

# User Manual

ALTIMIUM

## SCA61TS

### 6-input Seamless Scaler Switcher & HDBaseT Receiver



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Version: SCA61TS\_2017V1.2

## Preface

Read this user manual carefully before using the product. Pictures are shown in this manual 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 December 19, 2017. 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 insure 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 optical 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. Introduction**

## **1.1 Brief Introduction**

This product is a professional Scaler Switcher Kit consists of multi-format Seamless Scaler Switcher and HDBaseT Receiver.

The Scaler Switcher scales HDMI/DP/VGA video signals to an HDMI and HDBaseT output simultaneously. HDBaseT output supports PoH and can connect to a compatible HDBaseT Receiver. With 1 IR IN and 1 IR OUT and 1 RS232, the IR and RS232 control signals can be transmitted bi-directionally between the Scaler Switcher and a compatible HDBaseT Receiver. The Scaler Switcher can be controlled either by front panel buttons, IR Remote, RS232 or GUI. With a balanced stereo audio output for audio reinforcement, the Scaler Switcher can be handle in a myriad of A/V applications.

## **1.2 Features**

- Compliant with HDMI1.4& HDCP2.2.
- VGA video supports C-video, YPbPr and VGA.
- Supports PoH for simplified wiring.
- The transmission distance between the Scaler Switcher and HDBaseT Receiver can up to 70m at 1080p.
- Supports CEC, with commands to enable/disable this function.
- Supports Seamless switching and auto-switching function.
- Controllable via front panel buttons, IR Remote, RS232 & GUI.
- Powerful OSD (on screen display) control.
- Bi-directional IR & RS232 control.
- Supports CEC.
- Supports MHL.
- Output resolutions selectable to assure preferred output, and supports various output resolutions, such as 1920x1200, 1920x1080, 1600x1200, 1600x900, 1360x768, 1280x800, 1280x720, 1024x768.
- Supports online software upgrading.

## 1.3 Package List

<b>Scaler Switcher</b>	• 1 x SCA61TS(NR) Seamless Scaler Switcher
	• 2 x Mounting Ears with 4 Screws
	• 2 x Long Mounting Ears with 6 Screws (Optional)
	• 1 x Power Adapter (24VDC,2.71A)
	• 4 x Plastic Cushions
	• 1 x IR Remote
	• 1 x IR Receiver (5V with carrier wave)
	• 1 x IR Emitter
	• 1 x VGA Converting Cable (VGA to YPbPr)
	• 2 x 3-Pin Phoenix Connectors
	• 1 x 5-Pin Phoenix Connector
<b>HDBaseT Receiver</b>	• 1 x TP411RA HDBaseT Receiver
	• 2 x Mounting Ears with 4 Screws
	• 4 x Plastic Cushions
	• 1 x User Manual

**Note:** Please confirm if the product and the accessories are all included, if not, please contact with the dealers.

## 2. Panel Description

### 2.1 Seamless Scaler Switcher

#### ➤ Front Panel

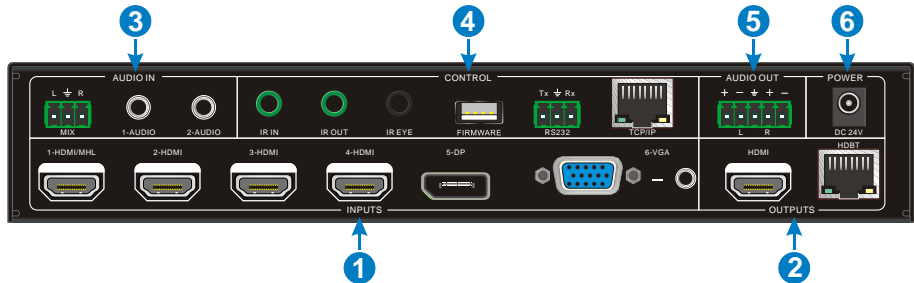


- ① Built-in IR Receiver.
  - ② Power Indicator- RED when the device is in standby, GREEN when device is powered on and no indicator when there is no power to device.
  - ③ 1-HDMI/MHL input selector and activity LED/ Left key for OSD.
  - ④ 2-HDMI input selector and activity LED/ Right key for OSD.
  - ⑤ 3-HDMI input selector and activity LED/ Up key for OSD.
  - ⑥ 4-HDMI input selector and activity LED/ Down key for OSD.
  - ⑦ 5-DP input selector and activity LED/ ENTER key for OSD.
  - ⑧ 6-VGA input selector and activity LED/ OSD menu button.
  - ⑨ Auto switching selector and activity LED.
    - Press this to enter or exit auto-switching mode.
    - Long-press this button 3 seconds or more to reset output resolution to 720p or to activate HDMI and HDBT outputs if they have been turned off.
- Note:** When you set any VGA port to C-video or YPbPr in Manual-switching mode, the system will not be able to enter Auto-switching mode.
- ⑩ Volume knob for variable audio control- Push knob in to toggle between 'MIX' and 'Source' control.



## 6-input Seamless Scaler Switcher & HDBaseT Receiver

### ➤ Rear Panel



#### ① INPUTS

- Video input ports: 1 HDMI/MHL, 3 HDMI inputs, 1 DP and 1 VGA.
- Audio input ports: 1 VGA auxiliary audio input.

#### ② OUTPUTS

- HDMI output: HDMI video output port.
- HDBaseT output: Support PoH. Connect with a compatible HDBaseT Receiver to transmit AV signal, IR or RS232 control signal.

#### ③ AUDIO IN

- MIX: 3-Pin phoenix connector for line audio input.
- 1-AUDIO& 2-AUDIO: 3.5mm mini jacks for line audio input.

#### ④ CONTROL

- IR IN & IR OUT: Connect with IR Receiver and Emitter to control devices via IR.
- IR EYE: Connect with the IR Receiver (with carrier wave only) to control this Scaler Switcher via the including IR Remote.
- FIRMWARE: Type-A USB port for updating system firmware or loading customized EDID data.
- RS232: Serial port, 3-pin phoenix connector, connect with a control device (such as PC) to control the Scaler Switcher or other devices connected with HDBaseT Receiver.
- TCP/IP: Ethernet port, connect with PC to control the Scaler Switcher via GUI.

#### ⑤ AUDIO OUT - Stereo balanced L/R audio output.

#### ⑥ DC 24V - Locking power port, connect 24V DC power adapter.

## 2.2 HDBaseT Receiver

### ➤ Front Panel



#### ① RS232 Mode switcher

- CTRL: RS232 pass-through control mode;
- UPDATE A: Update Valens IC program, connect a PC to the RS232 port, and then double-click the update file (.bat).
- UPDATE B: Update the IC program which is used for de-embedding audio, the upgrade method is the same as the above UPDATE A.

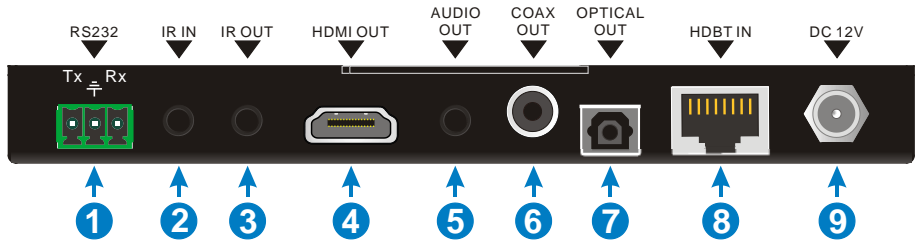
#### ② Link status LED - OFF: No Link / GREEN: Link successful.

