USB-C/HDMI 4x2 Presentation Switcher with Dante

User Manual

500532

94-001072-A/SE-001072-A

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1. Safety Precautions

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

- Follow basic safety precautions to reduce the risk of fire, electrical shock, and injury.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burns.
- Do not open or remove the housing of the device as you may be exposed to dangerous voltage or other hazards.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture and do not install this product near water. Keep the product away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on the housing, unplug the module immediately.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Using supplies or parts not meeting the product specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- Install the device in a place with adequate ventilation to avoid damage caused by overheat.
- Unplug the power when left unused for a long period of time.
- Information on disposal of devices: do not burn or mix with general household waste, please treat them as normal electrical waste.

2. Introduction

Introducing the MuxLab USB-C/HDMI 4x2 Presentation Switcher with Dante (Model: 500532):
Enhance your audiovisual experiences with the MuxLab USB-C/HDMI 4x2 Presentation Switcher, a cutting-edge solution designed for seamless connectivity and advanced presentation capabilities. This versatile switcher offers a myriad of features to meet your diverse multimedia needs.
The MuxLab USB-C/HDMI 4x2 Presentation Switcher with Dante features four video inputs: two USB-C and two HDMI inputs. Each USB-C input supports DisplayPort alternate mode A/V up to 4K@60Hz 4:4:4 8bit deep color, USB 3.2 Gen 1 5Gbps data and up to 60 watts power charging to USB-C source device. It also features 1Gbps Ethernet over USB-C functionality to allow USB-C source device to access internet seamlessly. Local USB 3.2 KVM switching and extending USB 2.0 high speed over HDBaseT 3.0 can be allowed to connect external USB 2.0 devices or cameras from RX remote side for video conference.
The MuxLab USB-C/HDMI 4x2 Presentation Switcher with Dante supports audio embedded and de-embedded, it built-in audio DSP with audio mixing, matrixing, independent EQ/volume/delay adjustment. It also supports Dante 2x2 audio input and output interface, and it can be seamlessly connected to any existing audio processing system with Dante enabled.
The MuxLab USB-C/HDMI 4x2 Presentation Switcher with Dante can be controlled via front panel buttons, IR remote control, API commands using RS-232 or TCP/IP. A Web server / GUI is built in that features A/V control, automatic display control and input EDID management. The product is ideal for software based video teleconference rooms.

3. Features

- Video resolution up to 4K@60Hz 4:4:4, as specified in HDMI 2.0b
- HDCP 2.3, DP 1.4 and HDBase3.0 compliant
- USB 3.2 Gen 1 up to 5Gbps
- 4x2 seamless switching (single screen) and fast switching (multiview) function
- Manual switching or auto switching mode
- Multiple multiview display modes: Auto/Single/PIP/PBP/Triple/Quad/Custom
- Input: 2 x USB-C, 2 x HDMI, 1 x Analog audio, 1 x Dante 2ch
- Output: 1 x HDMI, 1 x HDMI+ HDBaseT mirrored, 1 x Analog audio, 1 x Dante 2ch
- USB-C supports DisplayPort Alternate mode for A/V, USB 3.2, 1G LAN and 60W charging
- Local USB 3.2 switching and extending USB 2.0 over HDBaseT 3.0
- Local USB KVM hotkeys and mouse switching
- Uncompressed 4K60 4:4:4 over HDBaseT 3.0 up to 132ft/40m via single CAT6A cable
- Uncompressed 1080P & 4K30 over HDBaseT 3.0 up to 230ft/70m via single CAT6A cable
- Audio embedded and de-embedded
- Audio DSP for gain, equalizer, volume and delay
- Dante 2x2 audio input and output
- CEC/RS-232 control external devices ON/OFF
- Advanced EDID management
- Support standard PoE power supply from TX to RX (TX_PSE, RX_PD)
- Flexible control via front panel buttons, IR remote, RS-232,TCP/IP or Web GUI

4. Package Contents

- One (1) 4x2 Seamless Presentation Switcher with Dante
- One (1) HDBaseT Receiver
- One (1) IR Blaster cable (1.5 meters)
- One (1) IR Wideband Receiver Cable (1.5 meters)
- One (1) IR Remote Control
- Eight (8) Machine Screw
- Three (3) 3pin-3.5mm Phoenix Connector (male)
- Three (3) 5-pin Phoenix Connector (male)
- One (1) 24VDC/8A Desktop Power Supply and AC Power Cord (1.5 meters)
- Four (4) Mounting Ear (Matrix and Receiver)
- One (1) User manual (available via download)

5. Specifications

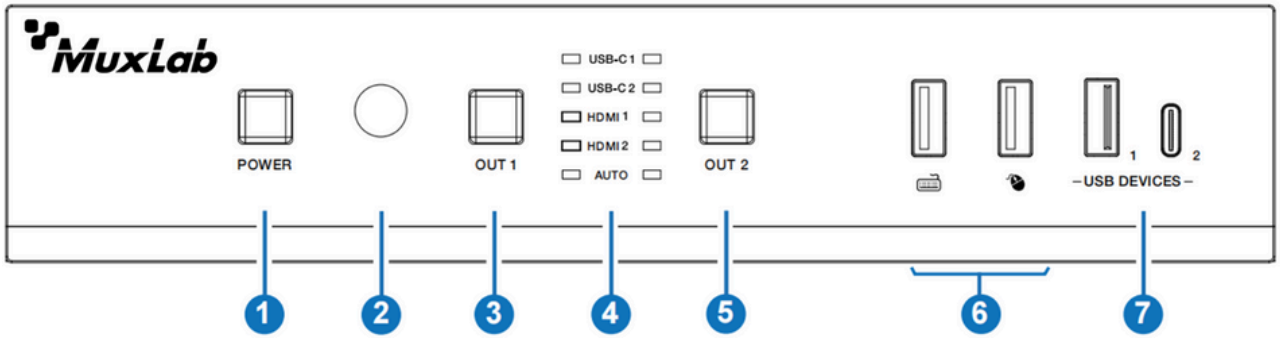
Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Input Video Resolution	480i ~1080p50/60Hz, 4Kx2K@24/30Hz, 4K2K@50Hz/60Hz 4:4:4
Output Video Resolution	Auto, 3840x2160p60, 3840x2160p50, 4096x2160p60, 4096x2160p50, 3840x2160p30, 3840x2160p25, 1920x1200p60RB, 1920x1080p60, 1920x1080p50, 1360x768p60, 1280x800p60, 1280x720p60, 1280x720p50, 1024x768p60
Color Space	Input: 8/10/12-bit, 8-bit (4K60Hz 4:4:4) Output: 8-bit
Color Depth	RGB, YCbCr 4 :4 :4/4 :2 :2/4 :2 :0
Audio Formats	LPCM 2.0
Audio Sample Rate	48KHz
Transmission Distance	1080P&4K30 -- 230ft/70m; 4K60-- 131ft/40m
HDR	Input supports HDR, output does not support HDR.
ESD Protection	Human-body Model: ±8kV (Air-gap discharge), ±4kV (Contact discharge)
TX Analog Audio (Base)	
Input Impedance	10K Ohms
Output Impedance	330 Ohms
Line Input Level (Max)	8.2dBu (2Vrms)@ balanced or unbalanced audio
Line Output Level (Max)	8.2dBu (2Vrms)@ balanced, 2.2dBu (1Vrms)@ unbalanced audio
Frequency Response	(+0.5 dB, -1 dB) 20 Hz to 20 kHz
Audio Output Sync Delay	<1ms
Audio S/N Ratio	93dB @ 2Vrms, 1kHz A-weighted
Audio THD+N	<0.1% @ 0dBV, 1kHz
RX Analog Audio (HDBaseT)	
Output Impedance	330 Ohms
Line Input Level (Max)	8.2dBu (2Vrms)@ balanced or unbalanced audio
Line Output Level (Max)	8.2dBu (2Vrms)@ balanced, 2.2dBu (1Vrms)@ unbalanced audio
Frequency Response	(+0.5 dB, -1 dB) 20 Hz to 20 kHz
Audio Output Sync Delay	0 to 50ms
Audio S/N Ratio	93dB @ 2Vrms, 1kHz A-weighted
Audio THD+N	<0.1% @ 0dBV, 1kHz
Dante Audio	
Audio Formant	LPCM2.0
Sample Rate	44.1, 48, 88.2 and 96KHz at 24 bits
Audio Delay	2ms, 3ms, 4ms, 5ms,10ms
Network Bandwidth	100Mbps

Connection	
Transmitter (Switcher)	Inputs: 2 x HDMI INPUT [Type A, 19-pinfemale] 2 x USB-C [24-pin female] 1 x LINE IN [5pin-3.5mm phoenix connector] 1 x DANTE [RJ45] Outputs: 2 x HDMI OUTPUT [Type A, 19-pinfemale] 1 x HDBT OUTPUT [RJ45] 1 x LINE OUT [5pin-3.5mm phoenix connector] Control: Controls: 1 x RS-232 [3pin-3.5mm phoenix connector] 1 x LAN [RJ45] 2 x USB HOST [USB Type B] 3 x USB DEVICES [USB Type A] 2 x USB 1.1 KVM [USB Type A] 1 x USB-C DEVICE [USB Type C] 1 x IR IN [3.5mm stereo mini-jack] 1 x IR OUT [3.5mm stereo mini-jack]
HDBaseT receiver	Inputs: 1 x HDMI IN [Type A, 19-pin female] 1 x HDBaseT IN [RJ45] Outputs: 1 x HDMI OUT [Type A, 19-pinfemale] 1 x LINE OUT [5pin-5mm phoenix connector] Control: Controls: 1 x RS-232 [3pin-3.5mm 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	Metal enclosure with Aluminum front panel
Color	Black
Dimensions (WxDxH)	Transmitter: 220mm[W]×220mm[D]×44mm[H] Receiver: 140mm[W]×105mm[D]×21.5mm [H]
Weight	Transmitter: 1.78Kg; Receiver: 424g
Power Supply	Input: 100VAC - 240VAC 50/60Hz Output: 24VDC/8A
Power Consumption	170W (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-condensing)
Generic Specification	
Compliance	Regulatory: FCC, CE, RoHS
Warranty	2 years
Order Information	500532 USB-C/HDMI 4x2 Presentation Switcher with Dante(UPC:627699005323)

6. Operation Controls and Functions

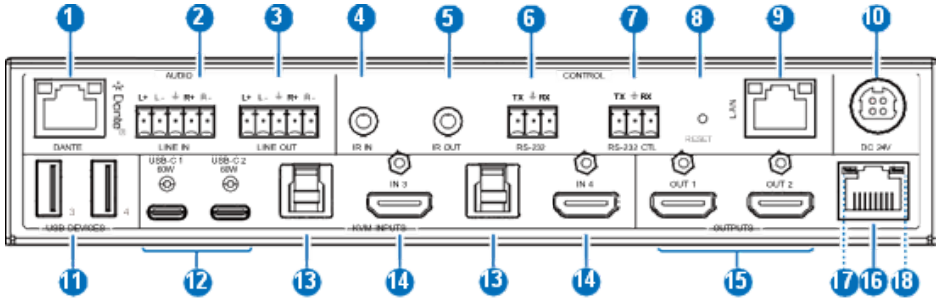
6.1 Switcher Panel

Front Panel



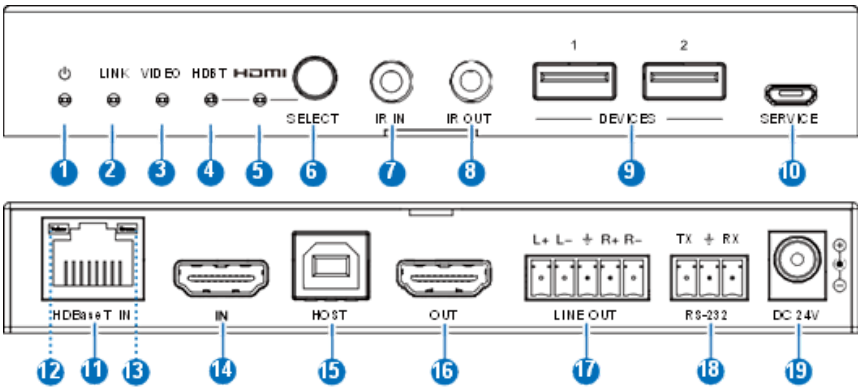
No	Name	Function Description
1	POWER button	Press and hold this button for 3 seconds, the unit will enter the standby mode and the button light will be red. In standby mode, short press this button, the unit will be turned on and the button light will be blue.
2	IR Window	IR signal receiving window, receiving the IR remote signal to control certain functions of the machine.
3	OUT 1 button	Press this button to select the input channel for HDMI OUT 1. When the OUT 1 port is connected to a display device, the button light is on; otherwise the button light is off.
4	USB-C 1/ USB-C 2/ HDMI 1/HDMI 2/ AUTO LEDs	**USB-C 1/USB-C2/HDMI 1/HDMI 2:** Indicates the selected status of each input channel. Steady green indicates that the corresponding input channel is selected, and off indicates that the input channel is not selected. **AUTO:** Indicates that the unit is in the auto switching/automatic layout state (setting via Web GUI),and the last connected signal source is the input source of HDMI output.
5	OUT 2 button	Press this button to select the input channel for HDMI OUT 2. When the OUT 2 port is connected to a display device, the button light is on; otherwise the button light is off.
6	USB 1.1 KVM ports	USB 1.1 device ports, connected to keyboard and mouse, supporting hotkey function and 5V/500mA output.
7	USB DEVICES 1/2 ports	USB extension ports, supporting USB 3.2 Gen 1 and 5V/900mA output, connected to USB 3.0 flash disk, camera, printer etc.

