VL120026

6-input Seamless Scaler Switcher &

HDBaseT Receiver

VIVO◇LINK™
PROFESSIONAL AV SOLUTIONS

Preface

Read this user manual carefully before using this product. Pictures shown in this manual is for reference only, different model and specifications are subject to real product.

This manual is only for operation instruction only, not for any maintenance usage. The functions described in this version are updated till March 2017. In the constant effort to improve our product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

All product function is valid till 2017-3-8.

Trademarks

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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.

Contents

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 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 web-based 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 & Web-based 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

Part 1	1 x 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 (12V with carrier wave) 1 x IR Emitter 1 x RS232 Cable (3-Pin phoenix connector to DB9) 1 x VGA Converting Cable (VGA to YPbPr) 2 x 3-Pin Phoenix Connectors 1 x 5-Pin Phoenix Connector
Part 2	1 x 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**
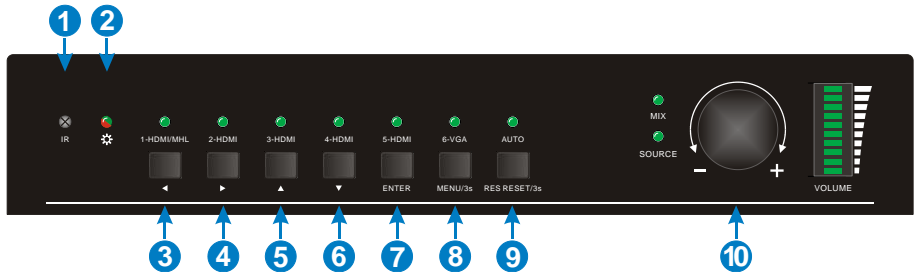
① Built-in IR Receiver

② Power Indicator- GREEN when the device is in standby, RED 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-HDMI 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.

➢ **Rear Panel**
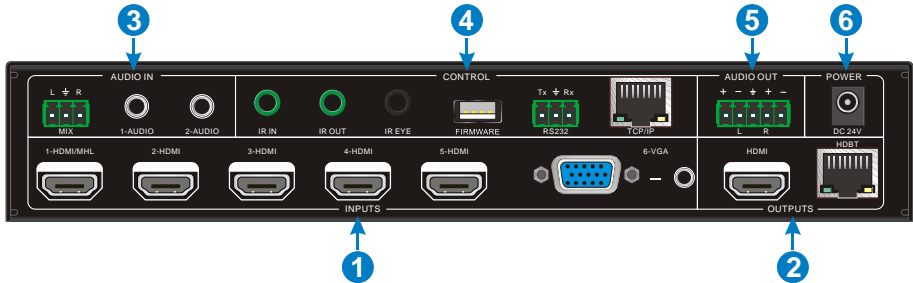
① **INPUTS**

- Video input ports: 1 HDMI/MHL, 4 HDMI inputs 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**
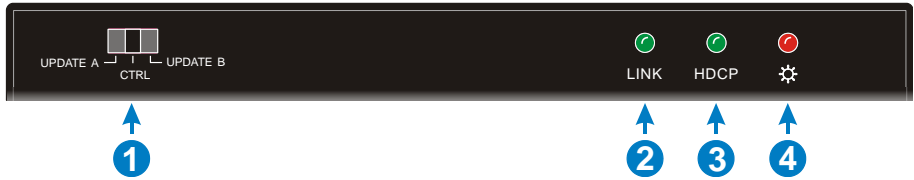
① **RS232 Mode switcher**

- 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 Link/GREEN: Link successful.

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

➢ **Rear Panel**
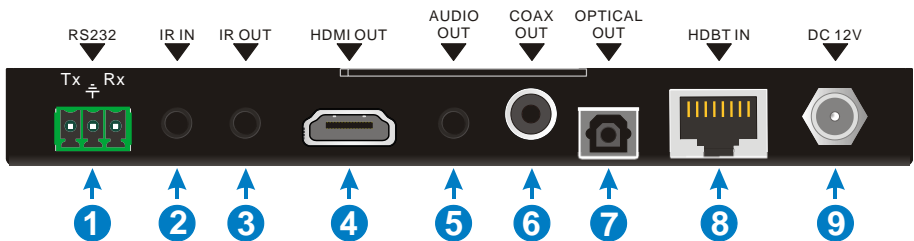
① **RS232 connector**- If one is connected with control device (e.g. PC), and the other should be connected with the third-party that need to be controlled.

② **IR IN** - Work with far-end IR OUT port, connect with 12V 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 12V 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
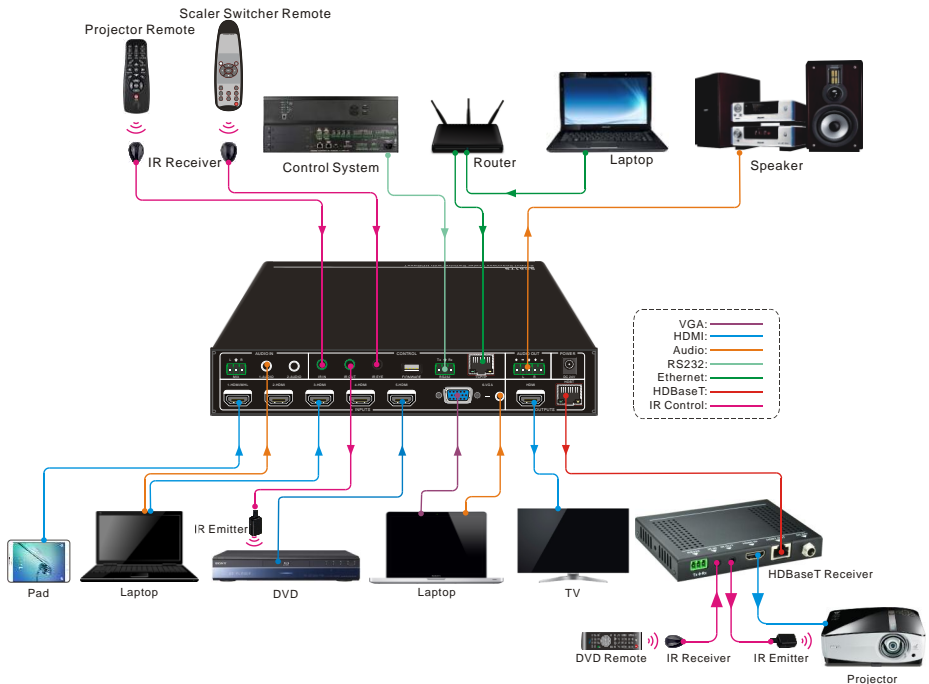
3.3 Connection Procedure

Step1. Connect HDMI source devices (e.g. Blue-ray DVD) to 1~5 HDMI input ports with HDMI cables.