#### ③ HDCP compliant LED - OFF: No HDMI traffic/GREEN: Traffic with HDCP/Blinking GREEN: Traffic without HDCP.

#### ④ Power LED - RED when device is powered on and no indicator when there is no power to device.

## 6-input Seamless Scaler Switcher & HDBaseT Receiver

### ➤ Rear Panel



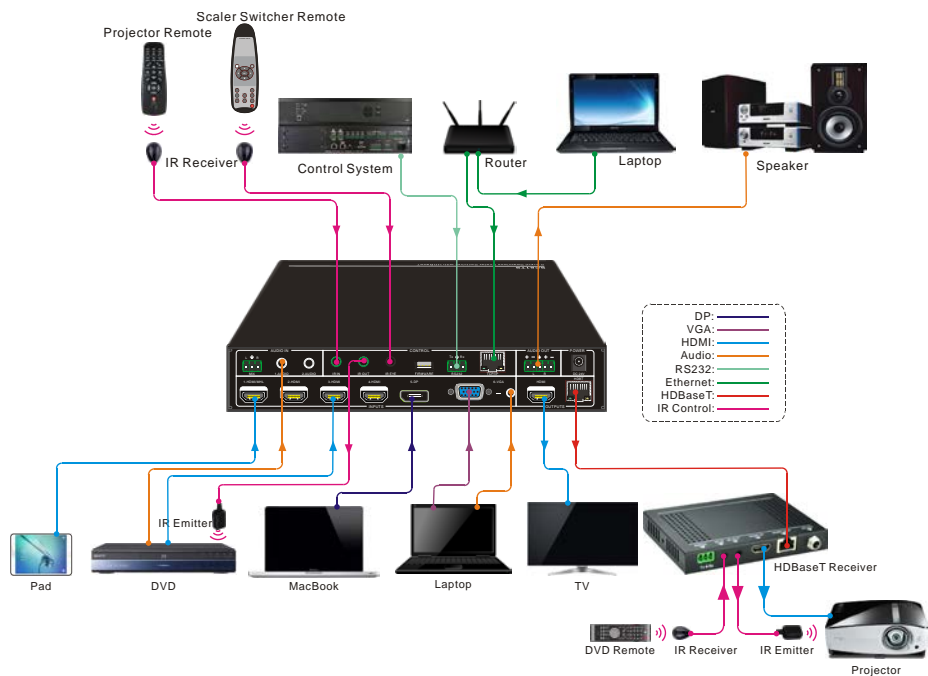
- ① **RS232 connector**- If one is connected with control device (e.g. PC), and the other should be connected with the third-party that need to be controlled.
- ② **IR IN** - Work with far-end IR OUT port, connect with IR Receiver (with carrier) to collect IR signal to control far-end display device from local.
- ③ **IR OUT** - Work with far-end IR IN port, connect with IR Emitter to send IR signal to control input source device.
- ④ **HDMI OUT** - HDMI type A connector, connect to display.
- ⑤ **AUDIO OUT** -3.5mm stereo audio jack, connect to analog stereo audio device.
- ⑥ **COAX OUT** - Coaxial audio connector, connect to digital audio device.
- ⑦ **OPTICAL OUT** - Optical audio connector, connect to optical audio devices.
- ⑧ **HDBT IN** - Connect to the HDBT OUT socket on HDBaseT Transmitter or Matrix Switcher via CAT5e/6a/7 cable, support unidirectional PoH technology.
- ⑨ **DC 12V power port** - Connect to 12VDC power adaptor, or it can be powered via the Scaler Switcher by PoH technology.

## 3. System Connection

### 3.1 Usage Precautions

- System should be installed in a clean environment and has a prop 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.

### 3.2 System Diagram



### 3.3 Connection Procedure

- Step1.** Connect HDMI source devices (e.g. Blue-ray DVD) to 1~4 HDMI input ports with HDMI cables.
- Step2.** Connect a DP source device (e.g. MacBook) to DP input port with DP cable.
- Step3.** Connect a VGA source device (e.g. Laptop) to VGA input port with VGA cable and VGA audio input port with audio cable.
- Step4.** Connect audio source device to the audio input port with audio cable.
- Step5.** Connect a HDMI display device to HDMI output port with HDMI cable.
- Step6.** Connect HDBaseT Receiver to HDBT output port with twisted pair.
- Step7.** Connect speaker, headphone or AV amplifier to AUDIO OUTPUT port.
- Step8.** Connect control device (e.g. PC) to the TCP/IP port, the Scaler Switcher can be controlled via GUI.
- Step9.** Connect control device (e.g. PC, control system) to the RS232 port of the Scaler Switcher or HDBaseT Receiver (bi-directional RS232 control, either end is available).
- Step10.** Connect IR Receiver to the IR EYE port, the Scaler Switcher can be controlled via IR Remote. For more details, please refer to **5. IR Control**.
- Step11.** Both the Scaler Switcher and HDBaseT Receiver have IR IN and OUT. When one model is connected with IR Receiver, the other model should connect with an IR Emitter.
- For example:** When “IR IN” of the Scaler Switcher connects with an IR Receiver, the IR Emitter must connect to IR OUT of HDBaseT Receiver.
- The IR signal can be transmitted bi-directionally between the Scaler Switcher and HDBaseT Receiver.**
- Step12.** Connect DC24V power adaptor to the power port (HDBaseT Receiver can be powered by the Scaler Switcher with PoH function).

**Note:** *If the power adapter is connecting with HDBaseT Receiver, the Scaler Switcher can't be powered from HDBaseT Receiver.*

### 4. Button Control

Front panel buttons can be used for switching operations and volume adjusting.

#### 4.1 Manual-Switching

Press **1-HDMI/MHL**, **2-HDMI**, **3-HDMI**, **4-HDMI**, **5-DP**, **6-VGA** on front panel to select the corresponding input source.

#### 4.2 Auto-Switching

Press **AUTO** to enter in auto-switching mode, and the auto-switching mode abides by the following principles:

- **New input**  
Once detecting a new input signal, the switcher would switch to this new signal automatically.
- **Rebooting device**  
The Scaler Switcher have the ability to save the last configuration before losing power. If the last switching mode is auto-switching, once rebooted, the switcher will automatically enter auto-switching mode, then detect all inputs and memorize their connection status for future rebooting using. If the last displayed signal is still available, the unit will output the signal. If not, the unit will detect all the input signals wit priority from 1-HDMI/MHL to 6-VGA. When detected the first signal, it will transfer to output.
- **Signal removing**  
Once removing the current display signal, the Scaler Switcher will detect all input signals with priority from 1-HDMI/MHL to 6-VGA. It will transfer the signal firstly detected to be available to output devices.

**Note:** Auto-switching function works only when inputting new signal, removing a signal or power rebooting. With any VGA port set to C-video or YPbPr, the system will be not able to enter in Auto-switching mode.

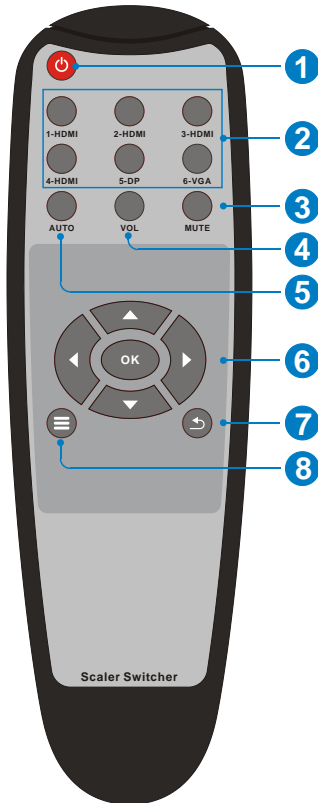
#### 4.3 Volume Adjusting

Press Volume knob to select MIX or Source audio to adjust, the corresponding LED will turn green and keep on, and then move the volume knob in clockwise or anti-clockwise direction to turn up/down sound volume.

## 5. IR Control

### 5.1 IR Remote

Connect IR receiver to IR EYE port, the Scaler Switcher can be controlled by using the including IR Remote. As CEC function, it is able to use the IR Remote to turn on/off the HDMI source or Display.

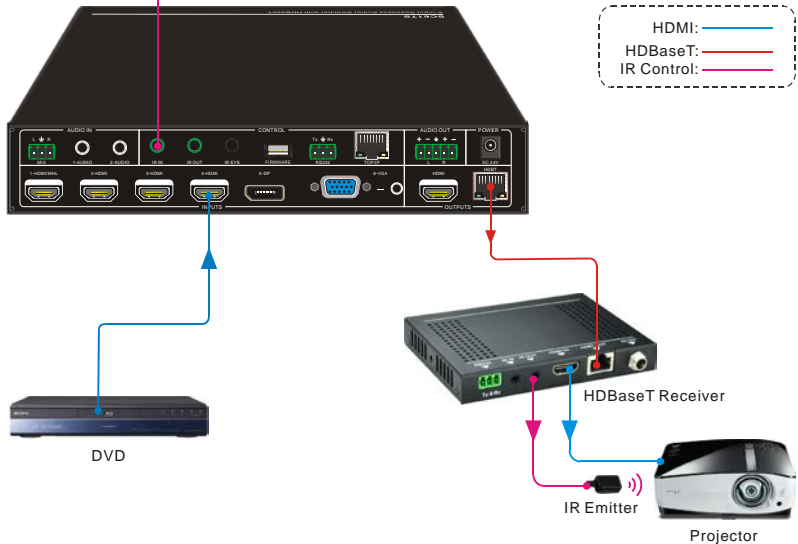


- ① Enter/ exit standby mode.
- ② Input channel selection buttons (1~6): Select video source via pressing corresponding button (audio switched following the corresponding video signal).
- ③ Mute/ unmute audio
- ④ VOL: Volume adjusting button. After pressing this button, the volume adjusting menu will be showed on Display, and then press UP/DOWON button to turn up/down volume.
- ⑤ Auto button: Enter/Exit auto-switching mode.
- ⑥ OK: confirm button; Navigation buttons: UP/DWON/LEFT/ RIGHT button, for value setting or page-turn.
- ⑦ Exit button: Exit OSD menu or current operation.
- ⑧ Enter OSD menu or return to previous menu.

## 5.2 Control Far-end Display Device

Connect an IR Receiver to IR IN port on the Scaler Switcher and connect IR Emitter to the IR OUT port on the HDBaseT Receiver, the far-end device(such as Projector) can be control by its IR Remote.

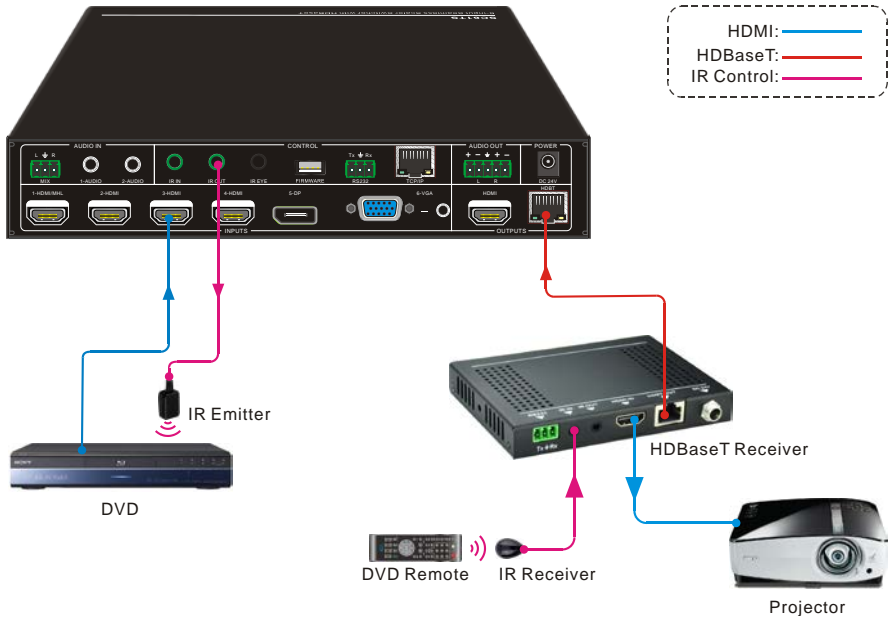
Projector Remote IR Receiver





### 5.3 Control Local Source Device

Connect an IR Emitter to IR OUT port on the Scaler Switcher and connect IR Receiver to the IR IN port on the HDBaseT Receiver, the source device (such as DVD) can be control by its IR Remote.



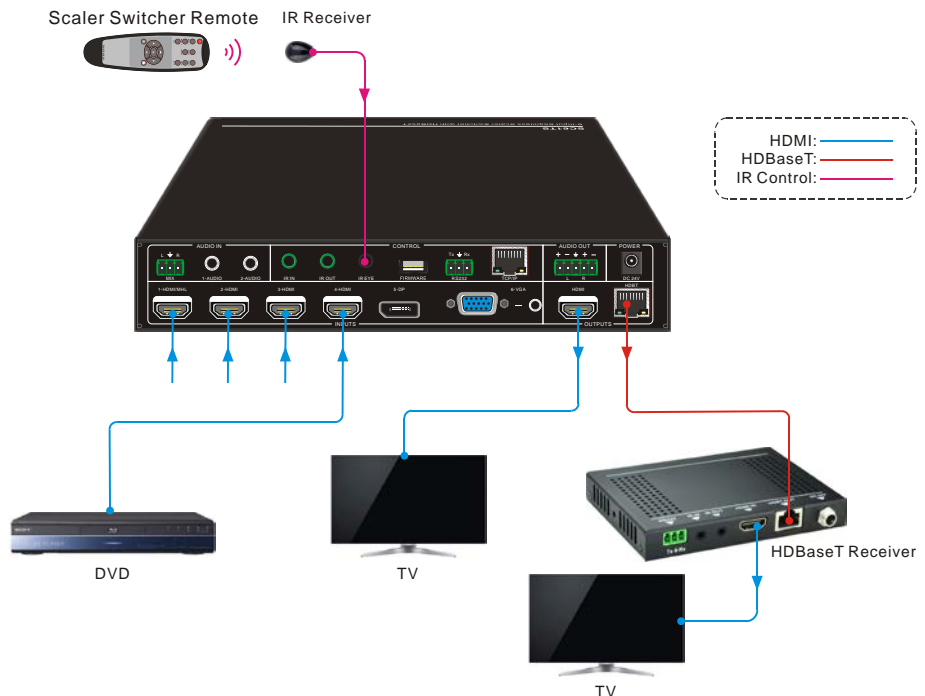
### 5.4 CEC Function

The Scaler Switcher supports CEC, it can be turned on/ off by sending RS232 commands or OSD menu operations. The default setting is ON.






Commands pertaining to CEC: "50686%" (enable CEC) and "50687%" (disable CEC)

HDMI INPUT ports support CEC, if the connected source devices also support CEC and their CEC are on, users can control the source device and display via the IR Remote of the Scaler Switcher.

## 6-input Seamless Scaler Switcher & HDBaseT Receiver



The working status related to CEC and STANDBY is shown as below:

Situation	Working Status
CEC: on, Standby: on	Press STANDBY button on IR Remote, the Scaler Switcher enters in standby mode, so do all HDMI source devices and display. Press STANDBY button again on IR Remote, the Scaler Switcher exits standby mode, the previous selected HDMI input source device and display start working too.
CEC: on, Standby: off	Press STANDBY button on IR Remote, the Scaler Switcher enters in standby mode, HDMI source devices and display keep on.
CEC: on	Use  ,  ,  ,  and  buttons on IR Remote to control HDMI source device.
CEC: off	Unable to control HDMI source device and display through IR Remote

## 6. RS232 Control

As RS232 can be transmitted bi-directionally between the Scaler Switcher and HDBaseT Receiver, so it is able to control a third-party device from local or control the Scaler Switcher from remote. The baud rate support 2400, 4800, 9600(default), 19200, 38400, 57600 or 115200.

### 6.1 RS232 Connection

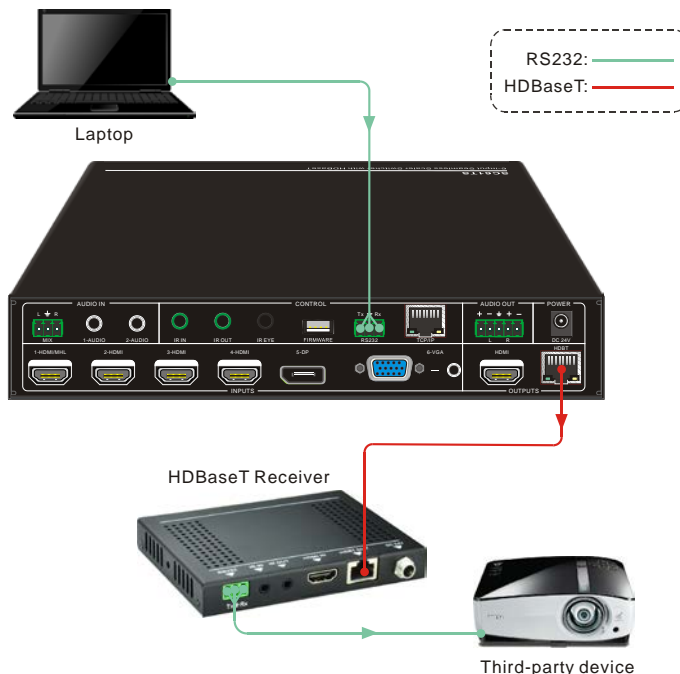
There are two RS232 control modes can be chosen via RS232 commands (50787%/50788%).

#### ① Control Scaler Switcher or Third-party Device from Local

Firstly, according the following connection diagram to connect all devices as needed.

Secondly, send command **50787%** (serial control mode 1, factory default) via RS232 communication software.

Lastly, send the right command of the Scaler Switcher or other remote RS232 device connected in present system.



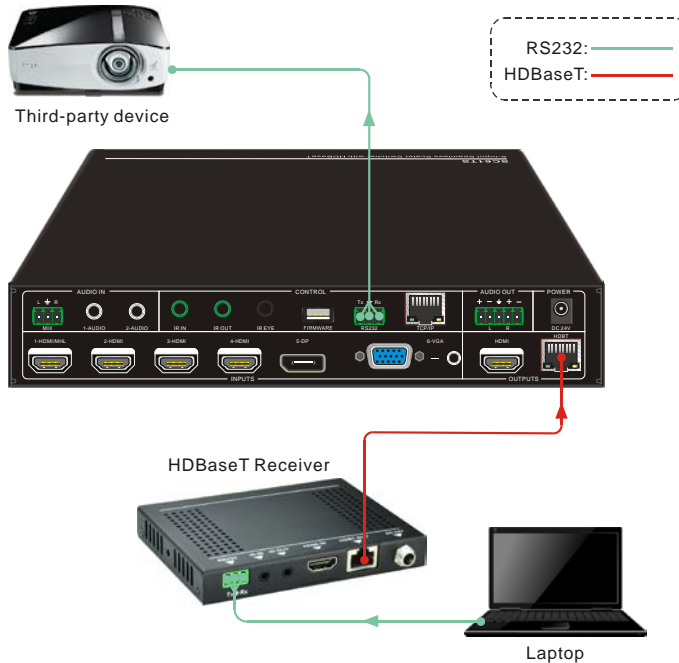
## 6-input Seamless Scaler Switcher & HDBaseT Receiver

### ② Control Scaler Switcher or Third-party Device form Remote

Firstly, according the following connection diagram to connect all devices as needed.

Secondly, send command **50788%** via RS232 communication software.

Lastly, send the right command to control the Scaler Switcher:



## 6.2 Installation/uninstallation of RS232 Control Software

- **Installation** Copy the control software file to the computer connected with the Scaler Switcher.
- **Uninstallation** Delete all the control software files in corresponding file path.

### Basic Settings:

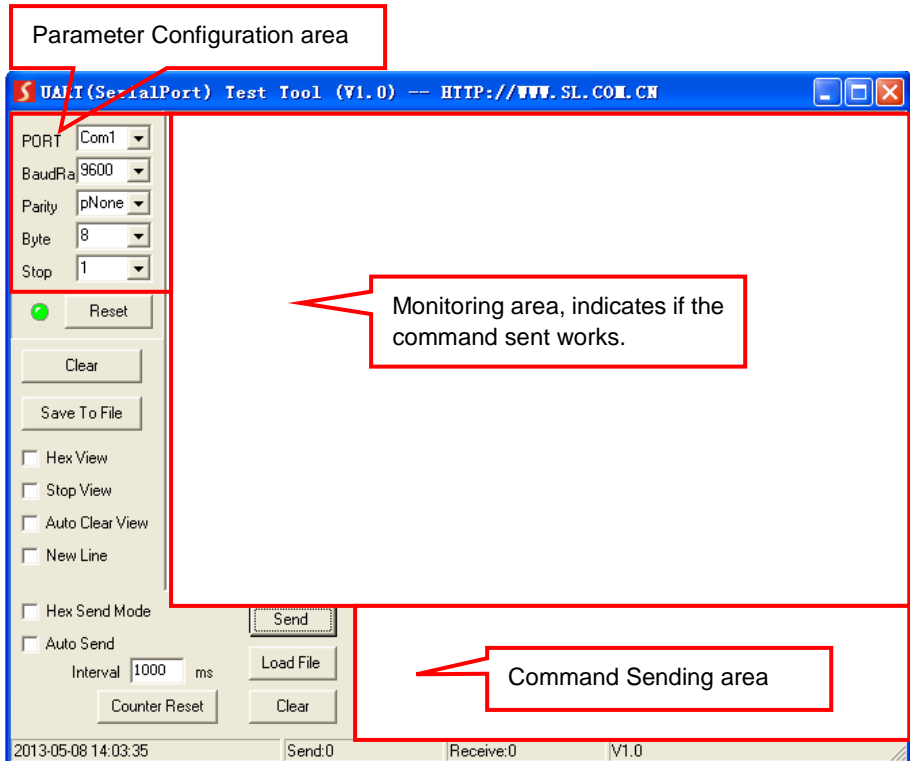
First to connect the Scaler Switcher with all input devices and output devices needed, then to connect it with a computer which is installed with RS232 control software. Double-click the software icon to run this software.

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Here we take the software **CommWatch.exe** as example. The icon is showed as below:



The interface of the control software is showed 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.

### 6.3 RS232 Communication Commands

**Communication protocol:** RS232 Communication Protocol

Baud rate: 9600

Data bit: 8

Stop bit: 1

Parity bit: none

#### 6.3.1 RS232 Control Mode Switching

Command	Function	Feedback Example
<b>50787%</b>	Enable RS232 control mode 1: Control the Scaler Switcher or third-party device from local.	RS232 Mode 1: RS232 Control Scaler & Remote
<b>50788%</b>	Enable RS232 control mode 2: Control the Scaler Switcher or third-party device from remote.	RS232 Mode 2: RS232 Control Scaler
<b>/+[X]:*****</b>	Set communication between PC and HDBaseT receiver. <ul style="list-style-type: none"> <li>X is for baud rate, its value ranges from 1 to 7 (1--2400, 2--4800, 3--9600, 4--19200, 5--38400, 6--57600, 7--115200)</li> <li>***** is for data (max 48 Byte)</li> </ul>	None

#### 6.3.2 Input Signal Switching

Command	Function	Feedback Example
<b>50701%</b>	Switch to 1-HDMI/MHL input.	Switch to HDMI 1
<b>50702%</b>	Switch to 2-HDMI input.	Switch to HDMI 2
<b>50703%</b>	Switch to 3-HDMI input.	Switch to HDMI 3
<b>50704%</b>	Switch to 4-HDMI input.	Switch to HDMI 4
<b>50705%</b>	Switch to 5-DP input.	Switch to DP
<b>50706%</b>	Switch to VGA/YPbPr/AV input.	Switch to VGA
<b>50680%</b>	Set the signal format to VGA for 6-VGA input.	Input 6 Set & Switch to VGA
<b>50681%</b>	Set the signal format to YPbPr for 6-VGA input.	Input 6 Set & Switch to YPbPr
<b>50682%</b>	Set the signal format to AV(C-video) for 6-VGA input.	Input 6 Set & Switch to AV
<b>50631%</b>	Get the input source.	Input: xx (xx= HDMI1/ HDMI2/ HDMI3/ HDMI4/ DP/VGA/ YPbPr/ AV)

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<b>50785%</b>	Enable auto-switching.	Auto Switch
<b>50786%</b>	Disable auto-switching.	Manual Switch

### 6.3.3 Audio Adjusting

Command	Function	Feedback Example
<b>50600%</b>	Mute source audio.	Source Mute
<b>50601%</b>	Unmute source audio.	Source Unmute
<b>50751%</b>	Get the Source mute status.	Source Mute/Source Unmute
<b>50602%</b>	Turn up the source audio volume	Source Volume: xx (xx=00~60)
<b>50603%</b>	Turn down the source audio volume.	Source Volume: xx (xx=00~60)
<b>501xx%</b>	Set the source audio volume.	Source Volume: xx (xx=00~60)
<b>50720%</b>	Mute Source & Line audio.	Line Mute Source Mute
<b>50721%</b>	Unmute Source & Line audio.	Line Unmute Source Unmute
<b>50722%</b>	Mute Line audio.	Line Mute
<b>50723%</b>	Unmute Line audio.	Line Unmute
<b>50752%</b>	Get the Line mute status	Line Mute/Line Unmute
<b>50724%</b>	Turn up the Line audio volume.	Line Volume: xx (xx=00~60)
<b>50725%</b>	Turn down the Line audio volume.	Line Volume: xx (xx=00~60)
<b>50630%</b>	Get the volume level.	Source Volume: xx (xx=00~60)
		Line Volume: xx (xx=00~60)
<b>508xx%</b>	Set the Line audio volume.	Line Volume: xx (xx=00~60)
<b>50726%</b>	Disable VGA audio.	VGA Audio Mute
<b>50727%</b>	Enable VGA audio.	VGA Audio Unmute
<b>50712%</b>	Get the audio input sources for VGA.	VGA Audio Mute/VGA Audio Unmute
<b>50660%</b>	Disable 1-HDMI audio.	HDMI1 Audio Mute
<b>50661%</b>	Enable 1-HDMI audio.	HDMI1 Audio Unmute