Rear Panel



No	Name	Function Description
1	DANTE port	Dante Network port, connected to the Switch with other Dante receivers. This port supports receiving and transmitting signals.
2	LINE IN port	Analog audio input port, supporting balanced/unbalanced audio input, with a maximum support of 2Vrms. Balanced connection method: L+, L -, GND , R+, R- Unbalanced connection method: L+, R+
3	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 -,G , R+, R- Unbalanced connection method: L+G R+
4	IR IN Port	Connect the IR receiver cable, used for IR signal pass-through or controlling this product via the IR remote.
5	IR OUT Port	Connect the IR blaster cable, the IR signal is from the IR IN port of the HDBaseT Receiver.
6	RS-232 port	RS-232 serial port, with two functions: (1) RS-232 signal pass-through or control external devices; (2) Update valens firmware and hotkey function firmware (switch the serial port via API commands)
7	RS-232 CTL port	RS-232 serial port, used for API commands control and MCU update.
8	RESET button	Press and hold this button for 5 seconds, all LEDs on the front panel will flash at 1Hz. When LEDs stop flashing, it indicates that the unit has been restored to factory default settings.
9	LAN port	1G Ethernet port, TCP/IP and Web GUI, connected to a router or network Switch for control or Ethernet access.
10	24VDC port	Power port, connected to the 24VDC power adapter.
11	USB DEVICES 3/4 ports	USB expansion ports, supporting USB 3.2Gen 1 and 5V/900mA output, connected to USB 3.0 flash disk, camera, printer etc.
12	USB-C 1/2 ports	USB-C ports, with four functions: (1) USB-C signal input ports, connected to USB-C signal source devices. (2) USB Host ports, supporting USB 3.2 Gen 1 5Gbps. (3) Providing 60W charging for the external device. (4) Supporting USB-C access network feature.
13	HOST 3/4 ports	USB Host ports, supporting USB 3.2 Gen 1 5Gbps.
14	IN 1/2 ports	HDMI signal input ports, connected to HDMI source device such as DVD or Blu-ray player with HDMI cable.
15	OUT 1/2 ports	HDMI signal output ports, connected to HDMI display device such as TV or monitor with HDMI cable.
16	HDBT 2 port	HDBaseT output port, connected to the HDBaseT IN port of the receiver with a CAT6A (F/FTP)cable.
17	Data Signal Indicator (Yellow)	▪ Light on: There is video signal input with HDCP. ▪ Light flashing: There is video signal input without HDCP. ▪ Light off: There is no video signal input.
18	Link Signal Indicator (Green)	▪ Light on: Transmitter and Receiver are connected and linked. ▪ Light flashing: The link between the Transmitter and Receiver is abnormal. ▪ Light off: Transmitter and Receiver are not linked.

6.2 HDBaseT Receiver Panel



No	Name	Function Description
1	Power LED	When the receiver is powered on, the red power LED will be on.
2	LINK LED	▪ 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	▪ Light on: There is video signal input with HDCP. ▪ Light flashing: There is video signal input without HDCP. ▪ Light off: There is no video signal input.
4	HDBT LED	When the HDBaseT IN port is selected as the signal input channel, the green HDBT LED will be on.
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 to IR receiver cable, the IR receive signal will emit to the "IR OUT" port of the Switcher.
8	IR OUT Port	Connect to IR blaster cable, the IR emit signal is from the "IR IN" port of the Switcher.
9	DEVICES Ports	USB extension ports, supporting USB 2.0 and 5V/500mA output, connected to whiteboard, mouse, keyboard or other USB devices.
10	SERVICE Port	Firmware update port.
11	HDBaseT IN Port	HDBaseT input port, connected to the HDBT 2 port of the transmitter with a CAT6A (F/FTP)cable.
12	Data Signal Indicator (Yellow)	▪ Light on: There is video signal input with HDCP. ▪ Light flashing: There is video signal input without HDCP. ▪ Light off: There is no video signal input.
13	Link Signal Indicator (Green)	▪ Light on: Transmitter and Receiver are connected and linked. ▪ Light flashing: The link between the Transmitter and Receiver is abnormal. ▪ Light off: Transmitter and Receiver are not linked.
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
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 -, , R+, R- Unbalanced connection method: L+, , R+
18	RS-232 Port	RS-232 serial port, used for RS-232signal pass-through or controlling external device.
19	24VDC Port	Power input port, connected to the 24VDC power adapter. Note: The receiver also can be powered by PoE (through the HDBaseT IN port).

7. IR Remote

① **Power button**: Power on the switcher or set it to standby mode.

② **VIDEO buttons**:

USB-C 1 / USB-C 2 / HDMI 1 / HDMI 2 : Press these buttons to select input source for OUT 1/2 in single screen display mode, and the corresponding input LED on the front panel will light in green.

:Multiview display mode switching button.

Short press this button to circularly select: Single-PIP-PBP-Triple-Quad

: Press these buttons to circularly select the previous or next input source for OUT 1/2 in single screen display mode.

AUTO: Press this button to enable/disable the auto switching function.

RES.: Press this button to cycle through the output resolution.

MUTE: Press this button to mute/unmute the audio of OUT 1/2.

VOL-, VOL+: Press these buttons to increase/decrease the audio output volume of OUT 1/2.

③ **Universal buttons:**

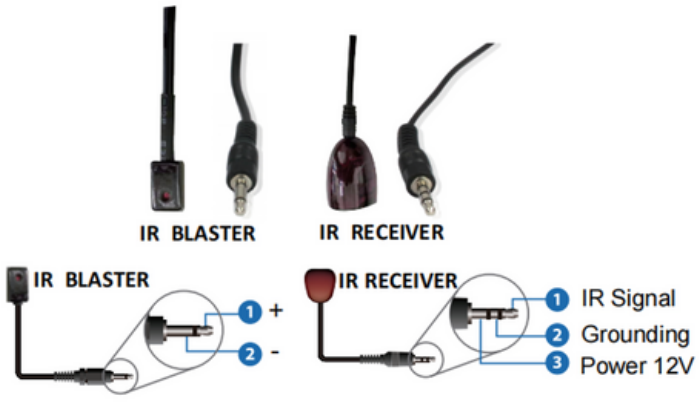
RX HDBT: Press this button to select the HDBaseT IN port as the signal source input channel of the receiver.

RX HDMI: Press this button to select the HDMI IN port as the signal source input channel of the receiver.

PRESET: Press this button to cycle through the preset application scenes.

8. IR Cable Pin Assignment

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



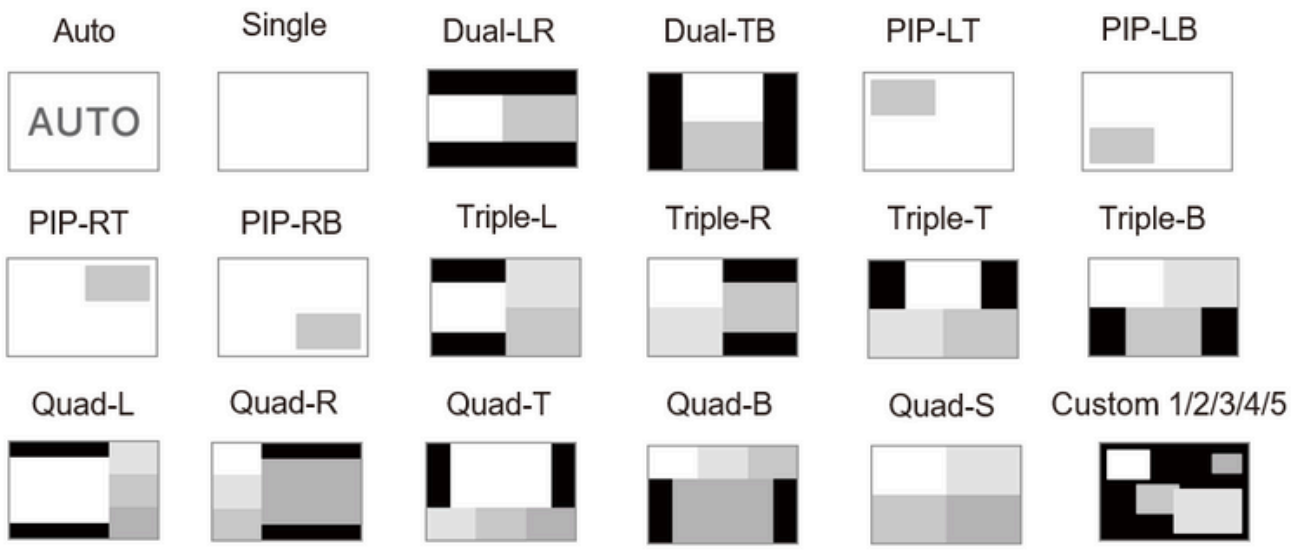
Note: When the angle between the IR receiver and the remote control is ± 45°, the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is ±90°, the transmission distance is 0-8 meters

9. Multiview

The presentation switch supports multiple multiview display modes:

Auto: When the Auto mode is selected, the multiview display modes set through Web GUI will be recalled automatically.
Single: Single screen display mode.
PBP: Dual screen display modes, including Dual-L Rand Dual-TB.
PIP: PIP screen display modes, including PIP-LT,PIP-LB, PIP-RT and PIP-RB
Triple: Triple screen display modes, including Triple-L, Triple-R, Triple-T and Triple-B
Quad: Quad screen display modes, including Quad-L, Quad-R, Quad-T, Quad-Band Quad-S
Custom: Five customized multiview display modes are supported.

Multiview window distributions are as following:



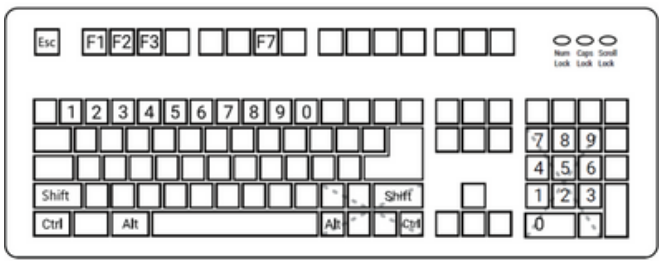
You can set/select multiview display modes via Web GUI. For details, please refer to the Video and System interface operation of "11. Web GUI Operation Guide".
In addition, you can select multiview display modes via IR remote control or RS-232 commands.

10. Keyboard & Mouse Hotkey Function

The presentation switch supports hotkey function, you can use keyboard and mouse hot keys to operate and control the switch.
(1) Keyboard hotkeys are as following:

Scroll Lock + Scroll Lock + 1 + 1 or Ctrl + Ctrl + 1 + 1	Switch output 1 from PC1 input
Scroll Lock + Scroll Lock + 1 + 2 or Ctrl + Ctrl + 1 + 2	Switch output 1 from PC2 input
Scroll Lock + Scroll Lock + 1 + 3 or Ctrl + Ctrl + 1 + 3	Switch output 1 from PC3 input
Scroll Lock + Scroll Lock + 1 + 4 or Ctrl + Ctrl + 1 + 4	Switch output 1 from PC4 input
Scroll Lock + Scroll Lock + 2 + 1 or Ctrl + Ctrl + 2 + 1	Switch output 2 from PC1 input
Scroll Lock + Scroll Lock + 2 + 2 or Ctrl + Ctrl + 2 + 2	Switch output 2 from PC2 input
Scroll Lock + Scroll Lock + 2 + 3 or Ctrl + Ctrl + 2 + 3	Switch output 2 from PC3 input
Scroll Lock + Scroll Lock + 2 + 4 or Ctrl + Ctrl + 2 + 4	Switch output 2 from PC4 input
Scroll Lock + Scroll Lock + 1 + Page Up or Ctrl + Ctrl + 1 + Page Up	Switch output 1 from next input
Scroll Lock + Scroll Lock + 1 + Page Down or Ctrl + Ctrl + 1 + Page Down	Switch output 1 from previous input
Scroll Lock + Scroll Lock + 2 + Page Up or Ctrl + Ctrl + 2 + Page Up	Switch output 2 from next input
Scroll Lock + Scroll Lock + 2 + Page Down or Ctrl + Ctrl + 2 + Page Down	Switch output 2 from previous input
Scroll Lock + Scroll Lock + F12 or Ctrl + Ctrl + F12	Enable/Disable buzzer

Note: Do not use the keypad on the right of the keyboard.



(2) Mouse hotkeys are as following:
Double-Click Middle-Right (Double-click the mouse scroll wheel, and then click the right button): Switch output 1 to next input
Double-Click Middle-Left (Double-click the mouse scroll wheel, and then click the left button): Switch output 2 to next input

11. Web GUI User Guide

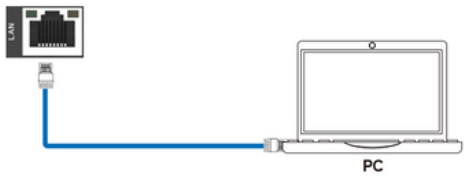
The presentation switch can be controlled by Web GUI. The operation method is shown as below:

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 switch IP address via RS-232 command control. Send the ASCII command "get 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).

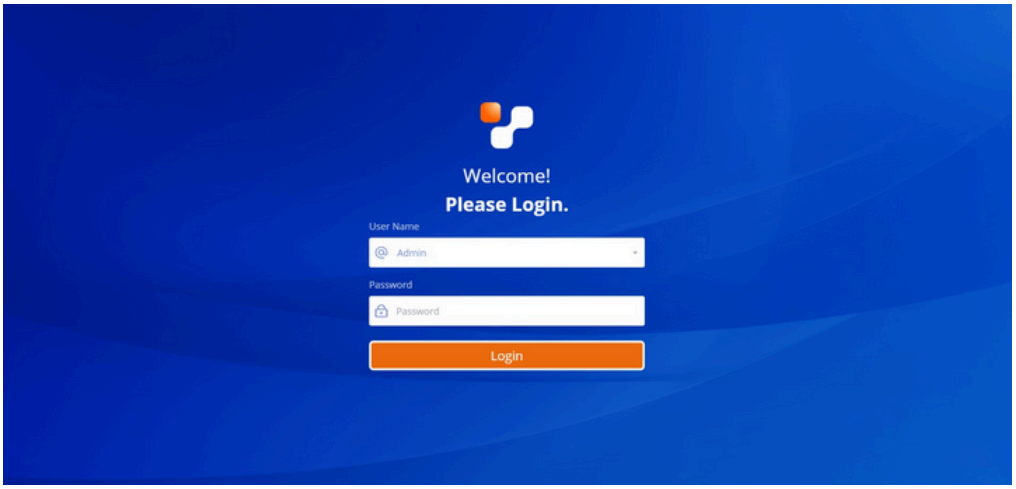
For the details of RS-232 control, please refer to "12. RS-232 Control Command".

Step 2: Connect the LAN port of the presentation 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 presentation switch.



Step 3: Input the current IP address of 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:

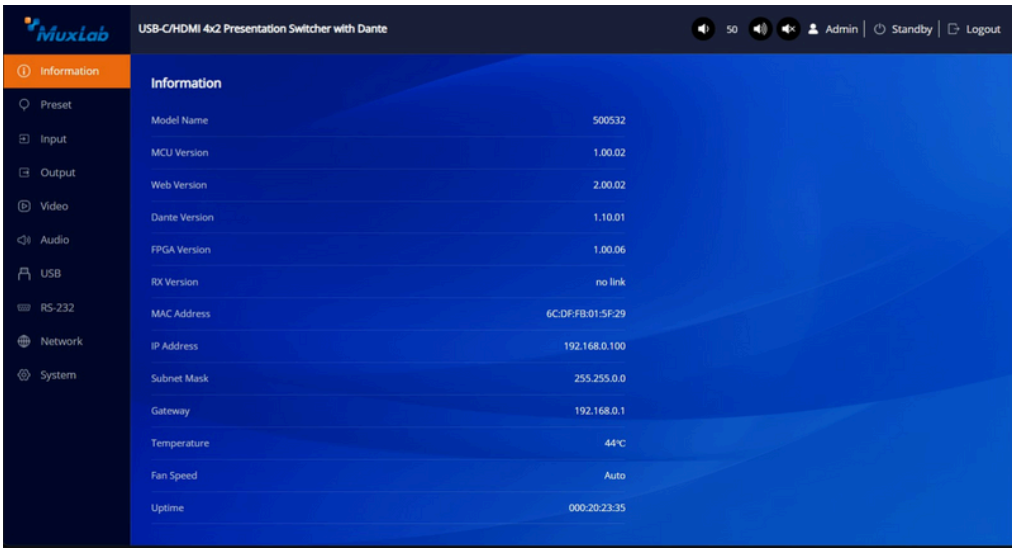


The default user name and password are as below:

Username	Password
Admin	1234
User	1234

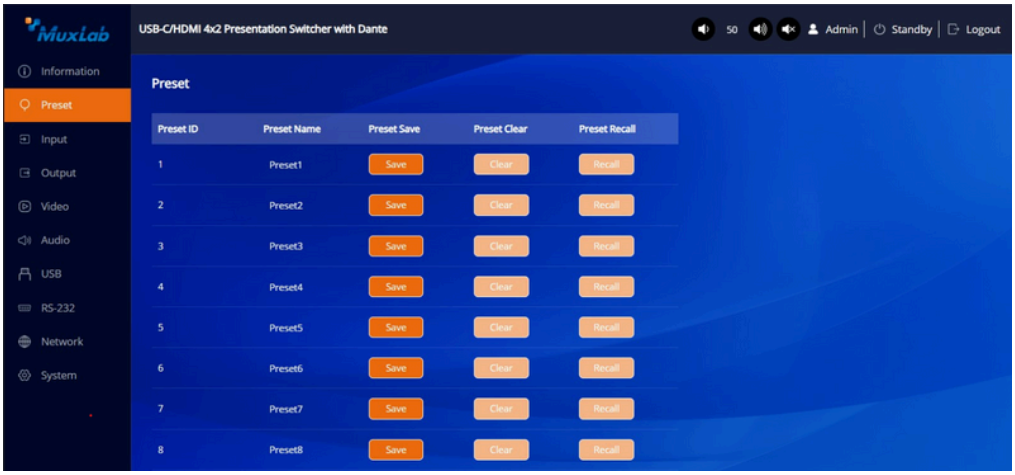
In the Login interface, select the username "Admin" and input the password "admin", then click the "Login" button to enter the Information page of the Admin interface.

■ Information Page



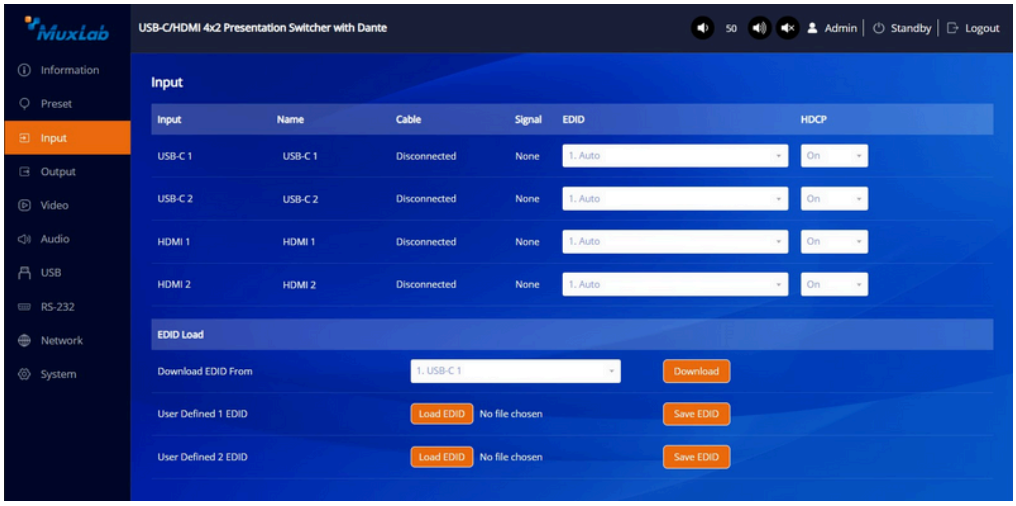
The Information page provides basic information about the model name, software version, Web version, Dante version, FPGA version, RX version, IP information, the current machine temperature, fan status and online time.
Besides, you can do the following operations in the upper right corner of each page.
① Display and set the audio volume of Master Out. Click the volume icons to increase/ decrease the audio volume of Master Out, or click the mute icon to mute/unmute the audio of Master Out. When muted, the mute icon displays red.
② Display the current username(User or Admin).
③ Click the power icon to power on the switch or set it in standby mode.
④ Click the logout icon to logout and return to the login interface.

■ Preset Page



You can set up to 8 preset scenes on the Preset page.
① **Preset Name**: You can name the preset scene (16 characters max).
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



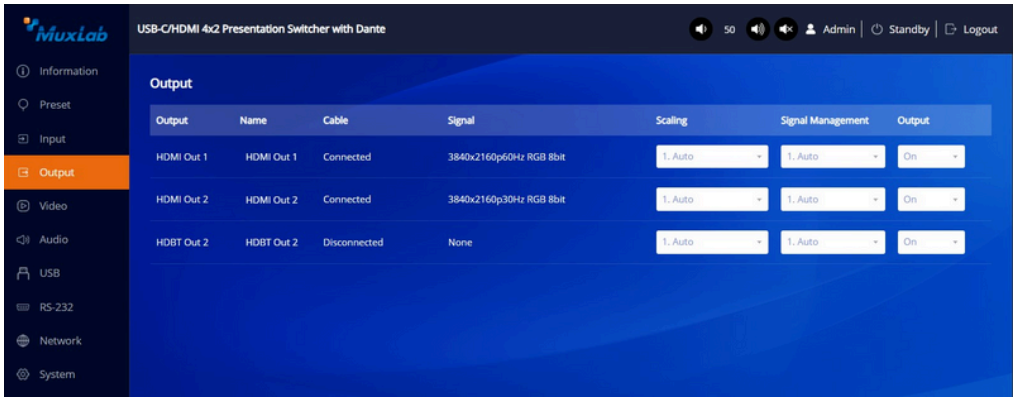
You can do the following operations on the Input page:
① **Input**: Input channel of the device.
② **Name**: The input channel's name. You can modify it by entering the corresponding name (16 characters max) in the input box.
③ **Cable**: It indicates whether the channel is connected/disconnected to the signal source.
④ **Signal**: It indicates the signal status.
⑤ **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	10	1680x1050, Stereo Audio 2.0
2	Copy HDMI Out 1	11	1600x1200, Stereo Audio 2.0
3	Copy HDMI Out 2	12	1440x900, Stereo Audio 2.0
4	Copy HDBT Out 2	13	1360x768, Stereo Audio 2.0
5	4K2K60_444, Stereo Audio 2.0	14	1280x1024, Stereo Audio 2.0
6	4K2K30_444, Stereo Audio 2.0	15	1024x768, Stereo Audio 2.0
7	1080P, Stereo Audio 2.0	16	User Defined 1
8	720P, Stereo Audio 2.0	17	User Defined 2
9	1920x1200, Stereo Audio 2.0		

⑥ **HDCP**: Click the drop-down menu to set the HDCP for each input port.
⑦ **Export EDID to your computer**: Click the drop-down menu to select the input/output/user-defined EDID, then click "Download".
⑧ **Import user-defined EDID**: Click "Load EDID" to load User Defined 1/2 EDID, then click "Save EDID".

