



Comprehensive®
Connectivity Company

CSW-HDBT300M

Multi-Input Switcher to HDMI with HDBaseT up to 330ft – Transmitter & Receiver



Operation Manual

1.Introduction

This machine is a high-performance presentation scaler and switcher. It accepts one of eight inputs: one DVI, two VGA, one composite video and four HDMI signals. The HDMI1, HDMI2 to bypass the input function, supports input resolutions up to 4Kx2K@30Hz, and HDMI3, HDMI4, DVI, VGA1, VGA2, CV scales the video, supports output resolutions up to 1920x1080P@60Hz. It scales the video, embeds the audio, and simultaneously outputs the signal to HDMI and HDBaseT output, HDBaseT output transmission distances up to 328ft/100m **(100m Version)** through CAT5e/6/7 cable, together with S/PDIF and stereo audio outputs. Flexible control mode diversity, through the front panel button, remote control, RS-232 and TCP/TP control.

2.Features

- HDMI, HDCP and DVI compliant
- The HDMI1,HDMI2 to bypass the input function, supports input resolutions up to 4Kx2K@30Hz
- The HDMI3,HDMI4,DVI,VGA1,VGA2,CV scales the video, supports input resolutions :
HDMI: 480i to 1080p
VGA:1920x 1080P@60Hz, 1360 x 768P@60Hz, 1280 x 1024P@60Hz, 1024 x 768P@60Hz,1280 x 720P@60Hz,1280 x 768P@60Hz, 800 x 600@60Hz, 640 x 480P@60Hz
CV: Supports PAL, NTSC3.58, NTSC4.43, SECAM, PAL/M, PAL/N standard TV formats
- Supports transmission distances up to 328ft/100m (100m Version) through CAT5e/6/7 cable
- Supports POE function
- VGA video supports YPbPr and RGBHV
- Picture Adjustment Settings
- Supports embeds the audio
- Supports S/PDIF and stereo audio outputs

- Supports HDBaseT LAN Serving function
- The USB and RS-232 for the firmware update
- Supports RS-232, remote control, on-panel control and TCP/IP Control
- Supports smart EDID management

3.Package Contents

- | | |
|---|------|
| ● ALL to HDMI with HDBaset 100m Cat6 Extender | 1pcs |
| ● HDBaseT Receiver | 1pcs |
| ● 24V/1A DC power adaptor | 1pcs |
| ● Operation Manual | 1pcs |
| ● Wideband IR Tx cable | 9pcs |
| ● Wideband IR Rx cable | 2pcs |
| ● Scaler Switcher IR Remote | 1pcs |
| ● Mounting ears | 2pcs |
| ● RS232 cable | 1pcs |

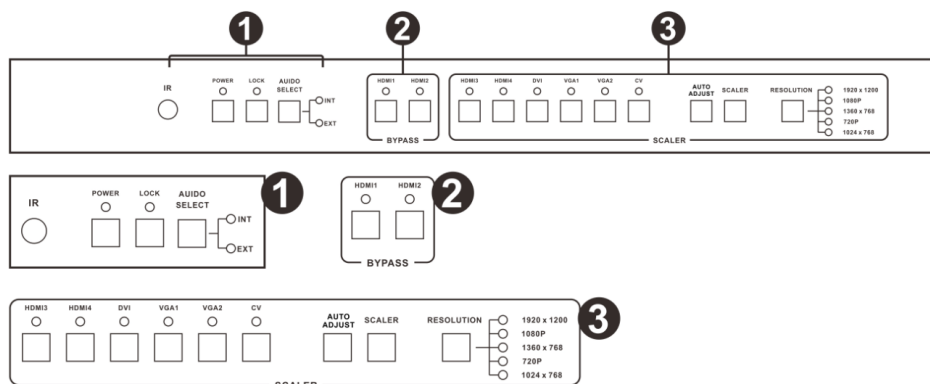
4.Specifications

| | |
|----------------------------|---|
| Input Ports | 4×HDMI,1×DVI,2×VGA,1×RCA , 1×RS-232,1×RJ-45(Control),1x IR IN, 7x3P captive screw connector(3.81mm), 1xUSB |
| Output Ports | 1×HDMI,2×RJ-45(LAN), 2×RCA, 1×RJ-45(HDBaseT),8x IR OUT |
| Input Resolutions Support | Up to 4Kx2K@30Hz |
| Output Resolutions Support | Up to 4Kx2K@30Hz(HDMI BYPASS) Up to 1920x1080P@60Hz(SCALER) |
| Control | IR , RS-232 , TCP/TP , Buttons |
| ESD Protection | Human-body Model: ± 8kV (Air-gap discharge) ± 4kV (Contact discharge) |

| | |
|-----------------------|--|
| Power Supply | 24 V/1 A DC (US/EU standards, CE/FCC/UL certified) |
| Dimensions | 440 mm (W)×200 mm (D)×45 mm (H) |
| Weight | 2300g |
| Chassis Material | Metal |
| Silkscreen Color | Black |
| Operating Temperature | 0 °C~40 °C/32 °F~104 °F |
| Storage Temperature | -20 °C~60 °C/-4 °F~140 °F |
| Relative Humidity | 20~90 % RH (non-condensing) |
| Power Consumption | 14.5 W(Max)/1.8W(Standby) |

5. PANEL FUNCTIONS

5.1 Front Panel



Part 1. IR: IR Receiver window (accepts the remote control signal of this device only).

