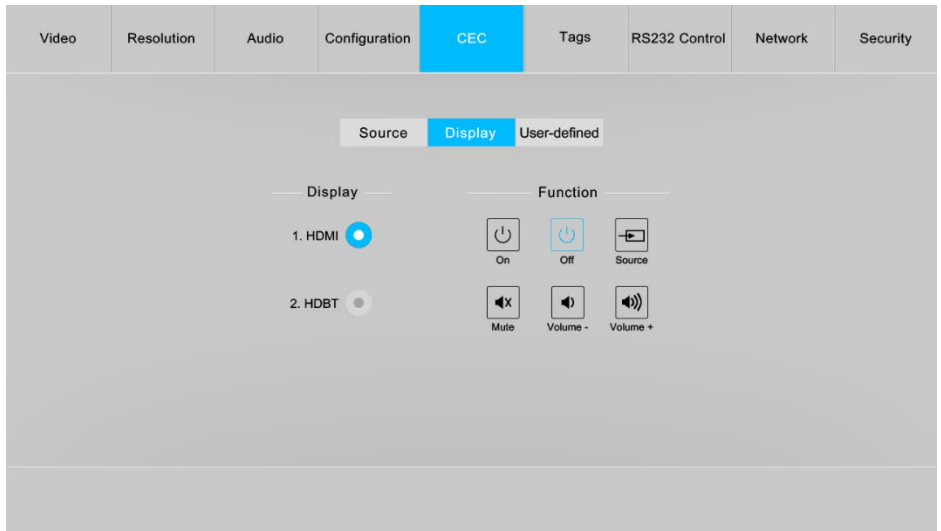
If the input source devices and display devices support CEC, they can be controlled by the below control buttons to replace IR remote.

1) Source Control



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

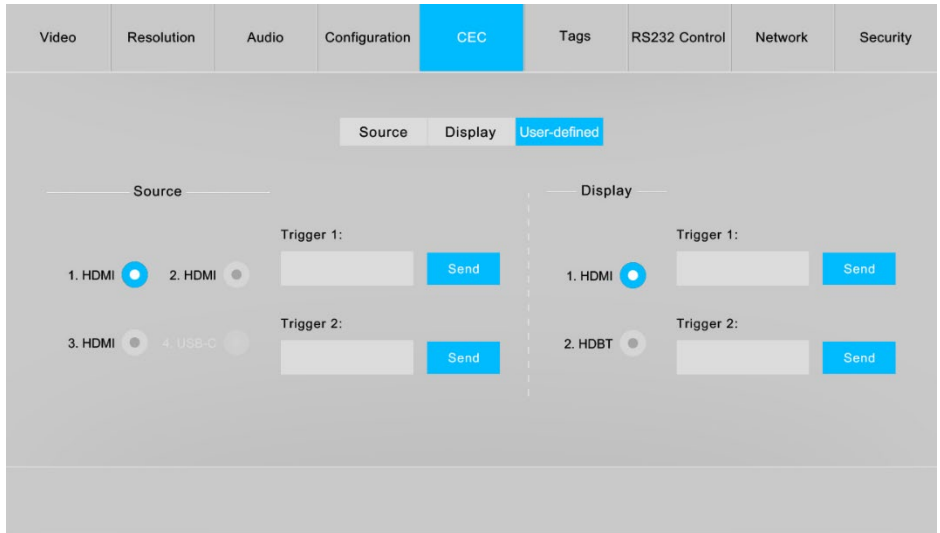
2) Display Control



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

3) User-defined

The switcher also provides user-define CEC functions, the CEC command can be edited and saved in the Trigger box.



The screenshot shows the CEC configuration interface. At the top, there are tabs for Video, Resolution, Audio, Configuration, CEC, Tags, RS232 Control, Network, and Security. The CEC tab is selected. Below the tabs, there are sub-tabs for Source, Display, and User-defined. The User-defined tab is selected. The interface is divided into two main sections: Source and Display. Each section has two triggers, Trigger 1 and Trigger 2. For the Source section, the input sources are 1. HDMI (selected), 2. HDMI, 3. HDMI, and 4. USB-C. For the Display section, the output displays are 1. HDMI (selected) and 2. HDBT. Each trigger has a text input box and a Send button.

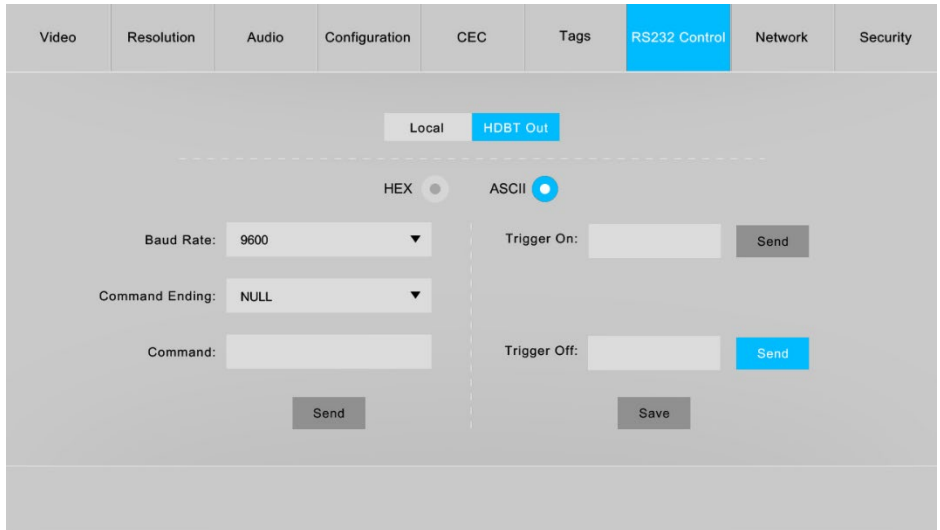
- Select the input source, and then type CEC command in the **Trigger 1** or **Trigger 2** box to control the selected source.
- Select the output display, and then type CEC command in the **Trigger 1** or **Trigger 2** box to control the selected display.