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<b>50662%</b>	Disable 2-HDMI audio.	HDMI2 Audio Mute
<b>50663%</b>	Enable 2-HDMI audio.	HDMI2 Audio Unmute
<b>50664%</b>	Disable 3-HDMI audio.	HDMI3 Audio Mute
<b>50665%</b>	Enable 3-HDMI audio.	HDMI3 Audio Unmute
<b>50666%</b>	Disable 4-HDMI audio.	HDMI4 Audio Mute
<b>50667%</b>	Enable 4-HDMI audio.	HDMI4 Audio Unmute
<b>50668%</b>	Disable DP audio.	DP Audio Mute
<b>50669%</b>	Enable DP audio.	DP Audio Unmute
<b>50941%</b>	Disable MIX audio.	MIX Audio Disable
<b>50942%</b>	Enable MIX audio.	MIX Audio Enable
<b>50943%</b>	Disable 1-AUDIO audio.	1-AUDIO Disable
<b>50944%</b>	Enable 1-AUDIO audio.	1-AUDIO Enable
<b>50945%</b>	Disable 2-AUDIO audio.	2-AUDIO Disable
<b>50946%</b>	Enable 2-AUDIO audio.	2-AUDIO Enable
<b>50659%</b>	Check input HDMI audio status.	HDMI1 Audio Unmute/HDMI1 Audio Mute
		HDMI2 Audio Unmute/HDMI2 Audio Mute
		HDMI3 Audio Unmute/HDMI3 Audio Mute
		HDMI4 Audio Unmute/HDMI4 Audio Mute
		DP Audio Unmute/DP Audio Mute
<b>50947%</b>	Check external audio input status (MIX, 1-AUDIO, 2-AUDIO).	MIX Disable/MIX Enable
		1-AUDIO Disable/1-AUDIO Enable
		2-AUDIO Enable/2-AUDIO Enable
<b>50648%</b>	Enable HDMI embedded audio output.	Embedded Audio Output: enable
<b>50649%</b>	Disable HDMI embedded audio output.	Embedded Audio Output: disable



### 6.3.4 VGA Scaling Configuration

The default output resolution for VGA is 1920x1080. Below is a list of the output resolutions the built-in scaler can output.

Command	Function	Feedback Example
<b>50619%</b>	Set the output resolution to 1360X768 HD.	Resolution: 1360x768
<b>50626%</b>	Set the output resolution to 1024X768 XGA.	Resolution: 1024x768
<b>50627%</b>	Set the output resolution to 1280X720 720P.	Resolution: 1280x720
<b>50628%</b>	Set the output resolution to 1280X800 WXGA.	Resolution: 1280x800
<b>50629%</b>	Set the output resolution to 1920X1080 1080P.	Resolution: 1920x1080
<b>50620%</b>	Set the output resolution to 1920X1200 WUXGA.	Resolution: 1920x1200
<b>50621%</b>	Set the output resolution to 1600X1200 UXGA.	Resolution: 1600x1200
<b>50624%</b>	Set the output resolution to 1600X900.	Resolution: 1600x900
<b>50632%</b>	Get the output resolution.	Resolution: xx (xx=1920x1200/1920x1080/ 1600x1200/1360x768/1280x 800/1280x720/1024x768/16 00x900)

### 6.3.5 Output Image Adjusting

Command	Function	Feedback Example
<b>502xx%</b>	Set the brightness to xx.	Brightness: xx (xx=00~99)
<b>50636%</b>	Get the brightness.	Brightness: xx (xx=00~99)
<b>503xx%</b>	Set the contrast to xx.	Contrast: xx (xx=00~99)
<b>50637%</b>	Get the contrast.	Contrast: xx (xx=00~99)
<b>504xx%</b>	Set the saturation to xx.	Saturation: xx (xx=00~99)
<b>50638%</b>	Get the saturation.	Saturation: xx (xx=00~99)
<b>505xx%</b>	Set the sharpness to xx.	Sharpness: xx (xx=00~99)

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<b>50639%</b>	Get the sharpness.	Sharpness: xx (xx=00~99)
<b>50607%</b>	Auto-adjust the color temperature to xx.	Color Temperature: xxxx (xx=Cool/Medium/Warm/Use r)
<b>50640%</b>	Get the color temperature.	Color Temperature: xx (xx= Cool/ Medium/Warm/User.)
<b>50608%</b>	Set the aspect ratio to xx.	Aspect Ratio: xx (xx= 16:9/ 4:3/ auto)
<b>50635%</b>	Get the image aspect ratio.	Aspect Ratio: xx (xx= 16:9/ 4:3/ auto/)
<b>50614%</b>	Set the image mode to xx.	Picture Mode: xx (xx= dynamic/ standard/ mild/ user)
<b>50633%</b>	Get the image mode.	Picture Mode: xx (xx= Dynamic/ Standard/ Mild/ User)
<b>50655%</b>	Freeze output image.	Freeze: enable
<b>50656%</b>	Cancel the freezing of output image	Freeze: disable
<b>50753%</b>	Get the freeze status.	Freeze: enable/Freeze: disable
<b>50646%</b>	Display the volume icon.	Volume Icon: enable
<b>50647%</b>	Hide the volume icon.	Volume Icon: disable
<b>50765%</b>	Display the freeze icon.	Freeze Icon: enable
<b>50766%</b>	Hide the freeze icon.	Freeze Icon: disable
<b>50644%</b>	Enable input Icon status	Input Icon: enable
<b>50645%</b>	Disable input Icon status	Input Icon: disable
<b>50650%</b>	Get the Icon status.	Input Icon: enable/Input Icon: disable Volume Icon: enable/Volume Icon: disable Freeze Icon: enable/Freeze Icon: disable
<b>50651%</b>	Get Volume Icon display status.	Volume Icon: xxxx
<b>50606%</b>	Auto-adjust the input parameter(VGA only)	VGA Input Auto
<b>50678%</b>	Enable screen output adjusting.	Enter Output Position Adjust

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<b>50679%</b>	Disable screen output adjusting.	Exit Output Position Adjust
<b>50670%</b>	Move the image to right.	Output Position Adjust X xx
<b>50671%</b>	Move the image to left.	Output Position Adjust X xx
<b>50672%</b>	Move the image up.	Output Position Adjust Y xx
<b>50673%</b>	Move the image down.	Output Position Adjust Y xx
<b>50674%</b>	Stretch left from left side (increase image width).	Output Width Adjust xx
<b>50675%</b>	Pull right from left side (decrease image width)	Output Width Adjust xx
<b>50676%</b>	Stretch upwards from bottom side (decrease image height).	Output Height Adjust xx
<b>50677%</b>	Stretch downwards from bottom side (increase image height).	Output Height Adjust xx
<b>50755%</b>	Turn off HDMI output.	HDMI power off
<b>50756%</b>	Turn on HDMI output.	HDMI power off
<b>50757%</b>	Turn off HDBT output.	HDBT power off
<b>50758%</b>	Turn on HDBT output	HDBT power off
<b>50759%</b>	Turn on HDMI& HDBT output synchronously.	HDMI HDBT power on

### 6.3.6 Auto Power-off Setup

<b>Command</b>	<b>Function</b>	<b>Feedback Example</b>
<b>50713%</b>	Auto Switch Mode: Disable the automatic power off function.	Auto power off: Disable
<b>50714%</b>	Auto Switch Mode: Set the auto power-off time to 0 minute when No signal input.	Auto power off: 0min
<b>50715%</b>	Auto Switch Mode: Set the auto power-off time to 1 minute when No signal input.	Auto power off: 1min
<b>50716%</b>	Auto Switch Mode: Set the auto power-off time to 2 minute when No signal input.	Auto power off: 2min
<b>50717%</b>	Auto Switch Mode: Set the auto power-off time to 5 minute when No signal input.	Auto power off: 5min
<b>50718%</b>	Auto Switch Mode: Set the auto power-off time to 10 minute when No signal input.	Auto power off: 10min

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<b>50719%</b>	Check the auto power-off time.	Auto power off: 5min Manu power off: Disable
<b>50771%</b>	Manual Switch Mode: Disable auto power-off time function.	Manu power off: Disable
<b>50772%</b>	Manual Switch Mode: Set the power-off time to 1 minute.	Manu power off: 1min
<b>50773%</b>	Manual Switch Mode: Set the power-off time to 2 minute.	Manu power off: 2min
<b>50774%</b>	Manual Switch Mode: Set the power-off time to 5 minute.	Manu power off: 5min
<b>50775%</b>	Manual Switch Mode: Set the power-off time to 10 minute.	Manu power off: 10min
<b>50776%</b>	Manual Switch Mode: Set the power-off time to 0 minute.	Manu power off: 0min

