DVDO


## DVDO-USBC-PS-21-XL

4K 2x1 Presentation Switcher with USB-C Inputs,
Audio Input & Output, 2 LAN Ports

# User Manual

Version v1.0

## Thank you for purchasing DVDO-USBC-PS-21-XL

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, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

## Table of Contents

# 1. Introduction

DVDO-USBC-PS-21-XL is a 2x1 Huddle Room Switcher with multiple control methods, designed with dual full-featured USB-C inputs, one HDMI™ output, one USB-C device, two USB-A devices, dual 1G Ethernet ports. Video resolution is up to 4K@60Hz 4:4:4, delivering high-quality visuals for presentations and displays. Audio embedding and de-embedding on a balanced analog audio interface, ensuring clear and synchronized audio record and playback.

DVDO-USBC-PS-21-XL also supports USB KVM, RS-232, GPIO, IR and Ethernet switching functions, as well as auto and manual switching, auto signal detection and wake up the whole system including external devices. It can be controlled via front panel button, RS-232, TCP/IP and Web GUI.

It features multiple interfaces for the easy connection between the BYOD devices and the meeting room devices, providing versatility and enhanced connectivity for presentation environments. It is designed to meet the demands of modern huddle room setups, providing a user-friendly and feature-rich solution for enhanced connectivity and control.

# 2. Features

- ☆ HDCP 2.3 and DP 1.4a compliant
- ☆ 2x1 huddle room switcher with dual USB-C inputs and one HDMI™ output
- ☆ USB-C inputs with DP Alt mode up to 4K60Hz 4:4:4, USB 3.2 Gen 1 (5Gbps), 1G ethernet and 100W charging (50W of each port)
- ☆ HDMI™ output up to 4K60Hz 4:4:4, as specified in HDMI™ 2.0b
- ☆ Fast switching including auto and manual switching

(Continued)

- ☆ Auto switching supports signal detection and 5V detection
- ☆ USB 3.2 Gen 1 (5Gbps) host and local hub
- ☆ USB 3.2 Gen 1 (5Gbps) device with 5V/1.5A power output
- ☆ Support balanced/un-balanced analog audio embedding to USB audio
- ☆ Support balanced/un-balanced analog audio de-embedding from USB or HDMI™ audio
- ☆ Advanced EDID management
- ☆ User defined welcome screen and no signal display image
- ☆ Dual 1G Ethernet ports with 802.1x and VLAN
- ☆ IR eye for IR learning and control
- ☆ Auto display on/off control
- ☆ External device control via CEC/IR/RS-232/LAN/GPIO
- ☆ Control via front panel buttons, RS-232, TCP/IP and Web GUI

# 3. Package Contents

① 1× DVDO-USBC-PS-21-XL Huddle Room Switcher
② 1× 24V/7.5A Power Supply
③ 1× IR Blaster Cable (1.5m)
④ 1× 3pin-3.5mm Phoenix Connector (male)
⑤ 2× 5pin-3.5mm Phoenix Connector (male)
⑥ 1× 6pin-3.5mm Phoenix Connector (male)
⑦ 4× Rubber Foot
⑧ 2× Mounting Ear
⑨ 4× Machine Screw (M3*5, for rubber foots)
⑩ 4× Machine Screw (KM3*6, for mounting ears)
⑪ 1× User Manual

# 4. Specifications

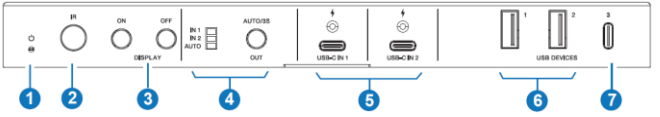
| Technical | |
|---|---|
| HDMI™ Compliance | HDMI™ 2.0b |
| HDCP Compliance | HDCP 2.3 |
| DP Compliance | DP 1.4a (USB-C input) |
| USB Compliance | USB 3.2 Gen1 (5Gbps) |
| Video Bandwidth | 18Gbps |
| Network Bandwidth | 1G |
| Video Resolution (Input&Output) | 640x480p60Hz, 800x600p60Hz, 1024x768p60Hz, 1280x1024p60Hz, 1360x768p60Hz, 1440x900p60Hz, 1440x1050p60Hz, 1600x1200p60Hz, 720x480i59.94Hz(480i59), 720x480p59.94Hz(480p59), 720x576i50Hz(576i50), 720x576p50Hz(576p50), 1280x720p50Hz(720p50), 1280x720p59.94Hz(720p59), 1280x720p60Hz(720p60), 1920x1080i50Hz(1080i50), 1920x1080i59.94Hz(1080i59), 1920x1080i60Hz(1080i60), 1920x1080p23.98Hz(1080p23), 1920x1080p24Hz(1080p24), 1920x1080p25Hz(1080p25), 1920x1080p29.97Hz(1080p29), 1920x1080p30Hz(1080p30), 1920x1080p50Hz(1080p50), 1920x1080p59.94Hz(1080p59), 1920x1080p60Hz(1080p60), 3840x2160p23.98Hz(2160p23), 3840x2160p24Hz(2160p24), 3840x2160p25Hz(2160p25), 3840x2160p29.97Hz(2160p29), 3840x2160p30Hz(2160p30), 3840x2160p50Hz(2160p50), 3840x2160p59.94Hz(2160p59), 3840x2160p60Hz(2160p60), 4096x2160p23.98Hz, 4096x2160p24Hz, 4096x2160p25Hz, 4096x2160p29.97Hz, 4096x2160p30Hz, 4096x2160p50Hz, 4096x2160p59.94Hz, 4096x2160p60Hz |
| Color Space | RGB, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0 |
| Color Depth | 8/10/12-bit, 8-bit (4K@60Hz, 4:4:4) |
| HDR | HDR, HDR10, HDR10+, Dolby Vision, HLG |
| Audio Formats | **USB-C IN, HDMI™ OUT:**<br>LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD |

| Technical | | |
|---|---|---|
| Audio Formats | **Analog Audio IN/OUT:**<br>LPCM 2CH (sample rate 32~192kHz) | |
| Audio In | Input Impedance | 20K Ohm balanced<br>10K Ohm unbalanced |
| | Input Level | Max 8.2dBu (2Vrms) balanced audio |
| | Frequency Response | 20Hz to 20kHz (-/+0.5dB) |
| | Dynamic Range | >90dB@0dBu, 1kHzA-weighted |
| | Audio S/N Ratio | >90dB@0dBu, 1kHzA-weighted |
| | Audio THD+N | < 0.01% at +4dBu, 1KHz |
| | Audio Output Delay | <1ms |
| Audio Out | Output Impedance | 600 Ohm balanced<br>300 Ohm unbalanced |
| | Output Level (Maximum) | Max 8.2dBu (2Vrms) balanced audio<br>Max 2.2dBu (1Vrms) unbalanced audio |
| | Frequency Response | 20Hz to 20kHz (-/+1dB) |
| | Dynamic Range | >90dB@0dBu, 1kHzA-weighted |
| | Audio S/N Ratio | >90dB@0dBu, 1kHzA-weighted |
| | Audio THD+N | < 0.067% at +4dBu, 1KHz |
| | Audio Output Delay | <1ms |
| IR Level | 5Vp-p | |
| IR Frequency | 20K-60KHz | |
| Transmission Distance | USB 3.2 Passive Cable: 1.5m/4.9ft<br>HDMI™ Passive Cable: 3m/9.8ft | |
| ESD Protection | IEC 61000-4-2:<br>±8kV (Air-gap discharge) & ±4kV (Contact discharge) | |

| Connection | |
|---|---|
| Input ports | 2× USB-C IN[USB-C, 24-pin female]<br>1× L/R AUDIO IN [5-pin 3.5mm phoenix connector] |
| Output ports | 1× OUT [HDMI™ Type A, 19-pin female]<br>1× USB DEVICE [USB-C, 24-pin female]<br>2× USB DEVICE [USB-A, 9-pin female]<br>1× L/R AUDIO OUT [5-pin 3.5mm phoenix connector] |
| Control ports | 1× RS-232 [3-pin 3.5mm phoenix connector]<br>1× IR OUT [3.5mm stereo mini-jack]<br>2× ETHERNET [RJ45 connector]<br>1× GPIO [6-pin 3.5mm phoenix connector]<br>1× SERVICE [USB-C, FW update port] |
| **Mechanical** | |
| Housing | Metal Enclosure |
| Color | Black |
| Dimensions | 230mm [W] × 130mm [D] × 23mm [H] |
| Weight | 796g |
| Power Supply | Input: AC 100-240V 50/60Hz, Output: DC 24V/7.5A<br>(US/EU standard, CE/FCC/UL certified) |
| Power Consumption | 37W (without USB-C charging);<br>145W (with 100W USB-C charging) |
| Operating Temperature | 32°F - 104°F / 0°C - 40°C |
| Storage Temperature | -4°F - 140°F / -20°C - 60°C |
| Operating Humidity | 20%~80% relative humidity, non-condensing |
| Storage Humidity | 10%~90% relative humidity, non-condensing |

# 5. Operation Controls and Functions

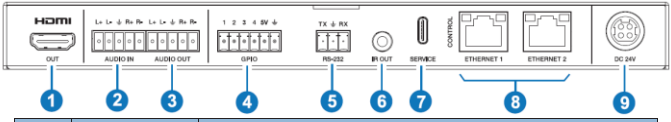
## 5.1 Front Panel




| NO. | Name | Function Description |
|---|---|---|
| 1 | Power LED | The LED will light in green when the product is working normally, and red when the product is standby. |
| 2 | IR | IR signal receiving window. It can be used for IR learning. |
| 3 | DISPLAY ON/OFF | Press to enable or disable the output of display devices. Please refer to "Display Page" in Web GUI for more details. |
| 4 | IN1/IN2/AUTO switch button & indicator | ■ Short press the button to switch between IN1 and IN 2. If one channel is selected, the corresponding LED will light up.<br>■ Long press the button for 3 seconds to enable or disable the auto switching mode.<br>If the auto switching mode is enabled, the AUTO LED will light up. |
| 5 | USB-C IN1/2 | USB-C input port, supporting USB 3.2 Gen 1, DP Alt mode, 1G Ethernet and up to 100W charging.<br>**Note 1:** The 1G Ethernet function of this port can be enabled or disabled on System page in Web GUI.<br>If the PC connected to this port needs to be online, the Ethernet should be networked.<br>**Note 2:** When USB-C IN port is connected to a PC, the USB-C port on PC must support DP Alt mode to transmit video signal.<br>**Note 3:** If two USB-C IN ports are both connected, each port supports PD 50W charging. |

| NO. | Name | Function Description |
|---|---|---|
| 6 | USB DEVICES 1/2 | USB-A downstream port, with output power 5V/1.5A. Connects to USB device. |
| 7 | USB DEVICES 3 | USB-C downstream port, with output power 5V/1.5A. Connects to USB device. |

## 5.2 Rear Panel




| NO. | Name | Function Description |
|---|---|---|
| 1 | HDMI OUT | HDMI signal output port, connected to a display device. |
| 2 | L/R AUDIO IN | Analog audio input port, connected to an audio input device such as a microphone.<br>Supports balanced audio input and unbalanced audio input (with a maximum support of 2Vrms).<br>Balanced connection method: L+, L-, GND, R+, R-<br>Unbalanced connection method: L+, GND, R+ |
| 3 | L/R AUDIO OUT | Analog audio output port, connected to an audio output device such as a speaker.<br>Supports balanced audio output (with a maximum support of 2Vrms) and unbalanced audio output (with a maximum support of 1Vrms).<br>Balanced connection method: L+, L-, GND, R+, R-<br>Unbalanced connection method: L+, GND, R+ |
| 4 | GPIO | Used for user-defined function extension. |
| 5 | RS-232 | RS-232 control port, connected to a PC or control system for API command control on this product or other devices with RS-232 ports. |
| 6 | IR OUT | IR signal output port, connected to the IR blaster cable. |

| NO. | Name | Function Description |
|---|---|---|
| 7 | SERVICE | USB 2.0 type C port, supporting API command control and firmware upgrade. |
| 8 | ETHERNET 1 | 1G Ethernet port, connected to a PC to visit Web GUI of this product to set the parameters. |
| 9 | ETHERNET 2 | 1G Ethernet port, connected to the router to surf the internet via a computer with USB-C port. |
| 10 | DC 24V | DC 24V/7.5A power input port. |

**Note:**

ETHERNET ports support two modes, you can set it via API command and Web GUI page.

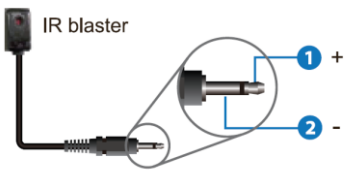
**Separated Mode** (Default): ETHERNET 1 is used for TCP/IP/Web GUI; ETHERNET 2 is used for 1G Ethernet only.

**Switch Mode**: ETHERNET 1 and ETHERNET 2 are both used for TCP/IP/ Web GUI and 1G Ethernet access.

## 6. IR Cable Pin Assignment

IR blaster pin's definition is as below:

IR BLASTER



# 7. Web GUI User Guide

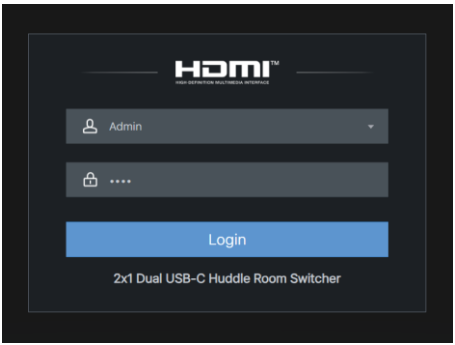
This product can be controlled by Web GUI. The operation method is shown as below:

**Step 1:** Get the current IP Address.
The default IP address is 192.168.0.100. You can get the current IP address via API command. Send the command “get ip addr” through an ASCII Command tool, and then you’ll get the current IP address (The IP address is variable, depending on what the specific device returns).

For the details of API control, please refer to “8. API Commands”.

**Step 2:** Connect the ETHERNET port of the product to a PC, and set the IP address of the PC to be in the same network segment with the product. For example, if its IP address is 192.168.62.106, the IP address of PC must be set to 192.168.62.xxx; if its IP address is 192.168.0.100, the IP address of PC must be set to 192.168.0.xxx.

**Step 3:** Enter the IP address of the product into your browser on the PC. After entering the Web GUI page, there will be a Login page, as shown below:

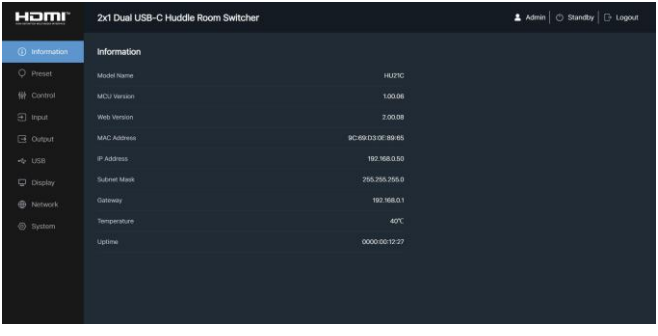


The default usernames and passwords are as below:

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

Select the username "Admin", enter the default password "1234", and then click "Login". The web page provides the following tabs for navigating the interface:

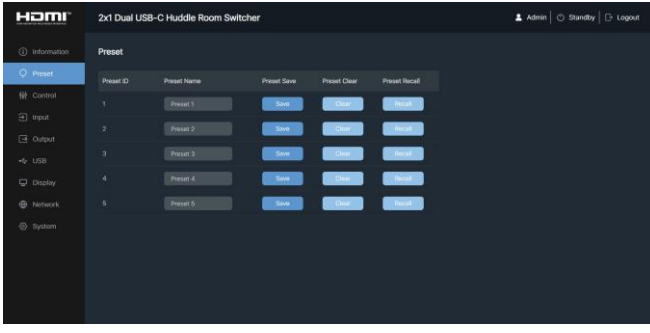
■ **Information Page**




The Information page provides basic information such as the Model, the installed firmware version and the network settings of the device.

The buttons at the top right of the web interface are always available:
■ Clicking the Logout button will log out and return to the login page.
■ Clicking the Standby button will set the device to standby mode or power on the device.

## ■ Preset Page




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

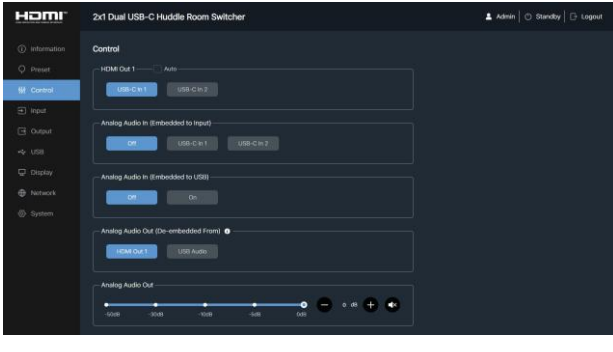
① **Preset Name:** You can name the preset scene, up to 16 characters.

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.

## ■ Control Page



You can do the following operations on the Control page:

① **HDMI Out:** Click "USB-C In 1" or "USB-C In 2" to select the input channel.

If the "Auto" checkbox is ticked, the auto switching mode is enabled.

② **Analog Audio In (Embedded to Input):**

**Off:** Click to turn off the audio embedding function.

**USB-C In 1/USB-C In 2:** Click to embed the audio to the input channel, and it will be output on the TV connected to the HDMI output port.

③ **Analog Audio In (Embedded to USB):**

**Off:** Click to turn off the audio embedding function.

**On:** Click to turn on the audio embedding function.

Now the microphone input can be selected on the PC which is connected to the USB-C In port when the audio embedding function is enabled.

④ **Analog Audio Out (De-embedded From):**

**HDMI Out:** Click to select "HDMI Out" as the source for de-embedding audio.

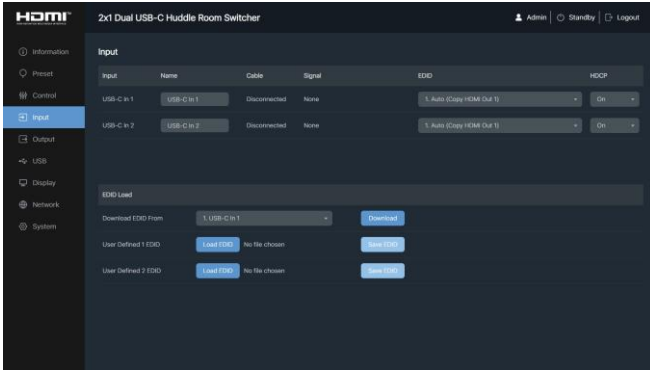
**USB Audio:** Click to select "USB Audio" as the source for de-embedding audio.

**Note:** When the audio embedding function (Analog Audio In) is enabled, the audio de-embedding function (Analog Audio Out) will not work. That is to say, the audio of "Analog Audio In" can't be routed to "Analog Audio Out" to output.

⑤ **Analog Audio Out:**

Click to increase, decrease or mute the volume.

## ■ Input Page




You can do the following operations on the Input page:

① **Input:** The input channel of this product.

② **Name:** You can modify the name if needed, up to 16 characters.

③ **Cable:** It shows the connection status of the input ports.

④ **Signal:** It shows the basic info of the input signal.

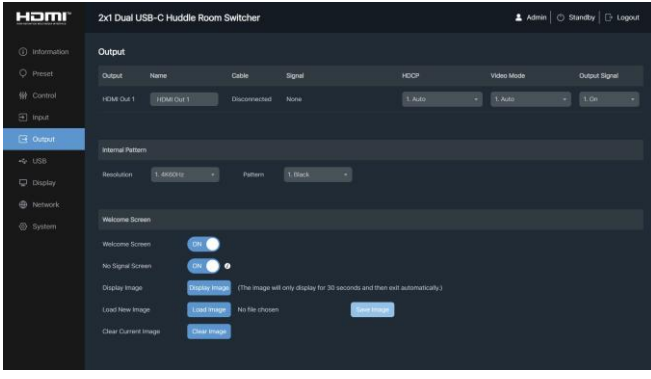
⑤ **EDID:** Click the drop-down list to set EDID for each input port.

The EDID list is shown below:

| No. | EDID Mode | No. | EDID Mode |
|---|---|---|---|
| 1 | Auto (Copy HDMI Out 1) | 11 | 720P60_444, Audio 2CH PCM |
| 2 | 4K2K60_444, Audio 2CH PCM | 12 | 1920x1200, Audio 2CH PCM |
| 3 | 4K2K60_444, Audio 5.1CH DTS/ DOLBY | 13 | 1680x1050, Audio 2CH PCM |
| 4 | 4K2K60_444, Audio 7.1CH DTS/ DOLBY/HD | 14 | 1600x1200, Audio 2CH PCM |
| 5 | 4K2K30_444, Audio 2CH PCM | 15 | 1440x900, Audio 2CH PCM |
| 6 | 4K2K30_444, Audio 5.1CH DTS/ DOLBY | 16 | 1360x768, Audio 2CH PCM |
| 7 | 4K2K30_444, Audio 7.1CH DTS/ DOLBY/HD | 17 | 1280x1024, Audio 2CH PCM |
| 8 | 1080P60_444, Audio 2CH PCM | 18 | 1024x768, Audio 2CH PCM |
| 9 | 1080P60_444, Audio 5.1CH DTS/ DOLBY | 19 | User Defined 1 |
| 10 | 1080P60_444, Audio 7.1CH DTS/ DOLBY/HD | 20 | User Defined 2 |

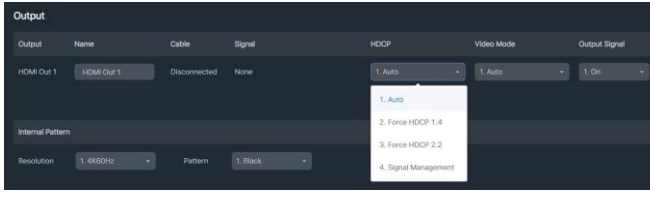
⑥ **HDCP:** Click the drop-down list to select ON or OFF as required.
⑦ **Download EDID from:** Click the drop-down list to select USB-C In 1 / USB-C In 2 / HDMI Out for EDID download. Then click the Download button and generate a .bin file.
⑧ **User-Defined EDID:** Click the Load EDID button to upload the defined EDID. Please note that only two user-defined EDID and .bin files are supported. Click the Save EDID button to save the user-defined EDID. Then it will be displayed in the EDID drop-down list, corresponding to the User Defined 1/User Defined 2.

## ■ Output Page




You can do the following operations on the Output page:

① **Output:** It shows the information of the output channel, such as name, connection status, HDCP, video mode.



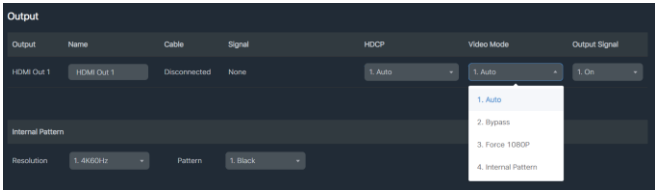

There are four options of HDCP:

**Auto:** HDCP version follows the corresponding display device.

**Force HDCP 1.4:** HDCP 1.4 compliant.

**Force HDCP 2.2:** HDCP 2.2 compliant.

**Signal Management:** Reserved mode.



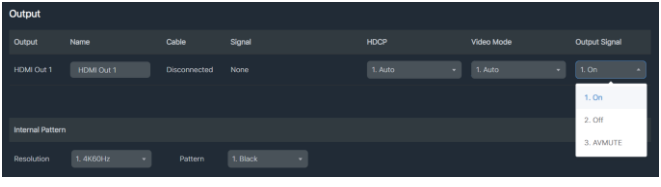

There are four options of Video Mode:

**Auto:** It means the output resolution is according to the EDID of the corresponding display device.

**Bypass:** It means the output resolution follows the input source.

**Force 1080P:** Downscales any 4K signal to 1080p to output.

**Internal Pattern:** User-defined mode.




There are three options of Output Signal:

**On:** Turn on the output channel.

**Off:** Turn off the output channel.

**AVMUTE:** Mute the output channel.

② **Internal Pattern:**

**Resolution:** 4K60Hz / 4K50Hz / 4K25Hz / 4K24Hz / 1080P60Hz / 480P60Hz / 576P50Hz

**Pattern:** 1. Black / 2. Checkboard / 3. Strip / 4. Red / 5. Green / 6. Blue / 7. White / 8. Ramp / 9. Red ramp / 10. Green ramp / 11. Blue ramp / 12. PRBS

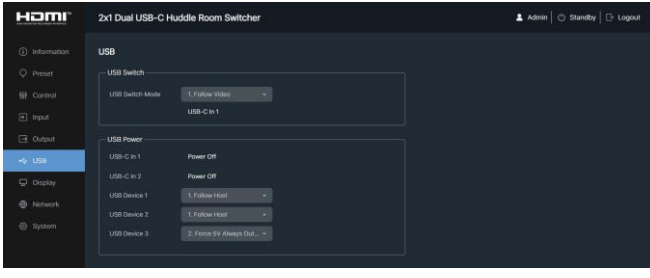
③ **Welcome Screen:**

**Welcome Screen:** Click to turn on or turn off the welcome screen.

**No Signal Screen:** If there is no signal in 60 seconds, it will display welcome screen automatically. You can click to turn on or turn off the no

signal screen.
**Display Image:** Click to display the starting image for 30 seconds, and then disappear automatically.
**Load New Image:** Click to load the image you want and save it.
**Clear Current Image:** Click to clear the current image.

## ■ USB Page



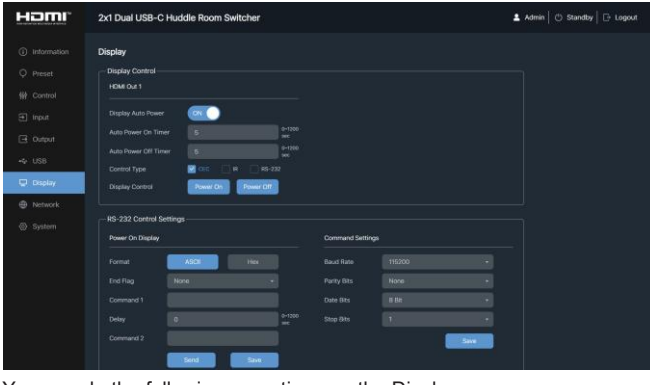

You can do the following operations on the USB page:
① **USB Switch Mode:** Select the USB switch mode.:
- **Follow Video:** Set the USB transmission to follow the video.
- **Manual Switch:** Switch the USB manually as required. Click the dropdown list to select USB-C In 1/USB-C In 2 as the upstream port.
- **Auto Switch:** Switch the USB automatically. The system will detect and switch to the latest connected port as the upstream port automatically.

② **USB Power:**
**USB-C In 1/USB-C In 2:** "Power On" means the power of the upstream device is detected. "Power Off" means the power of the upstream device is not detected.

