

**4x2 HDMI/USB-C 4K 18Gbps
Multi-format Collaboration
Switcher with HDBaseT 3.0
100m Out**



User Manual

VER 1.0

Thank you for purchasing this product

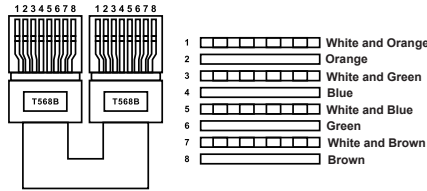
For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Caution

The product requires the use of UTP connectors. Please connect in direct interconnection method and do not cross connect.



Direct Interconnection Method

Table of Contents

| | |
|--|----|
| 1. Introduction..... | 1 |
| 2. Features..... | 1 |
| 3. Package Contents..... | 1 |
| 4. Specifications..... | 2 |
| 5. Operation Controls and Functions..... | 3 |
| 5.1 Switcher Panel..... | 3 |
| 5.2 HDBaseT Remote Panel..... | 5 |
| 5.3 IR Cable Pin Assignment..... | 7 |
| 6. IR Remote..... | 7 |
| 7. Web GUI User Guide..... | 8 |
| 8. RS-232 Control Command..... | 15 |
| 9. Connection Diagram..... | 23 |

1. Introduction

This 4x2 Collaboration Switch features 3 HDMI inputs, 1 USB-C input, 1 HDMI output and 1 HDBT collaboration output. It supports video up to 4K/60 4:4:4 with HDCP 2.3 and features HDBaseT 3.0 extension for uncompressed 4K video, embedded audio, control and USB over distances up to 330 feet (100 meters). USB-C input supports DP Alt mode for A/V, USB 2.0, 100M Ethernet and 60W charging for source device. All inputs and the local HDMI output support 4K HDR and 4K/60 4:4:4 at HDMI data rates up to 18 Gbps. Additionally, 4K to 1080p downscaling is available for the HDMI and HDBaseT outputs when connected to an HD sink. The integrated USB extension addresses the challenge of connecting between USB devices at remote locations and is ideal for software video conferencing and touch or interactive displays.

This Collaboration Switch includes USB 2.0 and USB-C interfaces for four host PCs, plus three peripheral devices such as a camera, microphone, speakerphone, or keyboard and mouse. The receiver also supports local HDMI and USB inputs for BYOD or PC devices. Host and RX both support audio de-embedded to analog balanced or un-balanced output.

2. Features

- ☆ 4x2 Collaboration Switch with HDMI/HDBT 3.0 330ft(100m) extension
- ☆ HDMI 2.0b, HDCP 2.3, 18Gbps
- ☆ HDBaseT 3.0 4K@60Hz up to 330ft(100m)
- ☆ Supports HDR, HDR10+, Dolby Vision LLM, HLG
- ☆ Host: 1x USB-C, 3x HDMI inputs, 3x USB 2.0 hosts and 3x USB 2.0 devices
- ☆ Remote: 1x HDBT, 1x HDMI input, 1x USB 2.0 hosts and 2x USB 2.0 clients
- ☆ USB-C supports ALT-DP mode for A/V, USB 2.0 data, and power charging up to 60 watts
- ☆ 4K to 1080p downscaling features on all HDMI outputs, no frame rate conversion
- ☆ Host/Remote both support analog audio de-embedding
- ☆ CEC and RS-232 external display control on both host and remote
- ☆ EDID management
- ☆ Host supports POE/PSE, Remote supports POE/PD (Remote doesn't have an external DC power supply)
- ☆ The front panel button, RS-232, and TCP/IP control (Host TCP/IP port for API and Web GUI)
- ☆ The host half rack size for easy installation

3. Package Contents

- ① 1 x 4x2 Collaboration Switch
- ② 1 x HDBaseT Recmote Device
- ③ 1 x IR Blaster Cable (1.5 meters)
- ④ 1 x IR Wideband Receiver Cable (1.5 meters)
- ⑤ 2 x 3pin-3.5mm Phoenix Connector (male)
- ⑥ 2 x 5pin-3.5mm Phoenix Connector (male)
- ⑦ 4 x Mounting Ear
- ⑧ 8 x Machine Screw
- ⑨ 1 x 24V/6A Desktop Power Supply & 1 x AC Power Cord (1.5 meters)
- ⑩ 1 x IR Remote
- ⑪ 1 x User Manual

4. Specifications

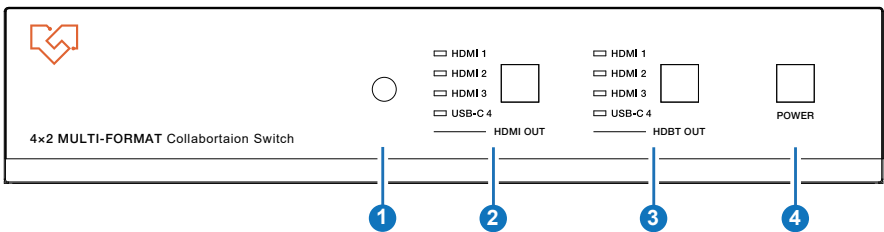
| Technical | |
|-----------------------|--|
| HDMI Compliance | HDMI 2.0b |
| HDCP Compliance | HDCP 2.2 |
| DP Version | DP 1.2 |
| Video Bandwidth | 18Gbps |
| Video Resolution | Up to 4K@60Hz 4:4:4 |
| IR Level | 12Vp-p |
| IR Frequency | Wideband 20K-60KHz |
| Color Space | Input: 8/10/12-bit, 8-bit (4K60Hz 4:4:4) |
| Color Depth | RGB, YCbCr 4:4:4 / 4:2:2, YUV 4:2:0 |
| Audio Formats | <p>USB-C/HDMI/HDBT: LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD</p> <p>AUDIO OUT [Analog audio, balanced 2CH (Max output level 2Vrms) & unbalanced 2CH (Max output level 1Vrms)]</p> |
| Transmission Distance | 4K60 -- 328ft/100m |
| HDR | HDR, HDR10, HDR10+, Dolby Vision, HLG |
| ESD Protection | Human-body Model: ±8kV (Air-gap discharge) , ±4kV (Contact discharge) |
| Connection | |
| Host | <p>Input: 3 x HDMI INPUT [Type A, 19-pin female] 1 x USB-C [24-pin female]</p> <p>Output: 1 x HDMI OUTPUT [Type A, 19-pin female] 1 x HDBT OUTPUT [RJ45] 1 x AUDIO OUTPUT [5pin-3.81mm phoenix connector]</p> <p>Control: 1 x RS-232 [3pin-3.81mm phoenix connector] 1 x TCP/IP [RJ45] 3 x USB HOST [USB Type B] 3 x USB DEVICES [USB Type A] 1 x IR IN [3.5mm stereo mini-jack] 1 x IR OUT [3.5mm stereo mini-jack]</p> |

| | |
|-----------------------|---|
| Remote | Input: 1 x HDMI IN [Type A, 19-pin female] 1 x HDBaseT IN [RJ45] Output: 1 x HDMI OUT [Type A, 19-pin female] 1 x LINE OUT [5pin-3.81mm phoenix connector] Control: 1 x RS-232 [3pin-3.81mm phoenix connector] 1 x USB HOST [USB Type B] 2 x USB DEVICES [USB Type A] 1 x SERVICE [Micro USB] 1 x IR IN [3.5mm stereo mini-jack] 1 x IR OUT [3.5mm stereo mini-jack] |
| Mechanical | |
| Housing | Front panel: Aluminum; Rear case: Metal Enclosure |
| Color | Black |
| Dimensions | Host: 220mm [W]×150mm [D]×44mm [H] Remote: 140mm [W]×105mm [D]×21.5mm [H] |
| Weight | Host: 1.16Kg; Remote: 424g |
| Power Supply | Input: AC100 - 240V 50/60Hz Output: DC 24V/6A (US/EU standard, CE/FCC/UL certified) |
| Power Consumption | 100W (Max) |
| 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-condensation) |

