avgear

USER MANUAL

AVG-SC41T-CODEC

4K Scaler
with Soft Codec

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Version: SC41T-CODEC_2018V1.0

The AVG-SC41T-Codec is a conferencing system codec kit supporting resolutions up to 4K@30Hz 4:4:4 and HDCP2.2. It includes a Transmitter and Receiver, providing AV Switching, de-embedded Audio, System Control commands and USB Extension.

Video, Audio, Control, USB and Ethernet signals can be transmitted over a single CATx cable up to 100m.

Features

- Supports resolution conversion ranging from 720p to 4Kx2K@30Hz 4:4:4
- Provides a variety of interfaces to simplify room device management.
- Supports PCs, USB devices such as keyboard, webcam, Mic for Conferencing system.
- Extends the transmission distance of USB signals.
- Supports Auto-switching for inputs.
- HDBaseT technology extends Video, Audio, Control and Ethernet up to 100m.
- De-embedded Analogue Audio.
- CEC control of connected Display.
- Controllable relays for Projector screens or lifts.
- Local Input available on the Receiver for BYOD (sold separately).

PLEASE READ THIS PRODUCT MANUAL CAREFULLY BEFORE USING THIS PRODUCT.

This manual is only for operational instruction only, and not to be used for maintenance. The functions described in this version are current as at January 2018. Any changes of functions and operational parameters will be updated in future manual versions. Please refer to your dealer for the latest product details.

Version 1.0 31/1/18

SAFETY OPERATION GUIDE

To guarantee the reliable operation of the equipment and safety of the user, please abide by the following procedures in installation, use and maintenance:

1. The system must be earthed properly. Please do not use two blade plugs and ensure the alternating power supply ranges from 100v to 240v and from 50Hz to 60Hz.
2. Do not install the switcher in an environment where it will be exposed to extreme hot or cold temperatures.
3. This unit will generate heat during operation, please ensure that you allow adequate ventilation to ensure reliable operation.
4. Please disconnect the unit from mains power if it will be left unused for a long time.
5. Please DO NOT try to open the casing of the equipment, DO NOT attempt to repair the unit. Opening the unit will void the warranty. There are high voltage components in the unit and attempting to repair the unit could result in serious injury.
6. Do not allow the unit to come into contact with any liquid as that could result in personal injury and product failure.

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1. Introduction

1.1. Introduction to AVG-SC41T-CODEC

The AVG-SC41T-Codec is a conferencing system codec kit supporting resolutions up to 4K@30Hz 4:4:4 and HDCP2.2. It includes a Transmitter and Receiver, providing AV Switching, de-embedded Audio, System Control commands and USB Extension. 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 help simplify meeting room device management, the kit offers LAN connections for Ethernet and USB ports for device extension, four on the Transmitter and two on the Receiver. It supports a variety of USB2.0 devices such as Cameras, Microphones and keyboards. It supports many other HID devices.

Users can control system functionality via WEB GUI, RS232 and CEC. Users also have control over the relay ports for projector screen or lifts.

It's a versatile solution for use in education institutions, meeting rooms, conference rooms using PC-based conferencing system codecs such as Skype, WebEx and GoToMeeting.

1.2. Features

- Supports resolution conversion ranging from 720p to 4Kx2K@30Hz 4:4:4
- Provides a variety of interfaces to simplify room device management.
- Supports PCs, USB devices such as keyboard, webcam, Mic for Conferencing system.
- Extends the transmission distance of USB signals.
- Two USB B ports used to connect to the host and four USB A for HID devices such as Webcam, mic and keyboard.
- Supports Auto-switching for inputs.
- HDBaseT technology extends Video, Audio, Control and Ethernet up to 100m.
- Ethernet can be used from either the Transmitter or Receiver, providing easy LAN access to users.
- De-embedded Analogue Audio.
- CEC control of connected Display.
- Ensures EDID communication between sources and display.
- Controllable relays for Projector screens or lifts.
- Local Input available on the Receiver for BYOD (sold separately).

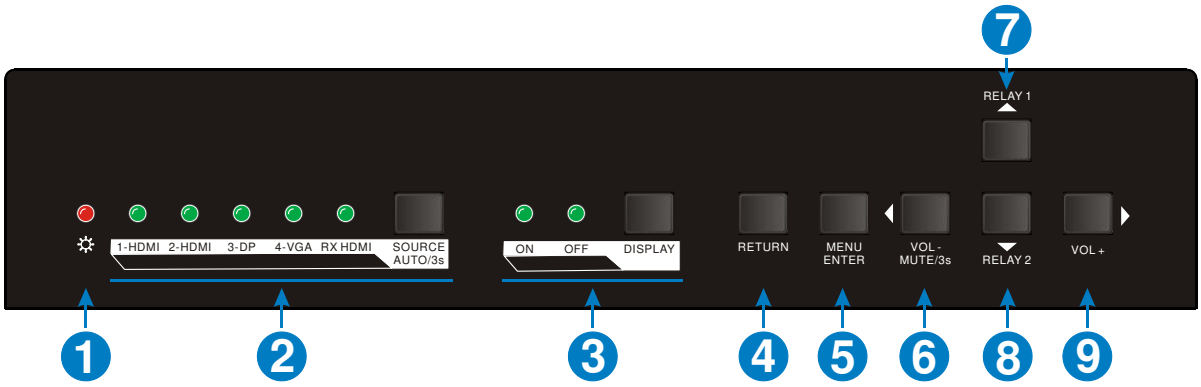
1.3. What's in the Box

- 1 x AVG-SC41T-Codec-T Transmitter and 1 x AVG-SC41T-Codec-R Receiver
- 4 x Mounting Ears, and 6 screws
- 8 x Rubber feet
- 1 x RS232 cable (3 pin phoenix connector to DB9)
- 1 x 7 pin phoenix connector
- 1 x 5 pin phoenix connector
- 1 x Power Adapter (24VDC, 2.71A)
- 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. Transmitter Front Panel



① **POWER LED:** The LED illuminates red when power is applied, or orange when the auto-switching mode is selected.

② **INPUT LED & SOURCE SELECTOR:**

- **1-HDMI:** The LED illuminates green when 1-HDMI input signal is selected.
- **2-HDMI:** The LED illuminates green when 2-HDMI input signal is selected.
- **3-DP:** The LED illuminates green when 3-DP input signal is selected.
- **4-VGA:** The LED illuminates green when 4-VGA input signal is selected.
- **RX HDMI:** The LED illuminates green when the HDMI input signal on Receiver is selected.
- **SOURCE SELECTOR:** Press this button to select the source signal, or long-press for 3 seconds or more to enable auto-switching mode.

For more details, please refer to section ***4. Button Control***.

③ **DISPLAY CONTROL:** Press this button to toggle power to the displays. The LED will illuminate green to reflect the state.

④ **RETURN:** Return key used for the OSD.

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

⑥ **VOL -** / **MUTE:** Press this button to turn down the audio output volume, or long-press 3 seconds or more to mute / Left key for OSD.