POWER: Press this button to power the device standby on/off. Press this button more than 2 seconds, the device has reached the standby mode. The LED will illuminate green when the power is on, red when it is in 'Standby' mode.

LOCK: Press this button to lock all the buttons on the panel, press again to unlock.

AUDIO SELECT: Press this button to select audio from digital(INT) or analog(EXT),When the signal is HDMI input.

Note: DVI interface as HDMI input has the same function.

Part 2. **HDMI INPUT BYPASS:** Press these buttons to switch directly to the required source. An LED will illuminate to indicate the selected input source.

Part 3. **SCALER SELECT:**

1. Source select: Press these buttons to switch directly to the required source. An LED will illuminate to indicate the selected input source.

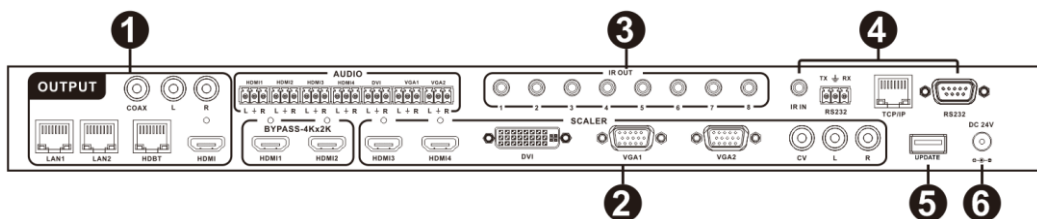
2. Picture adjustment: Press scaler or auto adjust button to adjust the output picture.

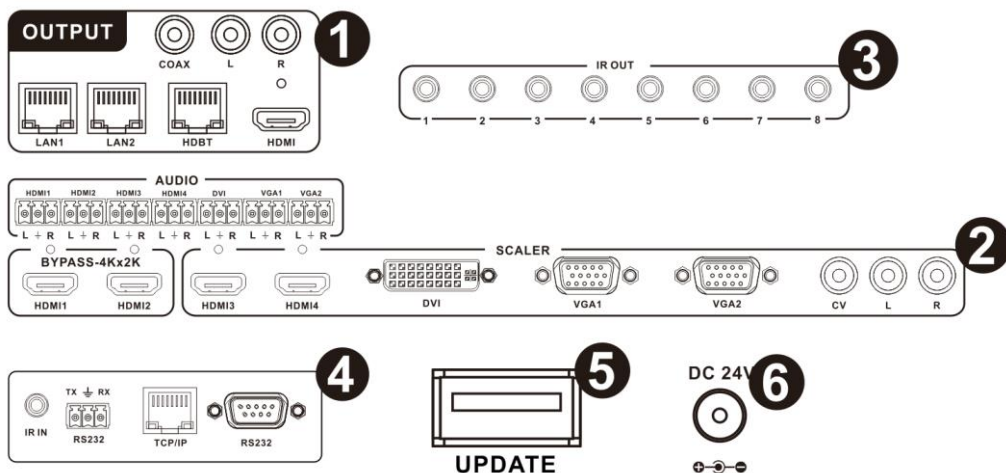
Note: a. When the signal source for VGA(RGBHV) input, auto adjust button is valid.

b. Scaler adjust the step: six steps

3. Resolution select: Press the button to select different resolution output. An LED will illuminate to indicate the selected resolution.

5.2 Rear Panel





Part1: OUTPUT

The HDMI OUTPUT connect to HDMI equipped TVs or monitors and the HDBT OUTPUT connect to the HDBT Receiver. The coaxial and stereo output is connected an audio amplifier. The LAN is connected to PC or Router.

Part2: INPUT

- 1) **HDMI 1/ 2/ 3/ 4:** Connect to HDMI sources such as DVD player /Blu-ray player for both video and audio signal conversion.
- 2) **DVI:** Connect to DVI sources such as PC.
- 3) **VGA 1/ 2:** Connect to a PC/Laptop source for video signal input with a D-Sub 15pin cable or connect to a DVD player source for video signal input with a D-Sub 15pin to 3 RCA adaptor cable.
- 4) **CV+L/R:** Connect to a composite video source such as a video /DVD player for both video and audio signal conversion.
- 5) **3P captive screw connectors(3.81mm):** Connect to source's L/R output with 3P cable for audio signal conversion.

Part 3: IR OUT

Connect with the supplied wideband IR TX.

Part 4: CONTROL

- 1) **TCP/IP:** This port is the link for TCP/IP controls, connect to an active Ethernet link with an RJ45 terminated cable.

2) RS232(DB9): Connect to a PC or control system with D-Sub 9-pin cable for the transmission of RS-232 commands.

Note: The RS-232 interface can control the machine.

3) IR IN: Connect with the supplied wideband IR RX

4) RS232(3.81mm 3P captive screw connector): Connect to a PC or control system with a D-Sub 9pin to 3P cable.

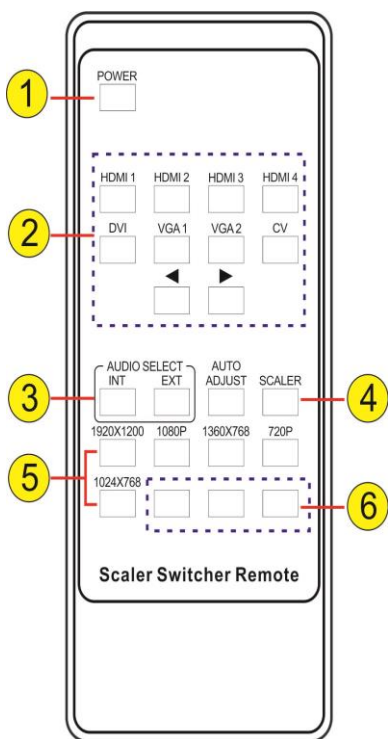
Note: The RS-232 interface only with the remote receiver (HDBaseT Receiver) RS-232 communication.

Part5: UPDATE PORT

Connect U flash drive, system software update.

Part6: DC POWER INPUT

Plug the 24V/1A DC power supply into the DC24V power in.



6. Remote Control

1. Press this button to power on the switcher or set it to standby mode.

2. Input Selection: Press these buttons to switch to the required source.

3. Audio select: Click these buttons to select audio from digital (INT) or analog (EXT), when the signal is switch to the HDMI or DVI signal source.

4. Press scaler or auto adjust button to adjust the output picture.

Note: a. When the signal source for VGA(RGBHV) input, auto adjust button is valid.

b. Scaler adjust the step: six steps.

5. Resolution select: Press these buttons to select different resolution output.

6. These buttons for function extension keys.

7. Serial Control

The RS-232 port lets you send and receive simple RS-232 signals between a controller and a serial device via the switcher which is connected to the RS-232 port (3.81mm 3P captive screw connector) and outputs via CAT5e/6/7 cable.

The example, illustrated in **Figure 2**, shows a PC or control system that is connected to the switcher via the RS-232 port (3.81mm 3P captive screw connector). The HDBT output connector on the switcher is connected via CAT5e/6/7 cable to an HDBT receiver. This HDBT receiver connects to a projector via HDMI and RS-232.

The PC or control system sends RS-232 signals control projector, by the switcher and HDBT receiver.

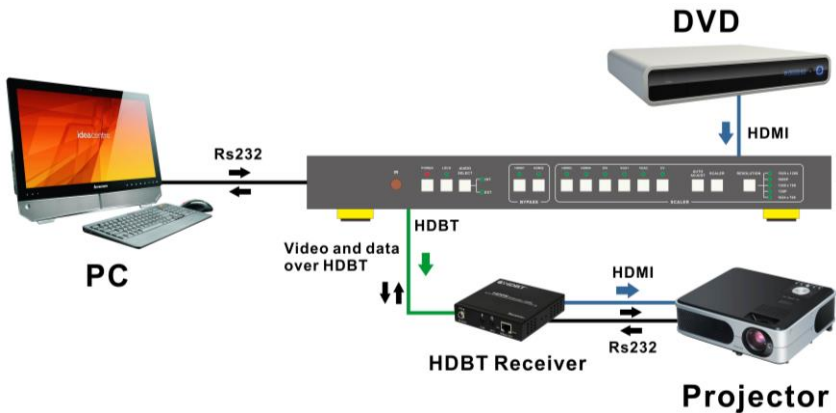


Figure 2

8. IR Control Operations

The IR control can realize two-way control function, and the 8 IR OUT ports are corresponding to the 8 video inputs one to one, and switch following the corresponding video source.

The example, illustrated in **Figure 3** and **Figure 4** :

1) To control far-end display: The IR Receiver (**Rx1**) is connected to the switcher IR IN port. The HDBT output connector on the switcher is

connected via CAT5e/6/7 cable to an HDBT receiver. The HDBT receiver connect to a TV via HDMI, and the IR Transmitter (**Tx2**) is connected to the HDBT receiver IR OUT port.

To control this machine(switcher) or far-end display device from local by using corresponding remote controller.