5. Operation Controls and Functions

5.1 Switcher Panel

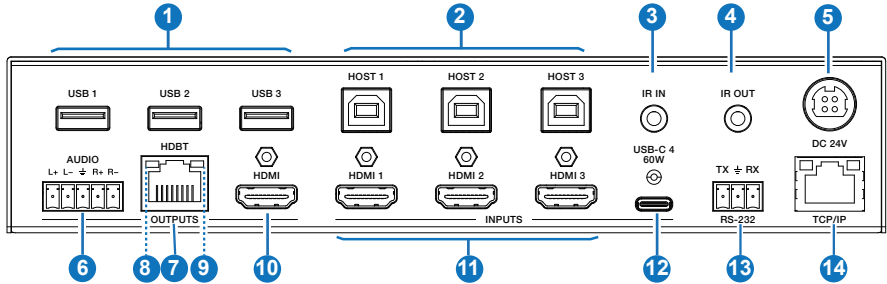
Front Panel



| No. | Name | Function Description |
|-----|---|--|
| 1 | IR Window | IR signal receiving window, receiving the IR remote signal. |
| 2 | HDMI OUT button & HDMI 1 / HDMI 2 / HDMI 3 / USB-C 4 LEDs | Press the HDMI OUT button to circularly select the HDMI 1 / HDMI 2 / HDMI 3 / USB-C 4 port as the signal input channel for HDMI output, the corresponding LED will be on. The button light will automatically turn off after 1 second each time. |

| No. | Name | Function Description |
|-----|---|--|
| 3 | HDBT OUT button & HDMI 1 / HDMI 2 / HDMI 3 / USB-C 4 LEDs | Press the HDBT OUT button to circularly select the HDMI 1 / HDMI 2 / HDMI 3 / USB-C 4 port as the signal input channel for HDBT output, the corresponding LED will be on. The button light will automatically turn off after 1 second each time. |
| 4 | POWER button | Press and hold this button for 3 seconds, the product will enter standby mode and the button light will be on. In standby mode, short press this button, the product will be turned on and the button light will be off. |

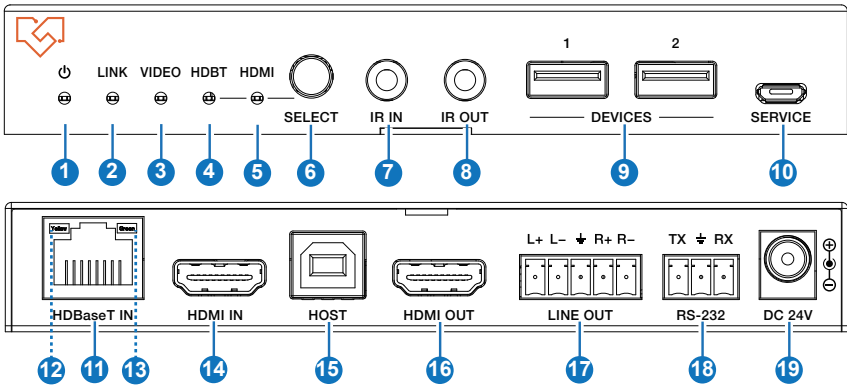
Rear Panel



| No. | Name | Function Description |
|-----|--------------------------------|---|
| 1 | USB 1/2/3 port | Three USB extension ports, connected to mouse, keyboard, USB camera or other USB devices. |
| 2 | HOST 1/2/3 port | Three USB Host ports, connected to PC. |
| 3 | IR IN port | Connect the IR receiver cable, used for IR signal pass-through or controlling this product via the IR remote. |
| 4 | IR OUT port | Connect the IR blaster cable, the IR signal is from the IR IN port of the HDBaseT Receiver. |
| 5 | DC 24V port | Power port, connected to the DC 24V power adapter. |
| 6 | AUDIO OUTPUT port | Analog audio output port, supporting balanced audio input (with a maximum support of 2Vrms) and unbalanced audio input (with a maximum support of 1Vrms). Balanced connection method: L+, L-, $\frac{\ominus}{\oplus}$, R+, R- Unbalanced connection method: L+, $\frac{\ominus}{\oplus}$, R+ Note: This port is used to output the de-embedding audio from the HDBT OUTPUT port, and it supports volume adjustment through Web GUI or API command. |
| 7 | HDBT OUTPUT port | HDBaseT output port, connected to the HDBaseT IN port of the receiver with a CAT6A (F/FTP) cable. |
| 8 | Data Signal Indicator (Yellow) | <ul style="list-style-type: none"> Light on: HDMI signal input with HDCP. Light flashing: HDMI signal input without HDCP. Light off: No HDMI signal input. |

| No. | Name | Function Description |
|-----|-------------------------------|--|
| 9 | Link Signal Indicator (Green) | <ul style="list-style-type: none"> Light on: Transmitter and Receiver are in good connection status. Light flashing: Transmitter and Receiver are in poor connection status. Light off: Transmitter and Receiver are not connected. |
| 10 | HDMI OUTPUT port | HDMI signal output port, connected to HDMI display device such as TV or monitor with HDMI cable. |
| 11 | HDMI 1/2/3 INPUT ports | HDMI signal input ports, connected to HDMI source device such as DVD or Blu-ray player with HDMI cable. |
| 12 | USB-C 4 port | USB-C signal input port, connected to USB-C signal source device, with the function of 60W charging. |
| 13 | RS-232 port | RS-232 serial port, used for RS-232 signal pass-through or controlling this product via RS-232 commands. |
| 14 | TCP/IP port | Connect to a router or Switch for USB-C Internet access or Web GUI control. |

5.2 HDBaseT Remote Panel

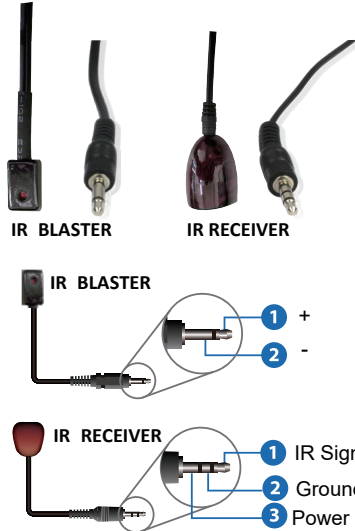


| No. | Name | Function Description |
|-----|-----------|--|
| 1 | Power LED | When the receiver is powered on, the red power LED will be on. |
| 2 | LINK LED | <ul style="list-style-type: none"> Light on: Transmitter and Receiver are in good connection status. Light flashing: Transmitter and Receiver are in poor connection status. Light off: Transmitter and Receiver are not connected. |
| 3 | VIDEO LED | <ul style="list-style-type: none"> Light on: HDMI signal input with HDCP. Light flashing: HDMI signal input without HDCP. Light off: No HDMI signal input. |
| 4 | HDBT LED | When the HDBaseT IN port is selected as the signal input channel, the green HDBT LED will be on. |