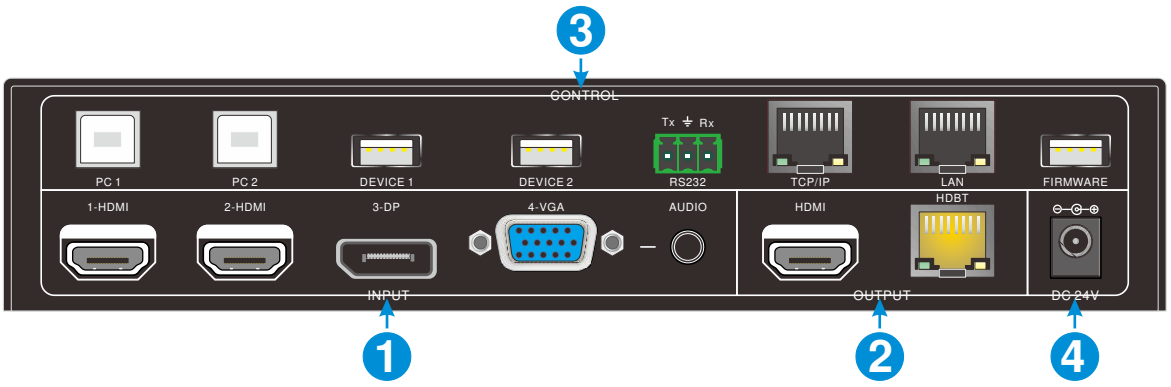
⑦ **RELAY 1:** Press this button to roll up the projection screen. / Up key for OSD.

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

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

Note: Pictures shown in this manual are for reference only, different model and specifications are subject to real product.

2.2. Transmitter Rear Panel



① **INPUT:**

- **VIDEO:** 2 HDMI inputs, 1 DP input and 1 VGA input.
- **AUDIO:** 1 VGA auxiliary audio input.

② **OUTPUT**

- **HDMI:** HDMI video output port.
- **HDBT:** Support 24V PoC. Connect with HDBaseT Receiver to transmit AV signal, IR or RS232 control signal.

③ **CONTROL**

- **PC1 & PC2:** Two Type-B USB ports, only one can be used to connect with a PC at a time, and the two priority: PC1>PC2. Ideally you would have the main PC connected to PC 1, and then PC2 is used for a laptop.
- **DEVICE 1 & DEVICE 2:** Two Type-A USB ports, connect with USB HID devices.
- **RS232:** Serial port, 3-pin phoenix connector, connect with a control device (such as PC).
- **TCP/IP:** RJ45 connector, connect with PC to control this system via web-based GUI.
- **LAN:** Ethernet port for extending network signal.
  - ***Note:*** *Please notice warning signs. The LAN port can't be connected with HDBT port.*
- **FIRMWARE:** Type-A USB port for updating system firmware or loading customized EDID data.

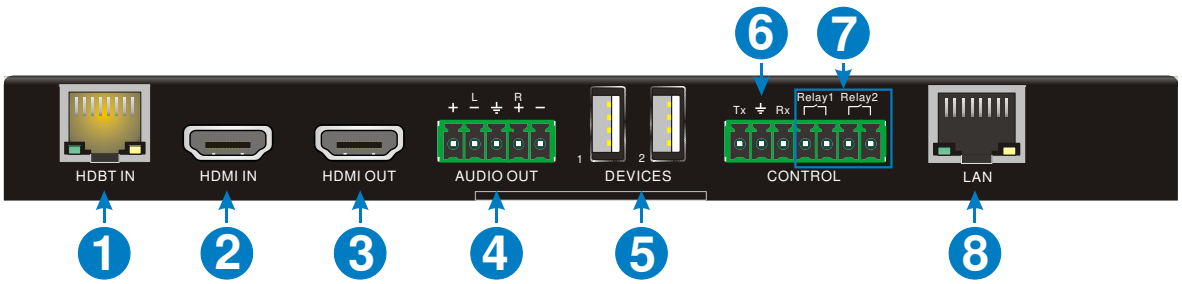
④ **DC 24V:** DC barrel connector for connecting the included power adapter.

Note: Pictures shown in this manual are for reference only.

2.3. 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 present.
③ **HDMI LED:** The LED illuminates green when HDMI input signal present.
④ **FIRMWARE:** Type-A USB port for updating system firmware.

2.4. Receiver Front Panel



① **HDBT IN:** Connect to the HDBT OUT port of the Transmitter via CAT5e / 6a / 7 cable. Supports PoC technology.
② **HDMI IN:** HDMI input port.
③ **HDMI OUT:** HDMI output port.
④ **AUDIO OUT:** Stereo balanced L/R audio output port.
⑤ **DEVICES:** Two Type-A USB ports, connect with USB HID devices.
⑥ **RS232:** Serial port, 3-pin phoenix connector, connect with the display device (such as projector) needed to be control via RS232 commands.
⑦ **RELAY1 & RELAY2:** Connect with relay device (such as projector screen).
⑧ **LAN:** Ethernet port, works with the LAN port on the Transmitter to extend network signal.

Note: *Please notice warning label. The LAN port can't be connected with HDBT port.*

