



PS-610

6x1 4K Seamless Presentation Switcher with HDBaseT Receiver



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1. Product Introduction

The PS-610 4K Seamless Presentation Switcher offers four HDMI, one display port and one USB-C inputs along with mirrored HDMI and HDBaseT outputs. The HDBaseT output supports PoC and can be paired with a compatible HDBaseT receiver to extend 4k@30Hz/1080P signal up to 40 meters (131ft) / 70 meters (230ft) all over a single CATx cable.

The switcher features an external line audio input that can be embedded into any HDMI input, and provides microphone input for audio mixing. The presentation switcher provides multi-view functionality and supports up to 16 multi-mode layouts. The switcher features a wide range of control flexibility via front panel buttons, built-in web GUI, IR remote, RS232 and CEC.

1.1. Features

- 6x1 4K Presentation Switcher with HDBaseT output.
- Supports seamless and auto switching.
- HDMI 1.4 and HDCP 2.2 compliant.
- Extends HDMI signals to distance up to 40 meters at 4K and 70 meters at 1080p.
- Supports audio embedded, audio de-embedding and microphone audio mixing.
- Supports multi-view and up to 16 modes can be selected.
- Controllable via front panel buttons, GUI, IR remote, RS232 and CEC.

1.2. Package List

Switcher

- PS-610 4K Presentation Switcher
- 2x Mounting Ears with 4 Screws
- 4x Plastic Cushions
- 2x 3-pin Terminal Blocks
- 2x 5-pin Terminal Blocks
- 1x IR Remote
- 1x IR Receiver
- 1x IR Emitter
- 1x RS232 Cable (3-pin to DB9)
- 1x Power Adapter (24V DC 5A)
- 1x Power Cord
- 1x User Manual

Receiver

- PS-610-RX HDBaseT Receiver
- 2x Mounting Ears with 4 Screws
- 4x Plastic Cushions
- 1x 3-pin Terminal Block

2. Specification

Video Input	
Video Input	(4) HDMI IN (1~4), (1) DP, (1) USB-C
Video Input Connector	(4) Type-A female HDMI, (1) DisplayPort, (1) Type-C USB
Input Resolution	HDMI: Up to 4K@30Hz 4:4:4
	DP: Up to 4K@30Hz 4:4:4
	USB-C: Up to 4K@30Hz 4:4:4
Video Output	
Video Output	(1) HDMI, (1) HDBaseT
Video Output Connector	(1) Type-A female HDMI, (1) RJ45
Output Resolution	HDMI: Up to 4K@30Hz 4:4:4
	HDBaseT: Up to 4K@30Hz 4:4:4
HDMI Standard	Up to 1.4
HDCP Version	Up to 2.2
Audio Input	
Audio Input	(1) LINE, (1) MIC
Audio Input Connector	(2) 3-pin terminal blocks
Frequency Response	20Hz ~ 20kHz, ± 3 dB
Max Input Level	2.0Vrms \pm 0.1
L-R Level Deviation	< 0.3dB, 1kHz sine at 0dBFS level (or max level before clipping)
Input Impedance	> 10K Ω
LINE/MIC Audio Format	PCM 2.0
HDMI/DP Audio Format	PCM 2.0 48K
L+R Audio Output	
Audio Output	(1) L+R
Audio Output Connector	(1) 5-pin terminal block
Frequency Response	20Hz ~ 20kHz, ± 1 dB
Max Output Level	2.0 \pm 0.1Vrms
THD+N	< 0.05%, 20Hz ~ 20kHz bandwidth, 1kHz sine at 0dBFS level (or max level)
SNR	> 80dB, 20Hz ~ 20kHz bandwidth
Crosstalk Isolation	< -70dB, 10kHz sine at 0dBFS level

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L-R Level Deviation	< 0.3dB, 1kHz sine at 0dBFS level (or max level before clipping)
Output Load Capability	1K Ω and higher (Supports 10x paralleled 10K Ω loads)
Noise Level	-80dB
SPDIF Audio Output	
SPDIF Out	(1) SPDIF
Audio Out Connector	(1) Toslink
Max Output level	\pm 0.3dBFS
Frequency Response	20Hz ~ 20kHz, \pm 1dB
THD+N	< 0.05%, 20Hz ~ 20kHz bandwidth, 1kHz sine at 0dBFS level (or max level)
Signal-to-Noise Ratio	> 90dB, 20Hz ~ 20kHz bandwidth
Crosstalk isolation	< -70dB, 10kHz sine at 0dBFS level (or max level before clipping)
Noise	- 90dB
Audio Format	PCM 2.0
Control	
Control port	(1) CONTACT IN, (1) IR IN, (1) IR OUT, (1) IR EYE, (1) FIRMWARE, (1) RS232, (1) TCP/IP
Control Connector	(1) 5-pin terminal block, (3) 3.5mm jack, (1) Type-A USB, (1) 3-pin terminal block, (1) RJ45
General	
Operation Temperature	-5 $^{\circ}$ C ~ +55 $^{\circ}$ C
Storage Temperature	-25 $^{\circ}$ C ~ +70 $^{\circ}$ C
Relative Humidity	10% ~ 90%
External Power Supply	Input: AC 100~240V, 50/60Hz; Output: 24V DC 5A
Power Consumption	90w (Max)
USB-C Power Charging	60w (Max)
Dimension (W*H*D)	250mm x 44mm x 200mm
Net Weight	1.6KG

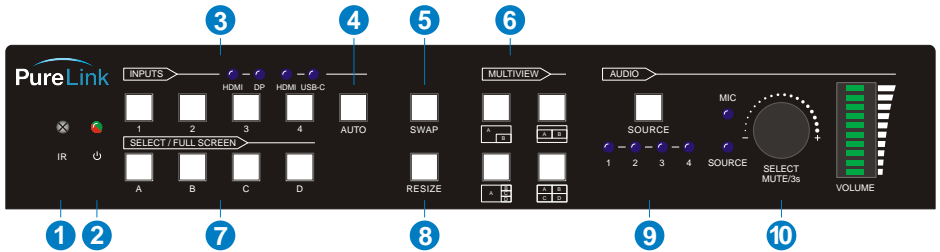
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2.2. Receiver

Input and Output	
Input	(1) HDBT IN
Input Connector	(1) RJ45
Output	(1) HDMI OUT
Output Connector	(1) Type-A female HDMI
Control	(1) IR IN, (1) IR OUT, (1) RS232
Control Connector	(2) 3.5mm jack, (1) 3-pin terminal block
General	
Maximum Video Resolution	4K@60Hz 4:2:0, including 1080p@60Hz
Transmission Mode	HDBaseT
Transmission Distance	1080p signal to 70m, 4K signal to 40m
Bandwidth	10.2Gbps
Video Standard	HDMI 1.4 with HDCP 2.2
Power Consumption	7 watts
Operation Temperature	-5°C ~ +55°C
Storage Temperature	-25°C ~ +70°C
Operating Humidity	0% ~ 90%
Power Supply	Input Power: 24VDC 1.25A or Power over HDBaseT (PoH); AC Adaptor Input Power: 100~240VAC, 50/60Hz
Dimension (W*H*D)	115mmx16.2mm x109mm
Net Weight (g)	196g

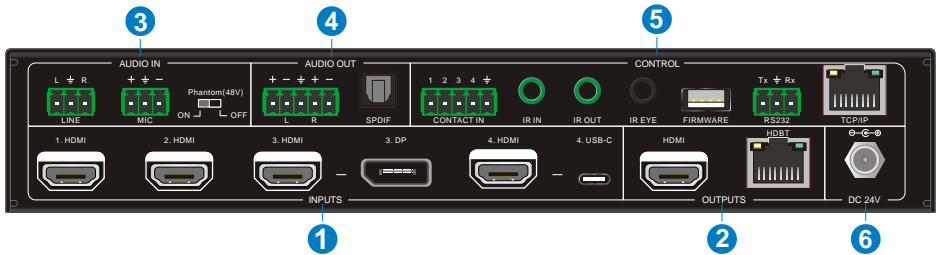
3. Panel Description

3.1. Switcher Front Panel



- ① **IR LED:** Built-in IR sensor, receives IR signal sent from IR remote.
- ② **POWER LED:** Illuminates red when switcher is in standby mode or illuminates green when device is powered on.
- ③ **INPUT BUTTONS (1~4):** Input source selectors.
 - HDMI/DP LED: Indicates HDMI or DP source for the third input channel.
 - HDMI/USB-C LED: Indicates HDMI or USB-C source for the fourth input channel.
- ④ **AUTO BUTTON:** Auto switching mode selector.
- ⑤ **SWAP:** Cycle swap the video source of window display in anticlockwise.
- ⑥ **MULTIVIEW:** Total four buttons for choosing Multi-view mode.
- ⑦ **SELECT/FULL SCREENS (A~B):** Four buttons for window selection and full screen setting.
- ⑧ **RESIZE:** Adjust the windows size.
- ⑨ **AUDIO SOURCE:** Select the audio source, and the correspond LED (1~4) will illuminate blue. When select the LINE audio, the button illuminates blue.
- ⑩ **VOLUME:** Variable audio control
 - Press the volume knob to select microphone or source audio control.
 - Rotate the knob to increase or decrease the volume of the selected audio.
 - Press and hold the knob at least 3 seconds to mute the selected audio, rotate the knob to unmute.

3.2. Switcher Rear Panel



- ① **INPUTS:** Four HDMI inputs, one DisplayPort and one USB-C input.
- ② **OUTPUTS:** One HDMI and one HDBaseT output. The HDBaseT output supports 48V PoC.
- ③ **AUDIO IN:**
 - LINE: Line audio input which can be embedded in any HDMI input.
 - MIC: Microphone input for audio mixing. Set 48V phantom power mode switch as needed: ON for Condenser microphone; OFF for Dynamic microphone.
- ④ **AUDIO OUT:**
 - L+R: Balanced analog audio output for audio de-embedding.
 - SPDIF: Digital SPDIF audio output for audio de-embedding.
- ⑤ **CONTROL:**
 - CONTACT IN: Contact external sensors, buttons and other devices for input source selection.
 - IR IN: Connects to IR receiver for IR pass-through.
 - IR OUT: Connects to IR emitter for IR pass-through.
 - IR EYE: Connects to IR receiver for local switcher control.
 - FIRMWARE: Type-A USB for firmware upgrade.
 - RS232: 3-pin terminal block for RS232 control.
 - TCP/IP: RJ45 port to control the switcher via GUI.
- ⑥ **DC 24V:** DC connector for power adapter connection.

3.3. Receiver Front and Rear Panel



① **LINK: HDBT Link status indicator:**

- OFF: No Link.
- GREEN: Link Successful.
- Blinking GREEN: Link abnormal.

② **HDCP: HDCP compliant indicator**

- OFF: No HDMI traffic.
- GREEN: Traffic with HDCP.
- Blinking GREEN: Traffic without HDCP.

③ **POWER LED:** Illuminates red when device is powered on.

④ **RS232:** 3-pin terminal block for RS232 control.

⑤ **IR IN:** Connects to IR receiver for IR pass-through.

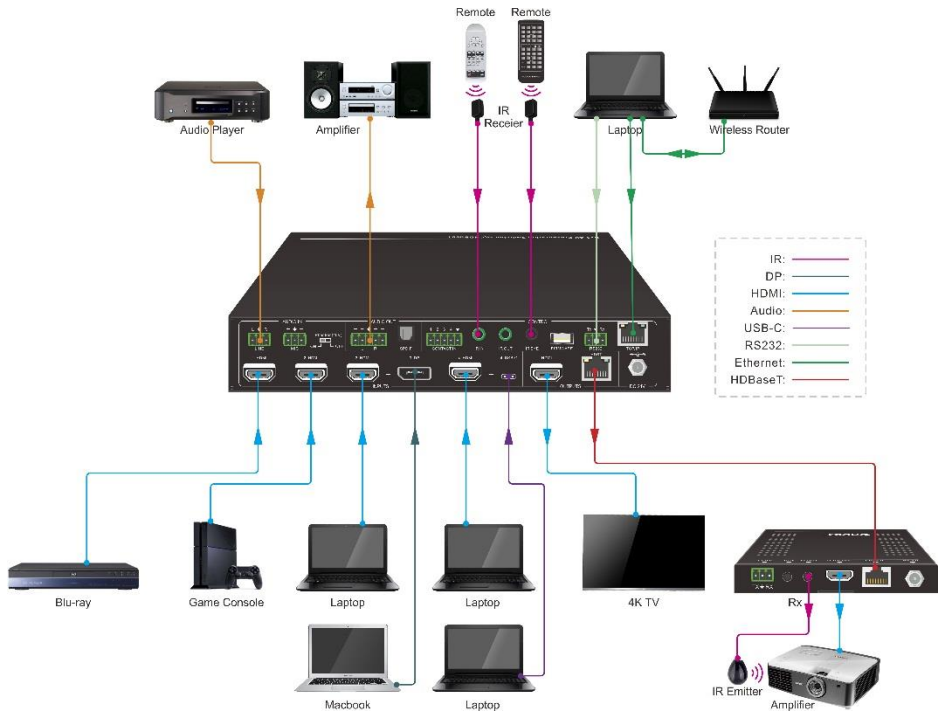
⑥ **IR OUT:** Connects to IR emitter for IR pass-through.

⑦ **HDMI Output:** Connect with HDMI display.

⑧ **HDBaseT input:** Connect to the HDBT OUT port on the transmitter via CAT5e/ CAT6a cable.

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

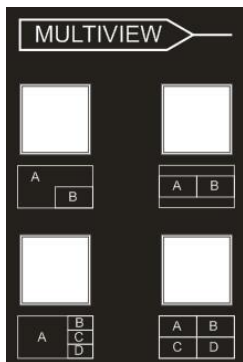
3.4. System Connection



4. Front Panel Control

4.1. Multi-view Mode Selection

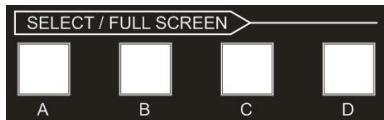
There are four multi-view modes can be selected by front panel buttons.



The factory default multi-view mode is quartered window mode, and there is a one-one correspondence between the four input sources and the four output windows: input 1 -> window A, input 2 -> window B, input 3 -> window C, input 4-> window D. The button LEDs (A~D) illuminate blue.

When switching to two-window (A&B) mode, the corresponding mode LED will illuminate blue, and the window A and B LEDs illuminate blue. The factory default correspondence between the two input sources and the two output windows is: input 1 -> window A, input 2 -> window B.

4.2. Full Screen Setting

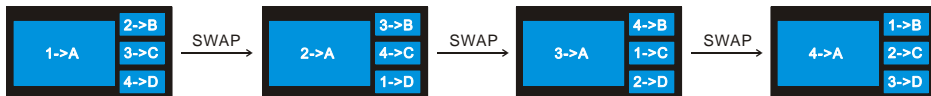


Press **Windows A~D** button to select the corresponding window to display in full-screen. Meanwhile, the corresponding input source button LED and window button A LED illuminate blue, other window buttons and previous multi-view mode button LED goes out.

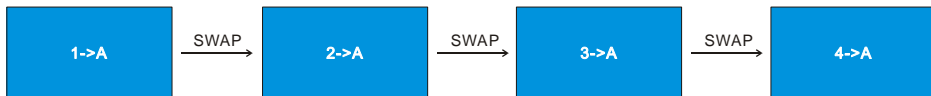
4.3. Swap Window Setting

Press **SWAP** button to cycle swap the video source of window display in anticlockwise, the SWAP LED lights once when press its button once.

Example: In Multi-view Mode



Example: In Full Screen Mode



4.4. Window Size Setting

The window A/B/C/D size can be adjusted by repeatedly pressing the **RESIZE** button, the button LED lights once when press its button once. Please refer the GUI Multi-view Tab for more details.

Example: PIP (Picture in Picture)



Example: Bisection



Example: One large and three small



4.5. Video Signal Switching

- **In the Multi-view mode**

Operation: Inputs# + Windows#

Example: Switch Input 1 to Windows B:

Press **INPUT 1** (The input 1 LED illuminates blue, the windows A~D LEDs flash.) →
 Press **Windows B** (The windows A, C and D LEDs go out, then input 1 and windows B LED flash three times, last, input 1 LED goes out and windows A~D LEDs illuminate blue.)

- **In the Full Screen mode**

- 1) **Manual Switching**

Operation: Inputs# + Windows#

Example: Switch Input 2 to Windows A:

Press **INPUT 2** (The input 2 LED illuminates blue.) → Press **Windows A** (The input 2 and windows A LEDs illuminate blue).

- 2) **Auto Switching**

Press **AUTO** button to enable or disable auto-switching mode. Note that auto switching

mode only works in full screen mode.

When in auto mode, the switcher will switch according to the following rules:

- *The switcher will switch to the available active inputs with the priority: 1-HDMI > 2-HDMI > 3-HDMI > 3-DP > 4-HDMI > 4-USB-C. When input source and output window are connected, the corresponding LEDs illuminate blue.*
- *New input: The switcher will automatically select the new input once detecting a new input.*
- *Reboot: If power is restored to the switcher, it will automatically reconnect the input before powered off.*
- *In auto mode, the input source also can be switched by the manual switching steps, but not exit auto mode.*
- *When full screen mode is switched into multi-view mode, the auto mode will not exit.*

4.6. Switching Status Inquiry

In the Multi-view mode (Window A, B, C and D LED illuminate blue).

Operation: Windows#

Example: Press and hold **Windows B** button at least 3 seconds (Window A, C and D LED go out, and then the corresponding input source LED will illuminate blue). After 3 seconds, Window A, B, C and D LED illuminate blue.

4.7. Audio Control



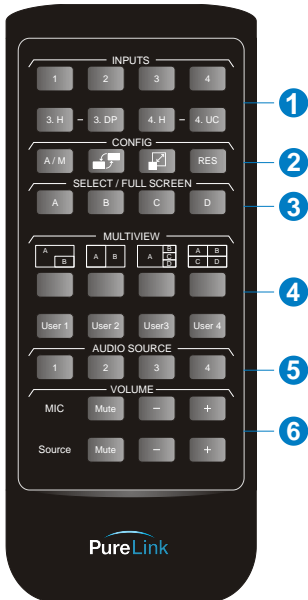
By default, the HDMI and HDBT output audio follows the video source in the full screen mode, but in the Multi-view mode, the output audio is from the 1-HDMI input. The audio source can be changed by pressing the **SOURCE** button.

Press the volume knob to select microphone or source audio control. Rotate the knob to increase or decrease the volume of the selected audio. Press and hold the knob at least 3 seconds to mute the selected audio, rotate the knob to unmute.

5. IR Remote Control

The switch provides IR EYE port for IR receiver connection, and then it can be control by the below IR remote.

Note: There is no long pressing function on this IR remote, and its button functions are the same as the front panel buttons.



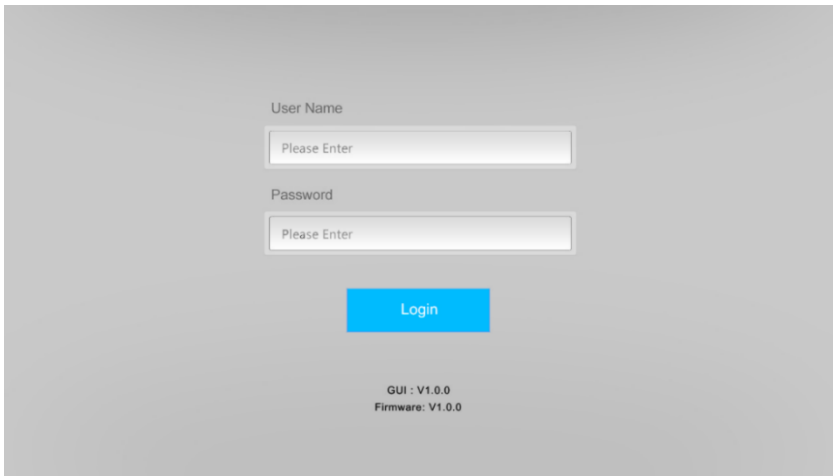
- ① **INPUTS:** Six buttons for input source selection.
- ② **CONFIG:**
 - A/M button for auto-switching mode setting.
 - SWAP button for cycle swap the video source of window display.
 - RESIZE button for window size adjustment.
 - RES button for output resolution selection.
- ③ **SELECT/FULL SCREEN:** A~D buttons for output window selection and full screen setting.
- ④ **MULTIVIEW:** Four buttons for built-in multiview mode selection and four buttons for user-defined mode selection. The user-defined multiview modes can be set via GUI.
- ⑤ **AUDIO SOURCE:** Four buttons for audio source selection.
- ⑥ **VOLUME:**
 - Microphone audio: Mute, volume up and volume down.
 - Source audio: Mute, volume up and volume down.

6. GUI Control

The switcher can be controlled via TCP/IP. The default IP settings are:

IP Address: 192.168.0.178
Subnet Mask: 255.255.255.0

Type **192.168.0.178** in the internet browser, it will enter the below log-in webpage:



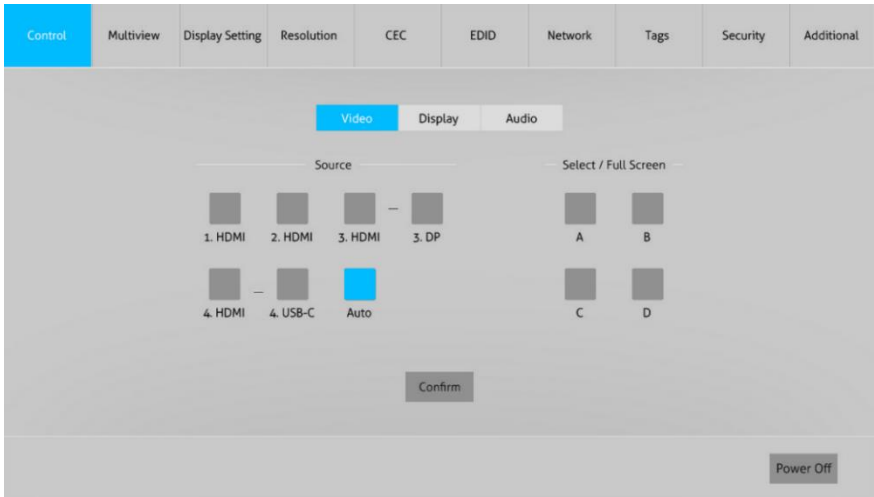
Username: admin

Password: admin

Type the user name and password, and then click **Login** to enter the section for video switching.

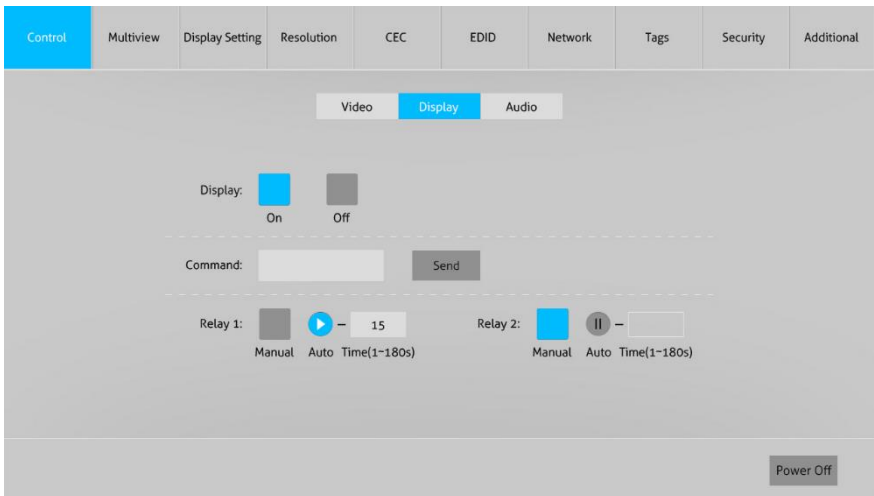
6.1. Control Tab

6.1.1. Video Control



- The source selection buttons, Auto button and window A~D buttons are same as the buttons of front panel button. Please find [4.5 Video Signal Switching](#) for more details.
- Click “Power Off” to enter system standby mode.

6.1.2. Display Control

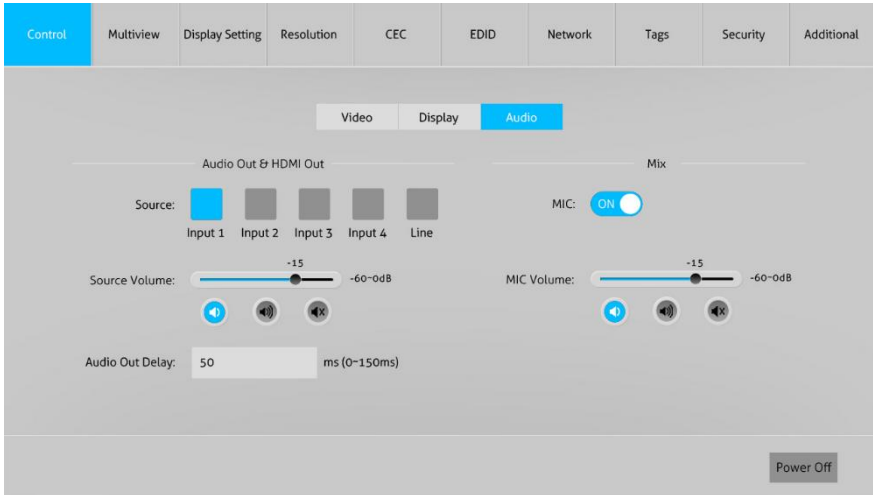


- **Display:** Click “On” or “Off” to power on or off the display device.

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- **Command:** Type command in this box to be send to control the display device, and then click “Send”.
- **Relay 1~2:** The function is for projection screen control, and the HDBaseT receiver which is connected to the switcher needs to have two relay ports. