User Manual

WOXCON

SCU41T-CODEC

4K Scaler with Soft Codec

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Version: SCU41T-CODEC_2018V1.0

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.In the constant effort to improve the product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

FCC Statement

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

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

SAFETY PRECAUTIONS

To ensure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.

- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.

- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.

- Using supplies or parts not meeting the specifications of product 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, and please treat them as normal electrical wastes.

Table of Contents

1. Product Introduction

The SCU41T-CODEC is a conference system codec kit supporting resolution up to 4K@60Hz 4:4:4 and HDCP 2.2. It includes a Transmitter and a Receiver, providing AV switching, audio de-embedded, USB extension, and system control. All video, audio, control, USB and Ethernet signals can be transmitted over a single CATx cable up to 100m.

The kit provides four video inputs such as HDMI, VGA and DP. To simplify meeting room device management, the kit offers the LAN for Ethernet and six USB ports for device extension, which is four on the Transmitter and two on the Receiver. It supports a variety of HID devices such as camera, microphone, keyboard etc.

It also allows user to control system function via WEB GUI, RS232 and CEC. Additionally, user can control the rise and fall of projector screen over relay port.

This is an ideal solution for meeting space using PC based conference system codecs such as Skype$^@$, WebEx$^@$ and GoToMeeting$^@$ etc.

1.1 Features

- Supports resolution converting ranging from 720P to 3840x2160@30Hz.
- Provides a variety of interfaces for simplifying room devices management.
- Supports one-way PoH, the Transmitter can be powered by Receiver.
- Supports PCs, USB devices like keyboard, webcam and MIC for conference system.
- Extends the transmission distance of USB signals.
- Two type-B USB ports for host connection, and four type-A USB ports for HID devices like webcam, mic and keyboard.
- Supports video source auto-switching.
- Extends video, audio, control command and Ethernet signal up to 100m based on HDBaseT technology.
- Ethernet can be imported from either Receiver or Transmitter.
- Audio can be de-embedded out from AUDIO OUTPUT.
- CEC control for display by front panel buttons.
- Smart EDID management.
- Relay device control such as projector.
- The extra video input on the Receiver for BYOD-W (sold separately).

1.2 Package List

Transmitter	▪ 1x SCU41T-CODEC-T Transmitter
	▪ 2x Mounting ears
	▪ 4x Mounting screws
	▪ 4x Plastic cushions
	▪ 1x RS232 cable (3-pin terminal block to DB9)
Receiver	▪ 1x SCU41T-CODEC-R Receiver
	▪ 2x Mounting ears
	▪ 2x Mounting screws
	▪ 4x Plastic cushions
	▪ 1x 3-pin terminal block
	▪ 1x 4-pin terminal block
	▪ 1x 5-pin terminal block
	▪ 1x Power adapter (24V DC 2.71A)
	▪ 1 x User manual

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

2. Specification

2.1 Transmitter

| Video	
Video Input	(2) HDMI; (1) DP; (1) VGA
Video Input Connector	(2) Female HDMI; (1) DisplayPort; (1) Female VGA (15-pin)
Video Input Resolution	HDMI: Up to 4Kx2K@60Hz 4:4:4 DP: Up to 4Kx2K@30Hz 4:4:4 VGA: Up to 1920x1200@50/60Hz
Video Output	(1) HDMI; (1) HDBaseT
Video Output Connector	(1) Female HDMI; (1) RJ45
Video Output Resolution	Supports 3840x2160@30Hz, 1920x1080, 1280x720
HDMI Standard	HDMI 1.4
HDCP Version	HDCP 2.2
Audio	
Audio Input	(1) AUDIO
Audio Input Connector	(1) 3.5mm stereo jack
Audio Input Impedance	>10kΩ
Control Part	
Control port	(2) PC, (2) DEVICE; (1) RS232; (2) LAN/GUI
Control Connector	(2) Type-B USB; (2) Type-A USB; (1)3-pin terminal block; (2) RJ45
General	
Transmission Distance	Up to 100m
Operation Temperature	-10 ~ +55℃
Storage Temperature	-25 ~ +70℃
Relative Humidity	10% ~ 90%
External Power Supply	Input: AC 100~240V, 50/60Hz; Output: 24V DC 2.71A.
System Power Consumption	35w (Max)
Dimension (W*H*D)	220mm x 44mm x 130mm
Net Weight	670g

2.2 Receiver

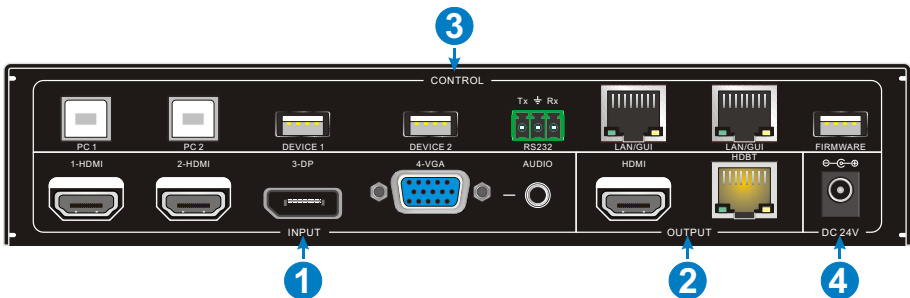| Video	
Video Input	(1) HDBT; (1) HDMI
Video Input Connector	(1) RJ45; (1) Female HDMI
Video Input Resolution	HDBT: Up to 4Kx2K@30Hz 4:4:4 HDMI: Up to 4Kx2K@60Hz 4:4:4
Video Output	(1) HDMI
Video Output Connector	(1) Female HDMI
Video Output Resolution	Supports 3840x2160@30Hz, 1920x1080, 1280x720
HDMI Standard	HDMI 1.4
HDCP Version	HDCP 2.2
Audio	
Audio Output	(1) Stereo balanced L/R audio
Audio Output Connector	(1) 5-pin terminal block
Audio Output Impedance	70Ω
Frequency Response	20Hz~20KHz
Stereo Channel Separation	>80dB @1KHz
Control Part	
Control port	(2) DEVICE; (1) RS232; (2) RELAY; (1) LAN
Control Connector	(2) Type-A USB; (1) 3-pin terminal block; (2) 2-pin terminal block; (1) RJ45
General	
Transmission Distance	Up to100m
Operation Temperature	-10℃ ~ +55℃
Storage Temperature	-25℃ ~ +70℃
Relative Humidity	10%-90%
External Power Supply	Input: AC 100~240V, 50/60Hz; Output: 24V DC 2.71A
System Power Consumption	35w (Max)
Dimension (W*H*D)	205mm x 21.5mm x 115mm
Net Weight	410g