**USB Device 1/2/3:** Click the drop-down list to set 5V detection for each USB device.

- **Follow Host:** 5V detection of the USB device follows the connection status of the selected host.
- **Force 5V Always Output:** 5V detection of the USB device is forced to be enabled.
- **Disable 5V Output:** 5V detection of the USB device is forced to be disabled.

## ■ Display Page




You can do the following operations on the Display page:

① **Display Control (HDMI Out):**

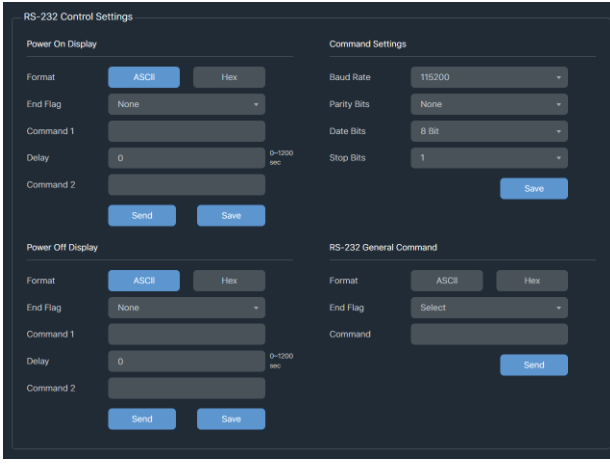
**Display Auto Power:** The display device will be powered on or powered off following the product. You can enable or disable this function.

**Auto Power On Timer** (0~1200 seconds)**:** Set the time interval to send the starting command to the display device when this product is powered on.

**Auto Power Off Timer** (0~1200 seconds)**:** Set the time interval to send the shutdown command to the display device when this product is standby.

**Control Type:** Set the control type of the display device, such as IR, CEC or RS-232.

**Display Control:** Click to turn on or turn off the connected display device.




② **RS-232 Control Settings:**

**Power On/Off Display:**

Format: ASCII and Hex

End Flag: None, \r, \n, \r\n

Command1: Enter the command1 to control the display device.

Delay: The time interval between sending the command1 and Command2.

Command2: Enter the command2 to control the display device.

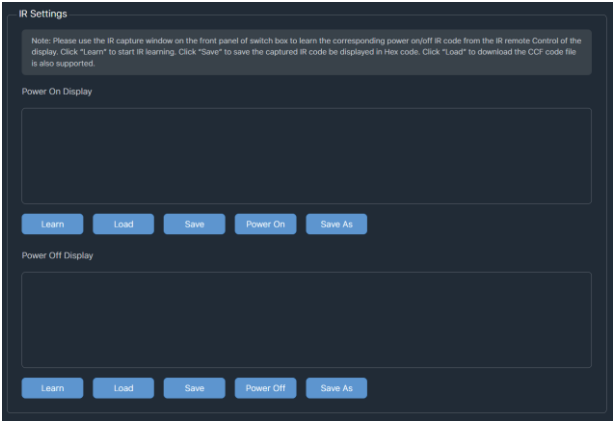
Send: Click to send the commands.

Save: Click to save the commands.

**Command Settings:**

Click the drop-down list to set Baud Rate, Parity Bits, Data Bits and Stop Bits, and then click "Save".

**RS-232 General Command:** Used to control the third-party device via sending serial command.
Format: ASCII and Hex
End Flag: None, \r, \n, \r\n
Command: Enter the command to control the display device.
Send: Click to send the commands.




③ **IR Settings:**

**Power On/Off Display**

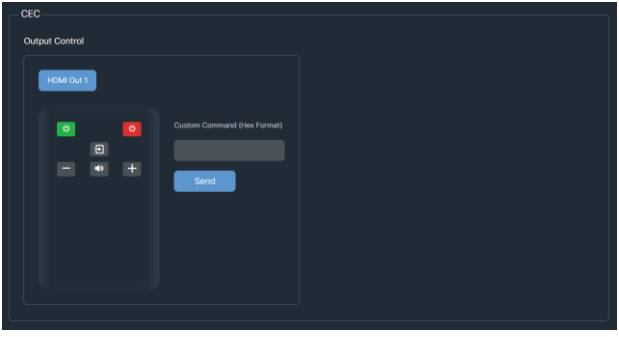
**Learn:** Click "Learn", and then let the IR remote aim at IR window on the front panel of this switcher to operate. When learning is finished, the Hex code will display in the text box on the IR Setting page.

**Load:** Click to load the CCF code of .bin file.

**Save:** Click to save the learned IR code.

**Power On/Off:** Click to send the IR code in the text box.

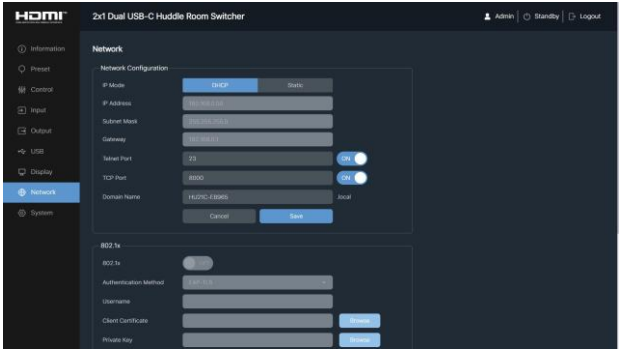
**Save As:** Click to save the learned IR code as a .bin file.




④ **CEC:**

**Output Control:** Click the buttons to control the display device connected to the HDMI Out port.
You can also enter a command with Hex format to control.

## ■ Network Page



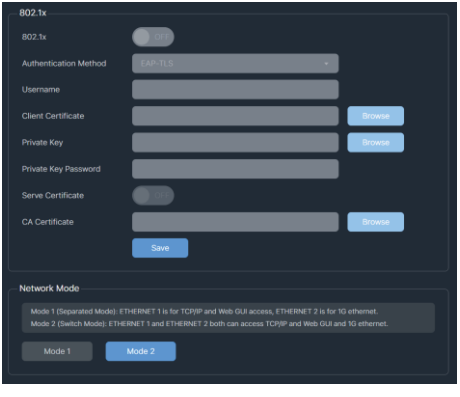
## ① Network Configuration:

If the Mode is “Static”, you can set manually the IP Address/Gateway/ Subnet/Telnet Port/Domain Name as required.
If the Mode is “DHCP”, it will search and be filled with the IP Address assigned by the router automatically. You can't modify it now.

Click “Save” to take effect, and click “Cancel” to cancel the setting.

**Note:**

1. The domain name "HU21C-E8965.local" can be used to login Web GUI.
2. The Telnet and TCP ports can be turned off if required. Click "Save" to take effect. It is turned on by default.




## ② 802.1x:

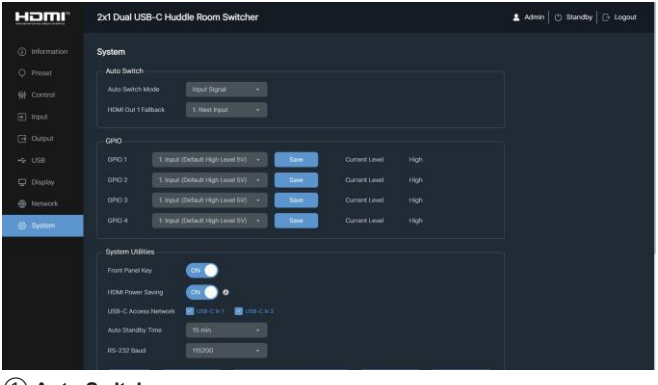
**On/Off:** Click to turn on or turn off 802.1x.
**Authentication Method:** EAP-TLS and EAP-MSCHAPv2
**Username:** Enter a username.
**Client Certificate:** Click "Browse" to load the client certificate.
**Private Key:** Click "Browse" to load the private key.
**Private Key Password:** Set the password.

**Serve Certificate:** Click to turn on or turn off.
**CA Certificate:** Click "Browse" to load the CA certificate.
Then click "Save" to save the settings.

③ **Network Mode:**

**Mode 1 (Separated Mode):**
ETHERNET 1 is used for TCP/IP/Web GUI.
ETHERNET 2 is used for 1G Ethernet only.
**Mode 2 (Switch Mode):**
Both ETHERNET 1 and ETHERNET 2 are used for TCP/IP/Web GUI and 1G Ethernet access.

## ■ System Page



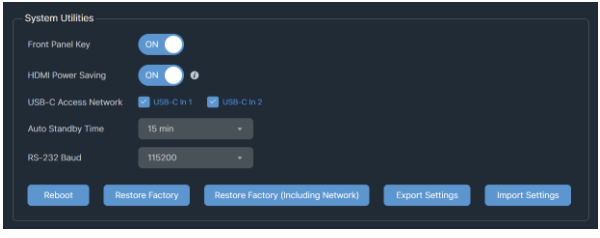

① **Auto Switch:**

**Auto Switch Mode:**
Two modes are supported: Input Signal and Source 5V.
**HDMI Out1 Fallback:**
There are four options: Next Input, Previous Input, USB-C In1, USB-C In2.