7.6 Tags Setting Tab

Video	Resolution	Audio	Configuration	CEC	Tags	RS232 Control	Network	Security
<div> <div> <div>INPUTS</div> <div> <div>1. HDMI <input type="text"/></div> <div>2. HDMI <input type="text"/></div> <div>3. HDMI <input type="text"/></div> <div>4. USB-C <input type="text"/></div> </div> </div> <div> <div>Preset</div> <div> <div>Preset 1 <input type="text"/></div> <div>Preset 2 <input type="text"/></div> <div>Preset 3 <input type="text"/></div> <div>Preset 4 <input type="text"/></div> <div>Preset 5 <input type="text"/></div> <div>Preset 6 <input type="text"/></div> </div> </div> </div> <div>Confirm</div>								

- **INPUTS:** Modify the label of input sources.
- **Preset:** Modify the label of presets.

7.7 RS232 Control Tab



- Select **Local** or **HDBT Out** control mode.
 - ✓ **Local:** Send RS232 commands to control the local third-party which is connected to the RS232 port of the switcher.
 - ✓ **HDBT Out:** Send RS232 commands to control the far-end third-party (e.g. Projector) which is connected to the RS232 port of HDBaseT receiver.
- Select **HEX** or **ASCII** format.
- **Baud Rate:** Supports 2400, 4800, 9600, 19200, 38400, 57600 or 115200.
- **Command Ending:** NULL, CR, LF or CR+LF can be chosen.
- **Command:** Type command in this textbox to be sent.
- **Trigger On:** Type Power On command in this textbox to turn on the third-party device.
- **Trigger Off:** Type Power Off command in this textbox to turn off the third-party device.

7.8 Network Setting Tab

Video	Resolution	Audio	Configuration	CEC	Tags	RS232 Control	Network	Security
<p>MAC Address: 44-33-4C-C9-35-12</p> <p> <input type="checkbox"/> DHCP <input checked="" type="checkbox"/> Static IP </p> <p> IP Address: <input type="text" value="192.168.0.178"/> </p> <p> Subnet Mask: <input type="text" value="255.255.255.0"/> </p> <p> Gateway: <input type="text" value="192.168.0.1"/> </p> <p><input type="button" value="Confirm"/></p>								

- Static IP or Dynamic Host Configuration Protocol (DHCP).
- Modify the static IP Address, Subnet Mask, and Gateway.

7.9 Security Setting Tab

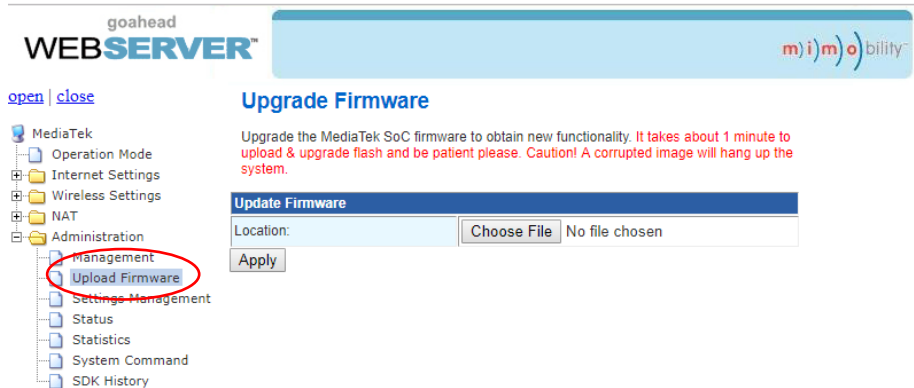
Video	Resolution	Audio	Configuration	CEC	Tags	RS232 Control	Network	Security
<div> <div>Credentials</div> <div> Password: <input type="text" value="admin"/> <input type="button" value="Confirm"/> </div> </div> <div> <div>Front Panel Lock</div> <div> ON <input checked="" type="checkbox"/> OFF </div> </div>								

- Modify the login password.
- Lock or unlock the front panel buttons.

7.10 GUI Upgrade

Please visit at <http://192.168.0.178:100> for GUI online upgrade.

Type the username and password (the same as the GUI log-in setting, modified password will be available only after rebooting) to login the configuration interface. After that, click **Administration** in the source menu to get to **Upload Firmware** as shown below:



Select the desired update file and press **Apply**, it will start upgrading then.

8. RS232 Control

Connect the RS232 port to control device (e.g. PC) with RS232 cable. 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 corresponding file path.

Basic Settings:

Connect the switcher with all input devices and output devices needed, then to connect it with a PC which is installed with RS232 control software. Double-click the software icon to run this software.

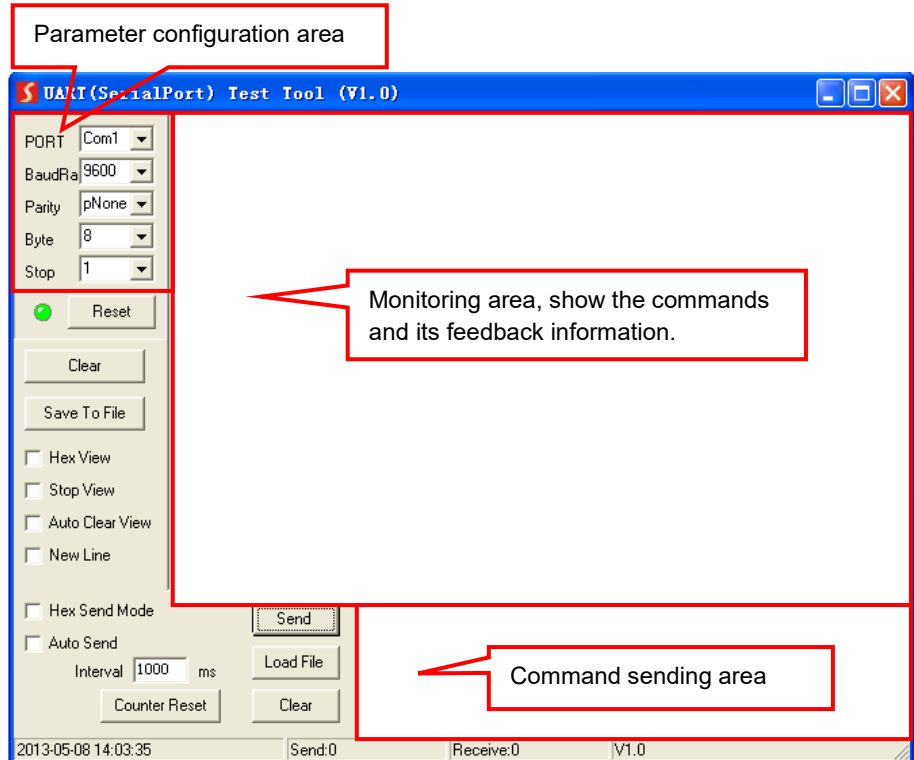
Here take the software **CommWatch.exe** as example:



CommWatch.exe

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The main view is shown as below:



Please set the parameters of COM number, bound rate, data bit, stop bit and the parity bit correctly, and then you are able to send command in command sending area.

8.2 RS232 Command

Communication protocol: RS232 Communication Protocol

Baud rate: 9600

Data bit: 8

Stop bit: 1

Parity bit: none

Note:

- All commands needs to be ended with "<CR><LF>".
- In the commands, "["and "]" are symbols for easy reading and do not need to be typed in actual operation.
- Type the command carefully, it is case-sensitive.

8.2.1 System Control

Command	Description	Command Example and Feedback
#SYS_SET_DEVICE_MODEL *****	Rename system model to ****.	#SYS_SET_DEVICE_MODEL ***** SCAM42TS
#SET_PWR_STATE ON	System on.	@PWR_STATE PWON
#SET_PWR_STATE OFF	System standby.	@PWR_STATE PWOFF
#GET_PWR_STATE	Get the system power status.	@PWR_STATE PWON @PWR_STATE PWOFF
#SET_KEYPAD_LOCK ON	Lock front panel buttons.	@KEYPAD_LOCK ON
#SET_KEYPAD_LOCK OFF	Unlock front panel buttons.	@KEYPAD_LOCK OFF
#GET_KEYPAD_LOCK	Get the front panel buttons locking status.	@KEYPAD_LOCK ON @KEYPAD_LOCK OFF
#GET_DEVICE_TYPE	Get system model.	SCAM42TS
#GET_DEVICE_IPADDRESS	Get GUI IP address.	@IP_ADDR: 192.168.0.178
#FACTORY_RESET	Reset to factory default.	FACTORY_RESET
#GET_DEVICE_FIRMWAREINF	Get firmware version.	FIRMWARE V1.0.0
#SET_PORT_RELAY 01 ON	Turn on PoC for HDBT output port. The TPUH610SR receiver can be powered by the switcher.	@PORT_RELAY 01 ON
#SET_PORT_RELAY 01 OFF	Turn off PoC for HDBT output port.	@PORT_RELAY 01 OFF

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Command	Description	Command Example and Feedback																
#GET_PORT_RELAY 01	Get PoC status.	@PORT_RELAY 00 @PORT_RELAY 01																
#SET_BADURATE_MODE [PARAM]	Set the baud rate of switcher to [PARAM]. [PARAM]=01~07	#SET_BADURATE_MODE 05																
	<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>	[PARAM]	Baud Rate	01	2400	02	4800	03	9600	04	19200	05	38400	06	57600	07	115200	
	[PARAM]	Baud Rate																
	01	2400																
	02	4800																
	03	9600																
	04	19200																
	05	38400																
	06	57600																
07	115200																	
#UPDATE_MODE MAIN [PARAM]	Upgrade the 3458 IC of port [PARAM]. [PARAM]=01~04 (input port). [PARAM]=05~06 (output port).	#UPDATE_MODE MAIN 01																
		@UPDATE_MODE MAIN 01 @Updating... @UPDATE_MODE MAIN: SUCCESS																
#UPDATE_MODE HDCP22 [PARAM]	Upgrade the HDCP 2.2 of port [PARAM]. [PARAM]=01~04 (input port). [PARAM]=05~06 (output port).	#UPDATE_MODE HDCP22 01																
		@UPDATE_MODE HDCP22 01 @Updating... @UPDATE_MODE HDCP22: SUCCESS																
#SET_MODE_DOWNSCLAR ON	Enable video resolution down-scaling.	@DOWNSCLAR_MODE ON																
#SET_MODE_DOWNSCLAR OFF	Disable video resolution down-scaling.	@DOWNSCLAR_MODE OFF																
#GET_MODE_DOWNSCLAR	Get video resolution down-scaling status.	@DOWNSCLAR_MODE ON																
		@DOWNSCLAR_MODE OFF																

8.2.2 Video Switching

Command	Description	Command Example and Feedback
#SET_AUTO_SWITCH [PARAM] ON	Enable the auto switching mode for the HDMI or HDBT output. [PARAM] = 01 (HDMI)/02 (HDBT)	#SET_AUTO_SWITCH 01 ON
		@AUTOSWITCH 01 ON
#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 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 Setting

Command	Description	Command Example and Feedback
#SAVE_PRESET_MODE [PARAM]	Store the current switching status to preset [PARAM]. [PARAM]=01~ 10.	#SAVE_PRESET_MODE 01
		@SAVE_PRESET_MODE 01
#RECALL_PRESET_MODE [PARAM]	Recall the preset [PARAM]. [PARAM]=01~ 10.	#RECALL_PRESET_MODE 04
		@CALL_PRESET_MODE 04
		@Video&Audio OUT 01 02
		IN 01 03
#CLR_PRESET_MODE [PARAM]	Clear the 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
#SET_AUDIO_ARC ON	Enable ARC mode of TPUH610S receiver.	@SET_AUDIO_ARC ON
#SET_AUDIO_ARC OFF	Disable ARC mode of TPUH610S receiver.	@SET_AUDIO_ARC OFF
#GET_AUDIO_ARC	Get the ARC status.	@SET_AUDIO_ARC ON
		@SET_AUDIO_ARC OFF
#SET_AUDIO_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_AUDIO_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	#SET_AUDIO_MUTE 01 OFF #SET_AUDIO_MUTE ALL OFF
		@AUDIO_MUTE 01 OFF @AUDIO_MUTE ALL OFF

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Command	Description	Command Example and Feedback
	ALL=All audio.	
#GET_AUDIO_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 embed in 1.HDMI input.	@AUDIO_EMBEDDED ON
#SET_AUDIO_EMBEDDED OFF	Select the internal HDMI audio stream of source device for 1.HDMI input.	@AUDIO_EMBEDDED OFF
#GET_AUDIO_EMBEDDED 01	Get the audio source of 1.HDMI input.	@AUDIO_EMBEDDED ON @AUDIO_EMBEDDED OFF
#SET_AUDIO_MIX [PARAM1] [PARAM2]	Enable/disable the output [PARAM1] audio to mix with MIX audio. [PARAM1]=01~02, ALL	#SET_AUDIO_MIX 01 ON #SET_AUDIO_MIX ALL ON

4x2 HDMI 2.0 Seamless Matrix Switcher

Command	Description	Command Example and Feedback
	01=HDMI Output 02=HDBT Output ALL=All outputs [PARAM2]=ON/OFF	@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 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 Setting

Command	Description	Command Example and Feedback						
#SET_OUTPUT_RES [PARAM1] TO [PARAM2]	Set the output resolution of output [PARAM2] to [PARAM1].	#SET_OUTPUT_RES 01 TO 01						
	● [PARAM2]=01~02							
	<table><tr><td>[PARAM2]</td><td>Output</td></tr><tr><td>01</td><td>HDMI</td></tr><tr><td>02</td><td>HDBT</td></tr></table>		[PARAM2]	Output	01	HDMI	02	HDBT
	[PARAM2]		Output					
	01		HDMI					
02	HDBT							
01	HDMI							
02	HDBT							

4x2 HDMI 2.0 Seamless Matrix Switcher

Command	Description	Command Example and Feedback																						
	<div>● [PARAM1]=1~10</div> <table><tr><th>[PARAM1]</th><th>Resolution</th></tr><tr><td>1</td><td>4K@60HZ 4:4:4</td></tr><tr><td>2</td><td>4K@30Hz 4:4:4</td></tr><tr><td>3</td><td>1920X1200@60Hz</td></tr><tr><td>4</td><td>1080P@60Hz</td></tr><tr><td>5</td><td>1080P@50Hz</td></tr><tr><td>6</td><td>1600x1200@60Hz</td></tr><tr><td>7</td><td>1360x768@60Hz</td></tr><tr><td>8</td><td>1024x768@60Hz</td></tr><tr><td>9</td><td>720P@60Hz</td></tr><tr><td>10</td><td>720P@50Hz</td></tr></table>	[PARAM1]	Resolution	1	4K@60HZ 4:4:4	2	4K@30Hz 4:4:4	3	1920X1200@60Hz	4	1080P@60Hz	5	1080P@50Hz	6	1600x1200@60Hz	7	1360x768@60Hz	8	1024x768@60Hz	9	720P@60Hz	10	720P@50Hz	@OUTPUT_RES 4k@60 TO 01
[PARAM1]	Resolution																							
1	4K@60HZ 4:4:4																							
2	4K@30Hz 4:4:4																							
3	1920X1200@60Hz																							
4	1080P@60Hz																							
5	1080P@50Hz																							
6	1600x1200@60Hz																							
7	1360x768@60Hz																							
8	1024x768@60Hz																							
9	720P@60Hz																							
10	720P@50Hz																							
#GET_OUTPUT_RES [PARAM]	Get the video resolution of output [PARAM]. [PARAM]=01~02, ALL	#GET_OUTPUT_RES 01																						
		@OUTPUT RES 1080@60 TO 01																						