3. Panel Description

3.1 Transmitter Front Panel
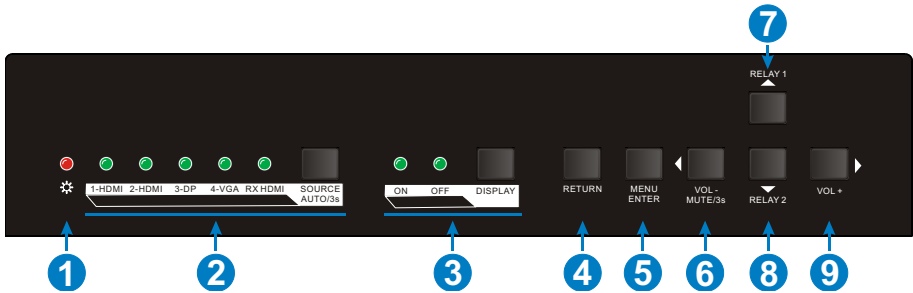
① **POWER LED:** The LED illuminates red when power is applied, or orange when the system is in auto-switching mode.

② **INPUT LED & SOURCE SELECTOR:**

- **1-HDMI:** The LED illuminates green when 1-HDMI input signal is chosen.
- **2-HDMI:** The LED illuminates green when 2-HDMI input signal is chosen.
- **3-DP:** The LED illuminates green when 3-DP input signal is chosen.
- **4-VGA:** The LED illuminates green when 4-VGA input signal is chosen.
- **RX HDMI:** The LED illuminates green when the HDMI input signal on Receiver is chosen.
- **SOURCE AUTO/3s:** Press the button to select input source signal, or press and hold it at least 3 seconds to enable auto-switching mode.
  For more details, please refer to the *5. Button Control* on page 10.

③ **DISPLAY:** Press the button to turn on/off the displays, and the activity LED ON/OFF will illuminate green respectively. It can be customized by sending RS232 commands for compatibility with various displays.

④ **RETURN:** Return key for OSD.

⑤ **MENU/ENTER:** Menu or Enter key for OSD.

⑥ **VOL-/MUTE:** Press the button to turn down the audio output volume, or press and

hold it at least 3 seconds to mute. Additional, it use as Left key for OSD.

⑦ **RELAY 1:** Press the button to roll up the projector screen. Up key for OSD.

⑧ **RELAY 2:** Press the button to drop the projector screen. Down key for OSD.

⑨ **VOL+:** Press the button to turn up the audio output volume. Right key for OSD.

3.2 Transmitter Rear Panel

① **INPUT:**

- **VIDEO:** Two HDMI inputs, a DP input and a VGA input.

- **AUDIO:** A VGA auxiliary audio input.

② **OUTPUT**

- **HDMI:** A HDMI video output.

- **HDBT:** Supports PoH. Connect to HDBaseT Receiver to transmit AV signal, IR or RS232 control signal.

③ **CONTROL**

- **PC1&PC2:** Two Type-B USB ports for PC connection.

  - The PC1 or PC2 can be selected manually via RS232 commands and GUI.

  - The Transmitter will automatically select the new PC once a new PC was connected.

  - When an active PC is removed, the Transmitter will switch to the other PC.

  - Once reboot the Transmitter, it will switch to the first available active PC

starting at PC 1.

- **DEVICE 1& DEVICE 2:** Two Type-A USB ports, connect to USB HID devices.
- **RS232:** Serial port, 3-pin terminal block, connect to a control device (such as PC) to send RS232 command to control the system.
- **LAN/GUI:** Two RJ45 connectors for the following two features.
  - Connect to the PCs to control this system via GUI.
  - Serve as Ethernet ports for extending network signal.

  Warning Note: The LAN/GUI port can't be connected with HDBT port.
- **FIRMWARE:** Type-A USB port for firmware upgrade or customized EDID data upload.

④ **DC 24V:** DC barrel connector for power adapter connection. It does not require a power adaptor connection if the Receive is connected with a power adapter.
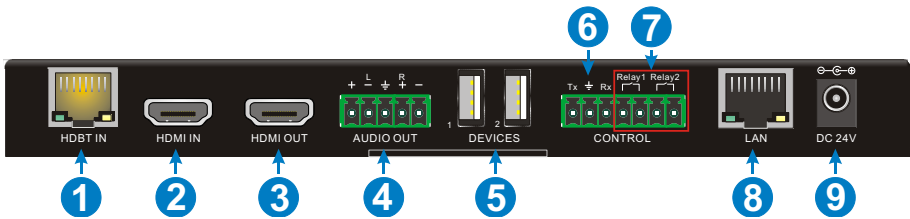
3.3 Receiver Front Panel

① **POWER LED:** The LED illuminates red when power is applied.

② **HDBT LED:** The LED illuminates green when HDBT input signal presenting.

③ **HDMI LED:** The LED illuminates green when HDMI input signal presenting.

④ **FIRMWARE:** Micro-USB port for firmware upgrade.

3.4 Receiver Rear Panel

① **HDBT IN:** Connect to the HDBT OUT port on Transmitter via CAT5e/6a/7 cable, supports PoH technology.

② **HDMI IN:** A HDMI input.

③ **HDMI OUT:** A HDMI output.

④ **AUDIO OUT:** A Stereo balanced L/R audio output.

⑤ **DEVICES:** Two Type-A USB ports, connect to USB HID devices.

⑥ **RS232:** Serial port, 3-pin terminal block, connect to the display device (such as projector) to be control via RS232 commands.

⑦ **RELAY1 & RELAY2:** Connects to relay device (such as projector screen).

⑧ **LAN:** Ethernet port, work with the GUI/LAN port on Transmitter to extend network signal.

   Warning Note: The LAN port can't be connected with HDBT port.

⑨ **DC 24V:** DC barrel connector for the power adapter connection.

4. System Connection

4.1 Usage Precaution

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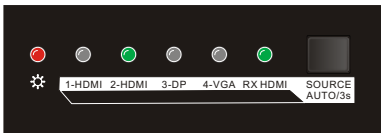- All devices should be connected before power on.