② **GPIO:**

There are four options:

1. Input (default High Level 5V)
2. Input (default Low Level 0V)
3. Output High Level (5V)
4. Output Low Level (0V)




③ **System Utilities:**

**Front Panel Key:** Click to lock or unlock the front panel button.

**HDMI Power Saving:** Click to turn on or turn off the function.

If "HDMI Power Saving" is On, 5V power on the HDMI output port will be turned off when all inputs are not connected.

**Note:** Now the "No Signal Screen" output function is not available if all inputs are not connected.

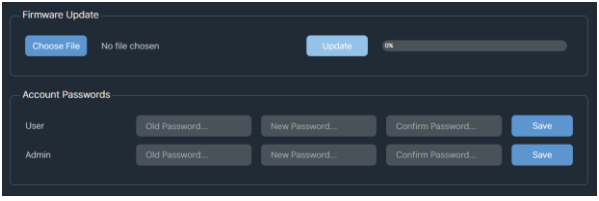
If "HDMI Power Saving" is Off, 5V power on the HDMI output port will be remained, whether or not any input port is connected or disconnected.

**USB-C Access Network:** If the checkbox is ticked, 1G Ethernet function of the USB-C In1/2 port will be available.

**Auto Standby Time:** Click the drop-down list to set the time to enter into standby mode when no signal is detected.

**RS-232 Baud:** Select the baud rate.

You can also reboot, restore factory, export settings or import settings via clicking the corresponding buttons.




④ **Firmware Update:** Support firmware update for MCU, Web and Video. Choose the update file first, and then click Update.

⑤ **Account Passwords:**

Enter the correct Old Password, New Password, and Confirm Password, and then click “Save”.

**Note:** Input rules for changing passwords:

(1) The password can’t be empty.

(2) New Password can’t be the same as Old Password.

(3) New Password and Confirm Password must be the same.

# 8. API Commands

The product also supports API command control. Connect the RS-232 port of the product to a PC. Then, open a Serial Command tool on PC to send ASCII command to control the device.
The ASCII command list is shown as below.