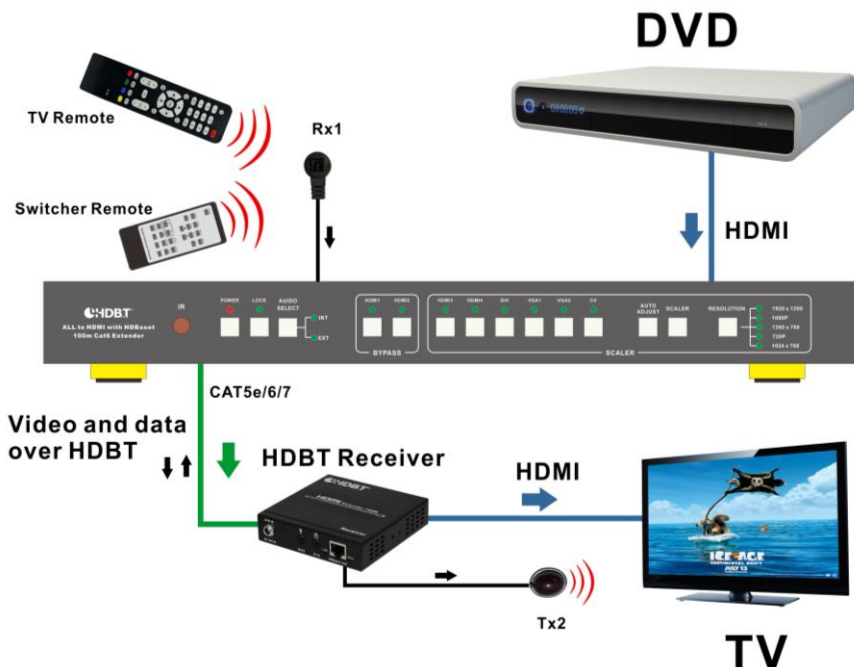


Figure 3

- 2) Control local device (DVD, Switcher, etc) from remote: The IR Receiver (**Rx2**) is connected to the HDBT receiver IR IN port. The HDBT output connector on the switcher is connected via CAT5e/6/7 cable to an HDBT receiver. The IR Transmitter (**Tx1**) is connected to the switcher IR OUT port.

IR remote can be used to control this machine (switcher) or local source device from remote.

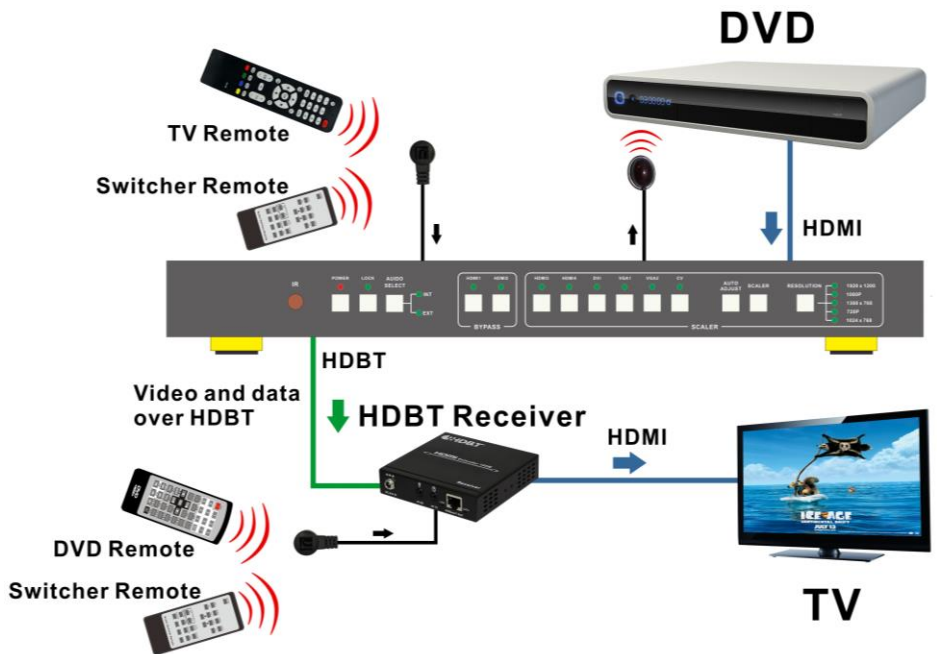


Figure 4

IR Cable Pin Assignment, illustrated in Figure 5:

IR RECEIVER

IR BLASTER



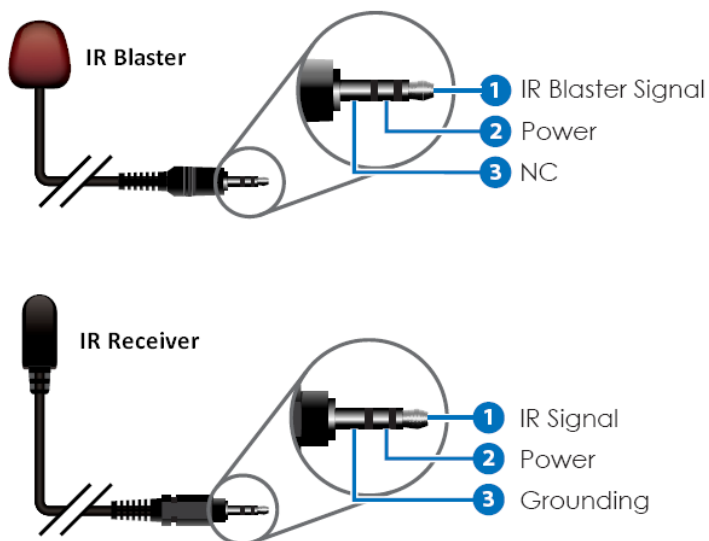
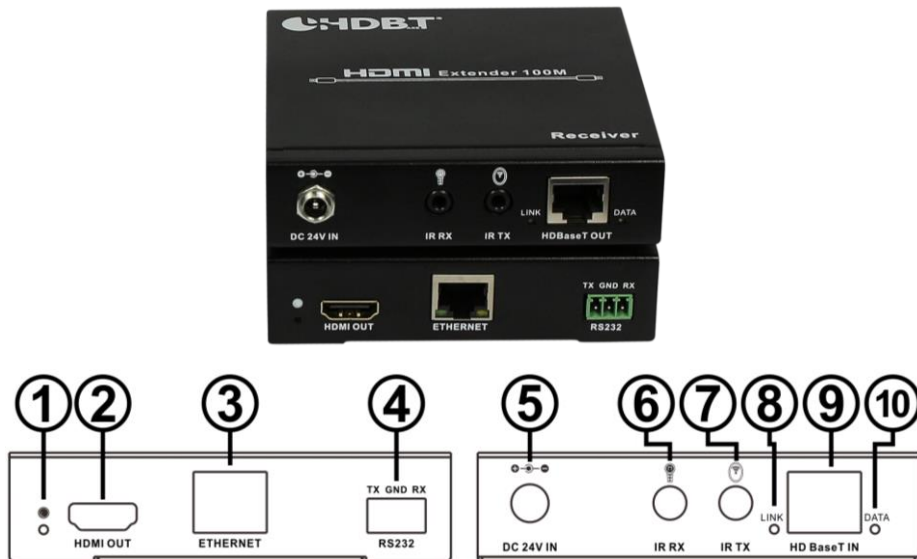


Figure 5

9. HDBT Receiver



- 1. OUTPUT LED:** The output status indicating lamp. This red LED illuminate when the TV plug in with HDMI cable.

2. **HDMI OUT:** HDMI output port. This slot is where you connect the HDTV or monitor with HDMI cable
3. **ETHERNET:** This slot provide Internet signal from transmitter or to transmitter.
4. **RS232:** Phoenix jack provide Serial port control signal from transmitter or to transmitter.
5. **DC IN:** Plug the 24V DC power supply into the unit.
6. **IR RX:** Chanel 2 IR Receiver. Connect with Wideband IR Rx.
7. **IR TX:** Chanel 1 IR Transmitter. Connect with Wideband IR Tx.
8. **LINK LED:** The connection status indicating lamp.
 - ※Illuminate: The Transmitter and Receiver is good connections.
 - ※Flashing: The Transmitter and Receiver is poor connections.
 - ※Dark: The Transmitter and Receiver is no connections.
9. **HDBaseT IN:** Standard HDBaseT signal input port. Connect HDBaseT transmitter with a UTP cable follows the standard of IEEE-568B.
10. **DATA LED:** The data status indicating lamp.
 - ※Illuminate: The HDMI signal with HDCP.
 - ※Flashing: The HDMI signal without HDCP.
 - ※Dark: No HDMI signal.

9. PC controller user guide

Installation

Switcher controller is a green software. Just copy SwitcherController.exe to PC which is used to control the Switcher by RS232 COM port or TCP/IP to complete installation.

Preparation

- Connect PC and Switcher by RS232 cable (headers of both sides of cable should be FEMALE) or TCP/IP(local area network)
- Power-up Switcher
- Double click SwitcherController.exe icon to run it

How to control Switcher

◆ “General” page

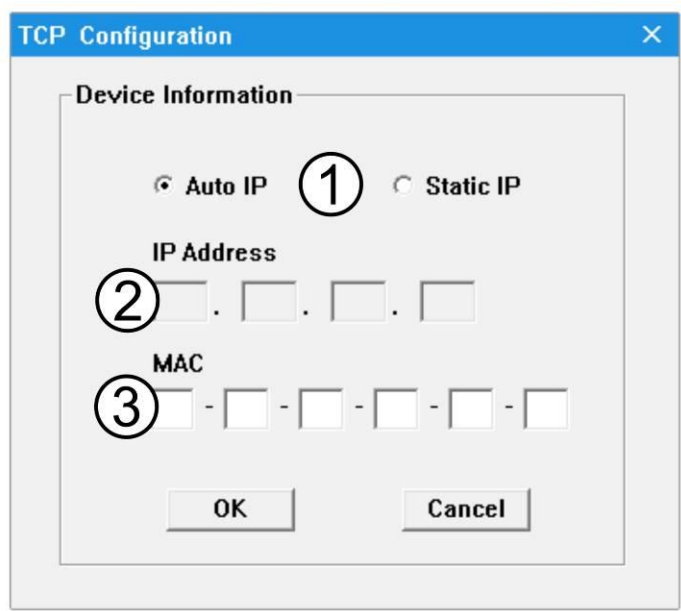
The screenshot shows the 'Presentation Switcher/Scaler' application window with the 'General' tab selected. The interface is divided into several sections:

- Control Mode Select:** Contains two radio buttons: 'COM Control Mode' (selected, labeled 1) and 'TCP Control Mode'.
- COM Control Mode:** Includes a 'Port' dropdown menu (labeled 2) and a 'Connect' button (labeled 3).
- TCP Control Mode:** Includes a 'Switcher IP' dropdown menu (labeled 4) and a 'Connect' button (labeled 5). Below these are 'Search' (labeled 6) and 'Config...' (labeled 7) buttons.
- Device Information:** A large rectangular area (labeled 9) for displaying device details. It contains 'Status' (labeled 10) and 'Clear' (labeled 11) buttons.
- Reset to the factory settings:** Contains a 'Factory Reset' button (labeled 8).
- Disable/Enable Beep:** Contains a checkbox labeled 'Enable Beep' (labeled 12).

1. Select RS232 COM or TCP mode
2. Select RS232 COM port
3. Click to connect or disconnect PC and Switcher
4. Select Switcher IP
5. Connect to Switcher IP
6. Search Switcher IP
7. Configure Switcher IP and MAC
8. Click to reset to the factory settings
9. Device information display area
10. Click to refresh device status
11. Click to clear device information
12. Enable or disable Beep

Note: 9, 10, 11 function not opened

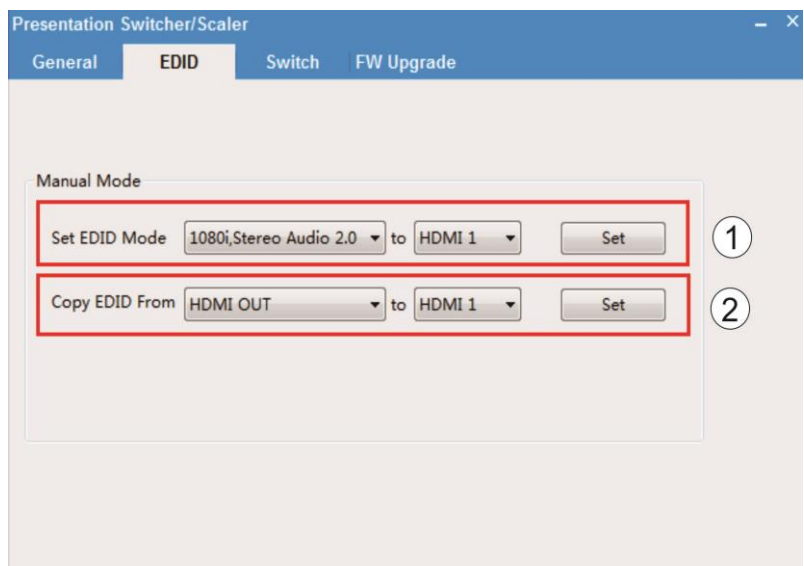
After action of 7, edit form will pop-up as below:



The image shows a 'TCP Configuration' dialog box with a blue title bar and a close button. It contains a 'Device Information' section with two radio buttons: 'Auto IP' (selected and circled with a '1') and 'Static IP'. Below these are fields for 'IP Address' (four boxes, circled with a '2') and 'MAC' (six boxes, circled with a '3'). At the bottom are 'OK' and 'Cancel' buttons.

- 1. Select auto or static IP
- 2. Rewrite the Switcher IP
- 3. Rewrite the Switcher MAC

◆ “EDID control” page



The image shows the 'EDID' tab of the 'Presentation Switcher/Scaler' software. It has tabs for 'General', 'EDID', 'Switch', and 'FW Upgrade'. Under the 'Manual Mode' section, there are two rows of controls, each highlighted with a red box. The first row is 'Set EDID Mode' with a dropdown set to '1080i, Stereo Audio 2.0', a 'to' label, a dropdown set to 'HDMI 1', and a 'Set' button (circled with a '1'). The second row is 'Copy EDID From' with a dropdown set to 'HDMI OUT', a 'to' label, a dropdown set to 'HDMI 1', and a 'Set' button (circled with a '2').

1. Select the needed EDID to input port and click set button the EDID will write to the selected HDMI input ports.
2. Copy the selected HDMI output or HDBT output EDID and click set button to write to the selected HDMI input ports.

Note: 1.The HDMI1/HDMI2 support EDID management mode:

The EDID mode table:

| EDID Mode | EDID Description |
|-----------|-------------------------|
| 1 | 1080i, 2CH AUDIO |
| 2 | 1080i, DOLBY/DTS 5.1 |
| 3 | 1080i, HD AUDIO |
| 4 | 1080p, 2CH AUDIO |
| 5 | 1080p, DOLBY/DTS 5.1 |
| 6 | 1080p, HD AUDIO |
| 7 | 3D,1080p, 2CH AUDIO |
| 8 | 3D, 1080p,DOLBY/DTS 5.1 |
| 9 | 3D,1080p, HD AUDIO |
| 10 | 4k*2k, 2CH AUDIO |
| 11 | 4k*2k, DOLBY/DTS 5.1 |
| 12 | 4k*2k, HD AUDIO |
| 13 | DVI 1024x768 |
| 14 | DVI 1920X1080 |
| 15 | DVI 1920X1200 |
| 16 | Copy from HDMI OUTPUT |
| 17 | Copy from HDBT OUTPUT |