4.2 System Diagram
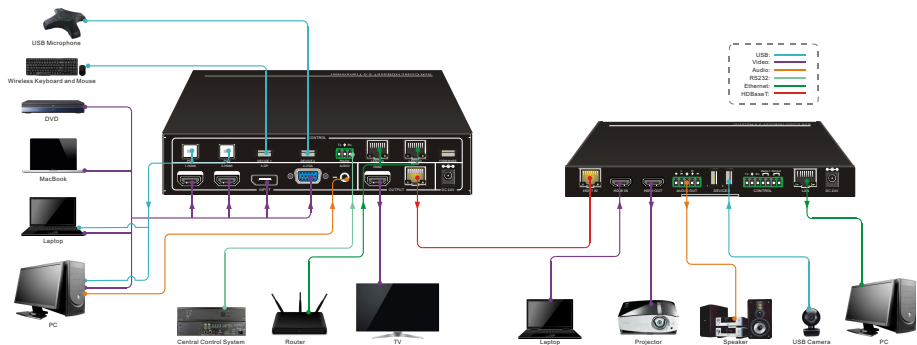
5. Button Control

Front panel buttons can be used for signal switching, OSD and volume adjusting.

5.1 Manual Switching

Press the **SOURCE/AUTO** button to select one input source for Transmitter, and press again to select next source, sequentially switch among 1-HDMI, 2-HDMI, 3-DP and 4-VGA. Meanwhile, the corresponding LED illuminates green.

The Receiver also features one HDMI input port, and follow the example to output the source signal via its HDMI output port.

	LED Status	**Description**
Status 1	The 1-HDMI LED illuminates green, other source LEDs go out.	The 1-HDMI is selected as input source. The input signal will be transmitted to all video output ports of Transmitter and Receiver.
Status 2	The 2-HDMI and RX HDMI LEDs illuminate green, other source LEDs go out.	▪ The 2-HDMI is selected as input source for Transmitter. The input signal will be transmitted to all video output ports of Transmitter. ▪ The HDMI input signal on Receiver will be only transmitted to the HDMI output port of Receiver.

Follow the below steps to switch to the status 2 from status 1.

① Press the **SOURCE/AUTO** button once to select 2-HDMI, and then release the button.

② Press the **SOURCE/AUTO** button continuously until the RX HDMI LED illuminates green to select the HDMI input for Receiver.

5.2 Automatic Switching

Press and hold the **SOURCE/AUTO** button at least 3 seconds to enable auto-switching mode, and it abides by the following principles:

▪ **New input**
Once detecting a new input signal, the Transmitter automatically switches to this new signal.

Once connecting a source device to the HDMI IN port of Receiver, it will automatically switch to this source to output HDMI signal via HDMI OUT port.

▪ **Rebooting device**
The Transmitter can save the last configuration before losing power. If the last switching mode is auto-switching, the Transmitter will automatically enter auto-switching mode once rebooted, then detect all inputs and memorize their connection status for future rebooting using. If the last selected input source is still available, the Transmitter will switch to the input. Otherwise, it will switch to the first available active input source starting at 1-HDMI.

▪ **Signal removing**
Once removing the current display signal, the Transmitter will detect all input signals with priority from 1-HDMI to 4-VGA. It will transfer the signal firstly detected to be available to output devices.

Note:

▪ *Auto-switching function working only when has new signal, removing a signal or power rebooting.*

▪ *The HDMI input source on Receive cannot be selected under auto-switching mode.*

5.3 Volume Adjustment

The Receiver features audio output ports for connecting speaker or AV amplifier.

Press the **VOL+** or **VOL-** button on Transmitter to adjust the output volume.

6. RS232 Control

As RS232 commands can be transmitted to Receiver from the Transmitter, so it is able to control the Transmitter or the third-party device (such as projector) on Receiver from local.

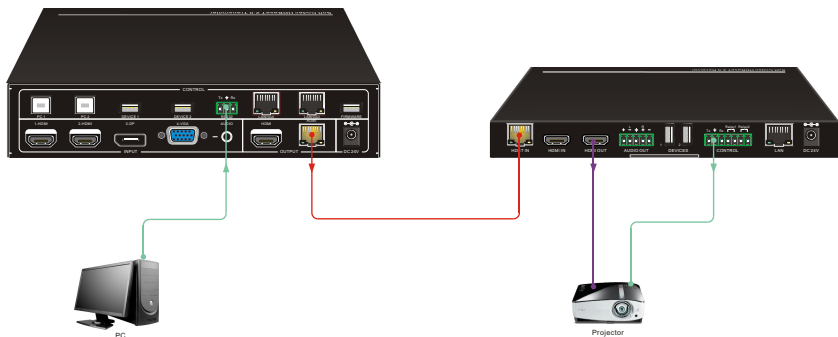The baud rate supports 2400, 4800, 9600(default), 19200, 38400, 57600 or 115200.

6.1 RS232 Connection

There are two RS232 control modes.

▪ **Control the Transmitter**

▪ **Control the third-party device**

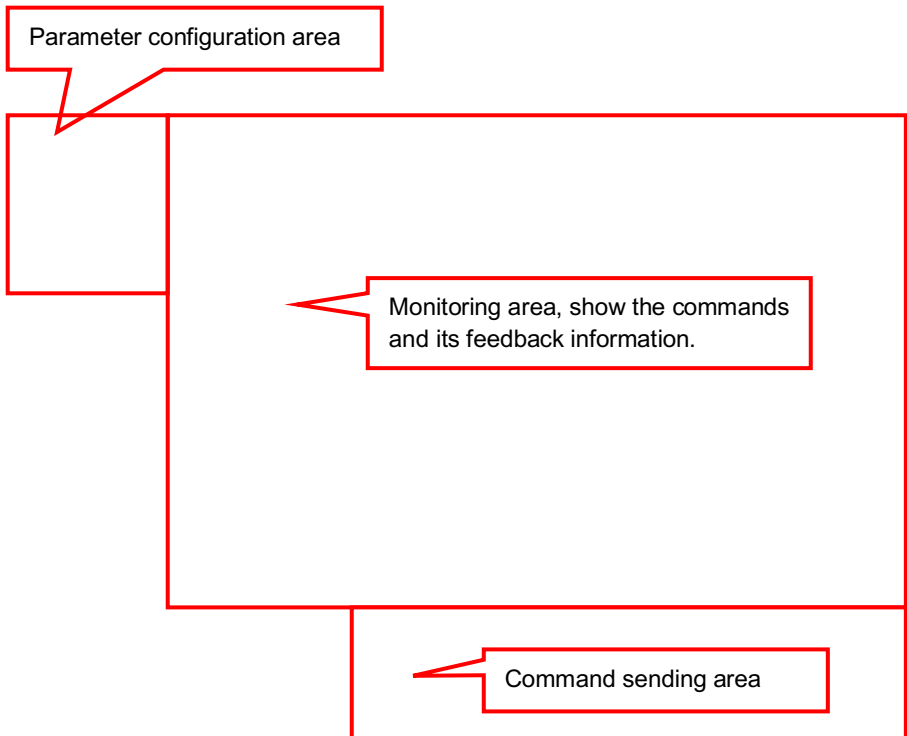## 6.2 RS232 Control Software

▪ **Installation/uninstallation**
  ✓ **Installation** Copy the control software file to the computer connected with the Transmitter.

  ✓ **Uninstallation** Delete all the control software files in corresponding file path.

▪ **Basic Settings**
  Connect the Transmitter to all input devices and output devices needed, then connect it to a PC which is installed with RS232 control software. Double-click the software icon to run this software. Please refer the software **CommWatch.exe** as example. The icon is shown as below:

CommWatch.exe

The interface of the control software is showed as below:

Parameter configuration area

Monitoring area, show the commands and its feedback information.

Command sending area
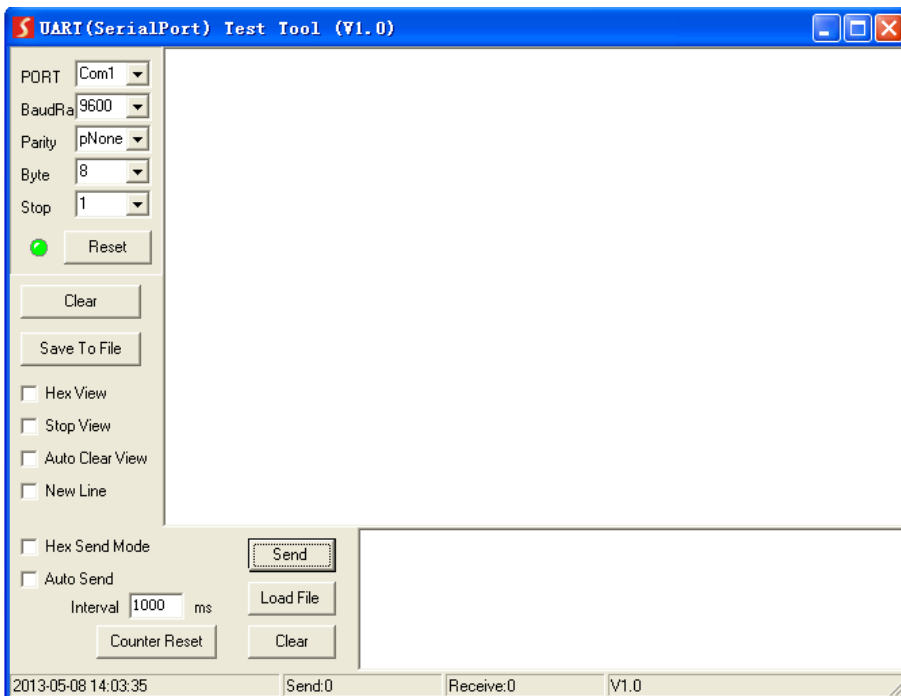
Please set the parameters of COM number, bound rate, data bit, stop bit and the parity bit correctly, then the RS232 commands can be sent in Command Sending Area.

6.3 RS232 Command

Communication protocol: RS232 Communication Protocol
Baud rate: 9600   Data bit: 8   Stop bit: 1   Parity bit: none
The ending mark of command is "<CR><LF>".

6.3.1 Source Switching

Command	Function	Feedback
SWIN H1	Switch to 1-HDMI input.	Switch to HDMI1
SWIN H2	Switch to 2-HDMI input.	Switch to HDMI2
SWIN DP	Switch to 3-DP input.	Switch to DP

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Command	Function	Feedback
SWIN VG	Switch to 4-VGA input.	Switch to VGA
SWIN RXHDMI	Switch to RX HDMI input.	Switch to RX HDMI
AUTO 01	Enable auto-switching.	Auto Switching
AUTO 00	Enable manual-switching.	Manual Switching
?GET IN	Get the input source of Transmitter. (HDMI1, HDMI2, DP, VGA)	TX Device Input: HDMI1
	Get the input source of Receiver. (HDMI, HDBT)	RX Device Input: HDMI
?GET AUTO	Get the switching mode.	Manual Switching/Auto Switching
VGAA	Auto-adjust the input parameter (VGA only).	VGA Input Auto

6.3.2 Audio Adjustment

Command	Function	Feedback
AUMT S1	Mute source audio.	Audio Mute Source: Enable
AUMT S0	Unmute source audio.	Audio Mute Source: Disable
AUMT V1	Mute VGA auxiliary input audio.	Audio Mute VGA: Enable
AUMT V0	Unmute VGA auxiliary input audio.	Audio Mute VGA: Disable
?GET AUMT	Get the Source mute status.	Audio Mute Source: Enable
	Get the VGA auxiliary audio mute status.	Audio Mute VGA: Enable
VOLS AP	Turn up the source audio volume (xx=00~60).	Source Volume: xx
VOLS AN	Turn down the source audio volume (xx=00~60).	Source Volume: xx
VOLV AP	Turn up the VGA auxiliary audio volume (xx=00~60).	VGA Volume: xx

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Command	Function	Feedback
VOLV AN	Turn down the VGA auxiliary audio volume (xx=00~60).	VGA Volume: xx
VOLS xx	Set the source audio volume (xx=00~60).	Source Volume: xx
VOLV xx	Set the VGA auxiliary audio volume (xx=00~60).	VGA Volume: xx
?GET VOL	Get the source audio volume (xx=00~60).	Source Volume: xx
	Get the VGA auxiliary audio volume (xx=00~60).	VGA Volume: xx

6.3.3 Output Resolution

The default output resolution is 3840x2160@30Hz. Below is a list of the output resolution the built-in scaler can output.