| ASCII Command | | | | |
|---|---|---|---|---|
| RS-232 Baud rate: 115200, Data bit: 8, Stop bit: 1, Parity bit: none, TCP/IP Port: 8000 | | | | |
| x - Parameter 1, y - Parameter 2 | | | | |
| **Command** | **Function Description** | **Example** | **Feedback** | **Default** |
| **System Setting** | | | | |
| ? | Get the list of all commands | ? | | List all API commands |
| help | Get the list of all commands | help | | List all API commands |
| get model | Get device model | get model | HU21C | |
| status | Get device current status | status | Please refer to the note at the end of the list. | |
| get version | Get firmware version | get version | BOOT: V1.00.01<br>MCU: V1.00.01<br>WEB: V1.00.01 | |
| power on | Power on the device | power on | Power: on<br>System initializing...<br>Initialization finished!<br>BOOT: V1.00.01<br>MCU: V1.00.01<br>WEB: V1.00.01 | |
| power off | Power off the device | power off | Power: off | |
| get power | Get current power state | get power | Power: off | |
| reboot | Reboot the device | reboot | Reboot…<br>System initializing...<br>Initialization finished!<br>BOOT: V1.00.01<br>MCU: V1.00.01<br>WEB: V1.00.01 | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **System Setting** | | | | |
| reset | Reset system settings to default (Should type "yes" to confirm, "no" to discard) | reset | Sure to reset system settings to default? Type "yes" after next prompt to confirm… | |
| reset all | Reset system and network settings to default (Should type "yes" to confirm, "no" to discard) | reset all | Sure to reset system and network settings to default? Type "yes" after next prompt to confirm… | |
| set front button x | Set front button locked on/off<br>x=0: Unlocked<br>x=1: Locked | set front button 0 | Button: unlocked | 0 |
| get front button | Get front button locked on/off status | get front button | Button: unlocked | |
| set hdmi power saving x | Set HDMI power saving on/off<br>x=0: Off<br>x=1: On | set hdmi power saving 1 | HDMI power saving: on | 1 |
| get hdmi power saving | Get HDMI power saving on/off status | get hdmi power saving | HDMI power saving: on | |
| set auto standby time x | Set auto standby time (x=0~5) when input signal is off<br>x=0: Never<br>x=1: 5 min<br>x=2: 10 min<br>x=3: 15 min<br>x=4: 30 min<br>x=5: 60 min | set auto standby time 3 | Auto standby time: 15 min | 15 min |
| get auto standby time | Get auto standby time | get auto standby time | Auto standby time: 15 min | |
| set usbc x access network y | Set USB-C (x=0~2) access network on/off<br>x=0: All USB-C inputs<br>x=1: USB-C input 1<br>x=2: USB-C input 2<br>y=0: Off<br>y=1: On | set usbc 0 access network 1 | USB-C input 1 access network: on<br>USB-C input 2 access network: on | 1 |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **System Setting** | | | | |
| get usbc x access network | Get USB-C (x=0~2) access network on/off status<br>x=0: All USB-C inputs<br>x=1: USB-C input 1<br>x=2: USB-C input 2 | get usbc 0 access network | USB-C input 1 access network: on<br>USB-C input 2 access network: on | |
| set gpio x value y | Set GPIO (x=0~4) value (y=1~4)<br>x=0: All GPIOs<br>x=1: GPIO 1<br>x=2: GPIO 2<br>x=3: GPIO 3<br>x=4: GPIO 4<br>y=1: Input (default High Level 5V)<br>y=2: Input (default Low Level 0V)<br>y=3: Output High Level (5V)<br>y=4: Output Low Level (0V) | set gpio 1 value 1<br>set gpio 2 value 4 | GPIO 1: input (default high level 5v)<br>GPIO 2: output low level (0v) | 1 |
| get gpio x | Get GPIO (x=0~4) status<br>x=0: All GPIOs<br>x=1: GPIO 1<br>x=2: GPIO 2<br>x=3: GPIO 3<br>x=4: GPIO 4 | get gpio 0 | GPIO 1: low<br>GPIO 2: high<br>GPIO 3: low<br>GPIO 3: high | |
| set baud x | Set RS-232 baud rate to (x=1~6) bps<br>x=1: 4800<br>x=2: 9600<br>x=3: 19200<br>x=4: 38400<br>x=5: 57600<br>x=6: 115200 | set baud 6 | Baudrate: 115200 | 115200 |
| get baud | Get RS-232 baud rate | get baud | Baudrate: 115200 | |
| get temp | Get device internal temperature | get temp | 65C | |
| get uptime | Get device running time (Day:Hour:Min:Sec) | get uptime | 0000:00:13:04 | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **System Setting** | | | | |
| set auto event report x | Set auto event report on/off<br>x=0: Off<br>x=1: On | set auto event report 1 | Auto event report: on | 1 |
| get auto event report | Get auto event report on/off status | get auto event report | Auto event report: on | |
| **Input Setting** | | | | |
| set input x name y | Set input (x=1~2) name to y (16 characters max)<br>x=1: USB-C input 1<br>x=2: USB-C input 2 | set input 1 name MacBook<br>set input 2 name Dell Laptop | USB-C input 1 name: MacBook<br>USB-C input 2 name: Dell Laptop | USB-C In 1<br>USB-C In 2 |
| get input x name | Get input (x=0~2) name<br>x=0: All inputs<br>x=1: USB-C input 1<br>x=2: USB-C input 2 | get input 0 name | USB-C input 1 name: MacBook<br>USB-C input 2 name: Dell Laptop | |
| get input x connected | Get input (x=0~2) cable connected status<br>x=0: All inputs<br>x=1: USB-C input 1<br>x=2: USB-C input 2 | get input 0 connected | USB-C input 1: connected<br>USB-C input 2: connected | |
| set input x edid y | Set input (x=0~2) EDID (y=1~20)<br>x=0: All inputs<br>x=1: USB-C input 1<br>x=2: USB-C input 2<br>y=1: Auto (Copy HDMI Out 1)<br>y=2: 4K2K60_444, Audio 2CH PCM<br>y=3: 4K2K60_444, Audio 5.1CH DTS/DOLBY<br>y=4: 4K2K60_444, Audio 7.1CH DTS/DOLBY/HD<br>y=5: 4K2K30_444, Audio 2CH PCM<br>y=6: 4K2K30_444, Audio 5.1CH DTS/DOLBY | set input 0 edid 1 | USB-C input 1 EDID: auto (copy HDMI out 1)<br>USB-C input 2 EDID: auto (copy HDMI out 1) | 1 |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Input Setting** | | | | |
| set input x edid y | (Continued)<br>y=7: 4K2K30_444, Audio 7.1CH DTS/DOLBY/HD<br>y=8: 1080P60_444, Audio 2CH PCM<br>y=9: 1080P60_444, Audio 5.1CH DTS/DOLBY<br>y=10: 1080P60_444, Audio 7.1CH DTS/DOLBY/HD<br>y=11: 720P60_444, Audio 2CH PCM<br>y=12: 1920x1200, Audio 2CH PCM<br>y=13: 1680x1050, Audio 2CH PCM<br>y=14: 1600x1200, Audio 2CH PCM<br>y=15: 1440x900, Audio 2CH PCM<br>y=16: 1360x768, Audio 2CH PCM<br>y=17: 1280x1024, Audio 2CH PCM<br>y=18: 1024x768, Audio 2CH PCM<br>y=19: User Defined 1<br>y=20: User Defined 2 | set input 0 edid 1 | USB-C input 1 EDID: auto (copy HDMI out 1)<br>USB-C input 2 EDID: auto (copy HDMI out 1) | 1 |
| get input x edid | Get input (x=0~2) EDID mode<br>x=0: All inputs<br>x=1: USB-C input 1<br>x=2: USB-C input 2 | get input 0 edid | USB-C input 1 EDID: auto (copy HDMI out 1)<br>USB-C input 2 EDID: auto (copy HDMI out 1) | |
| set user edid x <y> | Set user defined EDID (x=1~2)<br>x=1: User defined 1<br>x=2: User defined 2<br>y = 00 FF FF FF.....(y is 256 bytes EDID data) | set user edid 1 <00 FF FF FF….> | User defined 1 EDID is loaded successfully | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Input Setting** | | | | |
| get edid data x | Get EDID data (x=1~5)<br>x=1: USB-C input 1<br>x=2: USB-C input 2<br>x=3: HDMI output 1<br>x=4: User defined 1<br>x=5: User defined 2 | get edid data 1 | USB-C input 1 EDID data <00 FF FF FF….> | |
| set input x hdcp y | Set input (x=0~2) HDCP on/off<br>x=0: All inputs<br>x=1: USB-C input 1<br>x=2: USB-C input 2<br>y=0: Off<br>y=1: On | set input 0 hdcp 1 | USB-C input 1 HDCP: on<br>USB-C input 2 HDCP: on | 1 |
| get input x hdcp | Get input (x=0~2) HDCP on/off status<br>x=0: All inputs<br>x=1: USB-C input 1<br>x=2: USB-C input 2 | get input 0 hdcp | USB-C input 1 HDCP: on<br>USB-C input 2 HDCP: on | |
| **Output Setting** | | | | |
| set output x name y | Set output (x=1) name to y (16 characters max)<br>x=1: HDMI output 1 | set output 1 name Sony TV | HDMI output 1 name: Sony TV | HDMI Out 1 |
| get output x name | Get output (x=0~1) name<br>x=0: All outputs<br>x=1: HDMI output 1 | get output 0 name<br>get output 1 name | HDMI output 1 name: Sony TV | |
| get output x connected | Get output (x=0~1) cable connected status<br>x=0: All outputs<br>x=1: HDMI output 1 | get output 0 connected<br>get output 1 connected | HDMI output 1: connected | |
| set output x hdcp y | Set output (x=0~1) hdcp mode (y=1~4)<br>x=0: All outputs<br>x=1: HDMI output 1<br>y=1: Auto (follow sink)<br>y=2: Force HDCP 1.4<br>y=3: Force HDCP 2.2<br>y=4: Signal management | set output 0 hdcp 1<br>set output 1 hdcp 1 | HDMI output 1 HDCP: auto | 1 |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Output Setting** | | | | |
| get output x hdcp | Get output (x=0~1) hdcp mode<br>x=0: All outputs<br>x=1: HDMI output 1 | get output 0 hdcp<br>get output 1 hdcp | HDMI output 1<br>HDCP: auto | |
| set output x video y | Set output (x=0~1) video mode (y=1~4)<br>x=0: All outputs<br>x=1: HDMI output 1<br>y=1: Auto (auto downscale according to display's capability)<br>y=2: Bypass<br>y=3: Force 1080P<br>y=4: Internal pattern | set output 0 video 1<br>set output 1 video 1 | HDMI output 1 video: auto | 1 |
| get output x video | Get output (x=0~1) video mode<br>x=0: All outputs<br>x=1: HDMI output 1 | get output 0 video<br>get output 1 video | HDMI output 1 video: auto | |
| set output x signal y | Set output (x=0~1) signal on/off/avmute<br>x=0: All outputs<br>x=1: HDMI output 1<br>y=1: On<br>y=2: Off<br>y=3: AVMute | set output 0 signal 1<br>set output 1 signal 1 | HDMI output 1 signal: on | 1 |
| get output x signal | Get output (x=0~1) signal status<br>x=0: All outputs<br>x=1: HDMI output 1 | get output 0 signal<br>get output 1 signal | HDMI output 1 signal: on | |
| get pattern | Get internal pattern generator resolution and pattern | get pattern | Pattern: 4K60Hz checkboard | |
| set welcome screen x | Set welcome screen function on/off<br>x=0: Off<br>x=1: On | set welcome screen 1 | Welcome screen: on | 1 |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Output Setting** | | | | |
| set pattern x y | Set internal pattern generator resolution (x=1~7) pattern (y=1~12)<br>x=1: 4K60Hz<br>x=2: 4K50Hz<br>x=3: 4K25Hz<br>x=4: 4K24Hz<br>x=5: 1080P60Hz<br>x=6: 480P60Hz<br>x=7: 576P50Hz<br>y=1: Black<br>y=2: Checkboard<br>y=3: Strip<br>y=4: Red<br>y=5: Green<br>y=6: Blue<br>y=7: White<br>y=8: Ramp<br>y=9: Red ramp<br>y=10: Green ramp<br>y=11: Blue ramp<br>y=12: PRBS | set pattern 1 2 | Pattern: 4K60Hz checkboard | |
| get welcome screen | Get welcome screen function on/off status | get welcome screen | Welcome screen: on | |
| set no signal screen x | Set no signal after 60s display welcome screen function on/off<br>x=0: Off<br>x=1: On | set no signal screen 1 | No signal screen: on | 1 |
| get no signal screen | Get no signal display welcome screen function on/off status | get no signal screen | No signal screen: on | |
| set image display | Set welcome screen image display | set image display | Welcome image display | |
| set image clear | Clear welcome screen image | set image clear | Welcome image clear | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Video Setting** | | | | |
| set output x from y | Set output (x=0~1) from input (y=1~2)<br>x=0: All outputs<br>x=1: HDMI output 1<br>y=1: USB-C input 1<br>y=2: USB-C input 2 | set output 0 from 1<br>set output 1 from 1 | HDMI output 1: USB-C input 1 | 1 |
| get output x from | Get output (x=0~1) from which input<br>x=0: All outputs<br>x=1: HDMI output 1 | get output 0 from<br>get output 1 from | HDMI output 1: USB-C input 1 | |
| set output x auto switch y | Set output (x=0~1) auto switch on/off<br>x=0: All outputs<br>x=1: HDMI output 1<br>y=0: Off<br>y=1: On | set output 0 auto switch 1<br>set output 1 auto switch 1 | HDMI output 1 auto switch: on | on |
| get output x auto switch | Get output (x=0~1) auto switch on/off status<br>x=0: All outputs<br>x=1: HDMI output 1 | get output 0 auto switch<br>get output 1 auto switch | HDMI output 1 auto switch: on | |
| set output auto switch mode x | Set output auto switch detection mode (x=1~2)<br>x=1: Input signal<br>x=2: Source 5V | set output auto switch mode 1 | Auto switch mode: input signal | 1 |
| get output auto switch mode | Get output auto switch detection mode | get output auto switch mode | Auto switch mode: input signal | |
| set output x fallback input y | Set output (x=0~1) fallback input source (y=1~4) when active signal is removed in single source auto switching mode<br>x=0: All outputs<br>x=1: HDMI output 1<br>y=1: Next input<br>y=2: Previous input<br>y=3: USB-C input 1<br>y=4: USB-C input 2 | set output 0 fallback input 1<br>set output 1 fallback input 1 | HDMI output 1 fallback: next input | 1 |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Video Setting** | | | | |
| get output x fallback input | Get output (x=0~1) fallback input source<br>x=0: All outputs<br>x=1: HDMI output 1 | get output 0 fallback input<br>get output 1 fallback input | HDMI output 1 fallback: next input | |
| **Audio Setting** | | | | |
| set analog audio input x | Set analog audio input embedded to (x=0~2)<br>x=0: Off<br>x=1: USB-C input 1<br>x=2: USB-C input 2 | set analog audio input 0 | Analog audio input: off | 0 |