Notes:
(1) When the EDID is set to "Auto", it depends on the EDID of TV. The optimal resolution will be selected based on the EDID of the back-end TV with the lowest resolution.
(2) Please import the user-defined EDID before selecting User Defined 1/2 as the EDID.

■ **Output Page**



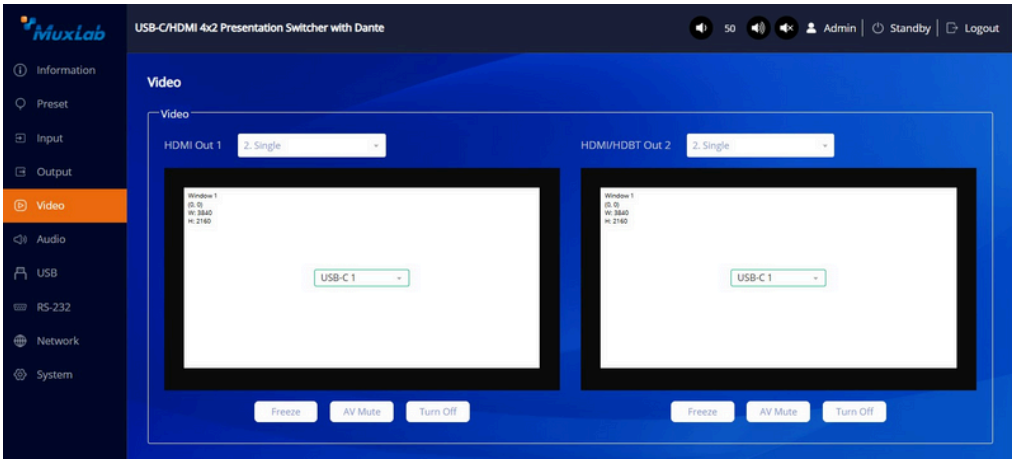
You can do the following operations on the Output page:
① **Output**: Output channel of the device.
② **Name**: The current output channel's name. You can modify it by entering the corresponding name (16 characters max) in the input box.
③ **Cable**: It indicates the connection status of the output channel.
④ **Signal**: It indicates the signal status.
⑤ **Scaling**: Click the drop-down list to select the output resolution. The output resolution list is as following.

No	Output Resolution	No	Output Resolution
1	Auto	9	1920x1080i60
2	3840x2160p60	10	1920x1080i50
3	3840x2160p50	11	1280x720p60
4	4096x2160p60	12	1280x720p50
5	4096x2160p50	13	1360x768p60
6	3840x2160p30	14	1280x800p60
7	1920x1080p60	15	1920x1200p60RB
8	1920x1080p50	16	1024x768p60

⑥ **HDCP**: Click the drop-down list to set the HDCP (Auto/HDCP 1.4/HDCP2.2/Reserved).
⑦ **On/Off**: Click the drop-down list to turn on/off the output display.

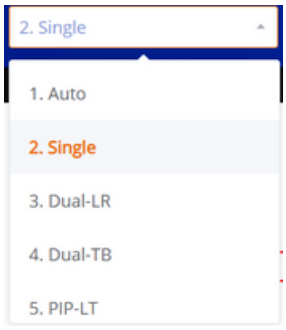
Notes:
(1) When the output resolution is set to "Auto", the presentation switch will output the matching resolution based on the EDID of the back-end TV.
(2)The output resolution can not be set separately in the multiview mode.

■ **Video Page**



Window layout

Click the drop-down list to select the display mode (Auto/Single/Dual-LR/Dual-TB/Triple/PIP-LT) for each output port, as shown in the following left figure. Then click the drop-down list of the input source to select the signal source for each window, as shown in the following right figure.



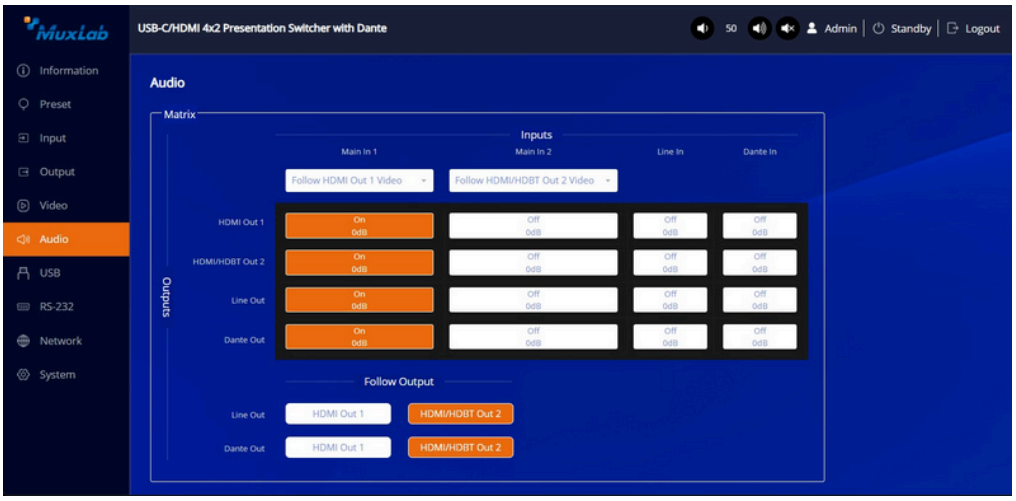
Freeze the screen

(1) When both outputs are in the single screen display mode, you can click the Freeze button to separately freeze the display screen of OUT 1 or OUT 2.
(2) When both outputs are in the multiview display mode, clicking the Freeze button will freeze both the screens of OUT 1 and OUT 2.
(3) When one output is in the single screen display mode, and the another output is in the multiview display mode, the freeze function is only available for the multiview display mode.

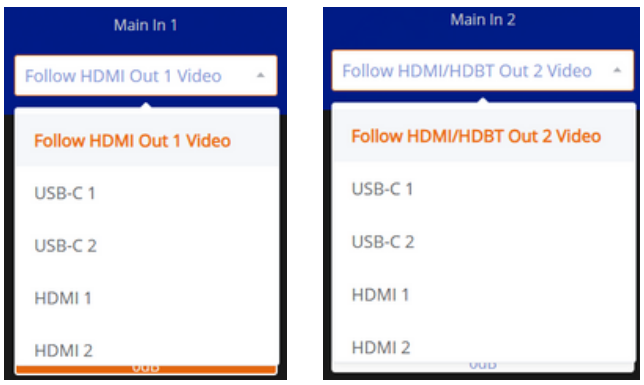
AV MUTE
Clicking the AV MUTE button, the corresponding output device will display black screen and mute the audio.

Turn off the output stream
Click the Turn Off button to turn off the output port, and there is no signal output.

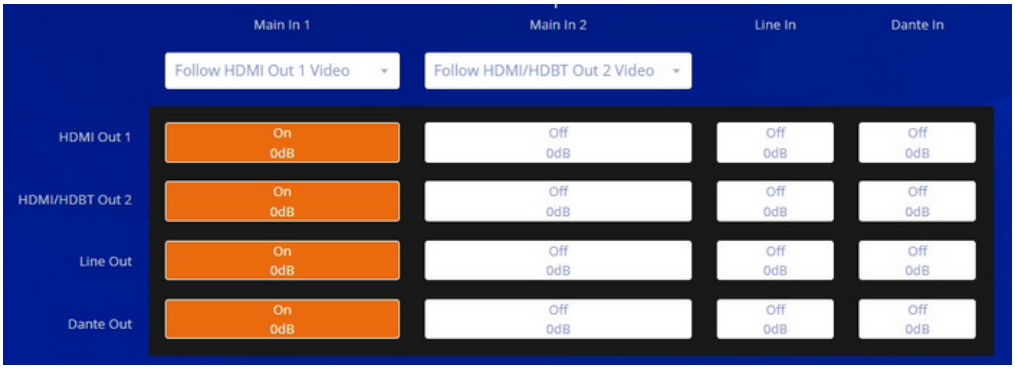
■ **Audio Page**



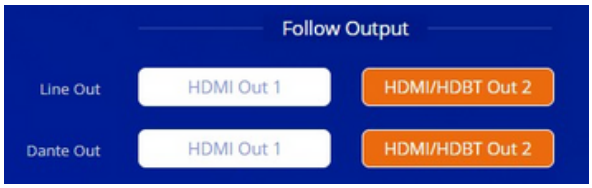
Audio Matrix
The presentation switch features four input ports (USB-C 1, USB-C 2, HDMI 1 and HDMI 2), meanwhile, the audio output from HDMI OUT 1/2 can be used as the audio input source. Therefore, there are five audio signal sources for Main In 1 and Main In 2, as shown in the figure below.



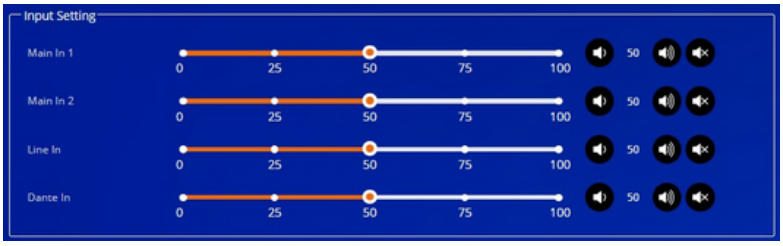
Click the drop-down list to select the audio source for Main In 1/2, and select one or multiple audio sources for each output port by clicking the corresponding button of Main In 1/Main In 2/Line in/Dante in, then an audio matrix forms.
In the audio matrix, multiple audio inputs can be selected for mixing output, and the mixing ratio can be adjusted with a Gain volume bar. When a single audio output is selected, the audio gain can be adjusted with a Gain volume bar, too.



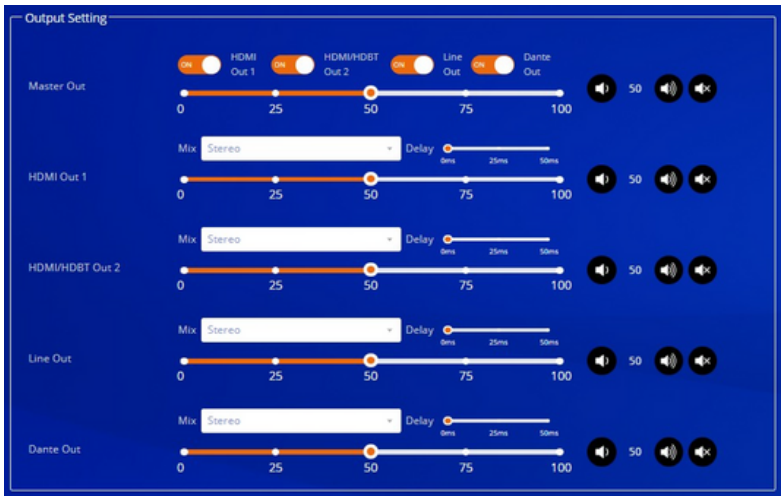
Follow Output
Click the corresponding button to set the Line Out/Dante Out follow the output of HDMI Out 1 or HDMI/HDBT Out 2.