3. System Connection

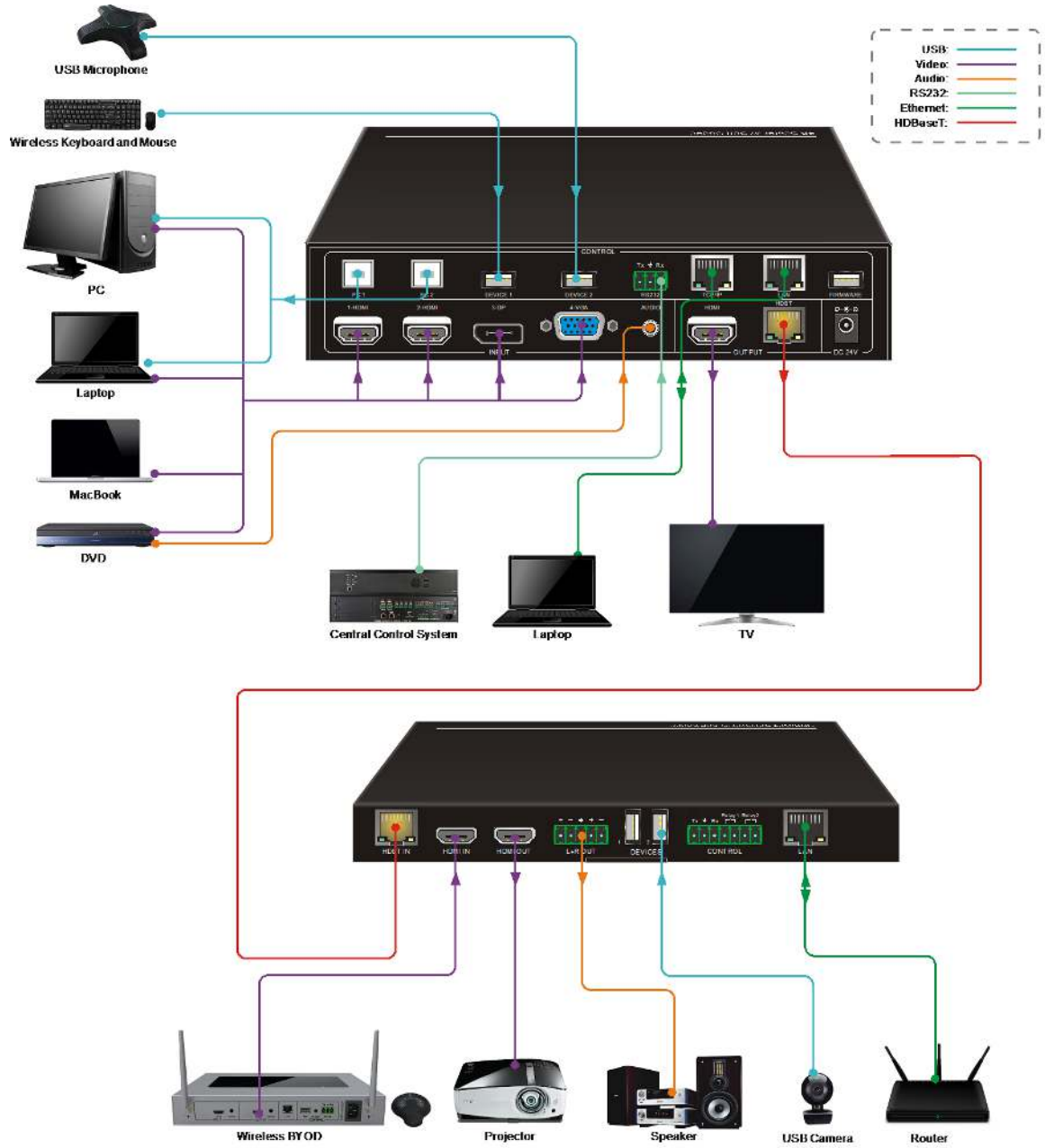
3.1. Usage Precautions

1. The system should be installed in a clean environment that has proper temperature and humidity.

2. All the power switches, plugs, sockets and power cords should be insulated and safe.

3. All devices should be connected before powering it on.

3.2. System Diagram



4. Operation

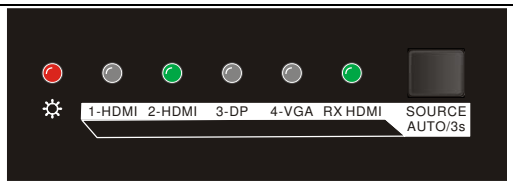
4.1. Front Panel Control

Front panel buttons can be used for switching operations, OSD and volume control.

4.1.1. Manual Switching

Press the **SOURCE/AUTO** button to select an input for the Transmitter, press again to select next source, switching sequentially between 1-HDMI, 2-HDMI, 3-DP and 4-VGA. The corresponding LED will illuminate green.

The Receiver also features one HDMI input port, if you need to output the source signal via its HDMI output port. The following is an example.

	LED Status	Description
Status 1	The 1-HDMI LED illuminates green, other source LEDs are gone.	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 are gone.	▪ 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 this button.

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

4.1.2. Auto-Switching

Long-press the **SOURCE/AUTO** button for 3 seconds or more to enable auto-switching mode. The auto-switching mode works as follows:

- **New input**

  Once the Transmitter detects a new input signal and it isn't already locked onto an input, it will switch to this new signal automatically.

- **Rebooting device**

  The Transmitter can save the last configuration before losing power. If the last switching mode is auto-switching, once rebooted, the Transmitter will automatically enter auto-switching mode, then detect all inputs and memorize their connection status for future rebooting use. If the last displayed signal is still available, the unit will output that signal. If not, the unit will detect any other input signals with priority from 1-HDMI to 4-VGA. When the next available signal has been detected it will switch this to the output.

- **Signal removing**

  On removal of the current source signal, the Transmitter will detect all input signals with priority from 1-HDMI to 4-VGA. It will switch to the next available input.

***Note**:*

- *Auto-switching function works only when connecting a new signal, removing a signal or power cycling.*
- *The HDMI input source on Receive cannot be selected under auto-switching mode.*

4.1.3. Volume Control

The Receiver features audio output ports for connecting speakers or an AV amplifier. Press the **VOL+** or **VOL-** button on Transmitter to turn up or turn down the volume.

4.3. RS232 Control

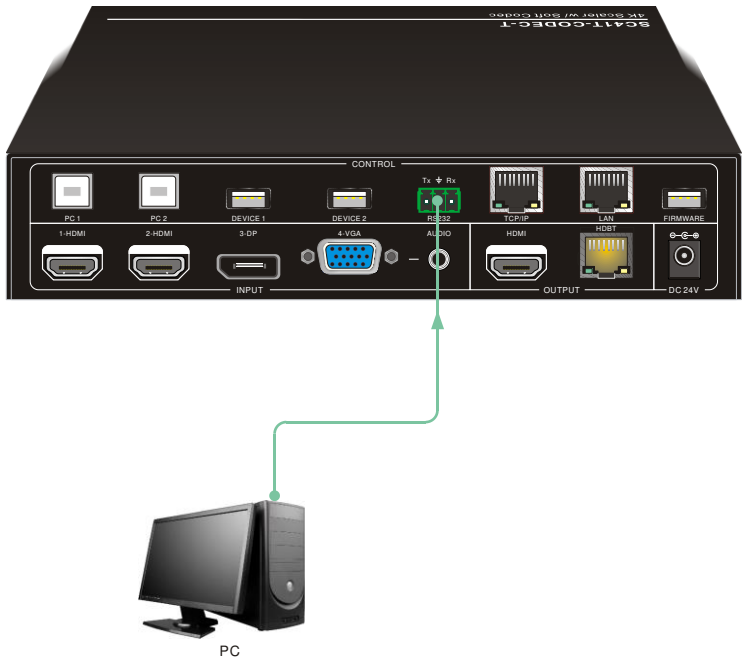
As RS232 commands can be transmitted to the Receiver from the Transmitter, so it is able to control the Transmitter or the third-party device (such as projector) on Receiver from local.

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

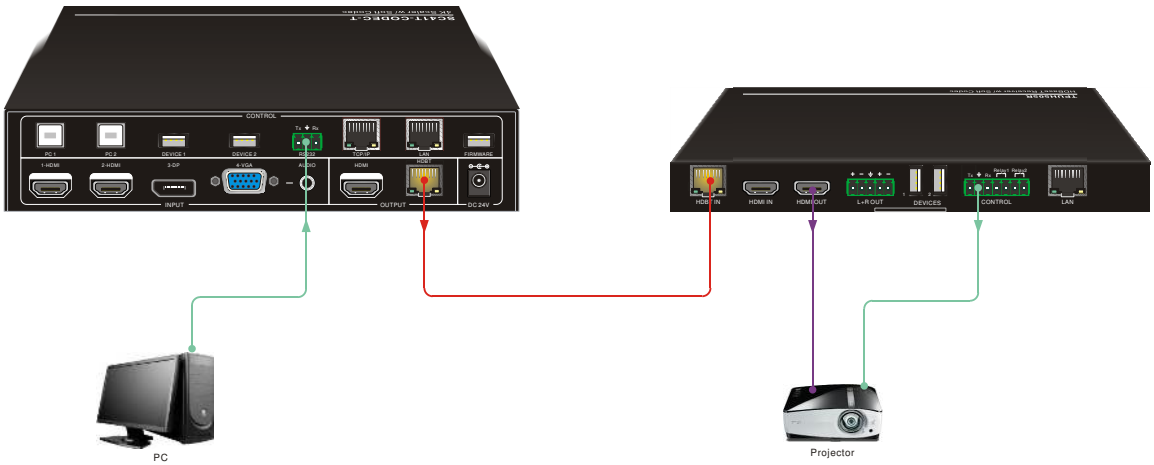
RS232 Connection

There are two RS232 control modes.