| get analog audio input | Get analog audio input embedded to | get analog audio input | Analog audio input: off | |
| set analog audio input to usb x | Set analog audio input embedded to USB audio on/off<br>x=0: Off<br>x=1: On | set analog audio input to usb 0 | Analog audio input to USB: off | 0 |
| get analog audio input to usb | Get analog audio input embedded to USB audio on/off status | get analog audio input to usb | Analog audio input to USB: off | |
| set analog audio output x | Set analog audio de-embedded from (x=1~2)<br>x=1: HDMI output 1<br>x=2: USB audio | set analog audio output 1 | Analog audio output: HDMI output 1 | 1 |
| get analog audio output | Get analog audio de-embedded from | get analog audio output | Analog audio output: HDMI output 1 | |
| set analog audio gain x | Set analog audio gain (x=0dB ~ -50dB) | set analog audio gain -5 | Analog audio gain: -5dB | 0dB |
| get analog audio gain | Get analog audio gain value | get analog audio gain | Analog audio gain: -5dB | |
| set analog audio gain+<br>set analog audio gain+x | Increase analog audio gain +1dB<br>Increase analog audio gain +xdB | set analog audio gain+<br>set analog audio gain+5 | Analog audio gain: -4dB<br>Analog audio gain: 0dB | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Audio Setting** | | | | |
| set analog audio gain-<br>set analog audio gain-x | Increase analog audio gain -1dB<br>Increase analog audio gain -xdB | set analog audio gain-<br>set analog audio gain-5 | Analog audio gain: -6dB<br>Analog audio gain: -10dB | |
| set analog audio mute x | Set analog audio mute on/ off<br>x=0: Off<br>x=1: On | set analog audio mute 1 | Analog audio mute: on | Off |
| get analog audio mute | Get analog audio mute status | get analog audio mute | Analog audio mute: off | |
| **USB Setting** | | | | |
| get usb host x power | Get USB host (x=0~2) power<br>x=0: All hosts<br>x=1: USB-C input 1<br>x=2: USB-C input 2 | get usb host power 0 | USB-C input 1 power: on<br>USB Host 2 power: off | |
| set usb switch mode x | Set USB switch mode (x=1~3)<br>x=1: Follow video<br>x=2: Manual switch<br>x=3: Auto switch | set usb switch mode 1 | USB switch mode: follow video | 1 |
| get usb switch mode | Get USB switch mode | get usb switch mode | USB switch mode: follow video | |
| set usb manual switch x | Set USB manual switch (x=1~2)<br>x=1: USB-C input 1<br>x=2: USB-C input 2 | set usb manual switch 1 | USB manual switch: USB-C input 1 | |
| get usb switch status | Get USB switch status | get usb switch status | USB switch status: USB-C input 1 | |
| set usb device x power y | Set USB device (x=0~3) power mode (y=1~3)<br>x=0: All USB device ports<br>x=1: USB device 1<br>x=2: USB device 2<br>x=3: USB device 3<br>y=1: Follow host<br>y=2: Force 5V always output<br>y=3: Disable 5V output | set usb device 0 power | USB device 1 power: follow host<br>USB device 2 power: follow host<br>USB device 3 power: follow host | Follow host |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **USB Setting** | | | | |
| get usb device x power | Get USB device (x=0~3) power mode<br>x=0: All USB device ports<br>x=1: USB device 1<br>x=2: USB device 2<br>x=3: USB device 3 | get usb device 0 power | USB device 1 power: follow host<br>USB device 2 power: follow host<br>USB device 3 power: follow host | |
| **Display Control** | | | | |
| set display x power y | Set display (x=0~1) power on/off<br>x=0: All outputs<br>x=1: HDMI output 1<br>y=0: Off<br>y=1: On | set display 0 power 1<br>set display 1 power 1 | Display 1 power: on | |
| set display x auto power feature y | Set display (x=0~1) auto power feature on/off when system power on/off<br>x=0: All outputs<br>x=1: HDMI output 1<br>y=0: Off<br>y=1: On | set display 0 auto power feature 1<br>set display 1 auto power feature 1 | Display 1 auto power feature: on | on |
| get display x auto power feature | Get display (x=0~1) auto power feature on/off status<br>x=0: All outputs<br>x=1: HDMI output 1 | get display 0 auto power feature<br>get display 1 auto power feature | Display 1 auto power feature: on | |
| set display x auto power on timer y | Set display (x=0~1) auto power on after period time (y=0~1200) when system power on<br>x=0: All outputs<br>x=1: HDMI output 1<br>y= 0~1200sec | set display 0 auto power on timer 5<br>set display 1 auto power on timer 5 | Display 1 auto power on timer: 5 sec | 5 sec |
| get display x auto power on timer | Get display (x=0~1) auto power on timer<br>x=0: All outputs<br>x=1: HDMI output 1 | get display 0 auto power on timer<br>get display 1 auto power on timer | Display 1 auto power on timer: 5 sec | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Display Control** | | | | |
| set display x auto power off timer y | Set display (x=0~1) auto power off after period time (y=0~1200) when system power off<br>x=0: All outputs<br>x=1: HDMI output 1<br>y= 0~1200sec | set display 0 auto power off timer 5<br>set display 1 auto power off timer 5 | Display 1 auto power off timer: 5 sec | 5 sec |
| get display x auto power off timer | Get display (x=0~1) auto power off timer<br>x=0: All outputs<br>x=1: HDMI output 1 | get display 0 auto power off timer<br>get display 1 auto power off timer | Display 1 auto power off timer: 5 sec | |
| set display x control type y | Set display (x=1) power on/off control type (y[2:0])<br>x=1: HDMI output 1<br>y[0]: CEC<br>y[1]: IR<br>y[2]: RS-232 | set display 1 control type 111 | Display 1 control type: 111 | 100 |
| get display x control type | Get display (x=0~1) power on/off control type<br>x=0: All outputs<br>x=1: HDMI output 1 | get display 0 control type<br>get display 1 control type | Display 1 control type: 111 | |
| **RS-232 Setting** | | | | |
| set serial setting y | Set serial setting to y=115200-8n1<br>Baud rate: 115200/57600/56000/38400/19200/9600/4800/2400<br>Data bits: 7/8<br>Parity: n(None)/ o(Odd) / e(Even)<br>Stop bits: 1/2 | set serial setting 115200-8n1 | Serial setting: 115200-8n1 | 115200-8n1 |
| get serial setting | Get serial setting | get serial setting | Serial setting: 115200-8n1 | |
| set serial HEX/ASCII <end> <command> | Set serial general command, command format is HEX or ASCII<br><end>= command end flag, can be null/CR/LF/CR+LF<br><command>= RS-232 command | set serial ASCII <CR+LF> <VOL+> | Serial: ASCII <CR+LF> <VOL+> | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **RS-232 Setting** | | | | |
| set serial power on/ off HEX/ ASCII <end> <command1> <delay> <command2> | Set serial power on/off commands, command format is HEX or ASCII <end>= command end flag, can be null/CR/LF/CR+LF <command1>= RS-232 power on/off command 1 <delay>= 0~1200sec <command2>= RS-232 power on/off command 2 NOTE: <delay> and <command2> can be NULL | set serial power on ASCII <CR+LF> <PWRON> <10> <INPUT1><br>set serial power off ASCII <CR+LF> <PWROFF> <10> <LAMPOFF><br>set serial power on ASCII <CR+LF> <PWRON><br>set serial power off ASCII <CR+LF> <PWROFF><br>set serial power on HEX <null> <11 22><br>set serial power off HEX <null> <33 44> | Serial power on: ASCII <CR+LF> <PWRON> <10> <INPUT1><br>Serial power off: ASCII <CR+LF> <PWROFF> <10> <LAMPOFF><br>Serial power on: ASCII <CR+LF> <PWRON><br>Serial power off: ASCII <CR+LF> <PWROFF><br>Serial power on: HEX <null> <11 22><br>Serial power off: HEX <null> <33 44> | |
| get serial power on/off command | Get serial power on/off commands | get serial power on command<br>get serial power off command | Serial power on: ASCII <CR+LF> <PWRON> <10> <INPUT1><br>Serial power off: ASCII <CR+LF> <PWROFF> <10> <LAMPOFF><br>Serial power on: ASCII <CR+LF> <PWRON><br>Serial power off: ASCII <CR+LF> <PWROFF><br>Serial power on: HEX <null> <11 22><br>Serial power off: HEX <null> <33 44> | |
| **IR Setting** | | | | |
| set ir power on/off | Set IR power on/off | set ir power on<br>set ir power off | IR power: on<br>IR power: off | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **CEC Setting** | | | | |
| set output x cec <y> | set output (x=0~1) CEC command <y><br>x=0: All outputs<br>x=1: HDMI output 1<br>y=power on/power off<br>y=active source/image view on/text view on<br>y=volume up/volume down/mute | set output 0 cec <power off><br>set output 1 cec <power off> | HDMI output 1 CEC: power off | |
| set output x custom cec <y> | Set output (x=0~1) custom CEC command <y><br>x=0: All outputs<br>x=1: HDMI output 1<br>y=custom CEC command (hex format) | set output 0 custom cec <87 01><br>set output 1 custom cec <87 01> | HDMI output 1 CEC: <87 01> | |
| **Preset Setting** | | | | |
| set preset save x | Save the current unit's settings to the specified preset (x=1~5)<br>All settings except network setting.<br>x=1~5: Preset 1 ~ Preset 5 | set preset save 1 | Preset 1: save | |
| set preset recall x | Recall a specified preset into unit (x=1~5)<br>All settings except network setting.<br>x=1~5: Preset 1 ~ Preset 5 | set preset recall 1 | Preset 1: recall | |
| set preset clear x | Clear a specified preset into unit (x=1~5)<br>All settings except network setting.<br>x=1~5: Preset 1 ~ Preset 5 | set preset clear 1 | Preset 1: clear | |
| set preset x name y | Set preset (x=1~5) name to y (16 characters max)<br>x=1~5: Preset 1 ~ Preset 5 | set preset 1 name MeetingRoom 1 | Preset 1 name: MeetingRoom 1 | |
| get preset x name | Get preset (x=1~5) name<br>x=1~5: Preset 1 ~ Preset 5 | get preset 1 name | Preset 1 name: MeetingRoom 1 | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Network Setting** | | | | |
| get mac addr | Get network MAC address | get mac addr | MAC address: 6C:DF:FB:0C:B3:8E | |
| set ip mode x | Set network IP mode to static IP or DHCP (x=0~1) x=0: Static x=1: DHCP | set ip mode 0 | IP mode: static (Please use "set net reboot" command to apply new config!) | 1 |
| get ipconfig | Get the Current IP Configuration | get ipconfig | IP mode: DHCP IP address: 192.168.62.106 Subnet mask: 255.255.255.0 Gateway: 192.168.62.1 TCP/IP port: 8000 Telnet port: 23 MAC address: 6C:DF:FB:0C:B3:8E (Static: 169.254.100.200 255.255.0.0 169.254.100.1) | default static IP is 192.168.0.100/255.255.0.0/192.168.0.1 |
| get ip mode | Get network IP mode | get ip mode | IP mode: static | |
| set ip addr xxx.xxx.xxx.xxx | Set network IP address | set ip addr 192.168.1.100 | IP address: 192.168.1.100 (Please use "set net reboot" command to apply new config!) DHCP on, device can't config static address, set DHCP off first. | |
| get ip addr | Get network IP address | get ip addr | IP address: 192.168.1.100 | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Network Setting** | | | | |
| set subnet xxx.xxx.xxx.xxx | Set network subnet mask | set subnet 255.255.255.0 | Subnet mask: 255.255.255.0 (Please use "set net reboot" command to apply new config!) DHCP on, device can't config subnet mask, set DHCP off first. | |
| set net reboot | Reboot network modules | set net reboot | Network reboot… Search for IP, Please wait ...! IP mode: DHCP IP address: 192.168.62.106 Subnet mask: 255.255.255.0 Gateway: 192.168.62.1 TCP/IP port: 8000 Telnet port: 23 MAC address: 6C:DF:FB:0C:B3:8E (Static: 169.254.100.200 255.255.0.0 169.254.100.1) | |
| set net mode x | Set network working mode (x=1~2) x=1: Mode 1 (separated mode), LAN 1 is for TCP/IP and Web GUI access, LAN 2 is for 1G ethernet. x=2: Mode 2 (switch mode), LAN 1 and LAN 2 both can access TCP/IP and Web GUI and 1G ethernet. | set net mode 1 | Network mode: 1 | 1 |
| get net mode | Get network working mode | get net mode | Network mode: 1 | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Network Setting** | | | | |
| get subnet | Get network subnet mask | get subnet | Subnet mask: 255.255.255.0 | |
| set gateway xxx.xxx.xxx.xxx | Set network gateway | set gateway 192.168.1.1 | Gateway: 192.168.1.1 (Please use "set net reboot" command to apply new config!) DHCP on, device can't config gateway, set DHCP off first. | |
| get gateway | Get network gateway | get gateway | Gateway: 192.168.1.1 | |
| set tcp/ip x | Set network TCP/IP port on/off<br>x=0: Off<br>x=1: On | set tcp/ip 1 | TCP/IP port: on | 1 |
| get tcp/ip | Get network TCP/IP port on/off status | get tcp/ip | TCP/IP port: on | |
| set tcp/ip port x | Set network telnet port(x=1~65535) | set tcp/ip port 8000 | TCP/IP port: 8000 | 8000 |
| get tcp/ip port | Get network TCP/IP port | get tcp/ip port | TCP/IP port: 8000 | |
| set telnet x | Set network telnet port on/off<br>x=0: Off<br>x=1: On | set telnet 1 | Telnet port: on | 1 |
| get telnet | Get network telent port on/off status | get telnet | Telnet port: on | |
| set telnet port x | Set network telnet port(x=1~65535) | set telnet port 23 | Telnet port: 23 | 23 |
| get telnet port | Get network telnet port | get telnet port | Telnet port: 23 | |
| set net hostname xxxx | Set network hostname to xxxx (x=[32 characters max]) | set net hostname 1234 | Hostname: 1234 | HU21C+ (Mac[3]%16, Mac[4], Mac[5]) |
| get net hostname | Get network hostname | get net hostname | Hostname: 1234 | |