| No. | Name | Function Description |
|-----|--------------------------------|--|
| 5 | HDMI LED | When the HDMI IN port is selected as the signal input channel, the green HDMI LED will be on. |
| 6 | SELECT button | Press this button to select signal input channel. |
| 7 | IR IN port | Connect the IR receiver cable, the IR signal will be sent to the IR OUT port of the transmitter. |
| 8 | IR OUT port | Connect the IR blaster cable, the IR signal is from the IR IN port of the transmitter. |
| 9 | DEVICES ports | Two USB extension ports, connected to whiteboard, mouse, keyboard, USB camera or other USB devices. |
| 10 | SERVICE port | Firmware update port. |
| 11 | HDBaseT IN port | HDBaseT input port, connected to the HDBT OUTPUT port of the transmitter with a CAT6A (F/FTP) cable. |
| 12 | Data Signal Indicator (Yellow) | <ul style="list-style-type: none"> ▪ Light on: HDMI signal input with HDCP. ▪ Light flashing: HDMI signal input without HDCP. ▪ Light off: No HDMI signal input. |
| 13 | Link Signal Indicator (Green) | <ul style="list-style-type: none"> ▪ Light on: Transmitter and Receiver are in good connection status. ▪ Light flashing: Transmitter and Receiver are in poor connection status. ▪ Light off: Transmitter and Receiver are not connected. |
| 14 | HDMI IN port | HDMI signal input port, connected to HDMI source device such as DVD or Blu-ray player with HDMI cable. |
| 15 | HOST port | USB Host port, connected to PC. |
| 16 | HDMI OUT port | HDMI signal output port, connected to HDMI display device such as TV or monitor with HDMI cable. |
| 17 | LINE OUT port | Analog audio output port, supporting balanced audio output (with a maximum support of 2Vrms) and unbalanced audio output (with a maximum support of 1Vrms). Balanced connection method: L+, L-, \pm , R+, R- Unbalanced connection method: L+, \pm , R+ |
| 18 | RS-232 port | RS-232 serial port, used for RS-232 signal pass-through or controlling this receiver via RS-232 commands. |
| 19 | DC 24V port | Power port, connected to the DC 24V power adapter. Note: The receiver also can be powered by PoE (through the HDBaseT IN port). |

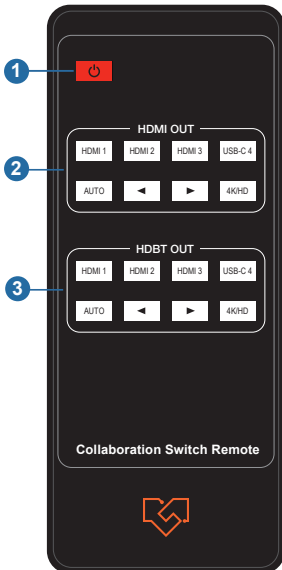
5.3 IR Cable Pin Assignment

The pin assignment of the IR Receiver cable and IR Blaster cable is as below:



Note: When the angle between the IR receiver and the remote control is $\pm 45^\circ$, the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is $\pm 90^\circ$, the transmission distance is 0-8 meters.

6. IR Remote



- ① Power button:** Press this button to power on the switcher or set it to standby mode.
- ② HDMI OUT control:**
HDMI 1 / HDMI 2 / HDMI 3 / USB-C 4: Press these buttons to select input source for HDMI output, and the corresponding input LED on the front panel will be on.
◀ ▶: Press these buttons to circularly select the last or next input source for HDMI output.
AUTO: Press this button to enable/disable the auto switching function.
4K/HD: Press this button to set the output scaling mode (Auto/Bypass/Force 1080p)
- ③ HDBT OUT control:**
HDMI 1 / HDMI 2 / HDMI 3 / USB-C 4: Press these buttons to select input source for HDBT output, and the corresponding input LED on the front panel will be on.
◀ ▶: Press these buttons to circularly select the last or next input source for HDBT output.
AUTO: Press this button to enable/disable the auto switching function.
4K/HD: Press this button to set the output scaling mode (Auto/Bypass/Force 1080p)

7. Web GUI User Guide

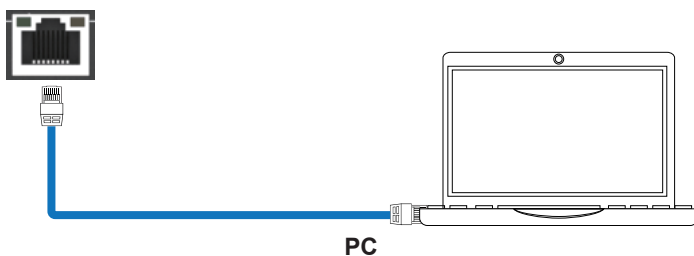
The Collaboration Switch can be controlled by Web GUI. The operation method is shown as below:

Step 1: Get the current IP Address.

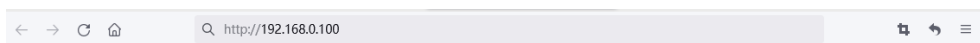
The default IP address is 192.168.0.100 (when the system is not connected to a router). You can get the current Collaboration IP address via RS-232 command control. Send the ASCII command "r ip addr" through a Serial Command tool, then you'll get the current IP address (The IP address is variable, depending on what the specific machine returns).

For the details of RS-232 control, please refer to "8. RS-232 Control Command".

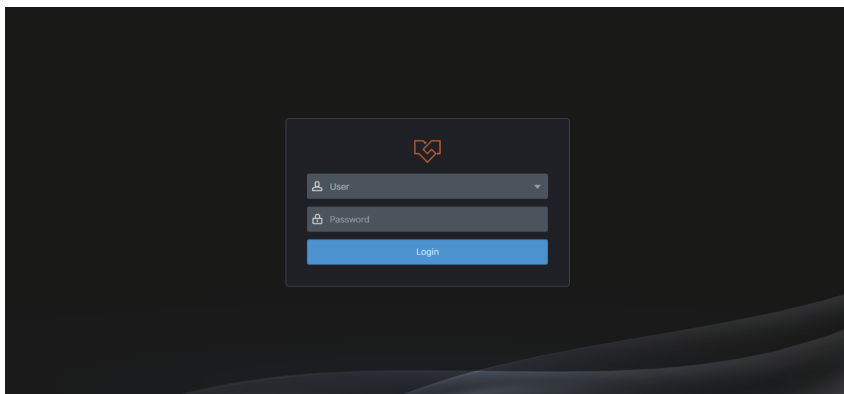
Step 2: Connect the TCP/IP port of the Collaboration Switch to a PC with an UTP cable (as shown in the following figure), and set the IP address of the PC to be in the same network segment with the Collaboration Switch.



Step 3: Input the current IP address of Collaboration Switch into your browser on the PC to enter Web GUI interface.



After entering the Web GUI page, there will be a Login interface, as shown below:

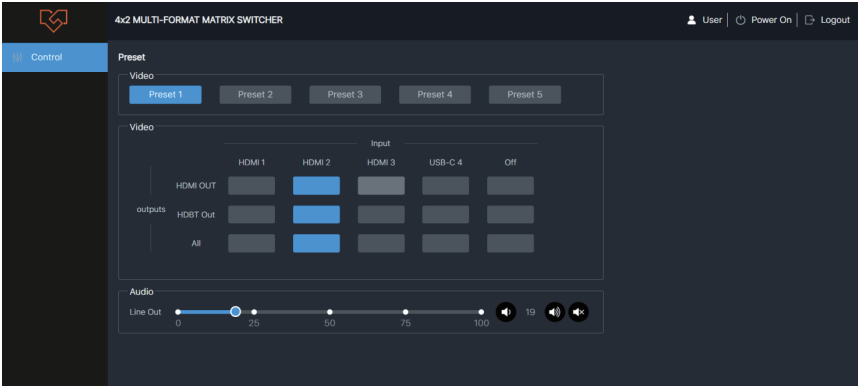


The default usernames and passwords are as below:

| | | |
|----------|-------------|--------------|
| Username | User | Admin |
| Password | 1234 | 1234 |

Select the username “User” and input the password “1234”, then click the “Login” button to enter the User page.

■ User Page

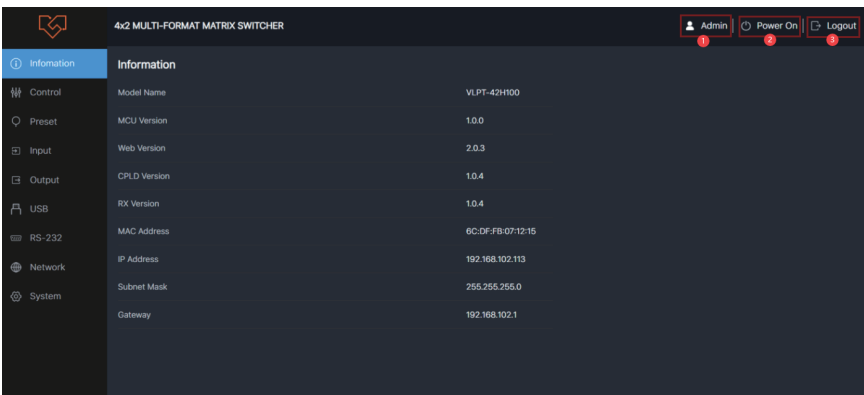


You can do the following operations on the User page:

- ① **Preset:** Recall the preset application scenes. (Note: The preset name only displays 8 characters.)
- ② **Video:** Select the input source for output to set the video switching.
- ③ **Audio:** Set the audio volume or mute/unmute the audio for Line Out, which is the de-embedding audio from HDBT output.

In the Login interface, select the username “Admin” and input the password “1234”, then click the “Login” button to enter the Information page of the Admin interface.

■ Information Page

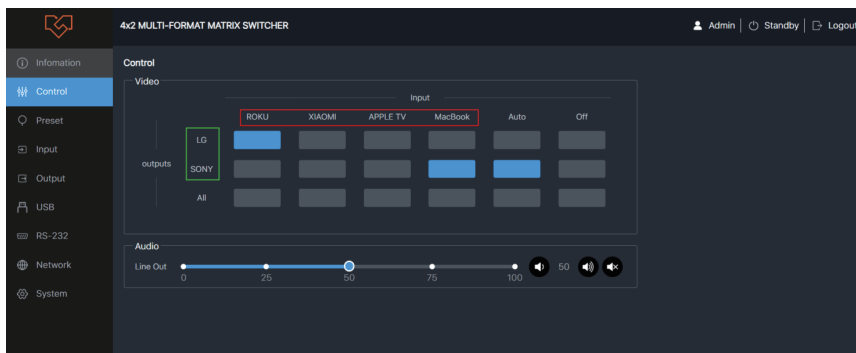


The Information page provides basic information about the model name, software version and the network settings of the device.

Besides, you can do the following operations on each page of the Admin interface.

- ① Display the current username (User or Admin).
- ② Click the power icon to power on the switcher or set it in standby mode.
- ③ Click the logout icon to logout and return to the login interface.

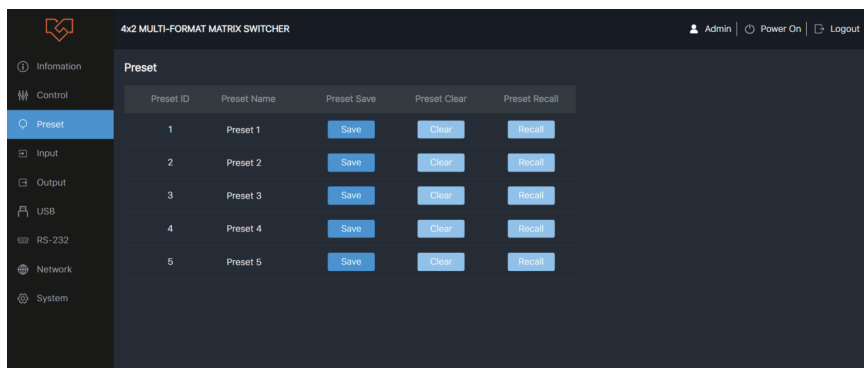
■ Control Page



You can do the following operations on the User page:

- ① **Video:** Select the input source for output to set the video Collaboration Switching.
Note: The name of the input source/output device can be modified in the Input/Output page.
- ② **Audio:** Set the audio volume or mute/unmute the audio for TX Line Out, which is the de-embedding audio from HDBT output.

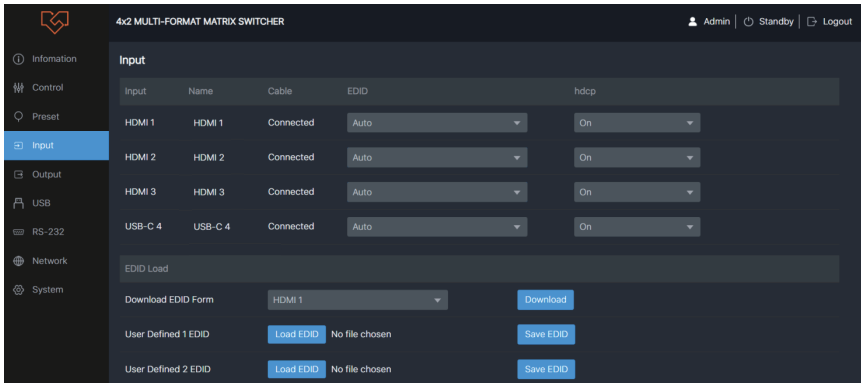
■ Preset Page



You can set up to 5 preset scenes on the Preset page.

- ① **Preset Name:** You can name the preset scene with a maximum of 16 characters. (Chinese name is not supported.)
- ② **Preset Save:** Click the Save button to save the scene.
- ③ **Preset Clear:** Click the Clear button to clear the saved scene.
- ④ **Preset Recall:** Click the Recall button to recall the saved scene.

■ Input Page



You can do the following operations on the Input page.

Input Setting

- ① **Name:** The name of the input port. You can name it with a maximum of 8 characters.
- ② **Cable:** It indicates the connection status of the input port.
- ③ **EDID:** Click the drop-down list to set EDID for each input port. The EDID list is as below.

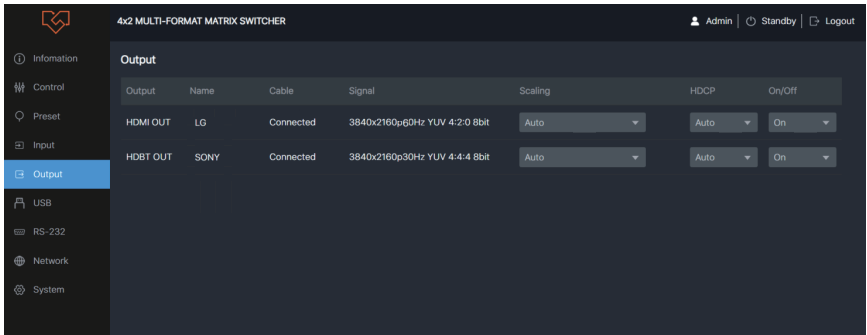
| No. | EDID Mode | No. | EDID Mode |
|-----|------------------------------|-----|-----------------------------|
| 1 | Auto | 9 | 1680x1050, Stereo Audio 2.0 |
| 2 | Copy HDMI OUT | 10 | 1600x1200, Stereo Audio 2.0 |
| 3 | Copy HDBT OUT | 11 | 1440x900, Stereo Audio 2.0 |
| 4 | 4K2K60_444, Stereo Audio 2.0 | 12 | 1360x768, Stereo Audio 2.0 |
| 5 | 4K2K30_444, Stereo Audio 2.0 | 13 | 1280x1024, Stereo Audio 2.0 |
| 6 | 1080P, Stereo Audio 2.0 | 14 | 1024x768, Stereo Audio 2.0 |
| 7 | 720P, Stereo Audio 2.0 | 15 | User Defined 1 |
| 8 | 1920x1200, Stereo Audio 2.0 | 16 | User Defined 2 |

- ④ **hdcp:** Click the drop-down list to set HDCP.

EDID Load

- ① Click the drop-down list to select HDMI 1\HDMI 2\HDMI 3\USB-C 4\HDMI OUT\HDBT OUT for EDID download.
- ② Click the Download button to download EDID and generate a .bin file.
- ③ Click the Load EDID button to download user-defined EDID. Please note that only .bin files are supported.
- ④ Click the Save EDID button to save the user-defined EDID.

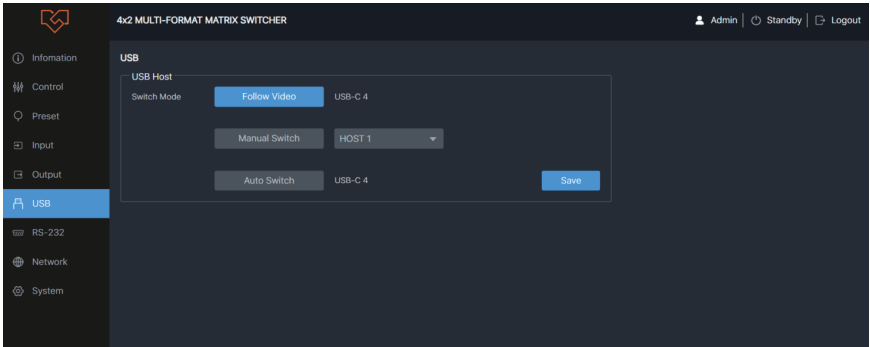
■ Output Page



You can do the following operations on the Output page:

- ① **Name:** The name of the output port. You can name it with a maximum of 8 characters.
- ② **Cable:** It indicates the connection status of the output port.
- ③ **Signal:** The video information of the output signal.
- ④ **Scaling:** Set the video output mode (Auto/Bypass/Force 1080p).
- ⑤ **HDCP:** Set the HDCP output (Auto/HDCP1.4/HDCP2.2).
- ⑥ **On/Off:** Turn on/off the video output.

■ USB Page



USB Host Switch Mode

- ① **Follow Video:** Click this button to set the USB transmission follow the video switch (follow the HDBT output).
 - ② **Manual Switch:** Switch to HOST 1\ HOST 2\ HOST 3\USB-C 4 manually.
 - ③ **Auto Switch:** Detect and switch to HOST 1\ HOST 2\ HOST 3\USB-C 4 automatically.
- After setting up, click “Save” to take effect.

■ RS-232 Page

The screenshot shows the 'RS-232 Settings' interface. It is divided into two columns: 'Local RS-232' and 'HDBT RS-232'. Each column contains four dropdown menus for 'Baud Rate', 'Data Bit', 'Parity', and 'Stop Bit'. The 'Local RS-232' settings are: Baud Rate: 115200, Data Bit: 8 Bit, Parity: None, Stop Bit: 1 Bit. The 'HDBT RS-232' settings are: Baud Rate: 115200, Data Bit: 8 Bit, Parity: None, Stop Bit: 1 Bit. A blue 'Save' button is located at the bottom of each column.

The screenshot shows the 'RS-232 Commands (Display Auto Power)' interface. It is divided into two main sections: 'Local RX-232 Commands' and 'Remote RS-232 Commands'. Each section has a toggle switch for 'Local RX-232 Commands' (OFF) and 'Remote RS-232 Commands' (OFF). The 'Local RX-232 Commands' section also has a 'HEX' toggle switch (ON). Below each section are four input fields: 'Display On Command', 'Display Off Command', 'Delay 1' (with a '(s)' unit), and 'Delay 2' (with a '(s)' unit). A blue 'Save' button is located at the bottom center.

RS-232 Settings

① **Local RS-232:** You can set the Baud Rate, Data Bit, Parity and Stop Bit for the RS-232 port of the transmitter.

② **HDBT(Remote) RS-232:** You can set the Baud Rate, Data Bit, Parity and Stop Bit for the RS-232 port of the receiver.

RS-232 Commands (Display Auto Power)

① **Local/Remote RS-232 Commands:** You can turn on/off the local/remote RS-232 commands and hex.

② **Display On/Off Command:** You can input the display on/off command of the device.

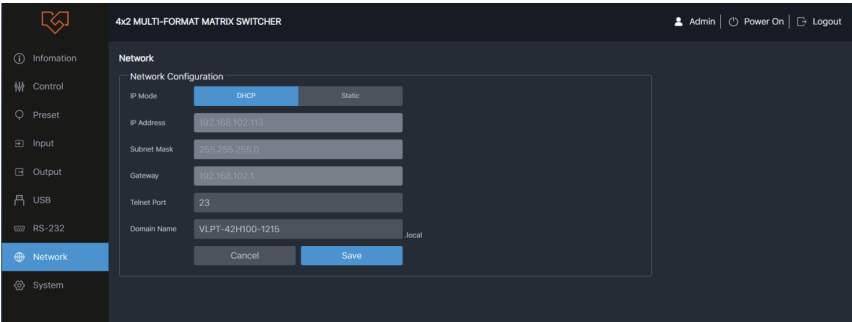
③ **Delay 1:** You can set the delay time for the next action (such as send the Display Input Select command).

④ **Display Input Select:** You can input the command of switching the input channel for the display device.

⑤ **Delay 2:** You can set the delay time for the next action after sending the Display Input Select command.

After setting up, click "Save" to take effect.

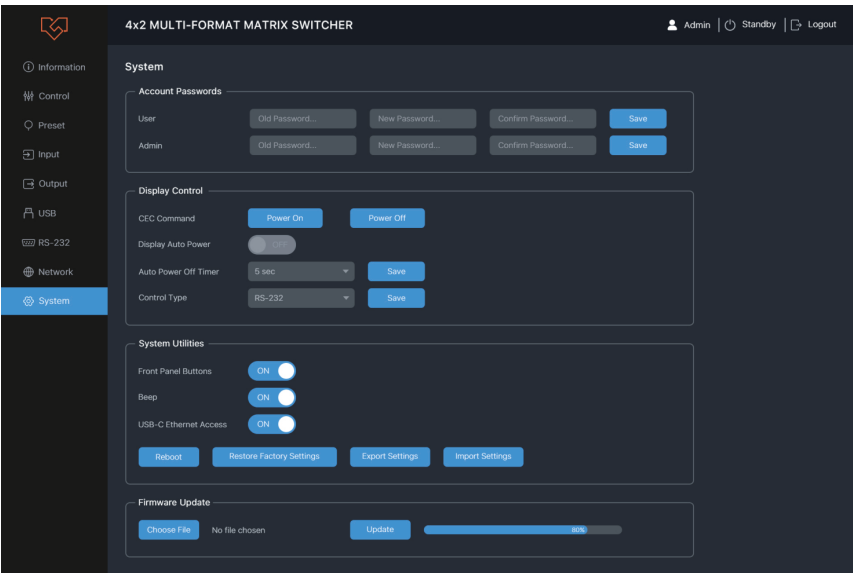
■ Network Page



Network Configuration: You can set the IP Mode (DHCP/Static), IP Address, Subnet Mask, Gateway, Telnet Port and Domain Name.

Note: The Domain Name “VLPT-42H100-1215.local” can be used to login the Web GUI. After setting up, click “Save” to take effect. Or you can click “Cancel” to cancel the setting.

■ System Page



Account Passwords: You can modify the login password for User and Admin. After setting up, click “Save” to take effect.

Display Control

① **CEC Command:** You can power on/off the CEC command.

② **Display Auto Power:** You can turn on/off the Display Auto Power. When it is set to ON, you can control the display device power on/off or switch the port based on the power status (power on/standby) or the signal input status of the transmitter by sending serial port or CEC Power On/Off command.

- ③ **Auto Power off Timer:** Click the drop-down list to select the delay time for sending the command to turn off the display device when the transmitter is in standby mode or there is no signal input.
- ④ **Control Type:** Click the drop-down list to select the control type.

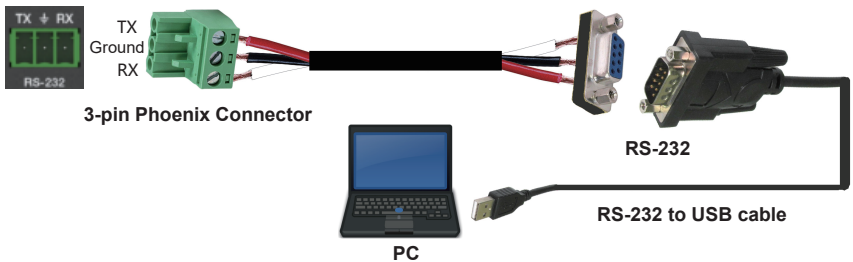
System Utilities

- ① **Front Panel Buttons:** Click “ON/OFF” to lock/unlock panel buttons. “On” indicates that panel buttons are available; “OFF” indicates panel buttons are unavailable.
- ② **Beep:** Click “ON/OFF” to turn on/off the beep.
- ③ **USB-C Ethernet Access:** Click “ON/OFF” to turn on/off the Ethernet access function of USB-C.
- ④ **Reboot:** Click “Reboot” to reboot the switcher.
- ⑤ **Restore Factory Settings:** Click this button to restore the switcher to factory settings.
- ⑥ **Export Settings:** Click this button to export configuration files.
- ⑦ **Import Settings:** Click this button to import configuration files.

Firmware Update: You can update the software of MCU, Web, CPLD or receiver. Click “Choose File” to select the update file, then click “Update” to start update. When the progress bar reaches 100%, the update is complete.

8. RS-232 Control Command

The product also supports RS-232 command control. Connect the RS-232 port of the product to a PC with a 3-pin phoenix connector cable and an RS-232 to USB cable. The connection method is as follows.



Then open a Serial Command tool on PC to send ASCII commands to control the product. The ASCII command list about the product is shown as below.

ASCII Command

Serial port protocol: Baud rate: 115200 (default), Data bits: 8bit, Stop bits:1, Parity bit: none
 TCP/IP protocol port: 8000

x - Parameter 1, y - Parameter 2

| Command Code | Function Description | Example | Feedback | Default Setting |
|-----------------------|--|--------------|--|---|
| System Setting | | | | |
| ? | Get the list of all commands | ? | <pre> ===== VLPT-42H100 Help Info MCU 1.1.0 Web 1.1.0 FPGA 1.1.0 RX 1.1.0 ===== System Setting Command ? Get the list of all commands help Get the list of all commands r type Get device model ===== </pre> | List all API commands. |
| help | Get the list of all commands | help | <pre> ===== VLPT-D6 Help Info MCU 1.1.0 Web 1.1.0 FPGA 1.1.0 RX 1.1.0 ===== System C6 Command ? Get the list of all commands help Get the list of all commands r type Get device model ===== </pre> | List all API commands. |
| r type | Get device model | r type | VLPT-42H100 | |
| r status | Get device current status | r status | | List current status. Please see Status Feedback sheet |
| r fw version | Get Firmware version | r fw version | MCU 1.1.0 Web 1.1.0 FPGA 1.1.0 RX 1.1.0 | |
| s power on | Power on the device | s power on | Power on System Initializing... Initialization Finished! MCU 1.1.0 Web 1.1.0 FPGA 1.1.0 RX 1.1.0 | |
| s power off | Power off the device | s power off | Power off | |
| r power | Get current power state | r power | power on /power off | |
| s reboot | Reboot the device | s reboot | Reboot... System Initializing... Initialization Finished! MCU 1.1.0 Web 1.1.0 FPGA 1.1.0 RX 1.1.0 | |
| s reset | Reset system settings to default (Should type "Yes" to confirm, "No" to discard) | s reset | Sure to Reset System Settings To Default? Type "Yes" after next prompt to confirm... | |
| s reset all | Reset system and network settings to default (Should type "Yes" to confirm, "No" to discard) | s reset all | Sure to Reset System and Network Settings To Default? Type "Yes" after next prompt to confirm... | |

| Command Code | Function Description | Example | Feedback | Default Setting |
|------------------------------|---|--------------------------|---|-----------------|
| s front button on/off | Set front button on/off | s front button on | Set front button on | on |
| r front button | Get front button on/off status | r front button | Front button on | |
| s beep on/off | Set buzzer on/off | s beep on | Set beep on | off |
| r beep | Get buzzer on/off status | r beep | Beep on | |
| s USBC access network on/off | Set USB-C access network feature on/off | s USBC access network on | Set USB-C access network feature on | on |
| r USBC access network | Get USB-C access network feature on/off status | r USBC access network | USB-C access network feature on | |
| Input Setting | | | | |
| s input x EDID y | Set input EDID (x=0~4) (y=1~16) x=0: all inputs x=1: HDMI 1 x=2: HDMI 2 x=3: HDMI 3 x=4: USB-C 4 y=1: Auto (HDBT or HDMI or HDBT+HDMI) y=2: Copy HDMI OUT y=3: Copy HDBT OUT y=4: 4K2K60_444, Stereo Audio 2.0 y=5: 4K2K30_444, Stereo Audio 2.0 y=6: 1080P, Stereo Audio 2.0 y=7: 720p, Stereo Audio 2.0 y=8: 1920x1200, Stereo Audio 2.0 y=9: 1680x1050, Stereo Audio 2.0 y=10: 1600x1200, Stereo Audio 2.0 y=11: 1440x900, Stereo Audio 2.0 y=12: 1360x768, Stereo Audio 2.0 y=13: 1280x1024, Stereo Audio 2.0 y=14: 1024x768, Stereo Audio 2.0 y=15: User Defined 1 y=16: User Defined 2 | s input 0 EDID 1 | Set all input EDID: Auto | 1 |
| r input x EDID | Get input EDID mode (x=0~4) x=0: all inputs x=1: HDMI 1 x=2: HDMI 2 x=3: HDMI 3 x=4: USB-C 4 | r input 0 EDID | Input HDMI 1(Name) EDID: Auto Input HDMI 2(Name) EDID: Auto Input HDMI 3(Name) EDID: Auto Input USB-C 4(Name) EDID: Auto | |
| r input x EdidData | Get input EDID Data (x=0~4) x=0: all inputs x=1: HDMI 1 x=2: HDMI 2 x=3: HDMI 3 x=4: USB-C 4 | r input 0 EdidData | Input HDMI 1(Name) EDID Data: <00 FF FF FF....> Input HDMI 2(Name) EDID Data: <00 FF FF FF....> Input HDMI 3(Name) EDID Data: <00 FF FF FF....> Input USB-C 4(Name) EDID Data: <00 FF FF FF....> | |