Step2. Connect a VGA source device (e.g. Laptop) to VGA input port with VGA cable and VGA audio input port with audio cable.

Step3. Connect audio source device to the audio input port with audio cable.

Step4. Connect a HDMI display device to HDMI output port with HDMI cable.

Step5. Connect HDBaseT Receiver to HDBT output port with twisted pair.

Step6. Connect speaker, headphone or AV amplifier to AUDIO OUTPUT port.

Step7. Connect control device (e.g. PC) to the TCP/IP port, the Scaler Switcher can be controlled via web-based GUI.

Step8. 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).

Step9. 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.*

Step10. 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.**

Step11. 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-HDMI, 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 cans 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.
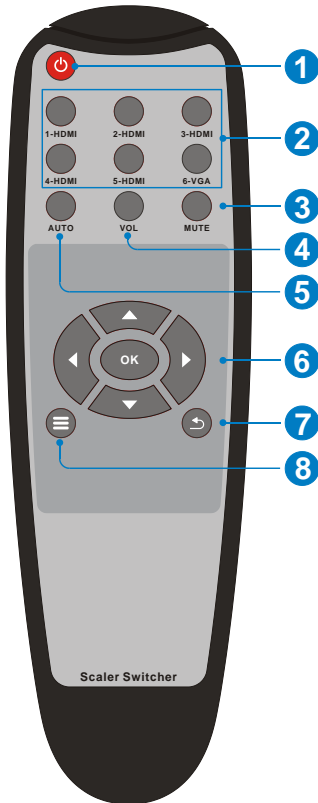
① Enter/ exit standby mode.

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.
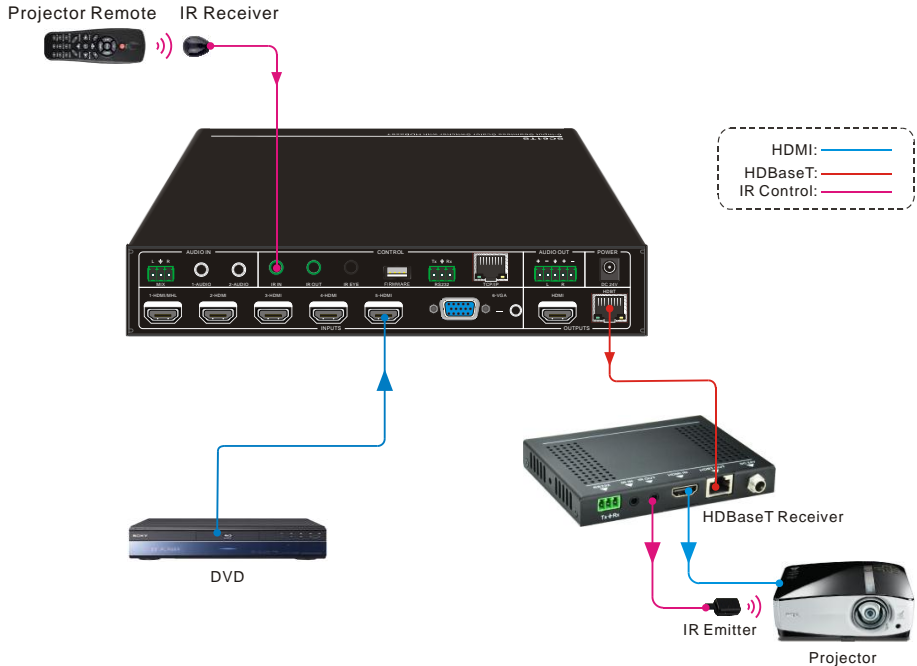
5.3 Control Local Source Device

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.
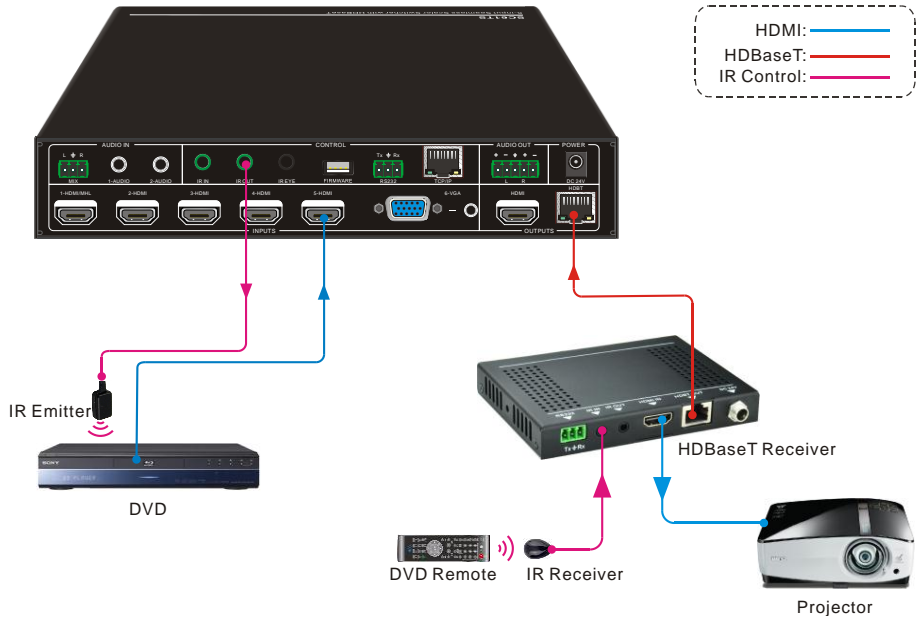
5.4 CEC Function

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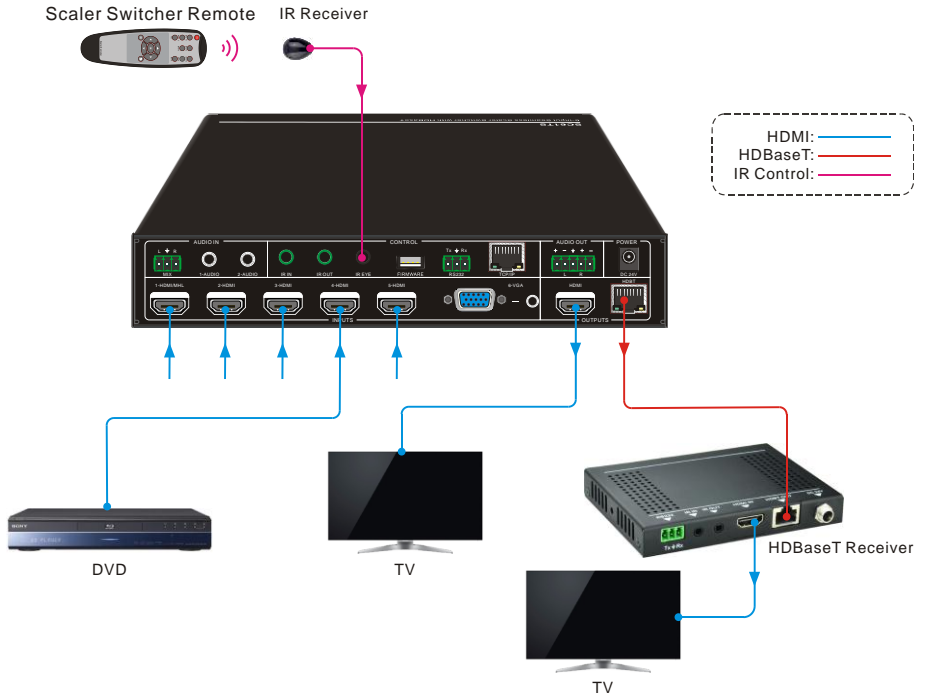
The working status related to CEC and STANDBY is showed as below:

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 OK 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.

Laptop

RS232:
HDBaseT:

HDBaseT Receiver
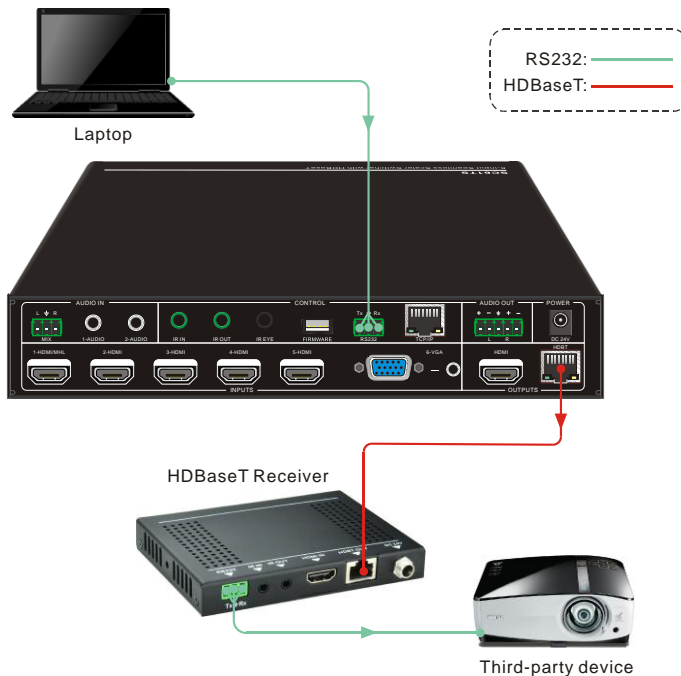
Third-party device

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:
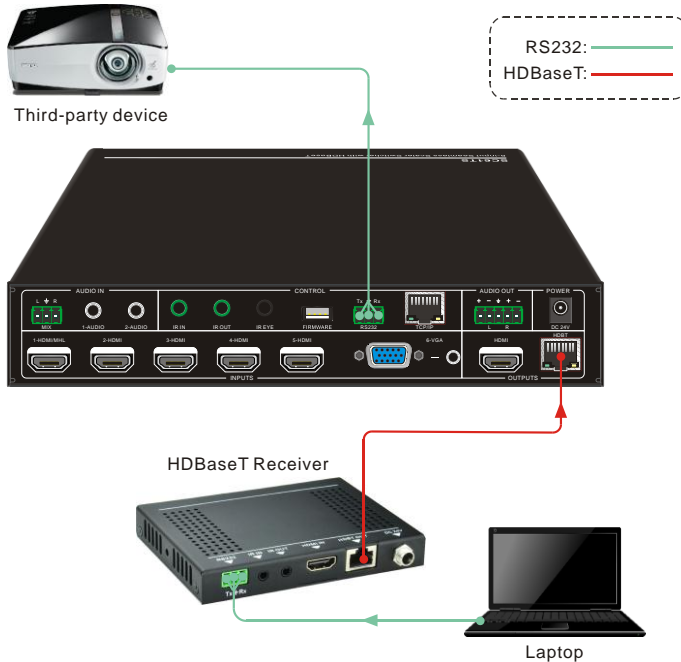
6.2 Installation/uninstallation of RS232 Control Software

● **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.

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

CommWatch.exe

The interface of the control software is showed as below:

Parameter Configuration area

S UART(SerialPort) Test Tool (V1.0) -- HTTP://WWW.SL.COM.CN

PORT Com1
BaudRa 9600
Parity pNone
Byte 8
Stop 1

Reset

Clear

Save To File

Hex View
Stop View
Auto Clear View
New Line

Hex Send Mode
Auto Send
Interval 1000 ms
Counter Reset

Send
Load File
Clear

Monitoring area, indicates if the command sent works.