### 6.3.7 OSD Menu Control

Command	Function	Feedback Example
<b>50616%</b>	MENU button (enter OSD)	OSD: Enter
<b>50609%</b>	OK for OSD selection	Key: ok
<b>50610%</b>	LEFT button	Key: left
<b>50611%</b>	RIGHT button	Key: right
<b>50612%</b>	UP button	Key: up
<b>50613%</b>	DOWN button	Key: down
<b>50618%</b>	EXIT button (exit OSD)	OSD: Exit

### 6.3.8 CEC Input Commands

Command	Function	Feedback Example
<b>50686%</b>	Enable CEC Input.	HDMI CEC ON
<b>50687%</b>	Disable CEC Input.	HDMI CEC OFF
<b>50901%</b>	Play & pause.	CEC cmd: play&pause
<b>50902%</b>	Stop.	CEC cmd: stop
<b>50903%</b>	Menu.	CEC cmd: menu
<b>50904%</b>	Reverse.	CEC cmd: rev

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<b>50905%</b>	Forward.	CEC cmd: fwd
<b>50906%</b>	Up.	CEC cmd: up
<b>50907%</b>	Down.	CEC cmd: down
<b>50908%</b>	Left.	CEC cmd: left
<b>50909%</b>	Right.	CEC cmd: right
<b>50910%</b>	Confirm command.	CEC cmd: select
<b>50911%</b>	Exit command Tog Menu.	CEC cmd: exit
<b>50912%</b>	Pause.	CEC cmd: pause
<b>50913%</b>	Power on input source device.	Source power on
<b>50914%</b>	Power off input source device.	Source power off
<b>50915%</b>	Enable input CEC auto power.	Source Auto Power Enable
<b>50916%</b>	Disable input CEC auto power. Do not allow the Scaler Switcher to power on from Blu-ray being powered on.	Source Auto Power Disable

### 6.3.9 CEC Output Commands

Command	Function	Feedback Example
<b>50920%</b>	Enable output CEC auto power. When in switcher is in auto and video detection is detected, CEC power on command is sent to display. After 3 minutes of no video input, CEC power-off command is sent to display.	Display Auto Power Enable
<b>50921%</b>	Disable output CEC auto power.	Disable Auto Power Disable
<b>50922%</b>	Power on output display device.	Display Power On
<b>50923%</b>	Power off output display device.	Display Power Off

### 6.3.10 EDID Configuration

Command	Function	Feedback Example
<b>50731%</b>	Set 1-HDMI/MHL EDID to 720P.	HDMI1 EDID:720P
<b>50732%</b>	Set 1-HDMI/MHL EDID to 1080P.	HDMI1 EDID to:1080P
<b>50733%</b>	Set 1-HDMI/MHL EDID to 1920x1200.	HDMI1 EDID to:1920x1200

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<b>50735%</b>	Set 2-HDMI EDID to 720P.	HDMI2 EDID:720P
<b>50736%</b>	Set 2-HDMI EDID to 1080P.	HDMI2 EDID:1080P
<b>50737%</b>	Set 2-HDMI EDID to 1920x1200.	HDMI2 EDID:1920x1200
<b>50739%</b>	Set 3-HDMI EDID to 720P.	HDMI3 EDID:720P
<b>50740%</b>	Set 3-HDMI EDID to 1080P.	HDMI3 EDID:1080P
<b>50741%</b>	Set 3-HDMI EDID to 1920x1200.	HDMI3 EDID:1920x1200
<b>50743%</b>	Set 4-HDMI EDID to 720P.	HDMI4 EDID:720P
<b>50744%</b>	Set 4-HDMI EDID to 1080P.	HDMI4 EDID:1080P
<b>50745%</b>	Set 4-HDMI EDID to 1920x1200.	HDMI4 EDID:1920x1200
<b>50747%</b>	Set DP EDID to 720P.	DP EDID:720P
<b>50748%</b>	Set DP EDID to 1080P.	DP EDID:1080P
<b>50749%</b>	Set DP EDID to 1920x1200.	DP EDID:1920x1200
<b>50767%</b>	Restore default EDID.	EDID:Default
<b>50768%</b>	Bypass EDID data from output to input.	EDID:Bypass
<b>50769%</b>	Upload custom EDID data to the switcher.	EDID:User
<b>50770%</b>	Inquire EDID status.	EDID:Default/ EDID:Bypass/ EDID:User/
<b>50782%</b>	EDID management, copy the best resolution data of one output to HDMI input.	EDID manage Resolution:1920x1080

### 6.3.11 HDCP Compliance

<b>Command</b>	<b>Function</b>	<b>Feedback Example</b>
<b>50791%</b>	HDCP Active mode.	HDCP Active.
<b>50792%</b>	HDCP Manual mode.	HDCP Manual.
<b>50795%</b>	Get HDCP status.	HDCP Active/HDCP Manual HDCP ON/HDCP OFF


### 6.3.12 Device Setup

Command	Function	Feedback Example
<b>50797%</b>	Enter standby mode.	System Standby
<b>50697%</b>	Power on.	System Power On
<b>50604%</b>	Lock the front panel buttons.	Front Panel Lock
<b>50605%</b>	Unlock the front panel buttons.	Front Panel Unlock
<b>50754%</b>	Get the panel locked status.	Front Panel Lock/Front Panel UnLock
<b>50699%</b>	Get the system version.	Version Vx.x.x
<b>50698%</b>	Software update.	Software update
<b>50617%</b>	Restore to factory defaults.	Factory Reset
<b>50657%</b>	Check IP address	192.168.0.178!
<b>50783%</b>	Get current status Display status including Source, Line audio, Resolution, Output Audio on/off, Manual/ Auto-switching modes	Source Volume:XX (Source xx = 00 to 60)
		Line Volume:XX (Line xx = 00 to 60)
		Input:XXXX
		Resolution:XXXX
		Embedded Audio Output: XXXX(Enable/Disable)
		Source Mute/Source Unmute
		Line Mute/Line Unmute
		Auto Switch/Manual Switch
		VGA Mute/Unmute

### 7. OSD Menu Control

The Scaler Switcher provides a powerful OSD operation menu, including 3 parts: optional settings, picture settings, and system setup.

There are three ways to enter OSD menu:

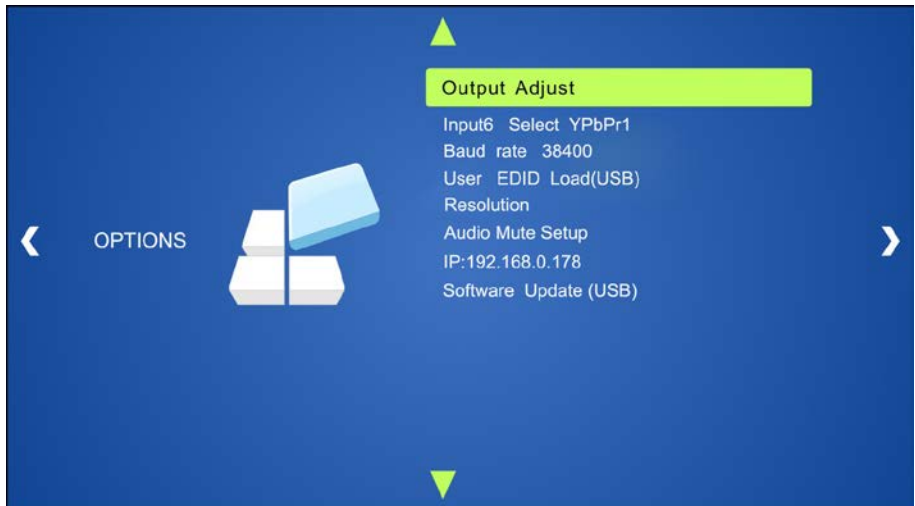
- ① Long-press the button **MENU/3s** on front panel 2 seconds or more.
- ② Press MENU button  on IR Remote.
- ③ Send the command **50616%** on RS232 Control Software.

#### Operation way:

- Press direction buttons (Left/Right/Up/ down), ENTER button on front panel.
- Press direction keys (Left/Right/Up/ down), OK key on IR Remote.
- Sending OSD menu command via RS232 control software.

#### 7.1 OPTIONS

Includes output adjust, input selection, baud rate, user EDID load (USB), resolution, and software update (USB).