| Command Code | Function Description | Example | Feedback | Default Setting |
|--------------------------|---|----------------------|---|-----------------|
| s input x HDCP on/off | Set input HDCP (x=0-4) on/off x=0: all inputs x=1: HDMI 1 x=2: HDMI 2 x=3: HDMI 3 x=4: USB-C 4 | s input 0 HDCP on | Set all input HDCP: On | on |
| r input x HDCP | Get input HDCP (x=0-4) on/off status | r input 0 HDCP | Input HDMI 1(Name) HDCP: On Input HDMI 2(Name) HDCP: On Input HDMI 3(Name) HDCP: On Input USB-C 4(Name) HDCP: On | |
| Output Setting | | | | |
| s output x from y | Set output (x=0-2) from input (y=0-4) x=0: all outputs (HDMI/HDBT), x=1: HDMI output x=2: HDBT output y=0: Off y=1: HDMI 1 y=2: HDMI 2 y=3: HDMI 3 y=4: USB-C 4 | s output 0 from 1 | Set HDMI(Name) output from: HDMI 1(Name) Set HDBT(Name) output from: HDMI 1(Name) | 1 |
| r output x from | Get output (x=0-2) from which input x=0: all outputs (HDMI/HDBT), x=1: HDMI output x=2: HDBT output | r output 0 from | HDMI(Name) output from: HDMI 1(Name) HDBT(Name) output from: HDMI 1(Name) | |
| s output x scaling y | Set output (x=0-2) scaling (y=1-3) x=0: all outputs (HDMI/HDBT) x=1: HDMI output x=2: HDBT output y=1: Auto y=2: Bypass y=3: Force 1080p | s output 0 scaling 1 | Set HDMI(Name) output scaling: Auto Set HDBT(Name) output scaling: Auto | 1 |
| r output x scaling | Get output scaling status | r output 0 scaling | HDMI(Name) output scaling: Auto HDBT(Name) output scaling: Auto | |
| s output x hdcp y | Set output (x=0~2) hdcp (x=1~3) x=0: all outputs (HDMI/HDBT) x=1: HDMI output x=2: HDBT output y=1: Auto y=2: HDCP 1.4 y=3: HDCP 2.2 | s output 0 hdcp 1 | Set HDMI(Name) output HDCP: Auto Set HDBT(Name) output HDCP: Auto | 1 |
| r output x hdcp | Get output (x=0~2) hdcp status x=0: all outputs (HDMI/HDBT) x=1: HDMI output x=2: HDBT output | r output 0 hdcp | HDMI(Name) output HDCP: Auto HDBT(Name) output HDCP: Auto | |
| s output x avmute on/off | Set output (x=0-2) avmute on/off x=0: all outputs (HDMI/HDBT), x=1: HDMI output x=2: HDBT output | s output 0 avmute on | Set HDMI(Name) output AVMUTE: On Set HDBT(Name) output AVMUTE: On | off |
| r output x avmute | Get output (x=0-2) avmute on/off status | r output 0 avmute | HDMI(Name) output AVMUTE: On HDBT(Name) output AVMUTE: On | |

| Command Code | Function Description | Example | Feedback | Default Setting |
|-------------------------------|---|---|--|-----------------|
| s output x auto switch mode y | Set output (x=0-2) auto switch detection mode (y=1-2) x=0: all outputs (HDMI/HDBT) x=1: HDMI output x=2: HDBT output y=1: TMDS y=2: 5V | s output 0 auto switch mode 1 | Set HDMI(Name) output auto switch mode: TMDS | 1 |
| r output x auto switch mode | Get output (x=0-2) auto switch detection mode | r output 0 auto switch mode | HDMI(Name) output auto switch mode: TMDS | |
| s output x auto switch on/off | Set output (x=0-2) auto switch on/off x=0: all outputs (HDMI/HDBT), x=1: HDMI output, x=2: HDBT output | s output 0 auto switch on | Set HDMI(Name) output auto switch: On | off |
| r output x auto switch | Get output (x=0-2) auto switch on/off status | r output 0 auto switch | HDMI(Name) output auto switch: On | |
| Audio Setting | | | | |
| s output line vol y | Set output line volume to y y=[0-100] volume value | s output line vol 50 | Set output line volume: 50 | 50 |
| r output line vol | Get output line volume | r output line vol | Output line volume: 50 | |
| s output line vol+ | Increase output line volume | s output line vol+ | Increase output line volume: 52 | |
| s output line vol- | Decrease output line volume | s output line vol- | Decrease output line volume: 50 | |
| s output x mute on/off | Set output (x=null/line/HDMI/HDBT) mute on/off | s output mute on s output line mute on s output HDMI mute on s output HDBT mute on | Set output all mute: On Set output line mute: On Set output HDMI(Name) mute: On Set output HDBT(Name) mute: On0 | off |
| r output x mute | Get output (x=null/line/HDMI/HDBT) mute on/off status | r output mute r output line mute r output HDMI mute r output HDBT mute | Output all mute: On Output line mute: On Output HDMI(Name) mute: On Output HDBT(Name) mute: On | |
| RX Setting | | | | |
| s rx output from x | Set RX output from input (x=1-2) x=1:HDBT IN x=2:HDMI IN | s rx output from 1 | Set RX output from: HDBT IN Error, RX not ready! | 1 |
| r rx output from | Get RX output from which input | r rx output from | RX output from: HDBT IN | |
| r rx hdmi5v | Get RX HDMI input power 5V | r rx hdmi5v | RX HDMI 5V: 1 | |
| r rx host5v | Get RX USB host power 5V | r rx host5v | RX host 5V: 1 | |
| s rx auto switch mode x | Set RX auto switch detection mode (x=1~2) x=1: TMDS x=2: 5V | s rx auto switch mode 1 | Set RX auto switch mode: TMDS | 1 |
| r rx auto switch mode | Get RX auto switch detection mode | r rx auto switch mode | RX auto switch mode: TMDS | |
| s rx auto switch on/off | Set RX auto switch on/off | s rx auto switch on | Set RX auto switch: On | on |
| r rx auto switch | Get RX auto switch on/off status | r rx auto switch | RX auto switch: On | |