Command	Function	Feedback
TRES 01	Set the output resolution for Transmitter to 3840x2160@30Hz.	TX Device Resolution: 3840x2160
TRES 02	Set the output resolution for Transmitter to 1920X1080.	TX Device Resolution: 1920x1080
TRES 03	Set the output resolution for Transmitter to 1280x720.	TX Device Resolution: 1280x720
RRES 01	Set the output resolution for Receiver to 3840x2160@30Hz.	RX Device Resolution: 3840x2160
RRES 02	Set the output resolution for Receiver to 1920x1080.	RX Device Resolution: 1920x1080
RRES 03	Set the output resolution for Receiver to 1280x720.	RX Device Resolution: 1280x720
?GET RES	Get the output resolution for Transmitter.	TX Device Resolution: 1920x1080
	Get the output resolution for Receiver.	TX Device Resolution: 1920x1080

6.3.4 Auto Power-off Setup

Command	Function	Feedback
?GET TIME	Check the auto power-off mode.	Auto Switch Mode no input to shutdown time: Disable
		Manual Switch Mode no input to shutdown time: Disable
TIME AD	Auto Switch Mode: Disable the auto power-off function.	Auto Switch Mode no input to shutdown time: Disable
TIME A1	Auto Switch Mode: Set the auto power-off time to 1 minute when no signal input.	Auto Switch Mode no input to shutdown time: 1 minutes
TIME A2	Auto Switch Mode: Set the auto power-off time to 2 minutes when no signal input.	Auto Switch Mode no input to shutdown time: 2 minutes
TIME A3	Auto Switch Mode: Set the auto power-off time to 5 minutes when no signal input.	Auto Switch Mode no input to shutdown time: 5 minutes
TIME A4	Auto Switch Mode: Set the auto power-off time to 10 minutes when no signal input.	Auto Switch Mode no input to shutdown time: 10 minutes
TIME MD	Manual Switch Mode: Disable auto power-off time function.	Manual Switch Mode no input to shutdown time: Disable
TIME M1	Manual Switch Mode: Set the power-off time to 1 minute.	Manual Switch Mode no input to shutdown time: 1 minutes
TIME M2	Manual Switch Mode: Set the power-off time to 2 minutes.	Manual Switch Mode no input to shutdown time: 2 minutes
TIME M3	Manual Switch Mode: Set the power-off time to 5 minutes.	Manual Switch Mode no input to shutdown time: 5 minutes

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Command	Function	Feedback
TIME M4	Manual Switch Mode: Set the power-off time to 10 minutes.	Manual Switch Mode no input to shutdown time: 10 minutes

6.3.5 CEC Command

Command	Function	Feedback
CECS P0	Turn off the source device by using CEC way.	CEC: Turn Source off
CECS P1	Turn on the source device by using CEC way.	CEC: Turn Source on
CECD P0	Turn off the display device by using CEC way.	CEC: Turn Display off
CECD P1	Turn on the display device by using CEC way.	CEC: Turn Display on

6.3.6 Relay Control

Command	Function	Feedback
RLY1 ON	Turn on the Relay1.	Relay 1 on
RLY1 OFF	Turn off the Relay1.	Relay 1 off
RLY2 ON	Turn on the Relay2.	Relay 2 on
RLY2 OFF	Turn off the Relay2.	Relay 2 off
RLY1 MODE 1	Set control mode of Relay1 button as Auto.	Set Relay1 Auto Mode!
RLY1 MODE 0	Set control mode of Relay1 button as Manual.	Set Relay1 Manual Mode!
GET RLY1 MODE	Report the control mode of Relay1 button.	Relay1 Mode: Manual/Auto
RLY1 TIME xx	When the control mode of Relay1 button is Auto, send this command to set the automatic stop control time as xx seconds. (xx=0~30).	Set Relay1 Auto Mode Time: xxs

GET RLY1 TIME	Report the automatic stop control time.	Relay1 Auto Mode Time: xxs
RLY2 MODE 1	Set control mode of Relay2 button as Auto.	Set Relay2 Auto Mode!
RLY2 MODE 0	Set control mode of Relay2 button as Manual.	Set Relay2 Manual Mode
GET RLY2 MODE	Report the control mode of Relay2 button.	Relay2 Mode: Manual/Auto
RLY2 TIME xx	When the control mode of Relay2 button is Auto, send this command to set the automatic stop control time as xx seconds. (xx=0~30).	Set Relay2 Auto Mode Time: xxs
GET RLY2 TIME	Report the automatic stop control time.	Relay2 Auto Mode Time: xxs
SUSB PC1 xx	Select the PC1 as the host to be controlled by the USB devices, and then switch the input source as xx. (xx=H1/H2/DP/VG)	Switch Usb huh to PC1 (Switch to HDMI1)
SUSB PC2 xx	Select the PC2 as the host to be controlled by the USB devices, and then switch the input source as xx. (xx=H1/H2/DP/VG)	Switch Usb huh to PC2 (Switch to HDMI1)

6.3.7 EDID Configuration

Command	Function	Feedback
EDID DF	The source device obtains the default EDID 3840x2160@30Hz.	EDID: Initial
EDID US	Load customize EDID data from U-disk.	EDID: User
?GET EDID	Get EDID status.	EDID: Initial/ User

6.3.8 Device Setup

Command	Function	Feedback
SFUD TX	Update the software of Transmitter.	TX Device Software Update
SFUD RX	Update the software of Receiver.	RX Device Software Update
?GET REV	Get the system version.	Vx.x.x
FRST	Restore to factory defaults.	Factor Reset
WAKE	Wake up the system.	Wake Up
STBY	Let this system enter in standby mode.	Go To Standby
?GET IP	Get the IP address.	192.168.0.178!