Command Sending area

2013-05-08 14:03:35   Send:0   Receive:0   V1.0

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
50787%	Enable RS232 control mode 1: Control the Scaler Switcher or third-party device from local.	50787<CR><LF>
50788%	Enable RS232 control mode 2: Control the Scaler Switcher or third-party device from remote.	50788<CR><LF>
/+[X]:******	Set communication between PC and HDBaseT receiver. ● 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) ● ***** is for data (max 48 Byte)	None

6.3.2 Input Signal Switching

Command	Function	Feedback Example
50701%	Switch to 1-HDMI/MHL input.	50701<CR><LF>
50702%	Switch to 2-HDMI input.	50702<CR><LF>
50703%	Switch to 3-HDMI input.	50703<CR><LF>
50704%	Switch to 4-HDMI input.	50704<CR><LF>
50705%	Switch to 5-HDMI input.	50705<CR><LF>
50706%	Switch to VGA/YPbPr/AV input.	50706<CR><LF>
50680%	Set the signal format to VGA for 6-VGA input.	50680<CR><LF>
50681%	Set the signal format to YPbPr for 6-VGA input.	50681<CR><LF>
50682%	Set the signal format to AV(C-video) for 6-VGA input.	50682<CR><LF>
50631%	Get the input source (xx= HDMI1/ HDMI2/ HDMI3/ HDMI4/HDMI5/(VGA/ YPbPr/ AV))	50701<CR><LF>/

		50702<CR><LF>/
		50703<CR><LF>/
		50704<CR><LF>/
		50705<CR><LF>/
		50706<CR><LF>
50785%	Enable auto-switching.	50785<CR><LF>
50786%	Disable auto-switching.	50786<CR><LF>

6.3.3 Audio Adjusting

Command	Function	Feedback Example
50600%	Mute source audio.	50600<CR><LF>
50601%	Unmute source audio.	50601<CR><LF>
50751%	Get the Source mute status.	50600<CR><LF>/ 50601<CR><LF>
50602%	Turn up the source audio volume (xx=00~60).	501xx<CR><LF>
50603%	Turn down the source audio volume (xx=00~60).	501xx<CR><LF>
501xx%	Set the source audio volume (xx=00~60).	501xx<CR><LF>
50720%	Mute Source & Line audio.	50600<CR><LF> 50722<CR><LF>
50721%	Unmute Source & Line audio.	50601<CR><LF> 50723<CR><LF>
50722%	Mute Line audio.	50722<CR><LF>
50723%	Unmute Line audio.	50723<CR><LF>
50752%	Get the Line mute status	50722<CR><LF>/ 50723<CR><LF>
50724%	Turn up the Line audio volume (xx=00~60).	508xx<CR><LF>
50725%	Turn down the Line audio volume (xx=00~60).	508xx<CR><LF>
50630%	Get the volume level (xx=00~60).	501xx<CR><LF>/ 508xx<CR><LF>

508xx%	Set the Line audio volume.	508xx\<CR>\<LF>
50726%	Enable VGA audio.	50726\<CR>\<LF>
50727%	Disable VGA audio.	50727\<CR>\<LF>
50712%	Get the audio input sources for VGA.	50726\<CR>\<LF>/ 50727\<CR>\<LF>
50660%	Disable 1-HDMI audio.	50660\<CR>\<LF>
50661%	Enable 1-HDMI audio.	50661\<CR>\<LF>
50662%	Disable 2-HDMI audio.	50662\<CR>\<LF>
50663%	Enable 2-HDMI audio.	50663\<CR>\<LF>
50664%	Disable 3-HDMI audio.	50664\<CR>\<LF>
50665%	Enable 3-HDMI audio.	50665\<CR>\<LF>
50666%	Disable 4-HDMI audio.	50666\<CR>\<LF>
50667%	Enable 4-HDMI audio.	50667\<CR>\<LF>
50668%	Disable 5-HDMI audio.	50668\<CR>\<LF>
50669%	Enable 5-HDMI audio.	50669\<CR>\<LF>
50941%	Disable MIX audio.	50941\<CR>\<LF>
50942%	Enable MIX audio.	50942\<CR>\<LF>
50943%	Disable 1-AUDIO audio.	50943\<CR>\<LF>
50944%	Enable 1-AUDIO audio.	50944\<CR>\<LF>
50945%	Disable 2-AUDIO audio.	50945\<CR>\<LF>
50946%	Enable 2-AUDIO audio.	50946\<CR>\<LF>
50659%	Check input HDMI audio status.	50660/50661\<CR>\<LF> 50662/50663\<CR>\<LF> 50664/50665\<CR>\<LF> 50666/50667\<CR>\<LF> 50668/50669\<CR>\<LF>
50947%	Check external audio input status (MIX, 1-AUDIO, 2-AUDIO).	50941/50942\<CR>\<LF> 50943/50944\<CR>\<LF> 50945/50946\<CR>\<LF>
50648%	Enable HDMI embedded audio output.	50648\<CR>\<LF>
50649%	Disable HDMI embedded audio output.	50649\<CR>\<LF>

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
50619%	Set the output resolution to 1360X768 HD.	50619<CR><LF>
50626%	Set the output resolution to 1024X768 XGA.	50626<CR><LF>
50627%	Set the output resolution to 1280X720 720P.	50627<CR><LF>
50628%	Set the output resolution to 1280X800 WXGA.	50628<CR><LF>
50629%	Set the output resolution to 1920X1080 1080P.	50629<CR><LF>
50620%	Set the output resolution to1920X1200 WUXGA.	50620<CR><LF>
50621%	Set the output resolution to1600X1200 UXGA.	50621<CR><LF>
50624%	Set the output resolution to 1600X900.	50622<CR><LF>
50632%	Get the output resolution(xx=1920×1200/ 1920×1080/ 1600×1200/ 1360×768/ 1280×800/ 1280×720/ 1024×768/1600x900)	50619<CR><LF>/ 50626<CR><LF>/ 50627<CR><LF>/ 50628<CR><LF>/ 50629<CR><LF>/ 50620<CR><LF>/ 50621<CR><LF>/ 50622<CR><LF>