- **Control Transmitter**



- **Control Display**



4.3.1. Installation/Removal of RS232 Control Software

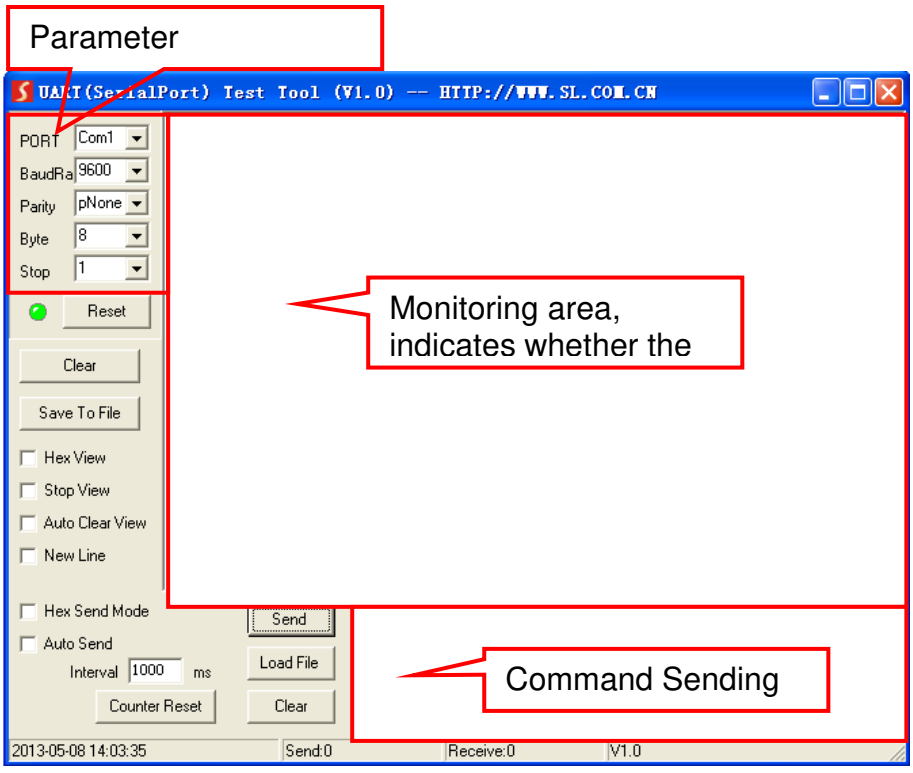
- **Installation:** Copy the control software file to the computer connected with the AVG-SC41T-Codec transmitter.
- **Uninstallation:** Delete all the control software files in corresponding file path.

4.3.2. Basic Settings

To begin with, connect the AVG-SC41T-Codec with all your input devices and output devices required, then connect it to a PC which has some RS232 control software installed. Double-click the software icon to run the software.

Here we have the software **CommWatch.exe** as an example. The icon looks like the image below:

The interface of the control software is shown below:



Please set the parameters of COM port, baud rate, data bit, stop bit and the parity bit correctly, and then you can successfully send commands in the Command Sending Area.

4.3.3. RS232 Control Commands

Communication protocol: RS232 control Protocol **Command Type:** ASCII

Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none

The terminating characters for any of the commands are “<CR><LF>”. That is carriage(h0D) return and line feed(h0A).

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
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

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

Command	Function	Feedback
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
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

Output Resolution

The default output resolution is 3840x2160@30Hz. Below is a list of output resolutions 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

Auto Power Off Setup

Command	Function	Feedback
?GET TIME	Check the auto power-off mode.	Auto Switch Mode no input to shut down time: Disable
		Manual Switch Mode no input to shut down time: Disable
TIME AD	Auto Switch Mode: Disable the auto power-off function.	Auto Switch Mode no input to shut down 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 shut down 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 shut down 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 shut down 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 shut down time: 10 minutes
TIME MD	Manual Switch Mode: Disable auto power-off time function.	Manual Switch Mode no input to shut down time: Disable
TIME M1	Manual Switch Mode: Set the power-off time to 1 minute.	Manual Switch Mode no input to shut down time: 1 minutes
TIME M2	Manual Switch Mode: Set the power-off time to 2 minutes.	Manual Switch Mode no input to shut down time: 2 minutes
TIME M3	Manual Switch Mode: Set the power-off time to 5 minutes.	Manual Switch Mode no input to shut down time: 5 minutes
TIME M4	Manual Switch Mode: Set the power-off time to 10 minutes.	Manual Switch Mode no input to shut down time: 10 minutes

Relay Control

Command	Function	Feedback
RLY1 ON	Turn on the Relay 1.	Relay 1 on
RLY1 OFF	Turn off the Relay 1.	Relay 1 off
RLY2 ON	Turn on the Relay 2.	Relay 2 on
RLY2 OFF	Turn off the Relay 2.	Relay 2 off

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

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!

4.4. OSD Menu Control

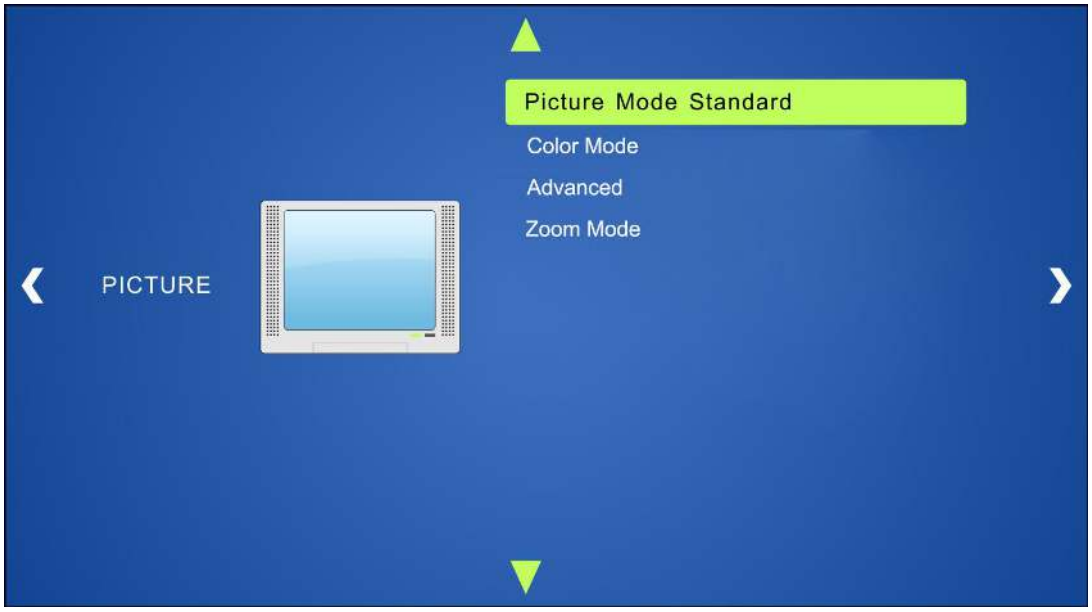
The AVG-SC41T-CODEC features a powerful OSD menu, including picture settings and system setup.