Input Setting
You can respectively set the audio volume or mute/unmute the audio for Main In 1/Main In 2/ Line In/Dante In.



Output Setting
① Master Out: System volume adjustment. Select the synchronization button to synchronize the volume of each audio output according to the Master Out volume bar. When adjusting the volume bar of the audio output separately, the synchronization button will automatically turn off.
② **HDMI Out 1/HDMI/HDBT Out 2/Line Out/Dante Out:** Click the drop-down list of Mix to select the audio output channel for HDMI Out 1/HDMI/HDBT Out 2/Line Out/Dante Out. You can set the delay, increase/decrease the audio or mute/unmute the audio.



GEQ Setting

① **Output:** Click the drop-down list to select the output channel.

② **Equalizer:** Click the drop-down list to set the equalizer status of different output audio.

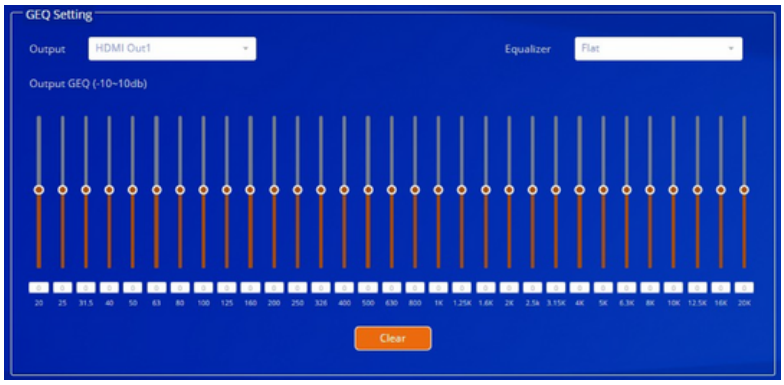
Flat: Set all EQ to 0db.

Custom1: Set EQ for custom 1.

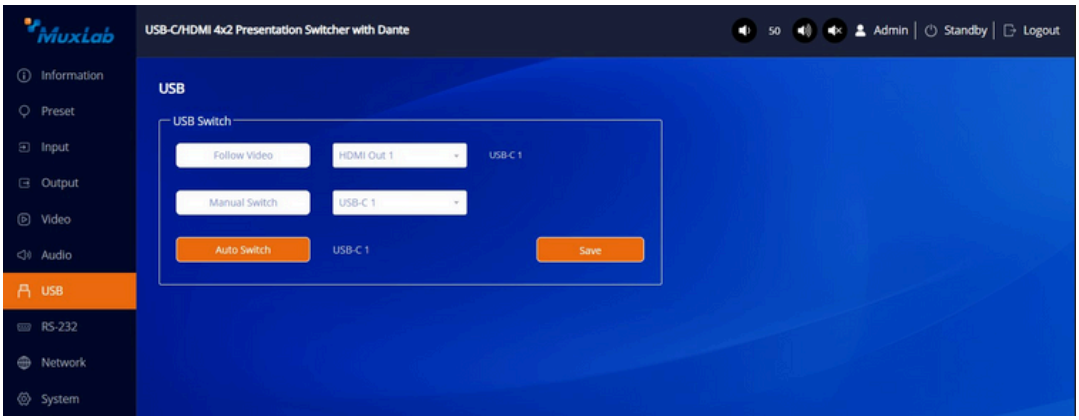
Custom2: Set EQ for custom 2.

Custom3: Set EQ for custom 3.

Custom4: Set EQ for custom 4.



■ **USB Page**



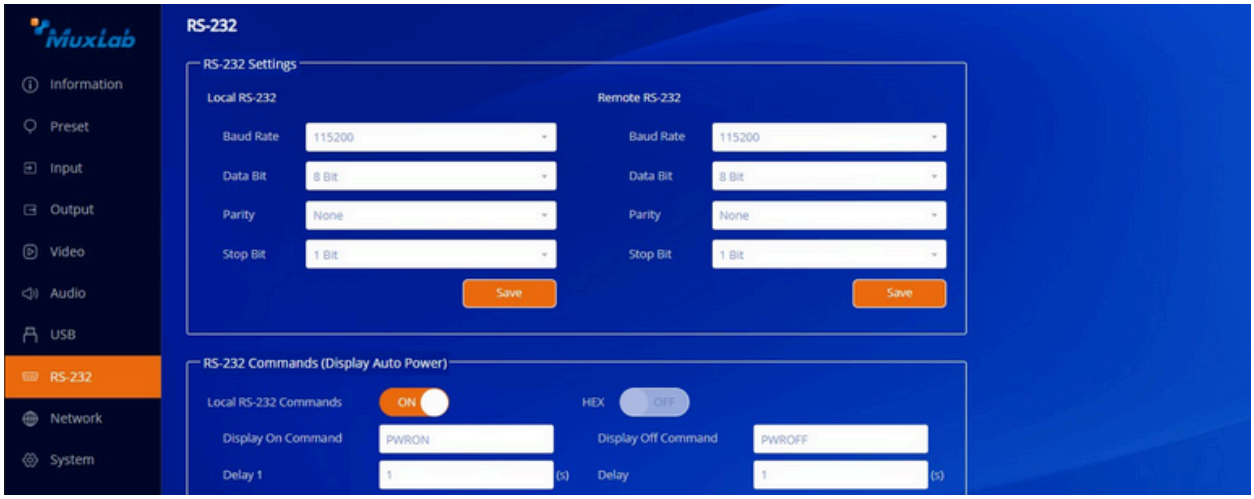
USB Switch

① **Follow Video:** Click this button to set the USB transmission follow the video. Click the drop-down list to set it follow the video output of HDMI Out 1 or HDMI/HDBT Out 2.

② **Manual Switch:** Click this button to enter the manual switching mode, then click the drop-down list to select USB-C 1/USB-C 2/Host 3/Host 4 as the upstream port.

③ **Auto Switch:** Click this button to enter the auto switching mode. The system will detect and switch to the last connected port as the upstream port automatically. After setting up, click "Save" to take effect.

■ RS-232 Page



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 **Remote RS-232:** You can set the Baud Rate, Data Bit, Parity and Stop Bit for the RS-232 port of the receiver. After setting up, please click "Save" to take effect.

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.

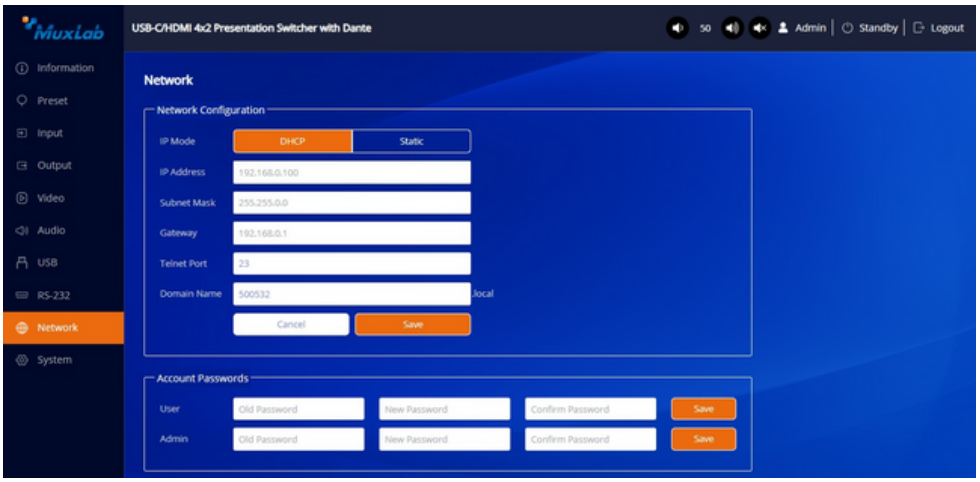
② **Display On/Off Command:** You can input he display on/off command of the external device.

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, please click "Save" to take effect.

■ Network Page

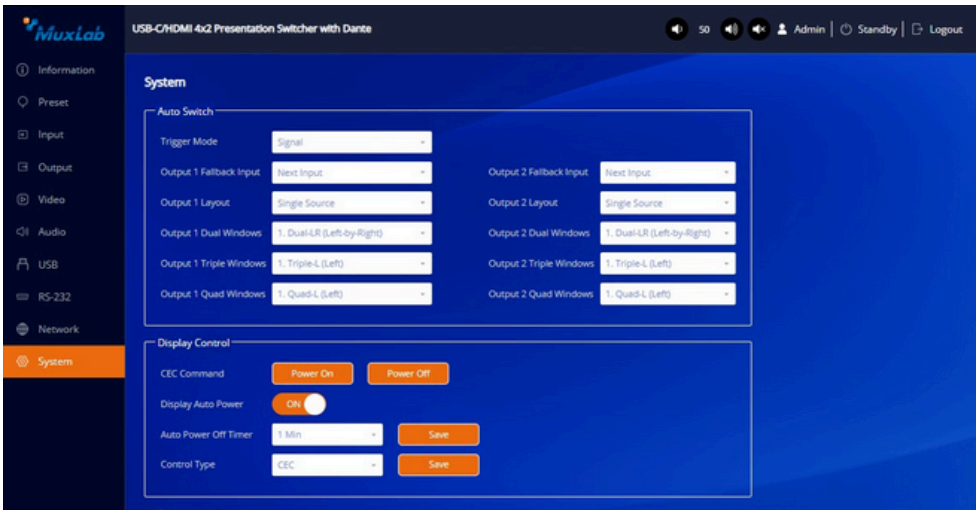


Network Configuration

You can set the IP Mode (Static/DHCP). If the mode is set to "Static", you can manually set the IP Address, Subnet Mask, Gateway, Telnet Port and Domain Name as required, then click "Save" to take effect. If the mode is set to "DHCP", the system will search and fill the IP Address with the one assigned by the router automatically. You can't modify it now.

Note: The Domain Name "500532.local" can be used to login the Web GUI.

■ System Page



Auto Switch

① **Trigger Mode**: Click the drop-down list to select Signal/Source 5V as the trigger mode for auto switching.
② **Output 1/2 Fallback Input**: Click the drop-down list to select Next Input/USB-C 1/USB-C 2/HDMI 1/HDMI 2/RX HDMI as the signal source of Fallback input. With the auto switching function enabled, when connecting signal sources, the output signal will switch to the last connected signal source automatically. When the current signal source is disconnected, if the Fallback input is set to "Next Input", the output signal will switch according to the order of input ports. For example, when disconnecting Input 1, the output signal will switch to Input 2. If the Fallback input is set to a fixed input, the output signal will switch to the selected input.
Note: The auto switching function is available only in single screen display mode.
③ **Output 1/2 Layout**: Set the display mode of the output 1/2 port, which can be configured as single screen or multiview. In multiview mode, dual screen/triple screen/quad screen can be displayed according to the number of connected sources.
④ **Output 1/2 Dual/Triple/Quad Windows**: Dual/Triple/Quad screen window setting, allowing users to freely choose the layout of dual/triple/quad screen display and customize the layout. User customized layout can be saved as a dual/triple/quad screen window in the layout customization (Custom 1/2/3/4/5) of the Video page, and then selected and called in the Output 1/2 Dual/Triple/Quad Windows column of the System page.