8.2.6 EDID Management

Command	Description	Command Example and Feedback
#SET_EDID_MODE CAL:[PARAM1] TO [PARAM2]	The HDMI input [PARAM2] invoke built-in EDID [PARAM1]. [PARAM1]=01~03 (EDID) [PARAM2]=01~03 (1.HDMI IN~3.HDMI IN)	#SET_EDID_MODE CAL:01 TO 02
		@EDID_MODE CAL:01 TO 02
#SET_EDID_MODE LRN: [PARAM1] TO [PARAM2]	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)	#SET_EDID_MODE LRN:02 TO 01
		@EDID_MODE LRN:02 TO 01

4x2 HDMI 2.0 Seamless Matrix Switcher

Command	Description	Command Example and Feedback
#SET_EDID_MODE UPL: [PARAM]	Upgrade the EDID data of the HDMI input port [PARAM]. [PARAM]=01~03 (1.HDMI IN~3.HDMI IN) When the command applied, system prompts to upload the EDID file (.bin). Operation will be cancelled in 15 seconds. Please disconnect HDBT connection before sending command to ensure the data can be received successfully.	#SET_EDID_MODE UPL:01
		@EDID_MODE UPL:01 @EDID_MODE UPL:Please Send Edid Data in 15s
#GET_EDID_MODE [PARAM]	Get the EDID data of input [PARAM]. [PARAM]=01~04.	#GET_EDID_MODE 01
		@EDID_MODE UPL:01

8.2.7 CEC Control

Command	Description	Command Example and Feedback
#SET_CEC_MODE ON	Enable CEC control.	@CEC_MODE ON
#SET_CEC_MODE OFF	Disable CEC control.	@CEC_MODE OFF
#GET_CEC_MODE	Get CEC status.	@CEC_MODE ON
		@CEC_MODE OFF

When CEC control is enabled, if the input source devices and display devices support CEC, they can be controlled by sending CEC commands to replace IR remote.

According to the below command format to send specific command to control input source or display devices.

#SEND_CECCMD [port]:[command]

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

[port]	Description
01	1.HDMI input
02	2.HDMI input
03	3.HDMI input
04	1.HDMI output

4x2 HDMI 2.0 Seamless Matrix Switcher

05	2.HDMI output (Loop)
06	2.HDBT output

- The “[command]” represents the specific command from the table below.

✓ **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.
#SEND_CECCMD [port]:0D	Exit.	#SEND_CECCMD 03:0D
		[CEC]: blue ray Exit.
#SEND_CECCMD [port]:41	Volume up.	#SEND_CECCMD 03:41
		[CEC]: blue ray Volume Up.
#SEND_CECCMD [port]:42	Volume down.	#SEND_CECCMD 03:42
		[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 backward.
#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	Backward.	#SEND_CECCMD 03:4C

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Command	Description	Command Example and Feedback
[port]: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
#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, the third-party device can be controlled by RS232 command, and the command format as shown below:

Command	Function	Command Example																
#SEND_[PARAM1]_[PARAM2]_[PARAM3]:XXXX	Send the ASCII or HEX command to control the third-party device.	#SEND_A_01_05:123456789																
	<ul style="list-style-type: none">[PARAM1]=A/H: Represents the command format.	Explanation: Send the ASCII command "123456789" to the third-party device which is connected to the RS232 port of switcher. The baud rate of third-party device is 38400.																
	<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>	[PARAM1]	Command Format	A	ASCII	H	HEX											
	[PARAM1]	Command Format																
	A	ASCII																
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<ul style="list-style-type: none">[PARAM2]=01~02: Represents the RS232 port.																		
<table><tr><th>[PARAM2]</th><th>RS232 Port</th></tr><tr><td>01</td><td>The RS232 port of the switcher.</td></tr><tr><td>02</td><td>The RS232 port of the far-end HDBaseT receiver.</td></tr></table>	[PARAM2]	RS232 Port	01	The RS232 port of the switcher.	02	The RS232 port of the far-end HDBaseT receiver.												
[PARAM2]	RS232 Port																	
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02	The RS232 port of the far-end HDBaseT receiver.																	
	<ul style="list-style-type: none">[PARAM3]=01~07: Represents the baud rate of third-party device.	#SEND_H_02_05:30 31 32 33 34																
	<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>	[PARAM3]	Baud Rate	01	2400	02	4800	03	9600	04	19200	05	38400	06	57600	07	115200	Explanation: Send the HEX command "30 31 32 33 34" to the third-party device which is connected to the RS232 port of receiver. The baud rate of third-party device is 38400.
[PARAM3]	Baud Rate																	
01	2400																	
02	4800																	
03	9600																	
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06	57600																	
07	115200																	
	<ul style="list-style-type: none">XXXX: ASCII or HEX characters.																	