6.3.9 Control Third Party Device

Command	Function	Command Example
/+pb:xxxxxxx xx	Send ASCII command to control the third party device based on RS232 pass-through function. **1) p = 0~1** is for RS232 control mode. ● When the "p=0", send command to control the local third party device which is connected to the Transmitter. ● When the "p=1", the command is sent to control remote third party	/+12:123456789 Send the ASCII command "123456789" to control the remote third party device of which baud rate is 9600.

|		
	device which is connected to the Receiver. **2)** **b = 0~6** is for baud rate. <table><tr><th>b</th><th>Baud Rate</th></tr><tr><td>0</td><td>2400</td></tr><tr><td>1</td><td>4800</td></tr><tr><td>2</td><td>9600,</td></tr><tr><td>3</td><td>19200</td></tr><tr><td>4</td><td>38400</td></tr><tr><td>5</td><td>57600</td></tr><tr><td>6</td><td>115200</td></tr></table> **3)** **xxxxxxxxx** is for ASCII data (max 48 Byte).	
/-pb:xx xx xx xx	Send HEX command to control the third party device based on RS232 pass-through function. **1)** **p = 0~1** is for RS232 control mode. ● When the "p=0", send command to control the local third party device which is connected to the Transmitter. ● When the "p=1", the command is sent to control remote third party device which is connected to the Receiver. **2)** **b = 0~6** is for baud rate. <table><tr><th>b</th><th>Baud Rate</th></tr><tr><td>0</td><td>2400</td></tr><tr><td>1</td><td>4800</td></tr><tr><td>2</td><td>9600,</td></tr><tr><td>3</td><td>19200</td></tr><tr><td>4</td><td>38400</td></tr><tr><td>5</td><td>57600</td></tr><tr><td>6</td><td>115200</td></tr></table> **3)** **xx xx xx xx** is for HEX data (max 48 Byte).	/-12:30 31 32 33 34 Send the HEX command "30 31 32 33 34" to control the remote third party device of which baud rate is 9600.

7. OSD Control

The system provides a powerful OSD operation menu, including picture setting and system setup.

Operation:

▪ Press the button **MENU/ENTER** to enter OSD menu.

▪ Press navigation button (**Left**/**Right**/**Up**/ **down**) to select function on OSD menu.

▪ Press **MENU/ENTER** button to apply the setting.

7.1 Picture

Including Picture Mode, Color Mode, Advanced and Zoom Mode.
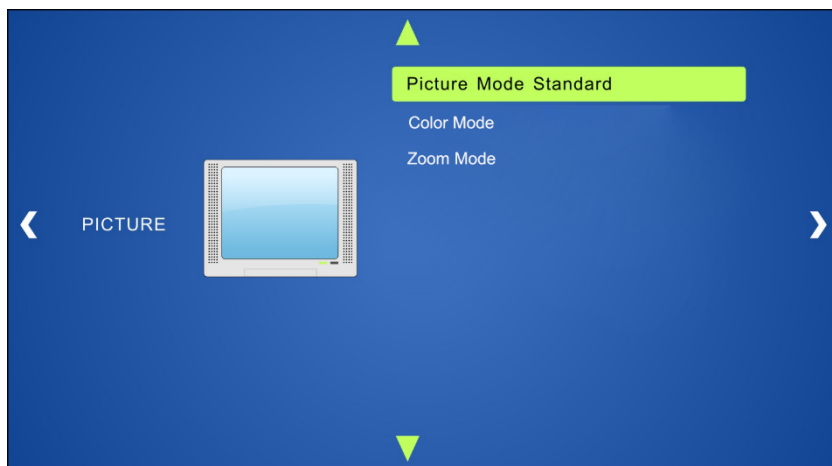
▪ **Picture Mode**: Including Dynamic, Standard, Soft, and Personal. Only in Personal mode, it will be able to set the image contrast, brightness, color and sharpness.

▪ **Color Mode**: Including Normal, Cool and Warm.

▪ **Zoom Mode**: Including Normal, Zoom, Cinema and Wide.

7.2 Setup

Including Menu Language, Restore Default, Software Update, Baudrate, TX Resolution, RX Resolution and SW Version.
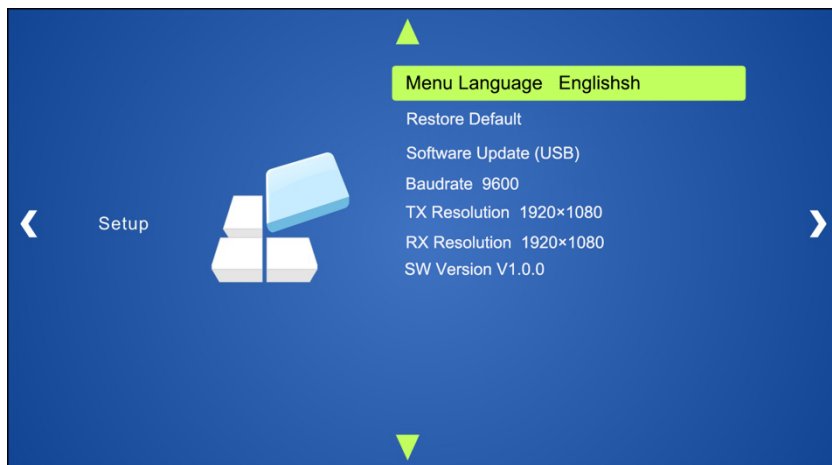

- **Menu Language:** Supports English (default), French, and Spanish 3 languages.

- **Restore Default:** Restores to factory setting.

- **Software Update (USB):** Insert the USB flash disk with update file to the FIRMWARE port, then upgrade the software through the menu.

- **Baudrate:** Set the baud rate for RS232 control, and it supports 2400, 4800, 9600, 19200, 38400, 57600 and 115200.

- **TX Resolution:** Set the output resolution for Transmitter, and it supports 3840x2160@30Hz, 1920x1080 and 1280x720.

- **RX Resolution:** Set the output resolution for Receiver, and it supports 3840x2160@30Hz, 1920x1080 and 1280x720.

- **SW Version:** Display software version.

8. GUI Control

In addition to control the system via front panel button and RS232 control software. The system can be controlled via GUI. It allows user to interact with the system through graphical icons and visual indicators.