6.3.5 Output Image Adjusting

Command	Function	Feedback Example
502xx%	Set the brightness to xx (xx = 00 to 99).	502xx<CR><LF>
50636%	Get the brightness.	502xx<CR><LF>
503xx%	Set the contrast to xx (xx = 00 to 99).	503xx<CR><LF>
50637%	Get the contrast.	503xx<CR><LF>

504xx%	Set the saturation to xx (xx = 00 to 99).	504xx<CR><LF>
50638%	Get the saturation.	504xx<CR><LF>
505xx%	Set the sharpness to xx (xx = 00 to 99).	505xx<CR><LF>
50639%	Get the sharpness.	505xx<CR><LF>
50607%	Auto-adjust the color temperature to xx (xx (xx=01 Cool/02 Medium/03 Warm/ 04 User).	50607:xx<CR><LF>
50640%	Get the color temperature (xx= 01 Cool/ 02 Medium/03 Warm/04 User).	50607:xx<CR><LF>
50608%	Set the aspect ratio to xx (xx= 01 16:9/02 4:3/ 03 auto).	50608:xx<CR><LF>
50635%	Get the image aspect ratio(xx= 01 16:9/ 02 4:3/ 03 auto/)	50608:xx<CR><LF>
50614%	Set the image mode to xx (xx= dynamic/ standard/ mild/ user).	50614:xx<CR><LF>
50633%	Get the image mode (xx= 01 Dynamic/ 02 Standard/ 03 Mild/ 04 User).	50614:xx<CR><LF>
50655%	Freeze output image	50655<CR><LF>
50656%	Cancel the freezing of output image	50656<CR><LF>
50753%	Get the freeze status.	50655<CR><LF>/ 50656<CR><LF>
50646%	Display the volume icon.	50646<CR><LF>
50647%	Hide the volume icon.	50647<CR><LF>
50765%	Display the freeze icon.	50765<CR><LF>
50766%	Hide the freeze icon.	50766<CR><LF>
50644%	Display channel status.	50644<CR><LF>
50645%	Hide channel status.	50645<CR><LF>
50650%	Get the Icon status.	50765<CR><LF>/ 50766<CR><LF>/ 50644<CR><LF>/ 50645<CR><LF>
50606%	Auto-adjust the input parameter(VGA only)	50606<CR><LF>
50678%	Enable screen output adjusting.	50678<CR><LF>

50679%	Disable screen output adjusting.	50679<CR><LF>
50670%	Move the image to right.	50670:xx<CR><LF>
50671%	Move the image to left.	50671:xx<CR><LF>
50672%	Move the image up.	50672:xx<CR><LF>
50673%	Move the image down.	50673:xx<CR><LF>
50674%	Stretch left from left side (increase image width).	50674:xx<CR><LF>
50675%	Pull right from left side (decrease image width)	50675:xx<CR><LF>
50676%	Stretch upwards from bottom side (decrease image height).	50676:xx<CR><LF>
50677%	Stretch downwards from bottom side (increase image height).	50677:xx<CR><LF>
50755%	Turn off HDMI output.	50755<CR><LF>
50756%	Turn on HDMI output.	50756<CR><LF>
50757%	Turn off HDBT output.	50757<CR><LF>
50758%	Turn on HDBT output	50758<CR><LF>
50759%	Turn on HDMI& HDBT output synchronously.	50759<CR><LF>

6.3.6 Auto Power-off Setup

Command	Function	Feedback Example
50714%	Auto Switch Mode: Disable the auto power-off function.	50714<CR><LF>
50715%	Auto Switch Mode: Set the auto power-off time to 1 minute when No signal input.	50715<CR><LF>
50716%	Auto Switch Mode: Set the auto power-off time to 2 minute when No signal input.	50716<CR><LF>
50717%	Auto Switch Mode: Set the auto power-off time to 5 minute when No signal input.	50717<CR><LF>
50718%	Auto Switch Mode: Set the auto power-off time to 10 minute when No signal input.	50718<CR><LF>
50719%	Check the auto power-off time.	50719<CR><LF>
50771%	Manual Switch Mode: Disable auto power-off	50771<CR><LF>

	time function.	
50772%	Manual Switch Mode: Set the power-off time to 1 minute.	50772\<CR\>\<LF\>
50773%	Manual Switch Mode: Set the power-off time to 2 minute.	50773\<CR\>\<LF\>
50774%	Manual Switch Mode: Set the power-off time to 5 minute.	50774\<CR\>\<LF\>
50775%	Manual Switch Mode: Set the power-off time to 10 minute.	50775\<CR\>\<LF\>

6.3.7 OSD Menu Control

Command	Function	Feedback Example
50616%	MENU button (enter OSD)	50616\<CR\>\<LF\>
50609%	OK for OSD selection	50609\<CR\>\<LF\>
50610%	LEFT button	50610\<CR\>\<LF\>
50611%	RIGHT button	50611\<CR\>\<LF\>
50612%	UP button	50612\<CR\>\<LF\>
50613%	DOWN button	50613\<CR\>\<LF\>
50618%	EXIT button (exit OSD)	50618\<CR\>\<LF\>

6.3.8 CEC Input Commands

Command	Function	Feedback Example
50686%	Enable CEC Input.	50686\<CR\>\<LF\>
50687%	Disable CEC Input.	50687\<CR\>\<LF\>
50901%	Play & pause.	50901\<CR\>\<LF\>
50902%	Stop.	50902\<CR\>\<LF\>
50903%	Menu.	50903\<CR\>\<LF\>
50904%	Reverse.	50904\<CR\>\<LF\>
50905%	Forward.	50905\<CR\>\<LF\>
50906%	Up.	50906\<CR\>\<LF\>
50907%	Down.	50907\<CR\>\<LF\>