Operation:

- Press the button **MENU/ENTER** to enter OSD menu.
- Press direction buttons (**Left/Right/Up/ down**) to select function on OSD menu.
- Press **MENU/ENTER** button to confirm the selected function.

4.4.1. Picture Menu Item

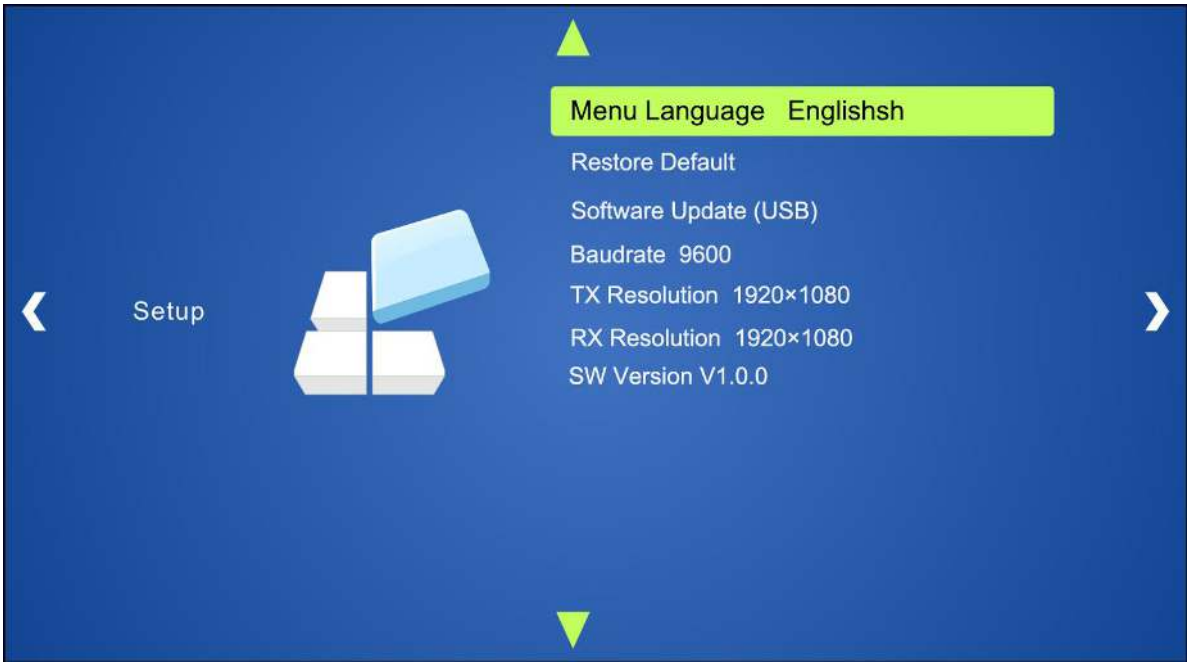
Including Picture Mode, Color Mode, Advanced and Zoom Mode.



- **Picture mode**: Including Dynamic, Standard, Soft, and Personal. Only in Personal mode, will it be able to set the image contrast, brightness, color and sharpness.
- **Color Mode**: Including Normal, Cool, Medium.
- **Advanced**: Including H-Pos, V-Pos, Clock, Phase, and Auto.
- **Zoom Mode**: Including Normal, Zoom, Cinema, Wide.

4.4.2. Setup Menu Items

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

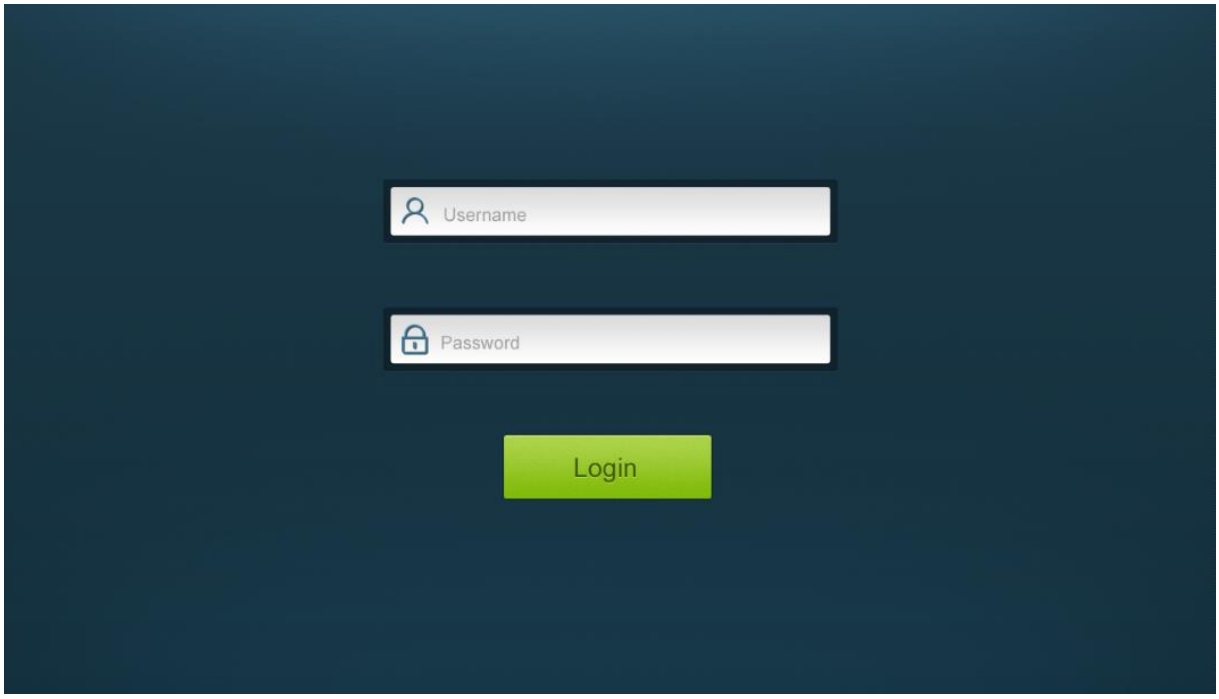


- **Menu Language:** Supports 3 languages, including English (default), French, and Spanish.
- **Restore Default:** Restores to original system state.
- **Software Update (USB):** Insert the USB flash disk with updating file to the FIRMWARE port of the Scaler Switcher, to update the software through this menu.
- **Baudrate:** Set the baud rate for RS232 control, and it support 2400、4800、9600、19200、38400、57600、115200.
- **TX Resolution:** Set the output resolutions for Transmitter, and it support 3840x2160@30Hz, 1920x1080, 1280x720.
- **TX Resolution:** Set the output resolutions for Receiver, and it support 3840x2160@30Hz, 1920x1080, 1280x720.
- **SW Version:** Software version.

4.5. Web-based GUI Control

The AVG-SC41T-CODEC can also be controlled via a web-based GUI. Users can interact with the Scaler Switcher through graphical icons and visual indicators in any web browser window.

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



This system only has a user mode.