- **Output Adjust:** Adjust output image position (X: horizontal direction and Y: vertical direction), ratio aspect (width and height), polarity adjustment (H Polarity and V



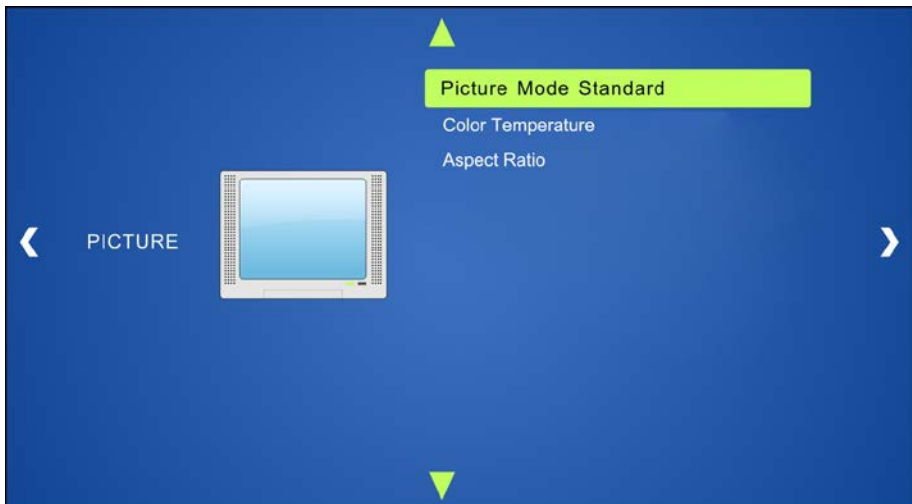
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Polarity) and output setting (HDMI on/off and HDBT on/off).

- **Input Selection:** Select video source format for VGA input, includes AV 1 (C-video signal), VGA 1 (VGA signal) and YPbPr 1 (Component video signal).
- **Baud rate:** Set the baud rate for RS232 control, and it support 2400、4800、9600、19200、38400、57600、115200.
- **User EDID Load (USB):** Insert the USB flash disk with EDID file to FIRMWARE port to load EDID data through this menu.
- **Resolution:** Set the output resolutions, and it support 1920x1200, 1920x1080, 1600x1200, 1600x900, 1360x768, 1280x800, 1280x720, 1024x768.
- **Audio Mute Setup:** Turn on/off the Mix, 1-AUDIO, 2-AUDIO, HDMI 1, HDMI 2, HDMI 3, HDMI 4, DP, VGA audio.
- **IP:** Show the IP address.
- **Software Update (USB):** Insert the USB flash disk with updating file to the FIRMWARE port of the Scaler Switcher, to update the software through this menu.

## 7.2 PICTURE

Including picture mode, color temperature, aspect ratio.



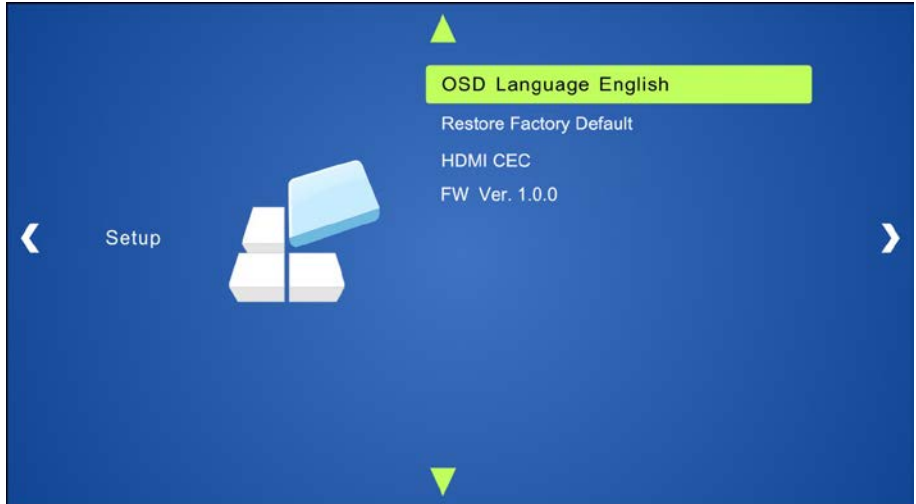
- **Picture mode:** Include Dynamic, Standard, Mild, and User. Only in User mode, will it be able to set the image contrast, brightness, color and sharpness.
- **Color Temperature:** Include Cool, Medium, Warm and User. And only in User mode, it is able to set values for Red, Green and Blue (RGB).

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- **Aspect Ratio:** Include Native, 4:3, 16:9, Zoom1, Zoom2, Just Scan, and Panorama. VGA format only supports 4:3, 16:9 and Panorama.

### 7.3 SETUP

Including OSD language, restore factory default, HDMI CEC and version inquiry.

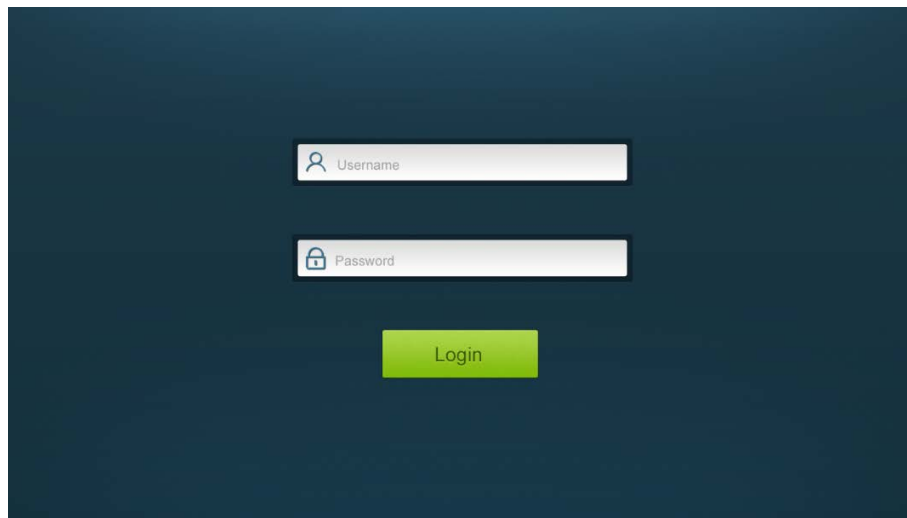


- **OSD Language:** Supports 7 languages, including English (default), Chinese etc.
- **Restore Factory Default:** Restores to original system state.
- **HDMI CEC:** Enable/disable CEC and auto-standby function. Default: CEC on, STANDBY on. Only when CEC is on, will it be able to set auto-standby status.
- **FW Ver. 1.0.0:** Software version.

## 8. GUI Control

In addition to control the Scaler Switcher via front panel button, IR remote and RS232 communication software. The Scaler Switcher can be controlled via GUI. It allows users to interact with the Scaler Switcher through graphical icons and visual indicators.

Type **192.168.0.178** in your browser, it will enter the log-in interface shown as below:

A screenshot of a web-based login interface. The background is a dark blue gradient. In the center, there are two white input fields. The top field is labeled "Username" with a small person icon to its left. The bottom field is labeled "Password" with a small padlock icon to its left. Below these fields is a green rectangular button with the word "Login" in white text.

## 8.1 Control Menu

Type the default user name (user) and password, and then click **Login** to enter the Control menu shown as below:




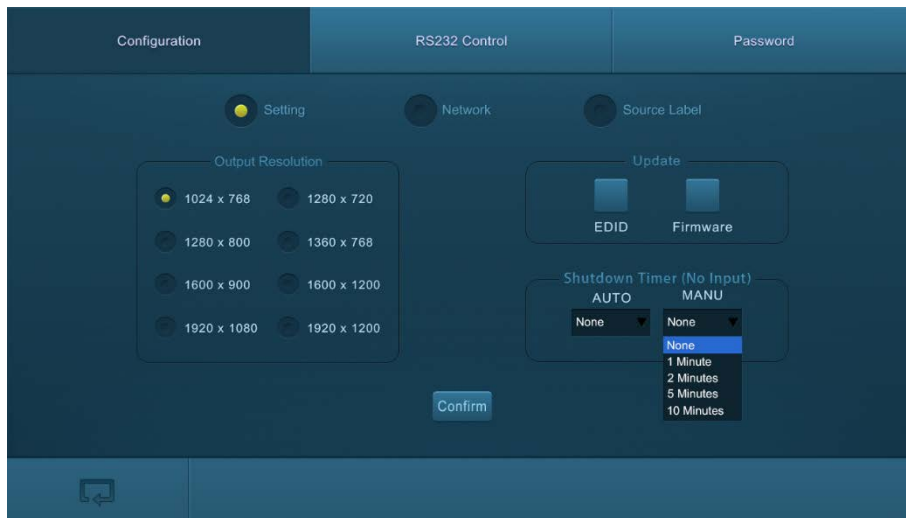
- **Sources:** Click the corresponding button (**1-HDMI/MHL**, **2-HDMI**, **3-HDMI**, **4-HDMI**, **5-DP** and **6-VGA**) to select video input source.
- **AUTO:** Click this button to enter auto-switching mode.
- **Adjust:** Click this button to adjust the position of VGA video output image to make sure the best visual effect.
- **Display:** Click this button to turn on/off output display device.
- **Standby:** Click this button to let the Scaler Switcher into standby mode.
- **Volume:** Click the corresponding positive/negative button or move the scroll bar to turn up/down the MIX/Source audio volume.