4x2 HDMI 2.0 Seamless Matrix Switcher

Command	Function	Command Example															
#SET_ON_[PARAM1]_[PARAM2]_[PARAM3]:XXXX	When power on system, automatically send the ASCII or HEX command to the third-party device.	#SET_OF_A_01_03:123456789															
	<ul style="list-style-type: none">[PARAM1]=A/H: Represents the command format.	Explanation: Automatically send the ASCII command "123456789" to the third-party device which is connected to the RS232 port of switcher. The baud rate of third-party device is 9600.															
	<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>	[PARAM1]	Command Format	A	ASCII	H	HEX										
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04	19200																
05	38400																
06	57600																
07	115200																
<ul style="list-style-type: none">XXXX: ASCII or HEX characters.	#SET_OF_H_02_03:3031323334																
	Explanation: Automatically send the HEX command "30 31 32 33 34" to the third-party device which is connected to the RS232 port of receiver. The baud rate of third-party device is 9600.																
#GET_ON_[PARAM1]_[PARAM2]	Get the feedback command which to be sent to the third-party device when the system is powered on.																
	<ul style="list-style-type: none">[PARAM1]=01~02: Represents the RS232 port.																
	<table><tr><th>[PARAM1]</th><th>RS232 Port</th></tr><tr><td>01</td><td>The RS232 port of the switcher.</td></tr><tr><td>02</td><td>The RS232 port of the far-end HDBaseT receiver.</td></tr></table>	[PARAM1]	RS232 Port	01	The RS232 port of the switcher.	02	The RS232 port of the far-end HDBaseT receiver.										
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4x2 HDMI 2.0 Seamless Matrix Switcher

Command	Function	Command Example																												
	<ul style="list-style-type: none">[PARAM2]=01~07: Represents the baud rate of 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>	[PARAM2]	Baud Rate	01	2400	02	4800	03	9600	04	19200	05	38400	06	57600	07	115200													
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03	9600																													
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#SET_OF_[PARAM1]_[PARAM2]_[PARAM3]:XXXX	<p>When power off system or enter system standby mode, automatically send the ASCII or HEX command to the third-party device.</p> <ul style="list-style-type: none">[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> <ul style="list-style-type: none">[PARAM2]=01~02: Represents the RS232 port. <table><tr><th>[PARAM2]</th><th>RS232 Port</th></tr><tr><td>01</td><td>The RS232 port of the switcher.</td></tr><tr><td>02</td><td>The RS232 port of the far-end HDBaseT receiver.</td></tr></table> <ul style="list-style-type: none">[PARAM3]=01~07: Represents the baud rate of 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> <ul style="list-style-type: none">XXXX: ASCII or HEX characters.	[PARAM1]	Command Format	A	ASCII	H	HEX	[PARAM2]	RS232 Port	01	The RS232 port of the switcher.	02	The RS232 port of the far-end HDBaseT receiver.	[PARAM3]	Baud Rate	01	2400	02	4800	03	9600	04	19200	05	38400	06	57600	07	115200	<p>#SET_OF_A_01_03:123456789</p> <p>Explanation: Automatically send the ASCII command "123456789" to the third-party device which is connected to the RS232 port of switcher. The baud rate of third-party device is 9600.</p>
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		<p>#SET_OF_H_02_03:3031323334</p> <p>Explanation: Automatically send the HEX command "30 31 32 33 34" to the third-party device which is connected to the RS232 port of receiver. The baud rate of third-party device is 9600.</p>																												



4x2 HDMI 2.0 Seamless Matrix Switcher

Command	Function	Command Example															
#GET_OF_[PARAM1]_[PARAM2]	Get the feedback command which to be sent to the third-party device when the system is powered off or enter standby mode.																
	<ul style="list-style-type: none">[PARAM1]=01~02: Represents the RS232 port.																
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07	115200																

9. OSD Control

The SCAM42TS provides a powerful OSD operation menu which contains 3 parts: optional settings, image settings, system settings etc.

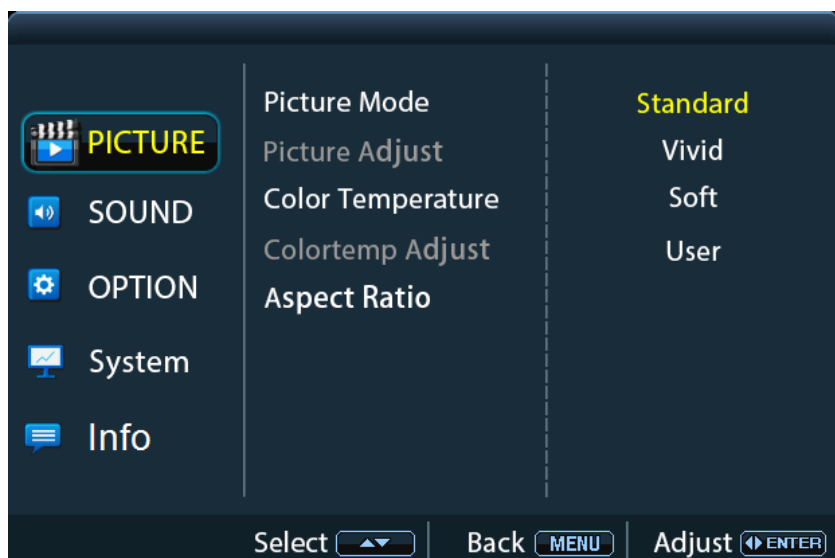
There are two ways to enter OSD menu:

- 1) Press and hold the **MENU/2s** button  at least two seconds on the front panel.
- 2) Press the **MENU** button  on the IR remote.