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

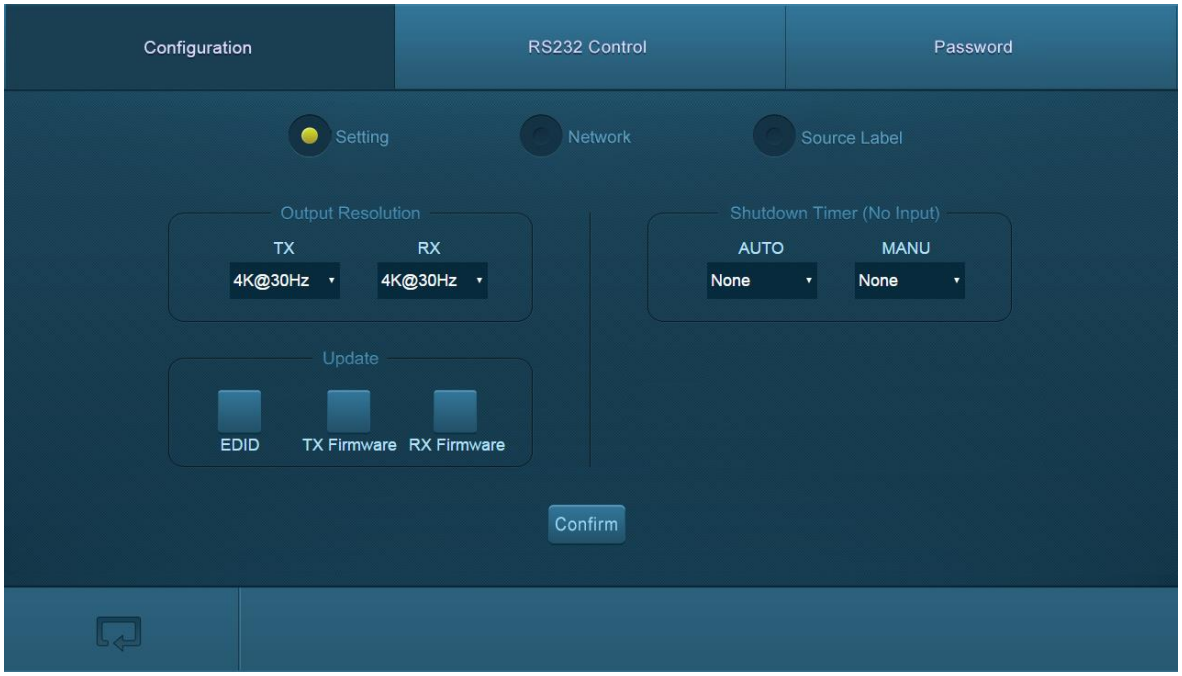
4.5.1 Control Menu

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

- **Sources:**
  - ✓ Click the corresponding button (**1-HDMI**, **2-HDMI**, **3-DP**, **4-VGA** and **RX HDMI**) to select video input source.
  - ✓ Click **AUTO** button to enter auto-switching mode.
- **VGA Audio:** Click this button to turn on/off the VGA auxiliary audio input.
- **Relay1:** Click this button to roll up the projector screen.
- **Relay2:** Click this button to drop the projector screen down.
- **Source:** Click this button to turn on/off source device.
- **Display:** Click this button to turn on/off output display device.
- **Unit:** Click this button to make the Transmitter and Receiver to enter standby mode.
- **TX Volume:** Click **+/-** button or drag the volume bar to adjust volume.

4.5.2. Configuration Menu

1. Click icon in control menu to enter the configuration Menu 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 update 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 update 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 update procedure.
- **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.

2. Click the **Network** button to enter the network setting menu shown as below:

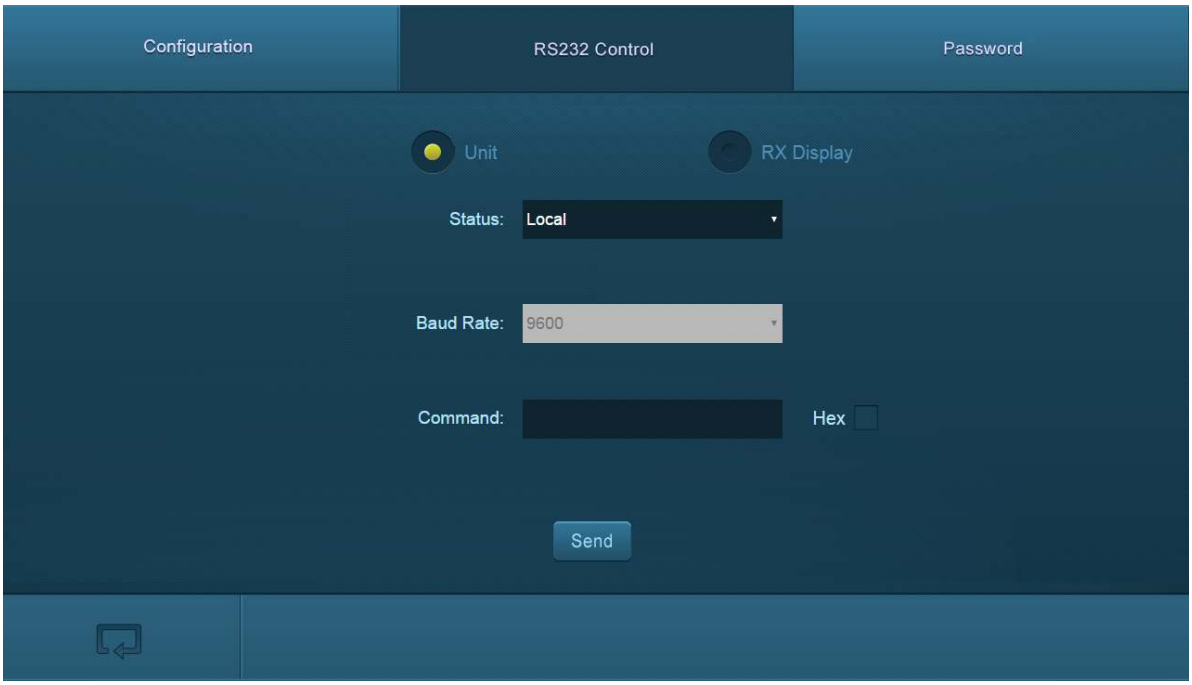
In this interface, dynamic or static IP mode can be selected. Under static IP mode, IP address and subnet mask, gateway can be set. Be sure the IP addresses are different from others on your network to avoid an IP conflict.

3. Click **Source Label** to enter source label setting menu shown as below:

In this interface, you can edit the names of the source inputs to suit your needs.