| Command | Function Description | Example | Feedback | Default |
|---|---|---|---|---|
| **Network Setting** | | | | |
| **Password Setting** | | | | |
| set admin password x | Set admin login password (x=[16 characters max]) | set admin password 1234 | Admin password: 1234 | 1234 |
| get admin password | Get admin login password | get admin password | Admin password: 1234 | |
| set user password x | Set user login password (x=[16 characters max]) | set user password 1234 | User password: 1234 | 1234 |
| get user password | Get user login password | get user password | User password: 1234 | |

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

==========

Status Info HU21C

MCU: V1.00.04 WEB: V2.00.06

| Power | Key | Baud | WelcomeScreen | NoSignalScreen | HDMIPowerSaving |
|---|---|---|---|---|---|
| On | On | 15200 | On | On | On |

| AutoSwitch_Mode | AutoStandbyTime | UsbcAccessNetwork | Temp(C) | Uptime(Day:Hour:Min:Sec) |
|---|---|---|---|---|
| Input_Signal | 5min | USB-C 1/2 | 47 | 0000:00:02:14 |

| Input | Name | Cable | Resolution | ColorSpace | ColorDepth | HDCP |
|---|---|---|---|---|---|---|
| USB-C_In1 | USB-C In 1 | Connected | 3840x2160p29.97 | RGB | 8 | Off |
| USB-C_In1 | USB-C In 2 | Connected | 3840x2160p29.97 | RGB | 8 | Off |

**EDID**

Auto (Copy HDMI Out 1)

Auto (Copy HDMI Out 1)

| Output | Name | Cable | Resolution | ColorSpace | ColorDepth | HDCP |
|---|---|---|---|---|---|---|
| HDMI_Out1 | HDMI Out 1 | Connected | 3840x2160p29.974 | RGB | 8 | Off |

| VideoMode | OutputSignal | AutoSwitch | From |
|---|---|---|---|
| Auto | On | On | USB-C_In1 |

| Analog_Audio_In | Analog_Audio_In_To_USB | Analog_Audio_Out_From |
|---|---|---|
| Off | On | HDMI_Out1 |

| Analog_Audio_Out_Mute | Analog_Audio_Out_Gain |
|---|---|
| Off | 0dB |

| USB_Switch | USB-C_In1 | USB_In2 | USB_Device1 | USB_Device2 | USB_Device3 |
|---|---|---|---|---|---|
| Follow Video | Power On | Power On | Follow Host | Follow Host | Force 5V Always Out |

| Display_AutoPower | On/Off | Power_On_Time(s) | Power_Off_Time(s) | Control_Mode |
|---|---|---|---|---|
| HDMI_Out1 | On | 5 | 5 | CEC |

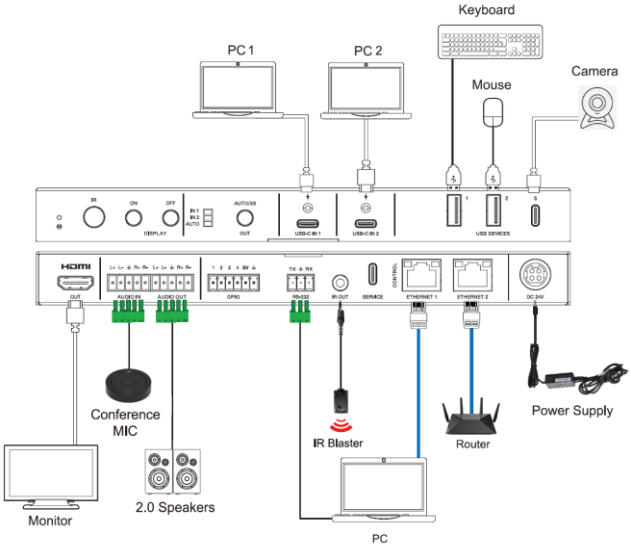
| GPIO1 | GPIO2 | GPIO3 | GPIO4 |
|---|---|---|---|
| Input_High | Input_High | Input_High | Input_High |

| TCP/IP | TCP/IP_Port | Telnet | Telnet Port | MAC |
|---|---|---|---|---|
| On | 8000 | On | 0023 | 9C:69:D3:0E:89:0D |

| DHCP | IP | Gateway | SubnetMask |
|---|---|---|---|
| On | 169.254.100.104 | 255.255.255.000 | 169.254.100.001 |
| (Static: | 192.168.000.100 | 255.255.000.000 | 192.168.000.001) |

==========

# 9. Application Example




**Mode 1 (separated mode):** LAN 1 = TCP/IP/Web GUI, LAN 2 = 1G Ethernet only

**Mode 2 (switch mode):** LAN 1 and LAN 2 = TCP/IP/Web GUI and 1G Ethernet

HIGH-DEFINITION MULTIMEDIA INTERFACE

DVDO

Follow us