Click the corresponding **Mute** button to mute/unmute Line/Source audio input.

## 8.2 Configuration Menu

### ① Setting

Click  on control menu to enter configuration menu shown as below:



- **Output Resolution:** Select the output resolution.
- **Update:** Insert the USB flash disk with EDID file/software updating file to the FIRMWARE port, and then click EDID/Firmware to start update procedure.
- **Shutdown Timer(NO Input):** Set the auto power-off time or manual power-off time, including none, 1 minute, 2minutes, 5minutes and 10 Minutes. If the Scaler Switcher can't detect video source input, it will automatically shut down after a preset interval.

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### ② Network

Click **Network** to enter the below menu to select the dynamic or static mode. Under static mode, then IP address, subnet mask and gateway can be reset.



The screenshot shows the 'Network' configuration screen. At the top, there are three tabs: 'Configuration', 'RS232 Control', and 'Password'. Below the tabs, there are three radio buttons: 'Setting', 'Network' (selected), and 'Source Label'. The 'MAC Address' is displayed as '44-33-4C-C9-35-12'. Below this, there are two options: 'DHCP' (selected) and 'Static IP'. Under 'Static IP', there are three input fields: 'IP Address' (192.168.0.178), 'Subnet Mask' (255.255.255.0), and 'Gateway' (192.168.0.1). A 'Confirm' button is located at the bottom right of the configuration area.

### ③ Source

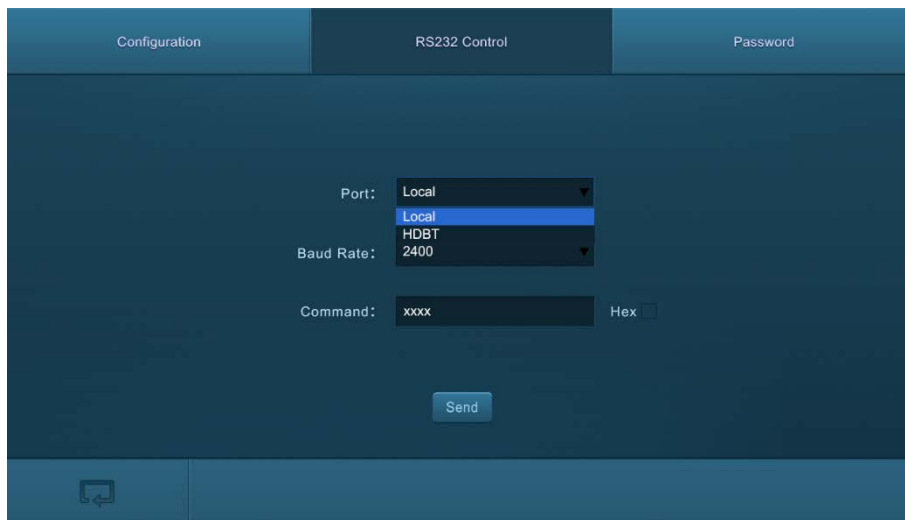
Click **Source Label** to enter the below menu to rename the input selection buttons.



The screenshot shows the 'Source Label' configuration screen. At the top, there are three tabs: 'Configuration', 'RS232 Control', and 'Password'. Below the tabs, there are three radio buttons: 'Setting', 'Network', and 'Source Label' (selected). The screen displays a 3x3 grid of input selection buttons. The first column contains '1-HDMI/MHL' and '4-HDMI'. The second column contains '2-HDMI' and '5-DP'. The third column contains '3-HDMI' and '6-VGA'. A 'Confirm' button is located at the bottom right of the configuration area.

### 8.3 RS232 Control Menu

Click **RS232 Control** on the top of interface to enter the below menu to send commands to control the Scaler Switcher or far-end third-party device.



- **Port:** **Local** refers to the RS232 port of the Scaler Switcher, and **HDBT** refers to the RS232 port of HDBaseT Receiver.
- **Baud Rate:** The baud rate of local port is 9600, but for HDBT port, it support 2400、4800、9600、19200、38400、57600、115200.
- **Command:** Typing commands in this box to control the Scaler Switcher or the far-end third-party device connected to HDBaseT Receiver. If check the “Hex”, you can type RS232 commands with hexadecimal value in the “Command” box.

## 8.4 Password Menu

Click **Password** on the top of interface to enter the below menu to reset the username and password.

## 8.5 GUI Update

GUI for the Scaler Switcher supports online update in <http://192.168.0.178:100>. Type the username and password (the same as the GUI log-in settings, modified password will be available only after rebooting) to log in the configuration interface. After that, click **Administration** at the source menu to get to **Upload Program** as shown below:

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



## 9. Specification

### 9.1 Seamless Scaler Switcher

<b>Video</b>	
Video Input	(1) HDMI/MHL; (3) HDMI; (1) DP; (1) VGA
Video Input Connector	(4) Female HDMI; (1) DisplayPort; (1) Female VGA (15-pin)
Input Video Signal	HDMI, DP, YPbPr, C-video, VGA
Video Output	(1) HDMI; (1) HDBaseT
Video Output Connector	(1) Female HDMI; (1) RJ45
Output Video Signal	HDMI, HDBaseT
Output Resolution	1920x1200, 1920x1080, 1600x1200, 1600x900, 1360x768, 1280x800, 1280x720, 1024x768.
Standards	Compliant with HDMI 1.4 & HDCP2.2
<b>Audio</b>	
Audio Input	(1) MIX; (2) AUDIO
Audio Input Connector	(1) 3-Pin phoenix connector (2) 3.5mm Stereo jacks
Audio Input Impedance	>10kΩ
Audio Output	(1) Stereo balanced L/R audio
Audio Output Connector	(1) 5-Pin phoenix connector
Audio Output Impedance	70Ω
Frequency Response	20Hz~20K Hz
Stereo Channel Separation	>80dB @1KHz
<b>Control Part</b>	
Control port	(1) IR IN, (1) IR OUT; (1) IR EYE; (1) FIRWARE; (1) RS232; (1) TCP/IP
Control Connector	(3) 3.5mm mini jacks; (1) Type-A USB; (1)3-Pin phoenix connectors; (1) RJ45
<b>General</b>	
Transmission Distance	1080P≤70m
Temperature	-10℃ ~ +50℃
Humidity	10% ~ 90%
Power Supply	Input: AC 100~240V, 50/60Hz; Output: 24VDC 2.71A
Power Consumption	28W (Max)
Dimension (W*H*D)	250mm x 44mm x 200mm
Weight	970g

## 9.2 HDBaseT Receiver

Video& Audio	
Input	(1) HDBT IN
Output	(1) HDMI OUT; (1) AUDIO OUT; (1) COAX OUT; (1) OPTICAL OUT
Control Ports	(1) IR IN, (1) IR OUT, (1) RS232
General	
Transmission Mode & Distance	HDBaseT; 1080P ≤ 70m; 4K×2K ≤ 40m
Resolution	Up to 4K×2K@60Hz 4:2:0
Bandwidth	10.2Gbps
HDMI Standard	HDMI1.4 & HDCP2.2
Power Consumption	10W (max)
Temperature	-10℃~ 50℃
Humidity	0% ~ 90%
Power Supply	Powered by the Seamless Scaler Switcher
Dimension (W*H*D)	152mmx16.2mmx100mm
Net Weight (g)	223g



## 11. Troubleshooting & Maintenance

Problems	Potential Causes	Solutions
Output image with snowflake	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.
EDID management does not work normally	The HDMI cable is broken at the output end.	Change for another HDMI cable which is in good working condition.
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.
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.
Cannot control the device by front panel buttons while can control it through RS232 port	The front panel buttons are locked	Send command <b>50605%</b> to unlock the front panel buttons.
Cannot control the device by RS232 / IR remote / front panel buttons	The device has already been broken.	Send it to authorized dealer for repairing.

If your problem still remaining after following the above troubleshooting steps, please find further assistance.

## **12. 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 Exclusions:**

- 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:** For further assistance or solutions, please contact your local distributor.



**ALTIMIUM**

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