50908%	Left.	50908<CR><LF>
50909%	Right.	50909<CR><LF>
50910%	Confirm command.	50910<CR><LF>
50911%	Exit command Tog Menu.	50911<CR><LF>
50912%	Pause.	50912<CR><LF>
50913%	Power on input source device.	50913<CR><LF>
50914%	Power off input source device.	50914<CR><LF>
50915%	Enable input CEC auto power.	50915<CR><LF>
50916%	Disable input CEC auto power. Do not allow the Scaler Switcher to power on from Blu-ray being powered on.	50916<CR><LF>

6.3.9 CEC Output Commands

Command	Function	Feedback Example
50920%	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.	50920<CR><LF>
50921%	Disable output CEC auto power.	50921<CR><LF>
50922%	Power on output display device.	50922<CR><LF>
50923%	Power off output display device.	50923<CR><LF>

6.3.10 EDID Configuration

Command	Function	Feedback Example
50731%	Set 1-HDMI/MHL EDID to 720P.	50731<CR><LF>
50732%	Set 1-HDMI/MHL EDID to 1080P.	50732<CR><LF>
50733%	Set 1-HDMI/MHL EDID to 1920x1200.	50733<CR><LF>
50735%	Set 2-HDMI EDID to 720P.	50735<CR><LF>
50736%	Set 2-HDMI EDID to 1080P.	50736<CR><LF>
50737%	Set 2-HDMI EDID to 1920x1200.	50737<CR><LF>

50739%	Set 3-HDMI EDID to 720P.	50739\<CR\>\<LF\>
50740%	Set 3-HDMI EDID to 1080P.	50740\<CR\>\<LF\>
50741%	Set 3-HDMI EDID to 1920x1200.	50741\<CR\>\<LF\>
50743%	Set 4-HDMI EDID to 720P.	50743\<CR\>\<LF\>
50744%	Set 4-HDMI EDID to 1080P.	50744\<CR\>\<LF\>
50745%	Set 4-HDMI EDID to 1920x1200.	50745\<CR\>\<LF\>
50747%	Set 5-HDMI EDID to 720P.	50747\<CR\>\<LF\>
50748%	Set 5-HDMI EDID to 1080P.	50748\<CR\>\<LF\>
50749%	Set 5-HDMI EDID to 1920x1200.	50749\<CR\>\<LF\>
50767%	Restore default EDID.	50767\<CR\>\<LF\>
50768%	Bypass EDID data from output to input.	50768\<CR\>\<LF\>
50769%	Upload custom EDID data to the switcher.	50769\<CR\>\<LF\>
50770%	Inquire EDID status.	50767\<CR\>\<LF\>/ 50768\<CR\>\<LF\>/ 50769\<CR\>\<LF\>/
50782%	EDID management, copy the best resolution data of one output to HDMI input.	50782\<CR\>\<LF\>

6.3.11 HDCP Compliance

Command	Function	Feedback Example
50791%	HDCP Active mode.	50791\<CR\>\<LF\>
50792%	HDCP Manual mode.	50792\<CR\>\<LF\>
50793%	Enable HDCP output.	50793\<CR\>\<LF\>
50794%	Disable HDCP output.	50794\<CR\>\<LF\>
50795%	Get HDCP status.	50791\<CR\>\<LF\>/ 50792\<CR\>\<LF\>/ 50793\<CR\>\<LF\>/ 50794\<CR\>\<LF\>

6.3.12 Device Setup

Command	Function	Feedback Example
50797%	Enter standby mode.	50797<CR><LF>
50697%	Power on.	50697<CR><LF>
50604%	Lock the front panel buttons.	50604<CR><LF>
50605%	Unlock the front panel buttons.	50605<CR><LF>
50754%	Get the panel locked status.	50604<CR><LF>/ 50605<CR><LF>
50699%	Get the system version.	Version Vx.x.x
50698%	Software update.	50698<CR><LF>
50617%	Restore to factory defaults.	Factory Reset
50657%	Check IP address	192.168.0.178!
50783%	Get current status Display status including Source, Line audio, Resolution, Output Audio on/off, Manual/ Auto-switching modes	501xx (Source xx = 00 to 60) <CR><LF> 508xx (Line xx = 00 to 60) <CR><LF> 50701 – 50706<CR><LF> (Input) 50619/26/27/28/29/20 (Resolution) <CR><LF>/ 50648/50649(HDMI output audio) <CR><LF> 50600 / 50601 (Source Mute) <CR><LF> 50722 / 50723 (Line Mute) <CR><LF> 50785/50786(Switching mode) <CR><LF> 50726/50727(VGA MUTE) <CR><LF>

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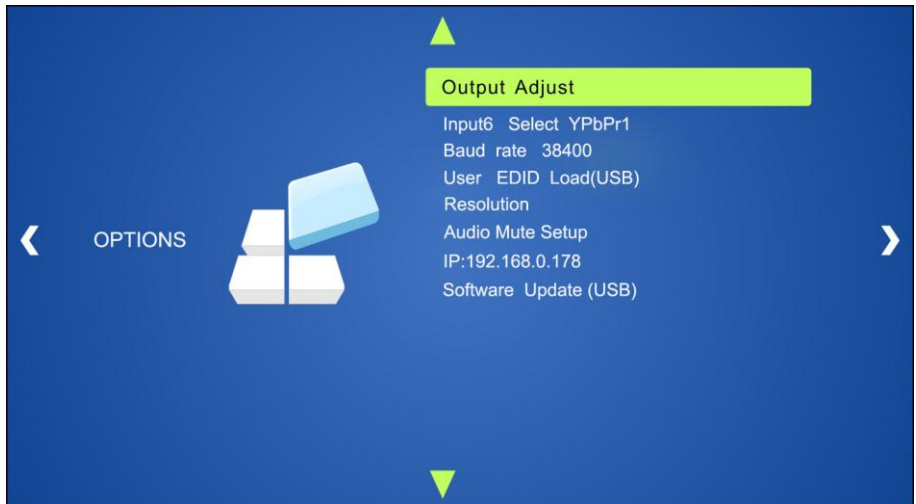
Output Adjust: Adjust output image position (X: horizontal direction and Y: vertical direction), ratio aspect (width and height), polarity adjustment (H Polarity and V Polarity)