Type ***192.168.0.178*** in your browser, it will enter the log-in interface is shown as below:
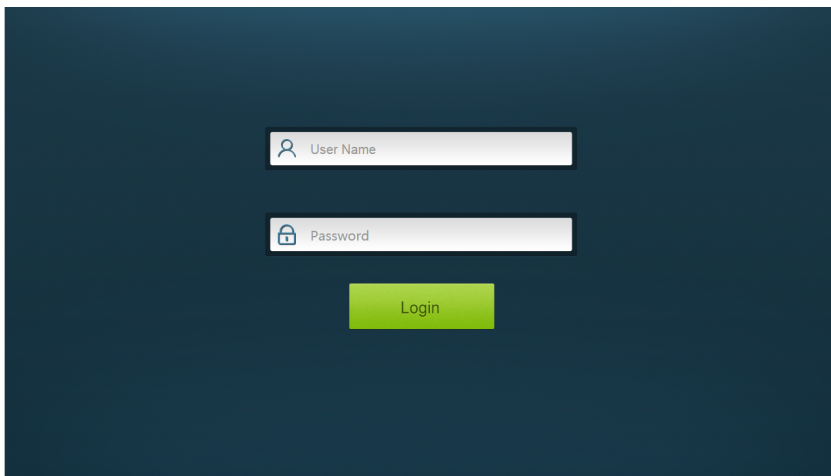
This system has administrator and user mode.

- **Administrator mode:** User name: admin; Password: admin (default setting)
- **User mode:** User name: user; Password: user (default setting)

Note: Log in as an admin mode can access more configuration interfaces than user mode. Here is a brief introduction to the interfaces.

8.1 Control Menu

Type the default user name and password, and then click **Login** to enter the control menu is shown as below:

- ▪ **Source:**
    - ✓ Click **1-HDMI**, **2-HDMI**, **3-DP**, **4-VGA** or **RX HDMI** to select the input source.
    - ✓ Click **AUTO** button to enable auto-switching mode.
- ▪ **TX Volume:**
    - ✓ Click **+**, **-** buttons or drag the bar to adjust volume.
    - ✓ Click **Mute** button to mute volume.
- ▪ **Power Management:**
    - ✓ Click **Source** to power on or off source device.
    - ✓ Click **Display** to power on or off display device.
    - ✓ Click **Unit** to enter standby mode.
- ▪ **Relay Control:**
    - ✓ Click **Manual** button to control the relay device manually, and then click again to stop process.
    - ✓ Click **Auto** button, the relay control will automatically stop within the setting time 0~30s.

8.2 Configuration Menu

① Setting

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

- **Output Resolution:** Select the output resolution for Transmitter or Receiver.

- **Update:**

  - ✓ **EDID:** Insert the USB flash disk with EDID file to the FIRMWARE port of Transmitter, and then click **EDID** button to start upgrade procedure.

  - ✓ **TX Firmware:** Insert the USB flash disk with software updating file to the FIRMWARE port of Transmitter, and then click **TX Firmware** button to start upgrade procedure.

  - ✓ **RX Firmware:** Insert the USB flash disk with software updating file to the FIRMWARE port of Receiver, and then click **RX Firmware** button to start upgrade procedure.

- **Relay Buttons:** Set the relay control mode for Relay 1 and Relay 2 buttons.

- **TX Shutdown Time (NO Input):** Set the auto power-off time or manual power-off time, including none, 1 minute, 2minutes, 5minutes and 10 Minutes. If the system can't detect video source input, it will automatically shut down after a preset

interval.

▪ **PC Input Setting:** Select the input source for the PC1 and PC2.

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.
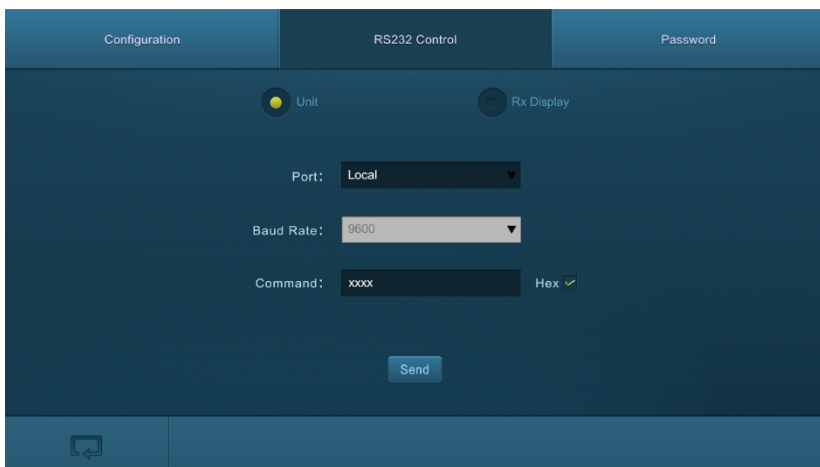
③ **Source**

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


8.3 RS232 Control Menu

① Click **RS232 Control** on the top of interface to enter the below menu to send the commands to control the third-party device.

▪ **Port:**

   ✓ **Local:** Refers to the RS232 port of the Transmitter.

   ✓ **HDBT:** Refers to the RS232 port of the Receiver.

▪ **Baud Rate:** The baud rate of local port is 9600, but it supports 2400, 4800, 9600, 19200, 38400, 57600, 115200 for HDBT port.

▪ **Command:** Typing commands in this box to control the third-party device (such as integrated control system) connected to Transmitter, or the third-party device (such as projector) connected to Receiver. If check the "Hex", it allows to type RS232 commands with hexadecimal value in the box.