Display Control

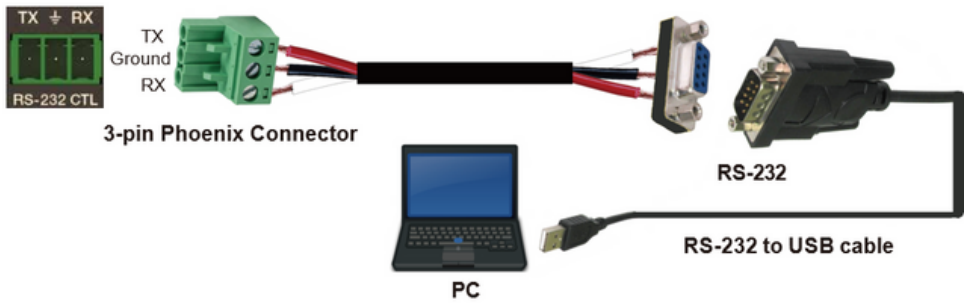
① **CEC Command**: Click the corresponding button to power on/off the display device.
② **Display Auto Power**: You can turn on/off the Display Auto Power. When it is set to ON, you can control the display device power on/off by sending RS-232command or CEC Power On/Off command.
③ **Auto Power off Timer**: 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**: Set the display device control type (CEC/RS-232/CEC and RS-232).

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 **Fan Speed**: Click the drop-down list to set the fan speed (Auto/25%/50%/75%/100%).
④ **Reboot**: Click "Reboot" to reboot the switch.
⑤ **Restore Factory Settings**: Click this button to restore the switch to factory settings.
⑥ **Restore Factory (Including Network)** : Click this button to restore the switch to factory settings (including the network configuration).
⑦ **Export Settings**: Click this button to export system configuration files.
⑧ **Import Settings**: Click this button to import system configuration files.
Firmware Update: You can update the software of MCU, Web, Scaler 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.

12. RS-232 Control Command

The product also supports RS-232 command control. Connect the RS-232 CTL 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. The end mark of command is "<CR><LF>".				
Command Code	**Function Description**	**Example**	**Feedback**	**Default Setting**
System Setting				
?	Get the list of all commands	?		
help	Get the list of all commands	help		
get model	Get device model	get model	500532	
status	Get device current status	status	Please refer to the note at the end of the list.	
get version	Get Firmware version	get version	MCU 1.1.0 Web 1.1.0 FPGA 1.1.0 RX 1.18.02	
power on	Power on the device	power on	Power on System Initializing... Initialization Finished! MCU 1.1.0 Web 1.1.0 FPGA 1.1.0 RX 1.18.02	
power off	Power off the device	power off	Power off	
get power	Get current power state	get power	power on /power off	
reboot	Reboot the device	reboot	Reboot... System Initializing... Initialization Finished! MCU 1.1.0 Web 1.1.0 FPGA 1.1.0 RX 1.18.02	
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...	
s front button x	Set front button locked on/off (x=0~1) x=0: Unlocked x=1: Locked	s front button 0	Set front button ulocked	0
get front button	Get front button locked on/off status	get front button	Unlocked	
set beep x	Set buzzer on/off (x=0~1) x=0: Off x=1: On	set beep 0	Set beep off	0
get beep	Get buzzer on/off status	get beep	Off	
set ir x	Set IR on/off (x=0~1) x=0: Off x=1: On	set ir 1	Set IR on	1
get ir	Get IR on/off status	get ir	On	
set UsbcAccess Network x	Set USB-C (x=0~3) access network feature x=0: All USB-C Inputs x=1: USB-C 1 x=2: USB-C 2 x=3: None	set UsbcAccess Network 0	Set all USB-C inputs access network	1
get UsbcAccess Network	Get USB-C access network feature status	get UsbcAccess Network	All USB-C inputs	
set fan speed x	Set fan speed (x=0~4) x=0: Auto x=1: 25% x=2: 50% x=3: 75% x=4: 100%	set fan speed 0	Set fan speed auto	0
get fan speed	Get fan speed	get fan speed	Auto	
get temp	Get device internal temperature	get temp	65C	

Command Code	Function Description	Example	Feedback	Default Setting
get uptime	Get device running time (Day:Hour:Min:Sec)	get uptime	000:00:13:04	
Input Setting				
set input x edid y	Set input (x=0~4) EDID (y=1~17) x=0: All Inputs x=1: USB-C 1 x=2: USB-C 2 x=3: HDMI 1 x=4: HDMI 2 y=1: Auto (HDBT or HDMI or HDBT+HDMI) y=2: Copy HDMI Out 1 y=3: Copy HDMI Out 2 y=4: Copy HDBT Out 2 y=5: 4K2K60_444, Stereo Audio 2.0 y=6: 4K2K30_444, Stereo Audio 2.0 y=7: 1080P, Stereo Audio 2.0 y=8: 720p, Stereo Audio 2.0 y=9: 1920x1200, Stereo Audio 2.0 y=10: 1680x1050, Stereo Audio 2.0 y=11: 1600x1200, Stereo Audio 2.0 y=12: 1440x900, Stereo Audio 2.0 y=13: 1360x768, Stereo Audio 2.0 y=14: 1280x1024, Stereo Audio 2.0 y=15: 1024x768, Stereo Audio 2.0 y=16: User Defined 1 y=17: User Defined 2	set input 0 edid 1	Set USB-C 1 EDID auto Set USB-C 2 EDID auto Set HDMI 1 EDID auto Set HDMI 2 EDID auto	1
get input x edid	Get input (x=0~4) EDID mode x=0: All Inputs x=1: USB-C 1 x=2: USB-C 2 x=3: HDMI 1 x=4: HDMI 2	get input 0 edid	USB-C 1 EDID auto USB-C 2 EDID auto HDMI 1 EDID auto HDMI 2 EDID auto	
set user edid x <y>	Set user defined EDID (x=1~2) x=1: User Defined 1 x=2: User Defined 2 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	
get edid data x	Get EDID data (x=1~9) x=1: USB-C 1 x=2: USB-C 2 x=3: HDMI 1 x=4: HDMI 2 x=5: HDMI out 1 x=6: HDMI out 2 x=7: HDBT out 2 x=8: User Defined 1 x=9: User Defined 2	get edid data 1	USB-C 1 EDID Data <00 FF FF FF….>	
set input x hdcp y	Set input (x=0~4) HDCP on/off x=0: All Inputs x=1: USB-C 1 x=2: USB-C 2 x=3: HDMI 1 x=4: HDMI 2 y=0: Off y=1: On	set input 0 hdcp 1	Set input USB-C 1 HDCP on Set input USB-C 2 HDCP on Set input HDMI 1 HDCP on Set input HDMI 2 HDCP on	1
get input x hdcp	Get input (x=0~4) HDCP on/off status x=0: All Inputs x=1: USB-C 1 x=2: USB-C 2 x=3: HDMI 1 x=4: HDMI 2	get input 0 hdcp	Input USB-C 1 HDCP on Input USB-C 2 HDCP on Input HDMI 1 HDCP on Input HDMI 2 HDCP on	

Command Code	Function Description	Example	Feedback	Default Setting
Output Setting				
set output x res y	Set output (x=0~3) resolution (y=1~16) x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2 y=1: Auto y=2: 3840x2160p60 y=3: 3840x2160p50 y=4: 4096x2160p60 y=5: 4096x2160p50 y=6: 3840x2160p30 y=7: 1920x1080p60 y=8: 1920x1080p50 y=9: 1920x1080i60 y=10: 1920x1080i50 y=11: 1280x720p60 y=12: 1280x720p50 y=13: 1360x768p60 y=14: 1280x800p60 y=15: 1920x1200p60RB y=16: 1024x768p60	set output 0 res 1	Set all outputs resolution auto	1
get output x res	Get output (x=0~3) resolution x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2	get output 0 res	HDMI out 1 resolution auto HDMI out 2 resolution auto HDBT out 2 resolution auto	
set output x hdcp y	Set output (x=0~3) hdcp mode (y=1~3) x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2 y=0: Reserved y=1: Auto y=2: HDCP 1.4 y=3: HDCP 2.2	set output 0 hdcp 1	Set all outputs HDCP auto	1
get output x hdcp	Get output (x=0~3) hdcp mode x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2	get output 0 hdcp	HDMI out 1 HDCP auto HDMI out 2 HDCP auto HDBT out 2 HDCP auto	
set output x enable y	Set output (x=0~3) enable on/off x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2 y=0: Off y=1: On	set output 0 enable 1	Set all outputs enable on	1
get output x enable	Get output (x=0~3) enable on/ off status x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2	get output 0 enable	HDMI out 1 enable on HDMI out 2 enable on HDBT out 2 enable on	

Command Code	Function Description	Example	Feedback	Default Setting
set output x avmute y	Set output (x=0~3) avmute on/off x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2 y=0: Off y=1: On	set output 0 avmute 1	Set all outputs avmute on	0
get output x avmute	Get output (x=0~3) avmute on/off status x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2	get output 0 avmute	HDMI out 1 avmute on HDMI out 2 avmute on HDBT out 2 avmute on	
set output x freeze y	Set output (x=0~3) freeze on/off x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2 y=0: Off y=1: On	set output 0 freeze 1	Set all outputs freeze on	0
get output x freeze	Get output (x=0~3) freeze on/off status x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI Out 2 x=3: HDBT Out 2	get output 0 freeze	HDMI out 1 freeze on HDMI out 2 freeze on HDBT out 2 freeze on	
Video Setting				
set output x display y	Set output (x=0~2) display mode (y=1~23) x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 y=1: Auto y=2: Single y=3: Dual-LR y=4: Dual-TB y=5: PIP-LT y=6: PIP-LB y=7: PIP-RT y=8: PIP-RB y=9: Triple-L y=10: Triple-R y=11: Triple-T y=12: Triple-B y=13: Quad-L y=14: Quad-R y=15: Quad-T y=16: Quad-B y=17: Quad-S y=18: Copy Output 2 or Copy Output 1 y=19: Custom Layout 1 y=20: Custom Layout 2 y=21: Custom Layout 3 y=22: Custom Layout 4 y=23: Custom Layout 5	set output 1 display 1	Set HDMI out 1 display auto	1
get output x display	Get output (x=0~2) display mode x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2	get output 1 display	HDMI out 1 display auto	

Command Code	Function Description	Example	Feedback	Default Setting
set output auto switch mode y	Set output auto switch detection mode (y=1~2) y=1: Signal y=2: Source 5V	set output auto switch mode 1	Set outputs auto switch mode signal	1
get output auto switch mode	Get output auto switch detection mode	get output auto switch mode	Signal	
set output x fallback input y	Set output (x=0~2) fallback input source (y=0~5) when active signal is removed in single source auto switching mode x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 y=0: Next Input y=1: USB-C 1 y=2: USB-C 2 y=3: HDMI 1 y=4: HDMI 2 y=5: RX HDMI	set output 1 fallback input 1	Set HDMI out 1 fallback next input	0
get output x fallback input	Get output (x=0~2) fallback input source x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2	get output 1 fallback input	HDMI out 1 fallback next input	
set output x auto layout y	Set output (x=0~2) auto switch layout mode (y=1~2) x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 y=1: Single Source y=2: Multiview	set output 1 auto layout 1	Set HDMI out 1 auto layout single source	1
get output x auto layout	Get output (x=0~2) auto switch layout mode x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2	get output 1 auto layout	HDMI out 1 auto layout single source	
set output x auto dual y	Set output (x=0~2) auto switch dual layout mode (y=1~7) x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 y=1: Dual-LR (Left-by-Right) y=2: Dual-TB (Top-by-Bottom) y=3: PIP-LT (Left-by-Top) y=4: PIP-LB (Left-by-Bottom) y=5: PIP-RT (Right-by-Top) y=6: PIP-RB (Right-by-Bottom) y=7: Dual User Defined	set output 1 auto dual 1	Set HDMI out 1 auto Dual-LR (Left-by-Right)	1
get output x auto dual	Get output (x=0~2) auto switch dual layout mode x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2	get output 1 auto dual	HDMI out 1 auto Dual-LR (Left-by-Right)	