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, HDMI 5, 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.
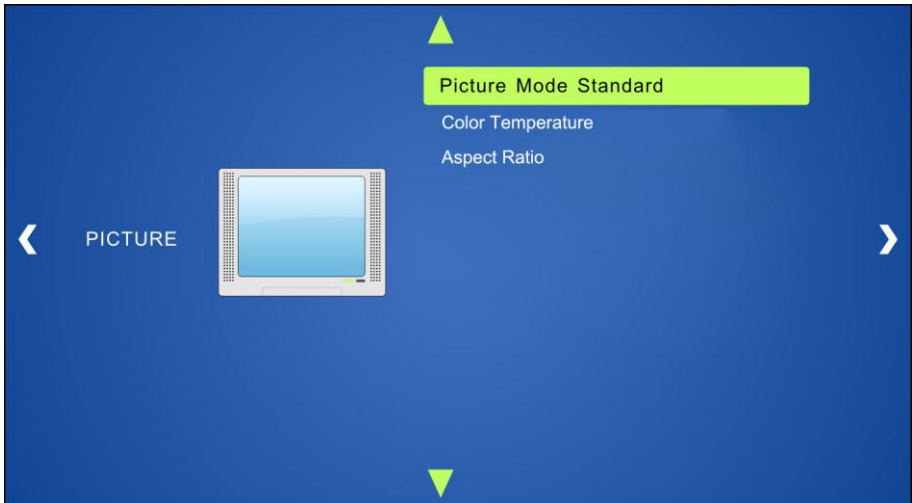
- **Picture mode**: Include Dynamic, Standard, Mild, and User. Only in User mode, will it be able to set the image contrast, brightness, color and sharpness.

- **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).

- **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

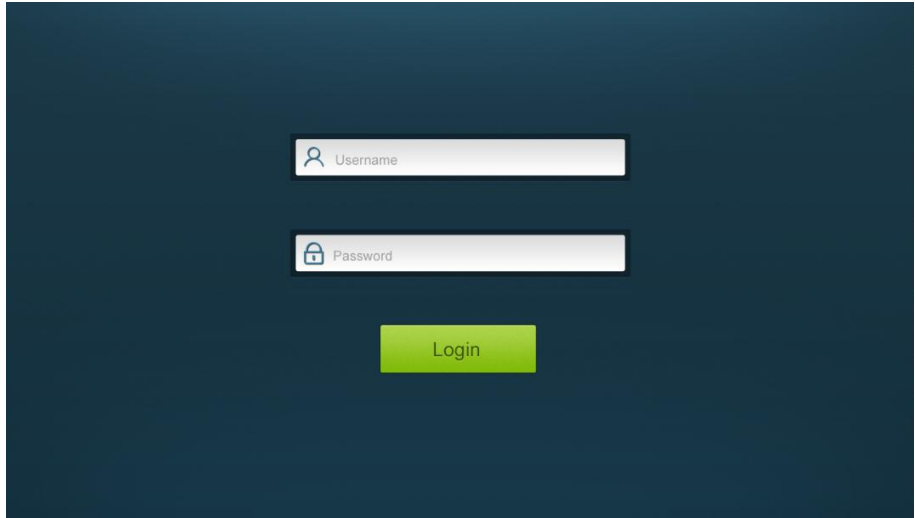Including OSD language, restore factory default, HDMI CEC and version inquiry.
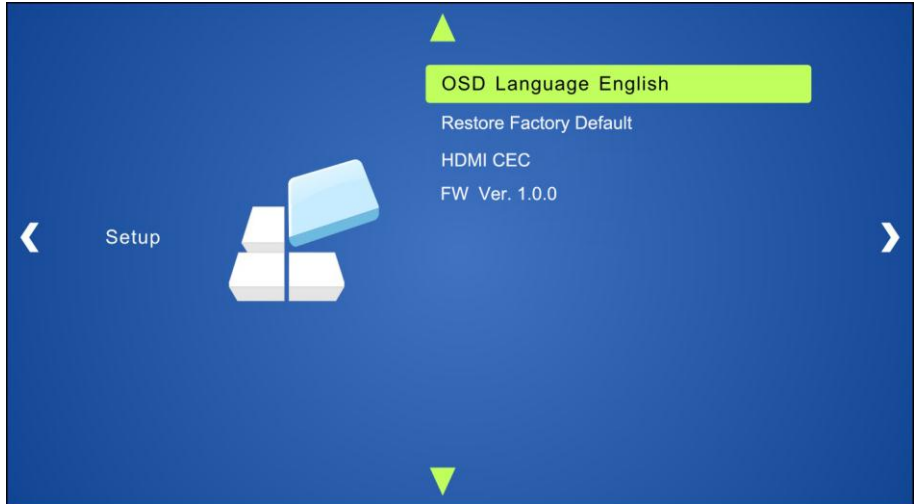
- **OSD Language**: Supports 7 languages, including English (default), Chinese etc.
- **Restore Factory Default**: Restores to original system state.
- **HDMI CEC**: Enable/disable CEC and auto-standby function. Default: CEC on, STANDBY on. Only when CEC is on, will it be able to set auto-standby status.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

8. Web-based 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 web-based 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:

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-HDMI** 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.

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.

③ **Source**

Click **Source Label** to enter the below menu to rename the input selection buttons.
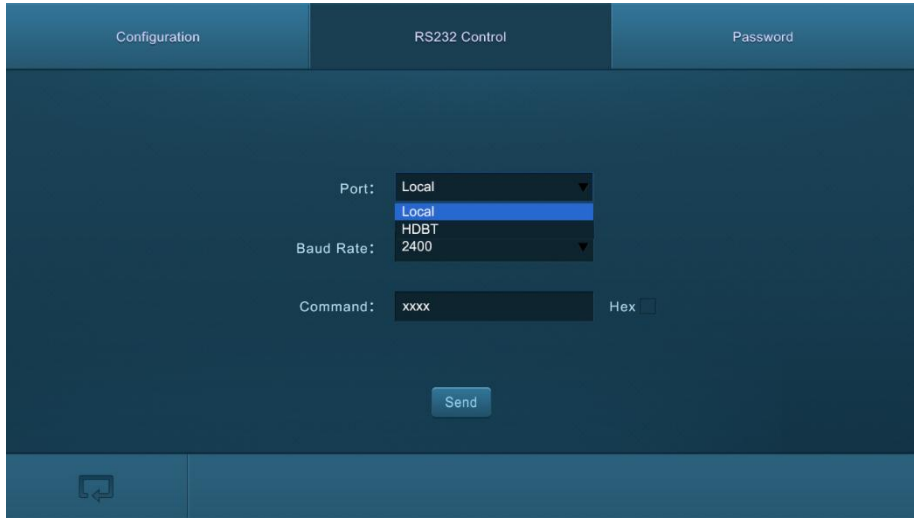
8.3 RS232 Control Menu