Operation:

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

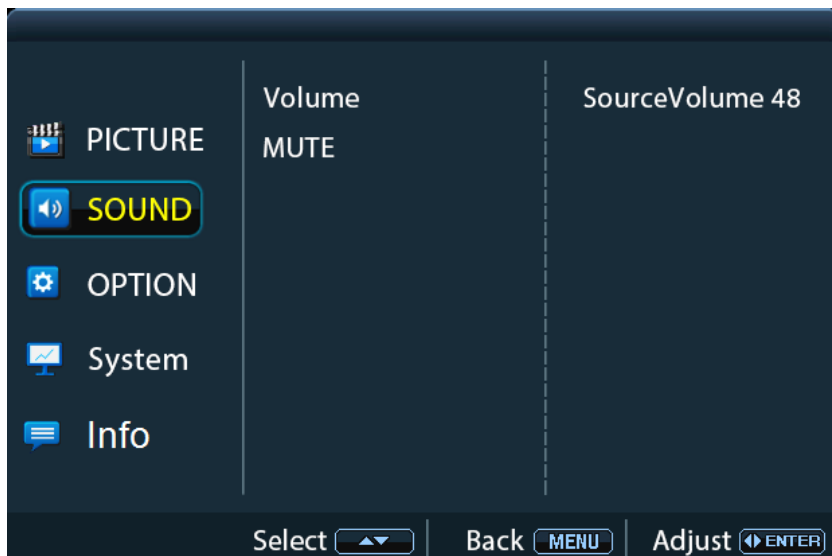
Options include Picture, Sound, Option, System, and Info.



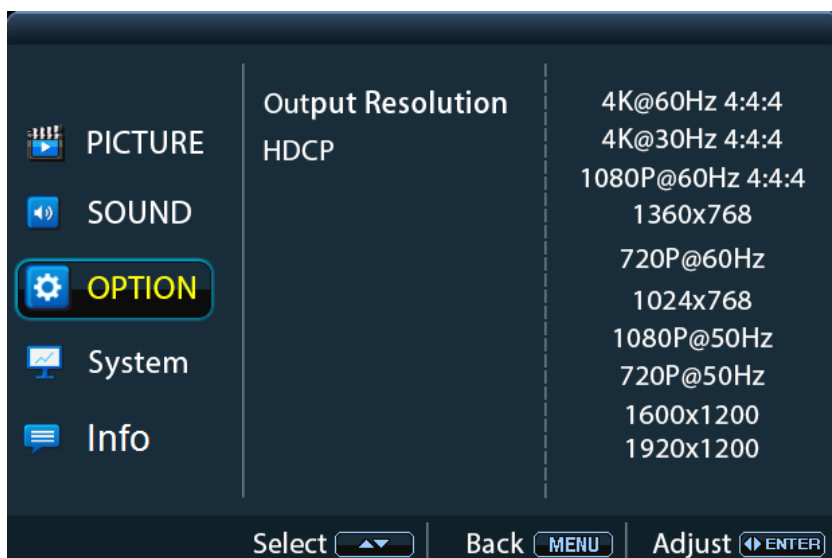
PICTURE MENU

Note: When setting the Picture Mode to **User**, Picture Adjust and Colortemp Adjust

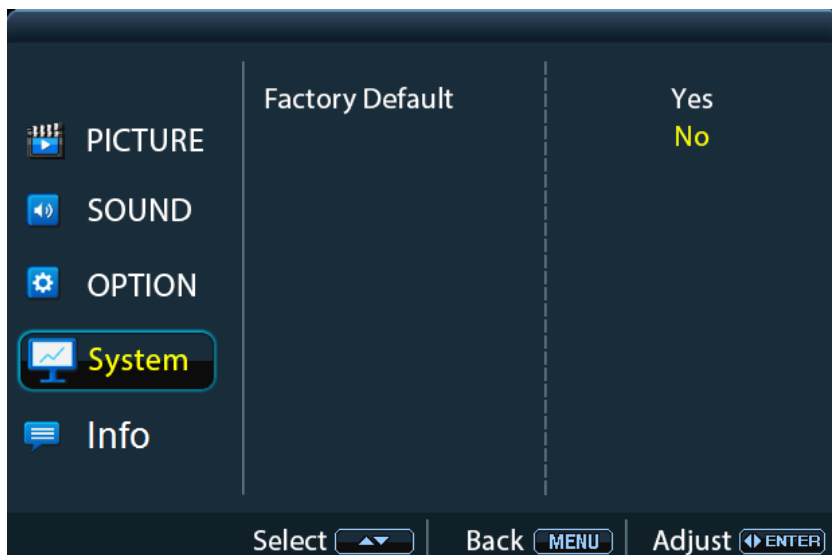
are available.