②   Click **RX DISPLAY** to enter the below menu to set the **ON/OFF** button function to turn on/off the display device (e.g. projector).
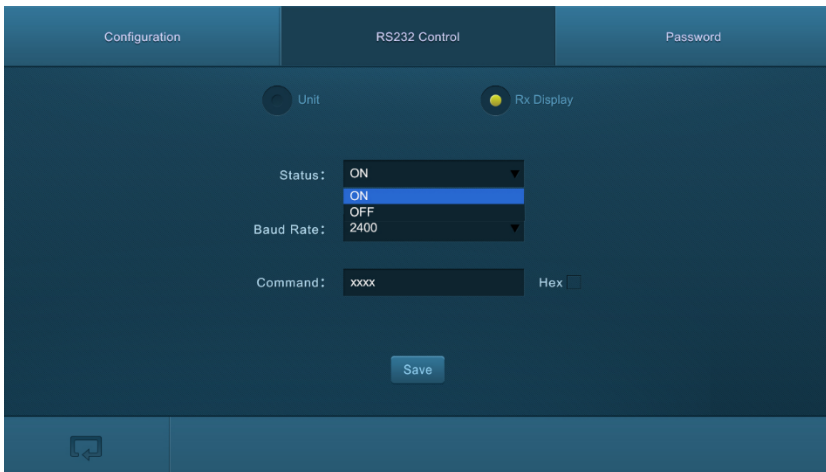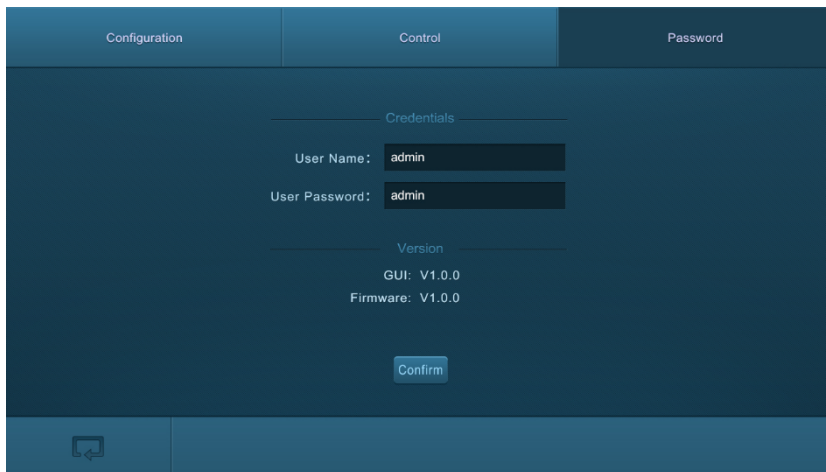

▪ **Status:** Select the **DISPLAY ON** or **OFF** button to set its function.

▪ **Baud Rate:** Supports 2400, 4800, 9600, 19200, 38400, 57600 and 115200.

▪ **Command:** Type the control command of display device, then click **Send**, the command will be sent to **DISPLAY ON** or **OFF** button.

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 setting, 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:
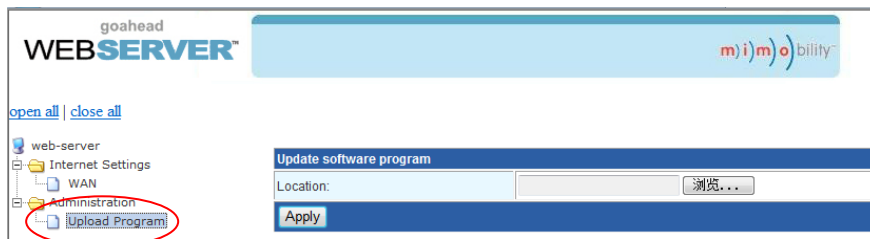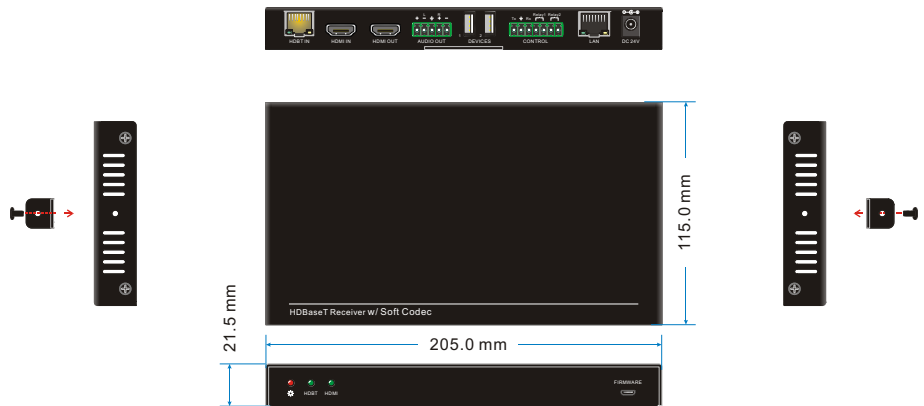

When select the update file and press Apply button, it will start upgrade then.

9. Panel Drawing
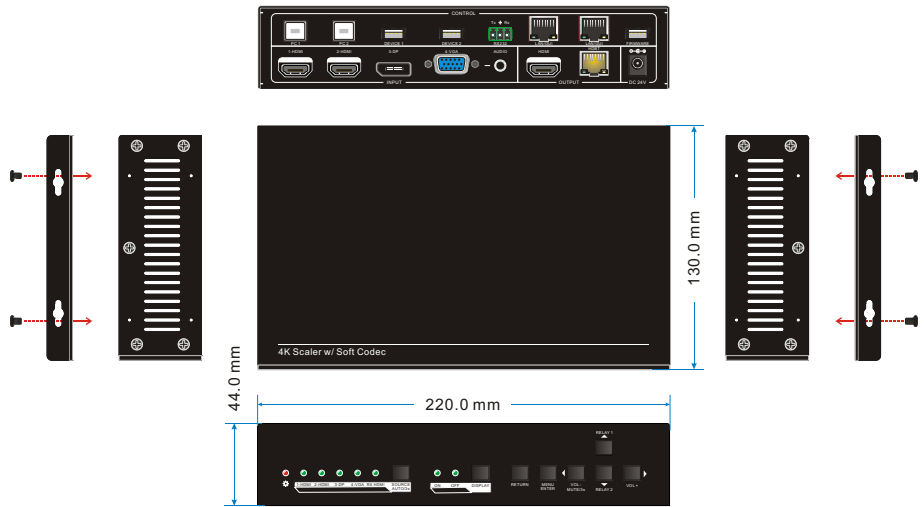
9-1 Transmitter

9-2 Receiver

10. 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.
Cannot control the device by control device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Type in correct RS232 communication parameters.
	Broken RS232 port	Send it to authorized dealer for checking.

Note: *If your problem still remaining after following the above troubleshooting steps, please contact your local dealer or distributor for further assistance.*

11. Customer Service

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

① **Warranty**

   The limited warranty period of the product is fixed three years.

② **Scope**

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

③ **Warranty Exclusion**

   - Warranty expiration.

   - Factory applied serial number has been altered or removed from the product.

   - Damage, deterioration or malfunction caused by:

      ✓ Normal wear and tear.

      ✓ Use of supplies or parts not meeting our specifications.

      ✓ No certificate or invoice as the proof of warranty.

      ✓ The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.

      ✓ Damage caused by force majeure.

      ✓ Servicing not authorized by distributor.

      ✓ Any other causes which does not relate to a product defect.

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

④ **Documentation:**

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

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