2. The HDMI3/HDMI4/DVI support EDID management mode:

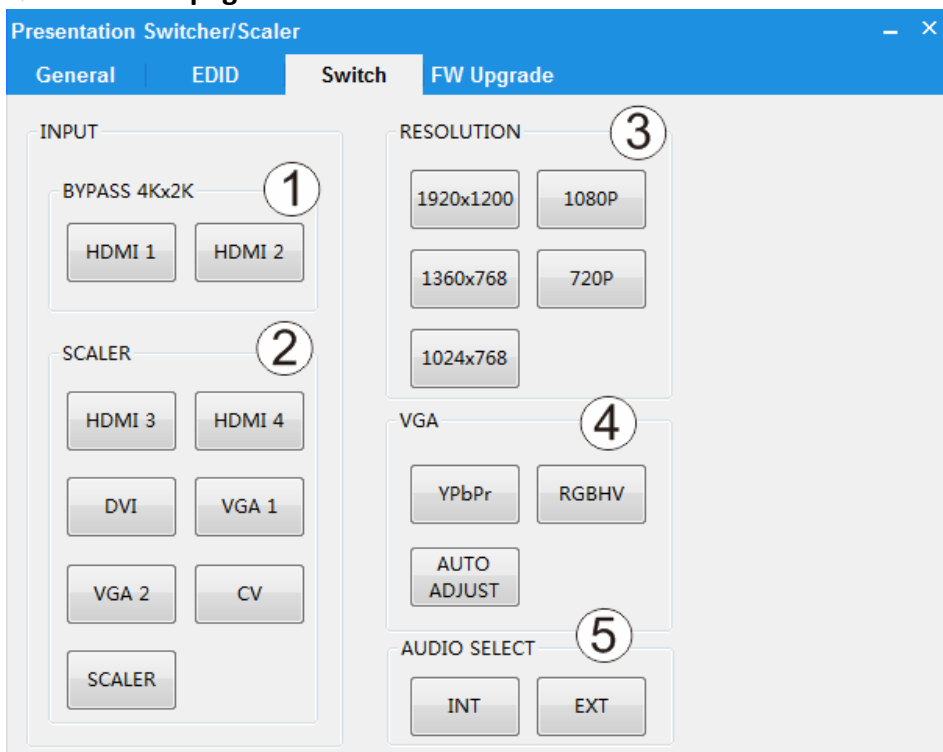
The EDID mode table:

| EDID Mode | EDID Description |
|-----------|------------------|
| 1 | 1080i, 2CH AUDIO |
| 2 | 1080p, 2CH AUDIO |
| 3 | DVI 1920X1080 |

EDID. What is it and what is it used for?

Under normal circumstances, a source device (digital and analog) will require information about a connected device/display to assess what resolutions and features are available. The source can then cater its output to send only resolutions and features that are compatible with the attached device/display. This information is called EDID (Extended Display Information Data) and a source device can only accept and read one EDID from a connected device/display. Likewise, the source can only output one resolution for use by a connected device/display.

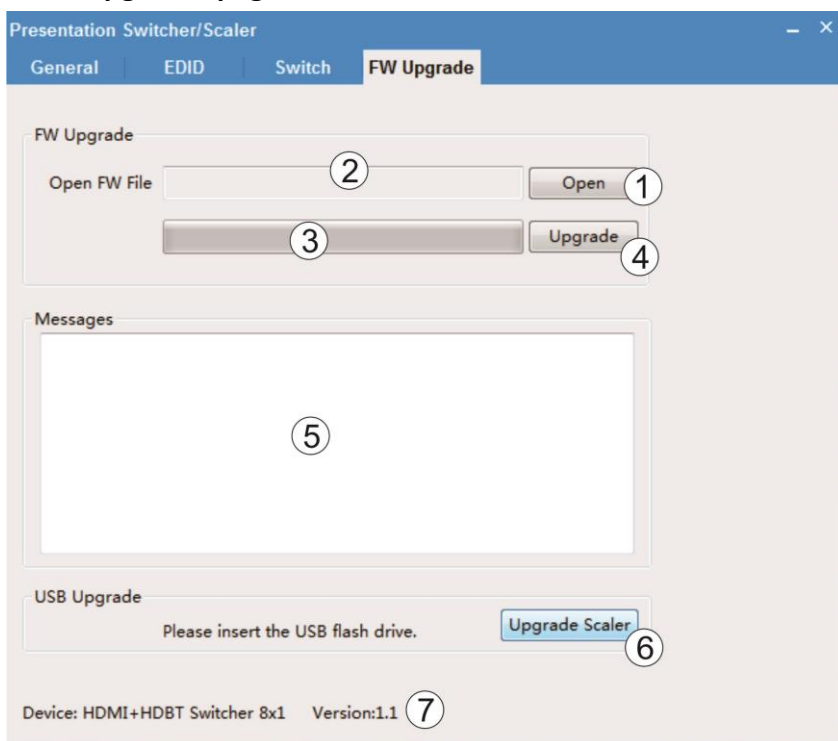
◆ “Switch” page



1. Input Selection (BYPASS 4Kx2K): Click these buttons to switch to the required source.
2. Input Selection (SCALER): Click these buttons to switch to the required source, and SCALER button to adjust the output picture.