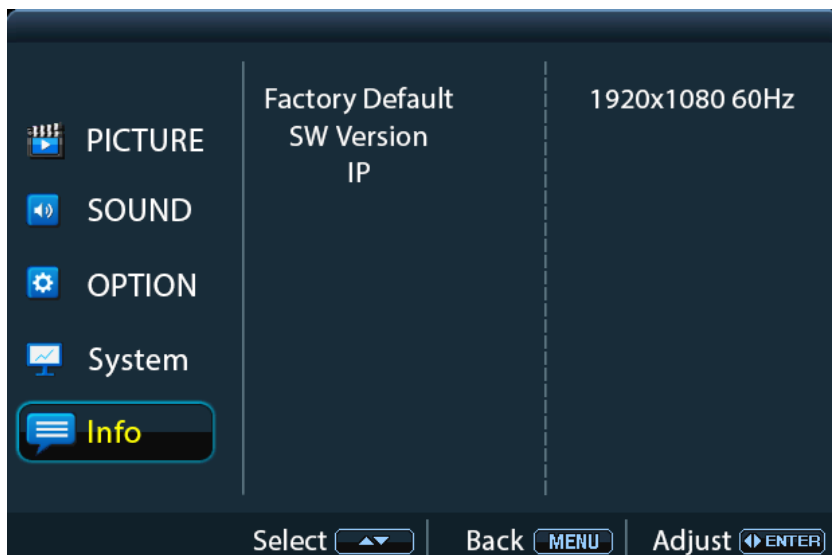
SOUND MENU



OPTION MENU



SYSTEM MENU



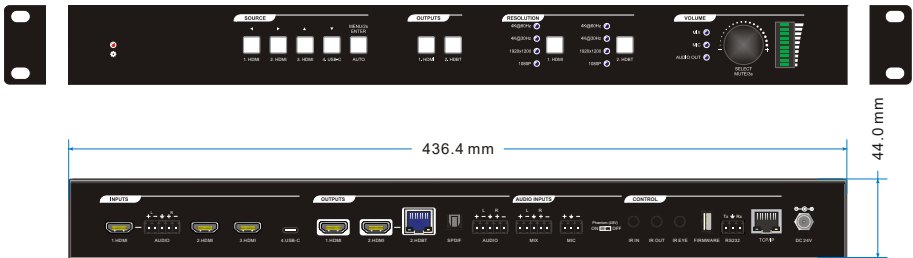
INFO MENU

10. Firmware Upgrade

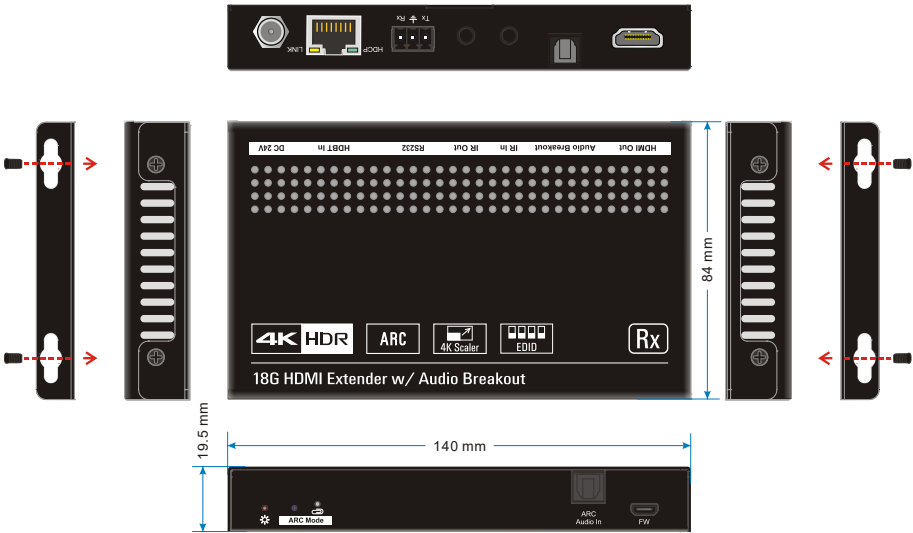
Please follow the steps as below to upgrade firmware by the **FIRMWARE** port on the rear panel:

- 1) Prepare the latest upgrade file (.bin) on PC.
- 2) Power off the switcher, and connect the **FIRMWARE** port of switcher to the PC with USB cable.
- 3) Power on the switcher, and then the PC will automatically detect a U-disk named of "BOOTDISK".
- 4) Double-click to open the U-disk.
- 5) Directly copy the latest upgrade file (.bin) to the "BOOTDISK" U-disk.
- 6) Remove the USB cable after firmware upgrade.
- 7) After firmware upgrade, the switcher should be restored to factory default by sending command.

11. Panel Drawing



SCAM42TS Matrix Switcher



TPUH610SR HDBaseT Receiver

12. Troubleshooting and Maintenance

Problems	Potential Causes	Solutions
Output image with white noise.	Bad quality of the connecting cable	Try another high quality cable.
	Fail or loose connection	Make sure the connection is good
No output image when switching	No signal at the input / output end	Check with oscilloscope or multimeter if there is any signal at the input/ output end.
	Fail or loose connection	Make sure the connection is good.
	The switcher is broken	Send it to authorized dealer for repairing.
POWER indicator doesn't work or no respond to any operation	Fail connection of power cord.	Make sure the power cord connection is good.
Cannot control the device by control device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Type in correct RS232 communication parameters.
	Broken RS232 port	Send it to authorized dealer for checking.

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

13. Customer Service

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

1) Warranty

The limited warranty period of the product is fixed 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 by authorized distributor only.

3) Warranty Exclusion

- Warranty expiration.
- 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 showed on the warranty card does not match with the model of the product for repairing or had been altered.
 - ✓ Damage caused by force majeure.
 - ✓ Servicing not authorized by distributor.
 - ✓ Any other causes which does not relate to a product defect.
- Shipping fees, installation or labor charges for installation or setup of the product.

4) Documentation

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

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



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