Command Code	Function Description	Example	Feedback	Default Setting
set output x auto triple y	Set output (x=0~2) auto switch triple layout mode (y=1~5) x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 y=1: Triple-L (Left) y=2: Triple-R (Right) y=3: Triple-T (Top) y=4: Triple-B (Bottom) y=5: Triple User Defined	set output 1 auto triple 1	Set HDMI out 1 auto Triple-L (Left)	1
get output x auto triple	Get output (x=0~2) auto switch triple layout mode x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2	get output 1 auto triple	HDMI out 1 auto Triple-L (Left)	
set output x auto quad y	Set output (x=0~2) auto switch quad layout mode (y=1~5) x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 y=1: Quad-L (Left) y=2: Quad-R (Right) y=3: Quad-T (Top) y=4: Quad-B (Bottom) y=5: Quad-S (Square) y=6: Quad User Defined	set output 1 auto quad 5	Set HDMI out 1 auto Quad-S (Square)	5
get output x auto quad	Get output (x=0~2) auto switch quad layout mode x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2	get output 1 auto quad	HDMI out 1 auto Quad-S (Square)	
set output x source y set output x source y1 y2 y3 y4	Set output (x=0~2) video source from (y=1~4) x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 y=1: USB-C 1 y=2: USB-C 2 y=3: HDMI 1 y=4: HDMI 2 y1 for Window 1 y2 for Window 2 y3 for Window 3 y4 for Window 4	set output 1 source 1 set output 1 source 1 2 3 4	Set HDMI out 1 video source USB-C 1 Set HDMI out 1 video source USB-C 1 USB-C 2 HDMI 1 HDMI 2	1
get output x source	Get output (x=0~2) video source x=0: All Outputs (HDMI/HDBT) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2	get output 1 source	HDMI out 1 video source USB-C 1	

Command Code	Function Description	Example	Feedback	Default Setting
set custom layout x <x1,y1,h1,v1> <x2,y2,h2,v2> <x3,y3,h3,v3> <x4,y4,h4,v4> layer l1 l2 l3 l4 display d1 d2 d3 d4 source s1 s2 s3 s4	Set custom layout (x=1~5) parameters x=1: Custom Layout 1 x=2: Custom Layout 2 x=3: Custom Layout 3 x=4: Custom Layout 4 x=5: Custom Layout 5 <x,y,h,v> x1/x2/x3/x4=[-4095~4095]: X coordinate of window 1/2/3/4 top-left corner y1/y2/y3/y4=[-2159~2159]: Y coordinate of window 1/2/3/4 top-left corner h1/h2/h3/h4=[1~4096]: The horizontal size of window 1/2/3/4 v1/v2/v3/v4=[1~2160]: The vertical size of window 1/2/3/4 Layer: l1/l2/l3/l4 l1/l2/l3/l4=[1~4]: The layer of window 1/2/3/4 (1 is the topmost layer, 4 is the bottommost layer) Display: d1/d2/d3/d4 d1/d2/d3/d4=[1111]: Set window 1/2/3/4 display(1) or hidden(0) Source: s1/s2/s3/s4 s1/s2/s3/s4=[1~4]: Select window 1/2/3/4 input source s=1: USB-C 1 s=2: USB-C 2 s=3: HDMI 1 s=4: HDMI 2	set custom layout 1 <0,0,1920,1080> <320,320,1920,1080> <640,640,1920,1080> <960,960,1920,1080> layer 1 2 3 4 display 1 1 1 1 source 1 2 3 4	Set custom layout 1 Window 1: <0,0,1920,1080> Layer: 1 Display: on Source: USB-C 1 Window 2: <320,320,1920,1080> Layer: 2 Display: on Source: USB-C 2 Window 3: <640,640,1920,1080> Layer: 3 Display: on Source: HDMI 1 Window 4: <960,960,1920,1080> Layer: 4 Display: on Source: HDMI 2	
set window x border y	Set the border (y=0~9) mode of the specified window(x=0~4) x=0: All Windows x=1: Window 1 x=2: Window 2 x=3: Window 3 x=4: Window 4 y=0: Off y=1: Black y=2: Red y=3: Green y=4: Blue y=5: Yellow y=6: Magenta y=7: Cyan y=8: White y=9: Gray	set window 0 border 0	Set all windows border off	0, 0
get window x border	Get the border mode of the specified window(x=0~4) x=0: All Windows x=1: Window 1 x=2: Window 2 x=3: Window 3 x=4: Window 4	get window 0 border	Window 1 border off Window 2 border off Window 3 border off Window 4 border off	

Command Code	Function Description	Example	Feedback	Default Setting
Audio Setting				
set output main x audio y	Set main audio (x=1~2) from (y=1~5) x=1: Main In 1 x=2: Main In 2 y=1: Follow HDMI Out 1 video/ Follow HDMI/HDBT Out 2 video y=2: USB-C In 1 y=3: USB-C In 2 y=4: HDMI In 1 y=5: HDMI In 2	set output main 1 audio 1 set output main 2 audio 1	Set main out 1 audio follow HDMI out 1 video Set main out 2 audio follow HDMI/HDBT out 2 video	1
get output main x audio	Get main audio (x=1~2) source x=1: Main In 1 x=2: Main In 2	get output main 1 audio	Follow HDMI out 1 video	
set output x audio y set output x audio y1 y2... gain z1 z2...	Set output (x=1~4) audio from (y=1~4) with gain value z=[-100dB~+6dB] x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out y=1: Main In 1 y=2: Main In 2 y=3: Line In y=4: Dante In z=[-100dB~+6dB]: Gain value	set output 1 audio 1 set output 1 audio 1 gain +6dB set output 1 audio 1 6 gain 0dB 0dB	Set HDMI out 1 audio main in 1 Set HDMI out 1 audio main in 1 gain +6dB Set HDMI out 1 audio main in 1 line in gain 0dB 0dB	1, 0dB
get output x audio	Get output (x=0~4) audio source x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	get output 1 audio	HDMI out 1 audio no enable	
set output x audio follow y	Set output (x=1~2) audio follow (y=1~2) x=1: Line Out x=2: Dante Out y=1: HDMI Out 1 y=2: HDMI/HDBT Out 2	set output 1 audio follow 2	Set line out follow HDMI/HDBT out 2	2
get output x audio follow	Get output (x=1~2) audio follow which source x=1: Line Out x=2: Dante Out	get output 1 audio follow	Follow HDMI/HDBT out 2	
set input x audio vol+	Increase input (x=0~4) audio volume x=0: All Inputs (Main In 1/2, Line, Dante) x=1: Main In 1 x=2: Main In 2 x=3: Line In x=4: Dante In	set input 1 audio vol+	Increase main in 1 volume 51	
set input x audio vol-	Decrease input (x=0~4) audio volume x=0: All Inputs (Main In 1/2, Line, Dante) x=1: Main In 1 x=2: Main In 2 x=3: Line In x=4: Dante In	set input 1 audio vol-	Decrease main in 1 volume 49	

Command Code	Function Description	Example	Feedback	Default Setting
set input x audio vol y	Set input (x=0~4) audio volume value (y=0~100) x=0: All Inputs (Main In 1/2, Line, Dante) x=1: Main In 1 x=2: Main In 2 x=3: Line In x=4: Dante In	set input 1 audio vol 50	Set main in 1 volume 50	50
get input x audio vol	Get input (x=0~4) audio volume value x=0: All Inputs (Main In 1/2, Line, Dante) x=1: Main In 1 x=2: Main In 2 x=3: Line In x=4: Dante In	get input 1 audio vol	Main in 1 volume 50	
set input x audio mute y	Set input (x=0~4) audio mute on/off (y=0~1) x=0: All Inputs (Main In 1/2, Line, Dante) x=1: Main In 1 x=2: Main In 2 x=3: Line In x=4: Dante In y=0: mute off y=1: mute on	set input 1 audio mute 1	Set main in 1 audio mute on	0
get input x audio mute	Get input (x=0~4) audio mute on/off status x=0: All Inputs (Main In 1/2, Line, Dante) x=1: Main In 1 x=2: Main In 2 x=3: Line In x=4: Dante In	get input 1 audio mute	Main in 1 audio mute on	
set master member x y z k	Set master output member (x/y/z/k=0~1) x=0: Exclude HDMI Out 1 x=1: Include HDMI Out 1 y=0: Exclude HDMI/HDBT Out 2 y=1: Include HDMI/HDBT Out 2 z=0: Exclude Line Out z=1: Include Line Out k=0: Exclude Dante Out k=1: Include Dante Out	set master member 1 1 1 1	Set master member 1111	1111
get master member	Get master output member	get master member	1111	
set master audio vol+	Increase master output audio volume	set master audio vol+	Increase master volume 51	
set master audio vol-	Decrease master output audio volume	set master audio vol-	Decrease master volume 49	
set master audio vol x	Set master output audio volume value (x=0~100)	set master audio vol 50	Set master volume 50	50
get master audio vol	Get master output audio volume value	get master audio vol	Master volume 50	
set master audio mute x	Set master output audio mute on/off (x=0~1) x=0: mute off x=1: mute on	set master audio mute 1	Set master mute on	0
get master audio mute	Get master output audio mute on/off status	get master audio mute	Master mute on	

Command Code	Function Description	Example	Feedback	Default Setting
set output x audio vol+	Increase output (x=0~4) audio volume x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	set output 1 audio vol+	Increase HDMI out 1 volume 51	
set output x audio vol-	Decrease output (x=0~4) audio volume x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	set output 1 audio vol-	Decrease HDMI out 1 volume 49	
set output x audio vol y	Set output (x=0~4) audio volume value (y=0~100) x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	set output 1 audio vol 50	Set HDMI out 1 volume 50	50
get output x audio vol	Get output (x=0~4) audio volume value x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	get output 1 audio vol	HDMI out 1 volume 50	
set output x audio mute y	Set output (x=0~4) audio mute on/off (y=0~1) x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out y=0: mute off y=1: mute on	set output 1 audio mute 1	Set HDMI out 1 mute on	0
get output x audio mute	Get output (x=0~4) audio mute on/off x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	get output 1 audio mute	HDMI out 1 mute on	
set output x audio mix y	Set output (x=0~4) audio mix (y=1~4) x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out y=1: Stereo y=2: Left y=3: Right y=4: Left and Right	set output 1 audio mix 1	Set HDMI out 1 mix stereo	Stereo

Command Code	Function Description	Example	Feedback	Default Setting
get output x audio mix	Get output (x=0~4) audio mix mode x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	get output 1 audio mix	HDMI out 1 mix stereo	
set output x audio delay y	Set output (x=0~4) audio delay (y=0~50) x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out y=[0~50]: Delay Time, Millisecond	set output 1 audio delay 50	Set HDMI out 1 audio delay 50ms	0
get output x audio delay	Get output (x=0~4) audio delay value x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	get output 1 audio delay	HDMI out 1 audio delay 50ms	
set output x audio eq y val z	Set output (x=0~4) audio GEQ index (y=1~31) to value z=[-10dB~+10dB] x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out y=[1~31]: GEQ index z=[-10dB~+10dB]: GEQ value	set output 1 audio eq 1 val -10dB	Set HDMI out 1 audio GEQ index 1 value -10dB	
get output x audio eq y val	Get output (x=0~4) audio GEQ index (y=1~31) value x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out y=[1~31]: GEQ index	get output 1 audio eq 1 val	HDMI out 1 audio GEQ index 1 value -10dB	
set output x audio eq preset y	Set output (x=0~4) audio GEQ to preset (y=1~6) x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out y=1: Flat y=2: Custom1 y=3: Custom2 y=4: Custom3 y=5: Custom4 y=6: Custom5	set output 1 audio eq preset 1	Set HDMI out 1 audio GEQ preset 1	1