3. Resolution select: Click these buttons to select different resolution output.
4. When the signal is switched to the VGA1 or VGA2 of port, these buttons can be used.
 - a. AUTO ADJUST: Automatically adjust the output picture.
 - b. RGBHV: Click this button to set VGA1 or VGA2 port for RGBHV signal source input.
 - c. YPbPr: Click this button to set VGA1 or VGA2 port for YPbPr signal source input.
5. Audio select: Click these buttons to select audio from digital (INT) or analog (EXT), when the signal is switched to the HDMI or DVI signal source.

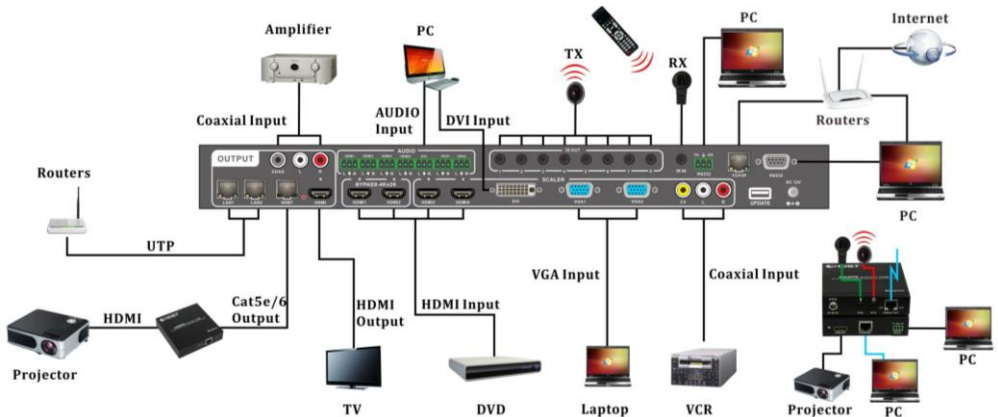
◆ “FW upgrade” page



1. Click to open FW file(file extension is “.fw”)
2. Display the FW file path

3. Displaying the progress of the software upgrade
4. Click to upgrade the Switcher software
5. Display the message of the software upgrade
6. Click to upgrade the Switcher scaler software
7. Display the switcher software version information

10. Operate and Connect



1. Connect HDMI source (for example, Blu-ray player or DVD player) to the HDMI1/2/3/4 video input connector. Alternatively, you can connect the DVI connector on the DVD player to the HDMI connector on this machine (switcher) via a DVI-HDMI adapter. You can connect the audio signal via the AUDIO IN HDMI 1/2/3/4 3.81mm 3P captive screw connector, or use the embedded audio.
Note: When selecting HDMI 1/2 input, and select external audio input, the digital and analog audio output is still the inside HDMI signal source of the sound.
2. Connect DVI source (for example, a DVD player) to the DVI video input connector. Alternatively, you can connect the HDMI connector on the DVD player to the DVI connector on this machine (switcher) via a HDMI-DVI adapter. You can connect the audio signal via the AUDIO IN DVI 3.81mm 3P captive screw connector, or use the embedded audio.

3. Connect a computer (YPbPr) or RGBHV source to the VGA1/2 IN video input D-Sub 15pin HD connector. You can connect the audio signal via the AUDIO IN VGA1/2 3.81mm 3P captive screw connector.



Connect with Component Video (YPbPr) Source:

Operation Examples: Via PC control software

Click the VGA1 or VGA2 button switch to YPbPr or RGBHV source, and click the YPbPr button set to YPbPr source.

6. Connect a composite video source (for example, a composite video player) to the CV IN RCA connector.
7. Connect the HDMI output connector to an HDMI equipped (for examples, TVs or monitors).
8. Connect the HDBT output connector to a HDBT receiver, and connect the HDBT receiver HDMI output connector to an HDMI equipped (for examples, projector or monitors).

Note: 1.When the transmission distance of 100 meters, it is recommended to use STP Cat6 or Cat 7 cable.

2.When 4K2K signal is output, it is recommended to use STP Cat6 or Cat7 cable, the transmission distance up to 70 meters.

9. OPTIONAL: Connect an Ethernet cable from the TCP/IP port on the switcher to a local Area Network.
10. OPTIONAL: Connect an RS-232 cable from the RS232 port on the switcher.
11. OPTIONAL: Connect the IR receiving extender to the IR IN port, and the IR emission extender to the IR OUT port.
12. OPTIONAL: Connect LAN1 or LAN2 RJ-45 connector to a router.
13. Connect the DC 24V Locking power supply to the power receptacle on the switcher.
14. Connect the power supply to an available electrical outlet.



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