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 Web-based GUI Update

Web-based 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:
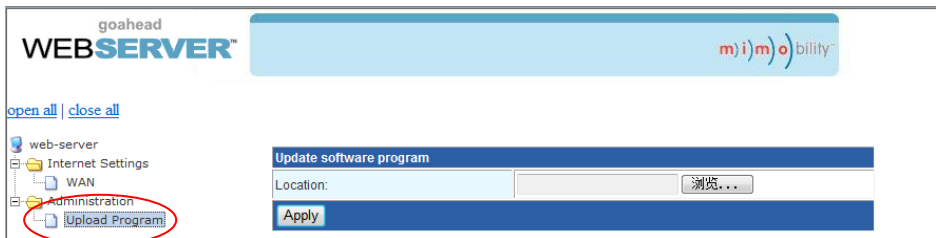
Select the desired update file and press Apply, it will start upgrading then.

9. Specification

9.1 Seamless Scaler Switcher

| Video	
Video Input	(1) HDMI/MHL; (4) HDMI; (1) VGA
Video Input Connector	(5) Female HDMI; (1) Female VGA (15-pin)
Input Video Signal	HDMI, 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
Audio	
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
Control Part	
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
General	
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

10. Panel Drawing
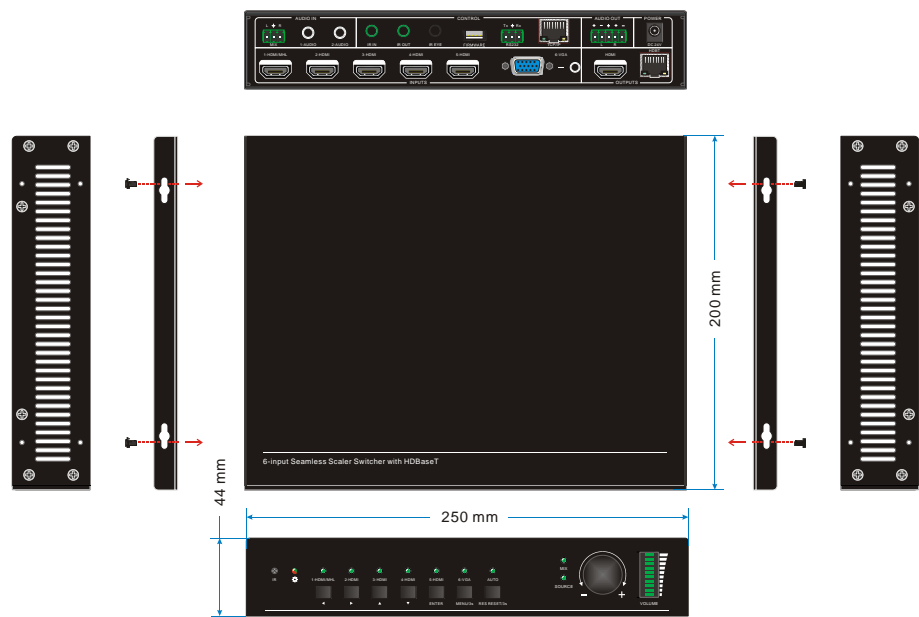
10-1 Seamless Scaler Switcher
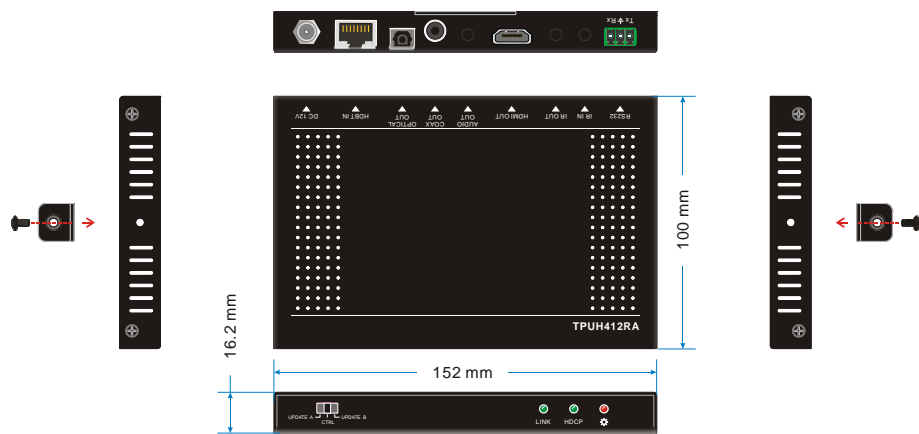
10-2 HDBaseT Receiver

11. Troubleshooting & Maintenance

Problems	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 **50605%** 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 persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.

12. After-sales Service

If there appear some problems when running this product, please check and deal with the problems referring to this user manual. Any transport costs are borne by the users during the warranty.

① **Product Limited Warranty:** We warrants that its products will be free from defects in materials and workmanship for **three years,** which starts from the first day you buy this product (The purchase invoice shall prevail).
Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.

② **What the warranty does not cover:**
- 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.
  - Any other causes which does not relate to a product defect
- Delivery, installation or labor charges for installation or setup of the product.

③ **Technical Support:** Email to our after-sales department or make a call, please inform us the following information about your cases.
- Product version and name.
- Detailed failure situations.
- The formation of the cases.

Remarks: For any questions or problems, please try to get help from your local distributor, or email EET at: *obsupport@eet.dk*