Command Code	Function Description	Example	Feedback	Default Setting
get output x audio eq preset	Get output (x=0~4) audio GEQ preset x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	get output 1 audio eq preset	HDMI out 1 audio GEQ preset 1	
set output x audio eq reset	Set output (x=0~4) audio GEQ reset x=0: All Outputs (HDMI/HDBT, Line, Dante) x=1: HDMI Out 1 x=2: HDMI/HDBT Out 2 x=3: Line Out x=4: Dante Out	set output 1 audio eq reset	Set HDMI out 1 audio GEQ reset	
RX Setting				
set rx input x	Set RX input source (x=1~2) x=1: HDBT IN x=2: HDMI IN	set rx input 1	Set RX HDBT in Error,RX not ready!	1
get rx input	Get RX input source	get rx input	HDBT in	
get rx hdmi5v	Get RX HDMI input power 5V	get rx hdmi5v	On	
get rx host5v	Get RX USB host power 5V	get rx host5v	On	
set rx auto switch mode x	Set RX Auto Switch detection mode (x=1~2) x=1: Signal x=2: Source 5V	set rx auto switch mode 1	Set RX auto switch mode signal	1
get rx auto switch mode	Get RX Auto Switch detection mode	get rx auto switch mode	Signal	
set rx auto switch x	Set RX Auto Switch on/off (x=0~1) x=0: Off x=1: On	set rx auto switch 1	Set RX auto switch on	1
get rx auto switch	Get RX Auto Switch on/off	get rx auto switch	On	
set rx usb power x	Set RX 2 USB device ports 5V power mode (x=0~2) x=0: Force off x=1: Force on x=2: Follow host	set rx usb power 1	Set RX USB power force on	2
get rx usb power	Get RX 2 USB device ports 5V power mode	get rx usb power	Force on	
CEC Setting				
set cec power on	Set CEC power on command	set cec power on	CEC power on	
set cec power off	Set CEC power off command	set cec power off	CEC power off	
set auto power feature x	Set display auto power feature on/off (x=0~1) x=0: Off x=1: On	set auto power feature 1	Set auto power feature on	1
get auto power feature	Get display auto power feature on/off status	get auto power feature	On	

Command Code	Function Description	Example	Feedback	Default Setting
set auto power off timer x	Set auto power off command (CEC/RS-232) will be sent out after x (x=1~6) x=1: 5 sec x=2: 10 sec x=3: 30 sec x=4: 1 min x=5: 5 min x=6: 10 min	set auto power off timer 4	Set auto power off timer 1 min	4
get auto power off timer	Get auto power off timer	get auto power off timer	1 min	
set 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	set auto power control 1	Set auto power control CEC	1
get auto power control	Get auto power feature control type	get auto power control	CEC	
USB Setting				
set usb switch mode x	Set USB switch mode (x=1~3) x=1: Follow video x=2: Manual switch x=3: Auto switch (detect USB 5V then switch)	set usb switch mode 1	Set USB switch mode follow video	1
get usb switch mode	Get USB switch mode	get usb switch mode	Follow video	
set usb manual x	Set USB manual switch (x=1~4) x=1: USB-C 1 x=2: USB-C 2 x=3: USB host 3 x=4: USB host 4	set usb manual 3	Set USB host 3	1
get usb switch	Get USB switch status	get usb switch	USB host 3	
get host5v x	Get USB host (x=0~4) power 5V x=0: All USB hosts x=1: USB-C 1 x=2: USB-C 2 x=3: USB host 3 x=4: USB host 4	get host5v 0	USB-C 1 on USB-C 2 on USB host 3 on USB host 4 on	
set usb power x	Set TX USB device ports 5V power mode (x=0~2) x=0: Force off x=1: Force on x=2: Follow host	set usb power 1	Set USB power force on	2
get usb power	Get TX USB device ports 5V power mode	get usb power	Force on	
RS-232 Setting				
set serial x setting y	Set serial port (x=0~2) setting to y x=0: All RS-232(Local and Remote) x=1: Local RS-232 x=2: Remote RS-232 y= 115200-8n1 Baud rate: 115200/57600/56000/ 38400/19200/9600/4800/2400 Data bits: 7/8 Parity: n(None)/ o(Odd) /e(Even) Stop bits: 1/2	set serial 0 setting 115200-8n1	Set local RS-232 115200-8n1 Set remote RS-232 115200-8n1	115200-8n1
get serial x setting	Get serial port (x=0~2) setting x=0: All RS-232(Local and Remote) x=1: Local RS-232 x=2: Remote RS-232	get serial 0 setting	Local RS-232 115200-8n1 Remote RS-232 115200-8n1	

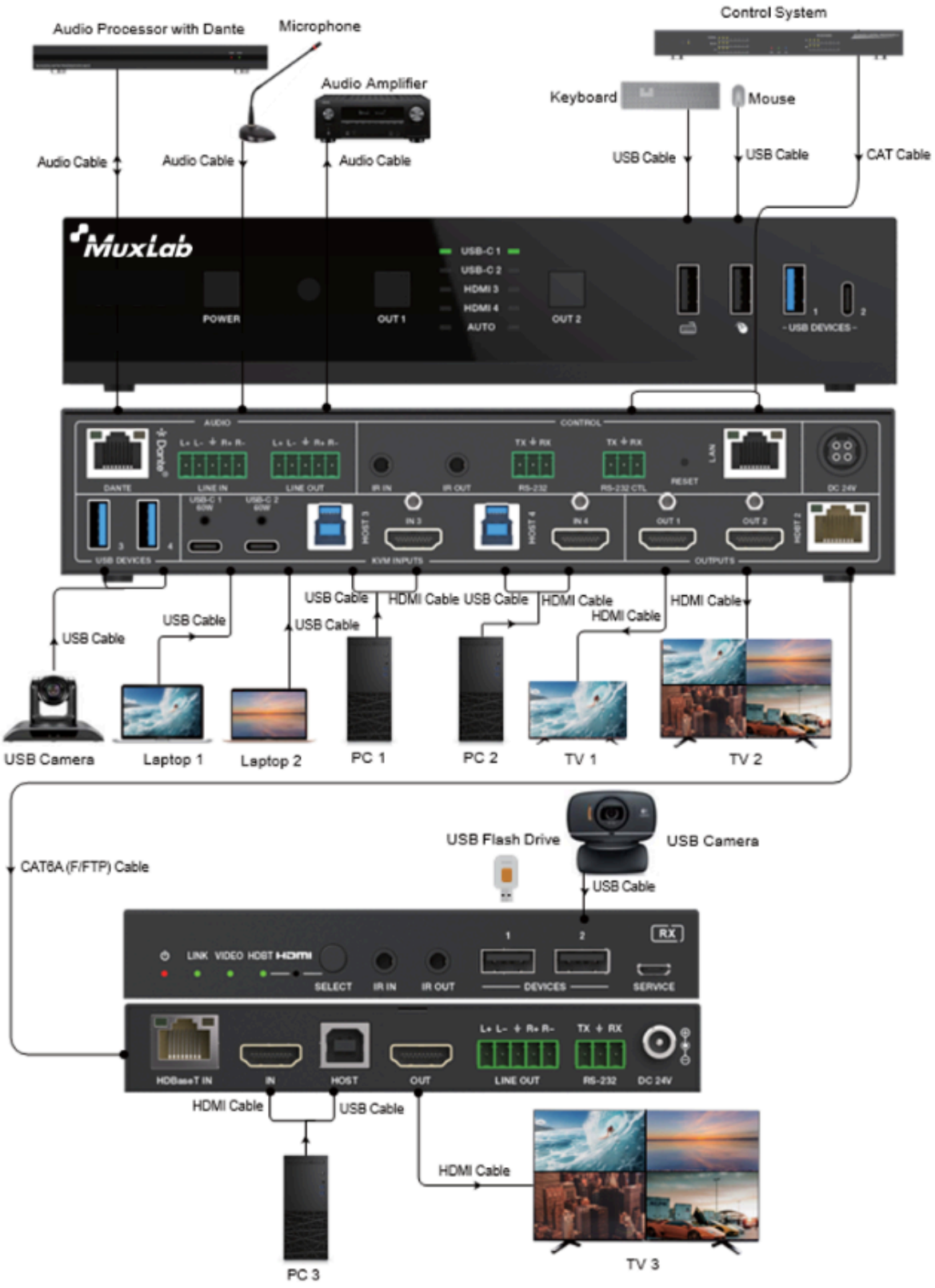
Command Code	Function Description	Example	Feedback	Default Setting
Preset Setting				
set preset save x	Save the current unit's settings to the specified preset (x=1~8) All settings except network setting. x=1~8: Preset 1 ~ Preset 8	set preset save 1	Set preset 1 save	
set preset recall x	Recall a specified preset into unit (x=1~8) All settings except network setting. x=1~8: Preset 1 ~ Preset 8	set preset recall 1	Set preset 1 recall	
set preset clear x	Clear a specified preset into unit (x=1~8) All settings except network setting. x=1~8: Preset 1 ~ Preset 8	set preset clear 1	Set preset 1 clear	
set preset x name y	Set preset (x=1~8) name to y (16 characters max) x=1~8: Preset 1 ~ Preset 8	set preset 1 name MeetingRoom 1	Set preset 1 name MeetingRoom 1	
get preset x name	Get preset (x=1~8) name x=1~8: Preset 1 ~ Preset 8	get preset 1 name	MeetingRoom 1	
Network Setting				
get ipconfig	Get the Current IP Configuration	get ipconfig	IP Mode: DHCP IP: 192.168.62.106 Subnet Mask: 255.255.255.0 Gateway: 192.168.62.1 TCP/IP port: 8000 Telnet port: 23 MAC: 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 mac addr	Get network MAC address	get mac addr	MAC: 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 or repower device to apply new config!)	1
get ip mode	Get network IP mode	get ip mode	DHCP	
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 or repower device 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	192.168.62.106	

Command Code	Function Description	Example	Feedback	Default 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 or repower device to apply new config!) DHCP on, Device can't config subnet mask, set DHCP off first.	
get subnet	Get network subnet mask	get subnet	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 or repower device to apply new config!) DHCP on, Device can't config gateway, set DHCP off first.	
get gateway	Get network gateway	get gateway	192.168.1.1	
set tcp/ip port x	Set network TCP/IP port (x=1~65535)	set tcp/ip port 8000	Set TCP/IP port 8000	8000
get tcp/ip port	Get network TCP/IP port	get tcp/ip port	8000	
set telnet port x	Set network telnet port (x=1~65535)	set telnet port 23	Set telnet port 23	23
get telnet port	Get network telnet port	get telnet port	23	
set net reboot	Reboot network modules	set net reboot	Search for IP, Please wait ...! IP Mode: DHCP IP: 192.168.62.106 Subnet Mask: 255.255.255.0 Gateway: 192.168.62.1 TCP/IP port: 8000 Telnet port: 23 MAC: 6C:DF:FB:0C:B3:8E (Static: 169.254.100.200 255.255.0.0 169.254.100.1)	
Password Setting				
set admin password x	Set admin login password (x=[16 characters max])	set admin password 1234	Set admin password 1234	1234
get admin password	Get admin login password	get admin password	1234	
set user password x	Set user login password (x=[16 characters max])	set user password 1234	Set user password 1234	1234
get user password	Get user login password	get user password	1234	

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

```
==========================================================================================
Status Info
MCU 1.1.0  Web 1.1.0  FPGA 1.1.0  RX 1.18.02

Input       Cable       Resolution          ColorSpace   ColorDepth   HDCP    EDID
USB-C 1     Connected   1920x1080p60        RGB          8bit         1.4     AUTO
USB-C 2     Connected   1920x1080p60        RGB          8bit         1.4     4K2K60_444, Stereo Audio 2.0
HDMI 1      Connected   3840x2160p60        RGB          8bit         2.2     AUTO
HDMI 2      Connected   3840x2160p60        YUV 4:4:4    8bit         Off     User Defined 2

Output        Cable       Resolution          ColorSpace   ColorDepth   HDCP   Freeze   AVMute   Turn_on/off   Sourc
HDMI OUT 1    Connected   3840x2160p60Hz      RGB          8bit         2.2    Off      Off      On            1/2/3/4
HDMI OUT 2    Connected   3840x2160p60Hz      RGB          8bit         2.2    Off      Off      On            1/2/3/4
HDBT OUT 2    Connected   3840x2160p60Hz      RGB          8bit         2.2    Off      Off      On            1/2/3/4

Power    Key    Beep   IR    UsbcAccessNetwork    Baud     FanSpeed    Temp(C)    Uptime(Day:Hour:Min:Sec)
On       On     Off    On    All USB-C Inputs     115200   Auto        46         000:00:13:04

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)
==========================================================================================
```

13. Connection Diagram



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