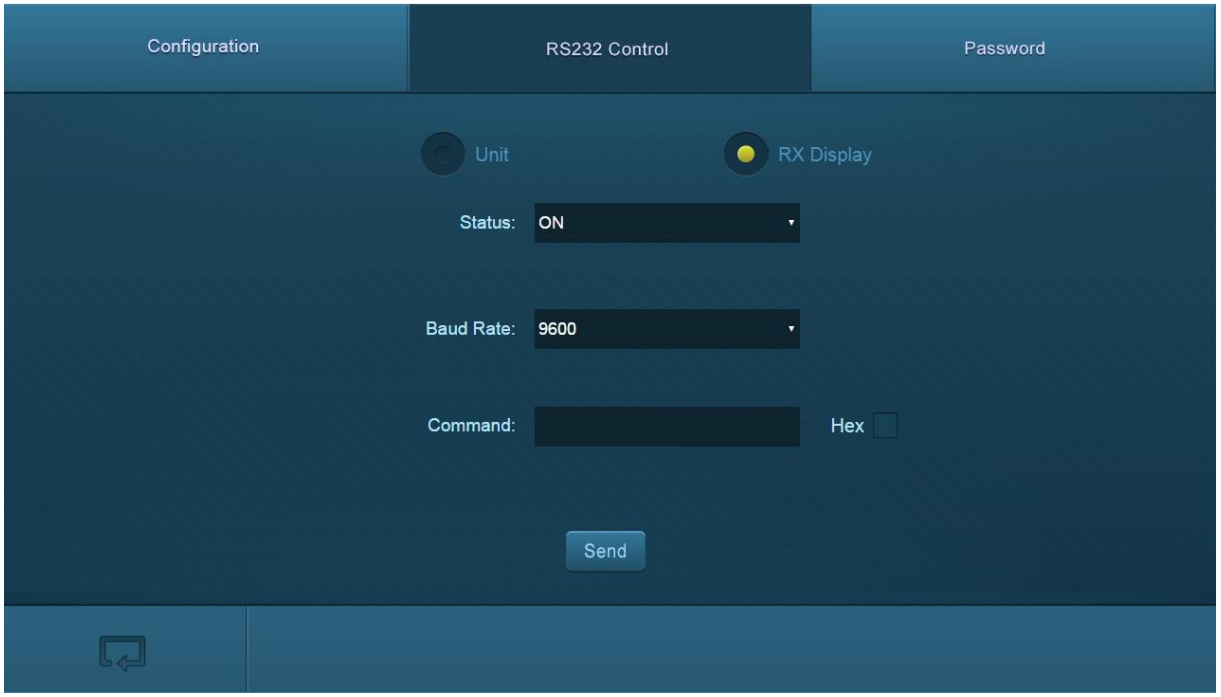
4.5.3 RS232 Control Menu

Click the **RS232 Control** tab on the top of interface to enter the RS232 control menu shown below:



- **Status:**
  - ✓ **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 for HDBT port, it supports 2400、4800、9600、19200、38400、57600、115200.
- **Command:** Typing commands in this box to control the third-party device (such as integrated control system) connected to Transmitter, or the far-end third-party device (such as projector) connected to Receiver. If check the “Hex”, you can type RS232 commands with hexadecimal value in the box.

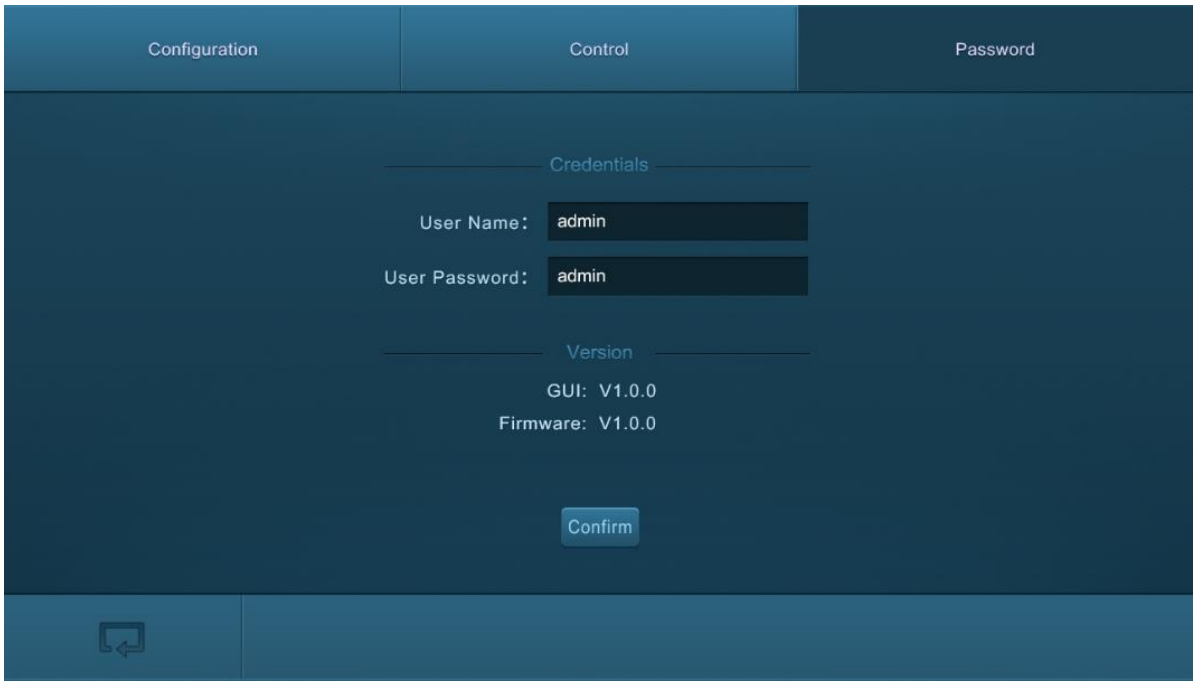
Click **RX DISPLAY** to enter the below menu to set the **ON**/**OFF** button function to turn on/ off the display device (such as projector).



- **Status: ON** or **OFF** can be chosen.
- **Baud Rate:** Supports 2400、4800、9600、19200、38400、57600、115200.
- **Command:** Typing the control command of display device, and then click **Send**, the command will be sent to **DISPLAY ON**/**OFF** button.

4.5.4 Password Menu

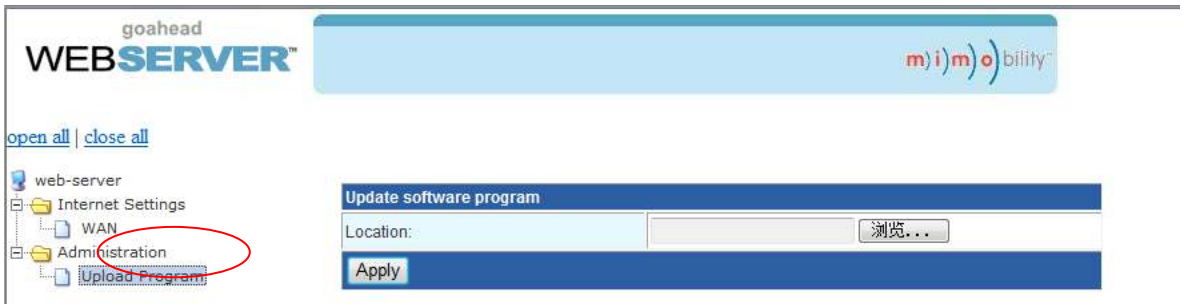
Click the **Password** tab on the top of interface to enter the password menu shown below:



In this interface, the user name and password can be modified as required.

4.5.5 Web-based GUI update

Web-based GUI for the Scaler Switcher features an online update available at http://192.168.0.178:100. Note, if you have changed the IP address of the AVG-SC41T-CODEC, then enter that IP address. Type the username and password (the same as in the GUI log-in settings, a 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 the **Upload Program** option as shown below:



Select the required update file and press Apply, it will then start updating.

5. Specification

Transmitter

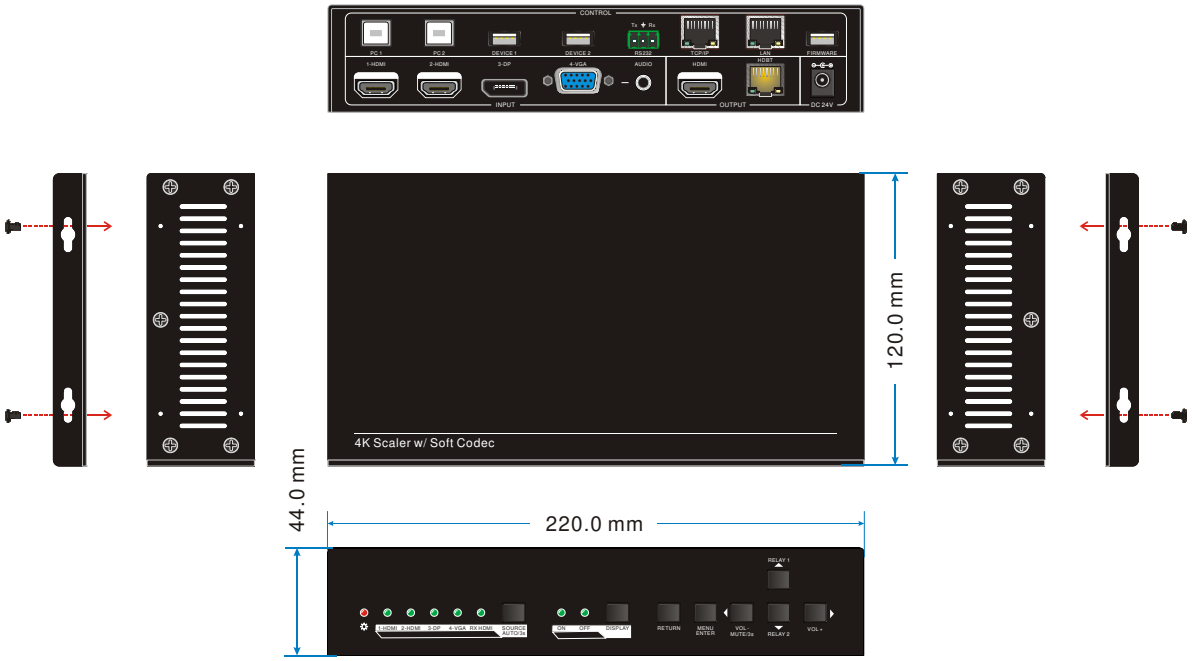
Video	
Video Input	(2) HDMI; (1) DP; (1) VGA
Video Input Connector	(2) Female HDMI; (1) DisplayPort; (1) Female VGA (15-pin)
Input Resolution	HDMI: Up to 4Kx2K@30Hz 4:4:4 DP: Up to 4Kx2K@30Hz 4:4:4 VGA: Up to 1920x1200@50/60Hz
Video Output	(1) HDMI; (1) HDBaseT
Video Output Connector	(1) Female HDMI; (1) RJ45
Output Resolution	Supports 3840x2160@30Hz, 1920x1080, 1280x720
Standards	Compliant with HDMI 1.4 & HDCP2.2
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; (1) TCP/IP; (1) LAN
Control Connector	(2) Type-B USB; (2) Type-A USB; (1)3-pin phoenix connector; (2) RJ45
General	
Transmission Distance	Up to 100m
Operation Temperature	0 ~ +40℃
Storage Temperature	-10 ~ +55℃
Relative Humidity	10% ~ 90%
External Power Supply	Input: AC 100~240V, 50/60Hz; Output: 24VDC 2.71A
System Power Consumption	40w (Max)
Dimension (W*H*D)	220mm x 44mm x 120mm
Net Weight	617g

Receiver

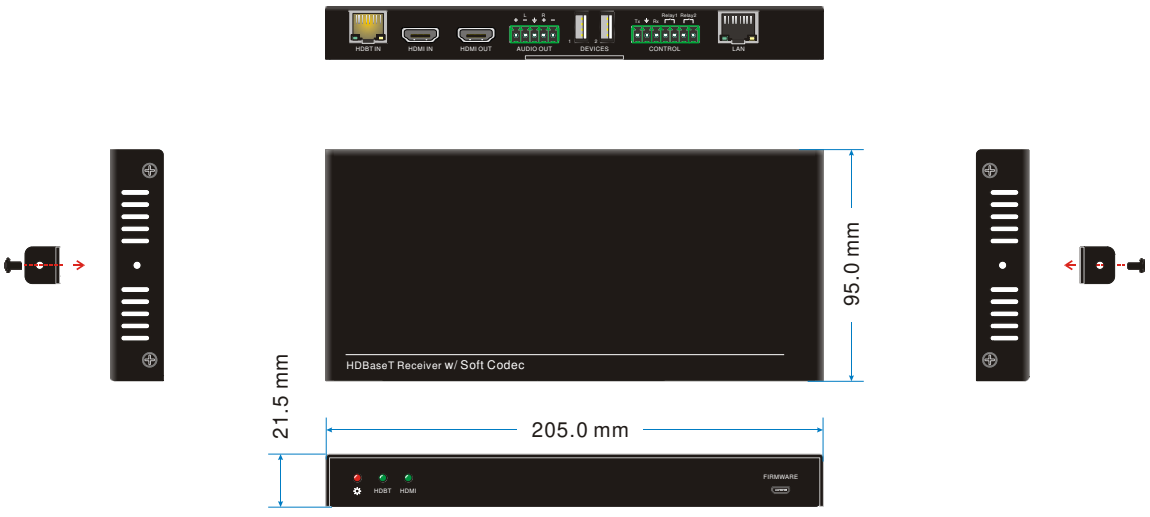
Video	
Video Input	(1) HDBT; (1) HDMI
Video Input Connector	(1) RJ45; (1) Female HDMI
Input Resolution	HDBT: Up to 4Kx2K@30Hz 4:4:4 HDMI: Up to 4Kx2K@30Hz 4:4:4
Video Output	(1) HDMI
Video Output Connector	(1) Female HDMI
Output Resolution	Supports 3840x2160@30Hz, 1920x1080, 1280x720
Standards	Compliant with HDMI 1.4 & HDCP2.2
Audio	
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	(2) DEVICE; (1) RS232; (2) RELAY; (1) LAN
Control Connector	(2) Type-A USB; (1) 3-pin phoenix connector; (2) 2-pin phoenix connector; (1) RJ45
General	
Transmission Distance	Up to100m
Operation Temperature	0 ~ +40℃
Storage Temperature	-10 ~ +55℃
Relative Humidity	10% ~ 90%
External Power Supply	Powered by Transmitter
System Power Consumption	40w (Max)
Dimension (W*H*D)	205mm x 21.5mm x 95mm
Net Weight	358g

6. Panel Drawing

Transmitter



Receiver



7. Troubleshooting & Maintenance

Problems	Causes	Solutions
Output image is white noise	Poor quality HDMI cable or faulty cable.	Change the HDMI cable to a good quality cable.
	Failed or loose connection	Fix the connection
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.
	Failed or loose connection	Fix the connection
	The scaler switcher is broken	Send it to authorized dealer for repairing.
POWER indicator doesn't work. No response to any operations	Failed power cord connection.	Fix the connection.
EDID management does not work normally	The HDMI cable is broken at the output end.	Change for a new good quality HDMI cable.
Static becomes stronger when connecting the video connectors	Poor grounding	Check the grounding and make sure it is connected properly.
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 is faulty.	Send it to authorized dealer for repairing.

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