| Command Code | Function Description | Example | Feedback | Default Setting |
|-----------------------------|---|-----------------------------------|---------------------------------------|-----------------|
| CEC Setting | | | | |
| s cec power on/off | Set CEC power on/off command | s cec power on s cec power off | Set CEC power on Set CEC power off | |
| s auto power feature on/off | Set display auto power feature on/off | s auto power feature off | Set auto power feature: Off | off |
| r auto power feature | Get display auto power feature on/off status | r auto power feature | Auto power feature: Off | |
| s auto power off timer x | Set auto power off command (CEC/RS-232) will be sent out after x x=1: 5sec, x=2: 10sec, x=3: 30sec, x=4: 1min, x=5: 5min, x=6: 10min | s auto power off timer 4 | Set auto power off timer: 1min | 4 |
| r auto power off timer | Get auto power off timer | r auto power off timer | Auto power off timer: 1min | |
| s auto power control x | Set auto power feature control via (x=1-3) x=1: CEC, x=2: RS-232, x=3: CEC and RS-232 | s auto power control 1 | Set auto power control: CEC | 1 |
| r auto power control | Get auto power feature control type | r auto power control | Auto power control: CEC | |
| USB Setting | | | | |
| s USB switch mode x | Set USB switch mode (x=1-3) x=1: Follow video (HDMI 1/ Host 1, HDMI 2/Host 2, HDMI 3/Host 3, USB-C 4) x=2: Manual mode x=3: Auto mode (detect host 5V then switch) | s USB switch mode 1 | Set USB switch mode: Follow video | 1 |
| r USB switch mode | Get USB switch mode | r USB switch mode | USB switch mode: Follow video | |
| s USB from x | Set USB manual switch from input (x=0-4) x=0: None, x=1: Host 1, x=2: Host 2, x=3: Host 3, x=4: USB-C 4 | s USB from 1 | Set USB from: Host 1 | 1 |
| r USB from | Get USB manual switch from which input | r USB from | USB from: Host 1 | |
| RS-232 Setting | | | | |
| s serial x setting y | Set serial port (x=0-2) setting to y x=0: All RS-232 (Local and HDBT) x=1: Local RS-232 x=2: HDBT RS-232 y= 115200-8n1 | s serial 0 setting 115200-8n1 | Set all RS-232: 115200-8n1 | 115200-8n1 |
| r serial x setting | Get serial port (x=0-2) setting x=0: All RS-232 (Local and HDBT) x=1: Local RS-232 x=2: HDBT RS-232 | r serial 0 setting | All RS-232: 115200-8n1 | |
| Preset Setting | | | | |
| s preset save x | Save the current unit's settings to the specified preset:x All settings except network setting. x=[1-5]: Preset 1 - Preset 5 | s preset save 1 | Save to preset 1 | |
| s preset recall x | Recall a specified preset:x into unit All settings except network setting. x=[1-5]: Preset 1 - Preset 5 | s preset recall 1 | Recall preset 1 | |

| Command Code | Function Description | Example | Feedback | Default Setting |
|---------------------------|---|-------------------------------|---|-----------------|
| s preset clear x | Clear a specified preset:x All settings except network setting x=[1-5]: Preset 1 - Preset 5 | s preset clear 1 | Clear preset 1 | |
| s preset x name y | Set preset:x name to y x=[1-5]: Preset 1 - Preset 5 y: Preset name, max 16 characters | s preset 1 name MeetingRoom 1 | Set preset 1 name: MeetingRoom 1 | |
| r preset x name | Get preset:x name x=[1-5]: Preset 1 - Preset 5 | r preset 1 name | Preset 1 name: MeetingRoom 1 | |
| Network Setting | | | | |
| r ipconfig | Get the Current IP Configuration | r ipconfig | IP Mode:DHCP IP Address:192.168.0.100 Subnet Mask:255.255.0.0 Gateway:192.168.0.1 TCP/IP port:8000 MAC:6C:DF:FB:0C:B3:8E | |
| r mac addr | Get network MAC address | r mac addr | MAC: 6C:DF:FB:0C:B3:8E | |
| s ip mode x | Set network IP mode to x=0: Static, x=1: DHCP | s ip mode 0 | Set IP mode: Static (Please use "s net reboot" command or repower device to apply new config!) | 1 |
| r ip mode | Get network IP mode | r ip mode | IP mode: Static | |
| s ip addr xxx.xxx.xxx.xxx | Set network IP address | s ip addr 192.168.1.100 | Set IP address: 192.168.0.100 (Please use "s net reboot" command or repower device to apply new config!) DHCP on, Device can't config static address, set DHCP off first. | |
| r ip addr | Get network IP address | r ip addr | IP: 192.168.0.100 | |
| s subnet xxx.xxx.xxx.xxx | Set network subnet mask | s subnet 255.255.255.0 | Set Subnet Mask: 255.255.255.0 (Please use "s net reboot!" command or repower device to apply new config!) DHCP on, Device can't config subnet mask, set DHCP off first. | |
| r subnet | Get network subnet mask | r subnet | Subnet Mask: 255.255.255.0 | |
| s gateway xxx.xxx.xxx.xxx | Set network gateway | s gateway 192.168.1.1 | Set Gateway: 192.168.1.1 (Please use "s net reboot!" command or repower device to apply new config!) DHCP on, Device can't config gateway, set DHCP off first. | |
| r gateway | Get network gateway | r gateway | Gateway: 192.168.1.1 | |
| s tcp/ip port x | Set network TCP/IP port (x=1~65535) | s tcp/ip port 8000 | Set TCP/IP port: 8000 | 8000 |
| r tcp/ip port | Get network TCP/IP port | r tcp/ip port | TCP/IP port: 8000 | |

| Command Code | Function Description | Example | Feedback | Default Setting |
|-----------------|-------------------------------------|------------------|---|-----------------|
| s telnet port x | Set network telnet port (x=1~65535) | s telnet port 23 | Set Telnet port: 23 | 23 |
| r telnet port | Get network telnet port | r telnet port | Telnet port: 23 | |
| s net reboot | Reboot network modules | s net reboot | Searching IP, please wait ... IP Mode: DHCP IP Address:192.168.0.100 Subnet Mask:255.255.0.0 Gateway: 192.168.0.1 TCP/IP port: 8000 MAC:6C:DF:FB:0C:B3:8E | |

Password Setting

| | | | | |
|--------------------|--|-----------------------|----------------------|------|
| s admin password x | Set admin login password (x=[16 characters max]) | s admin password 1234 | admin password: 1234 | 1234 |
| r admin password | Get admin login password | r admin password | admin password: 1234 | |
| s user password x | Set user login password (x=[16 characters max]) | s user password 1234 | user password: 1234 | 1234 |
| r user password | Get user login password | r user password | user password: 1234 | |

Note: The feedback of the command of “r status” is as following.

```

=====
VLPT-42H100 Status
MCU 1.1.0 Web 1.1.0 FPGA 1.1.0 RX 1.1.0

Input   Name   Cable   EDID   HDCP
HDMI 1  HDMI 1 Connected Auto   On
HDMI 2  HDMI 2 Connected Auto   On
HDMI 3  HDMI 3 Connected Auto   On
USB-C 4  USB-C 4 Connected Auto   On

Output   Name       Source   Cable   Signal
HDMI OUT HDMI OUT   HDMI 1   Connected 3840x2160p60Hz YUV 4:2:2 12bit
HDBT OUT HDBT OUT   HDMI 1   Connected 3840x2160p60Hz YUV 4:4:4 8bit

Output   On/Off OutputScaling AutoSwitch HDCP
HDMI OUT On       Auto          TMDS      On
HDBT OUT On       Auto          Off       On

Power   Key   Beep   Baud
On      On    Off    115200

TCP/IP  Telnet MAC
8000   0023  6C:DF:FB:0C:B3:8E

DHCP   IP           Gateway       SubnetMask
On     192.168.062.111 192.168.062.001 255.255.000.000
(Static: 192.168.000.100 192.168.000.001 255.255.000.000)
=====

```

9. Connection Diagram

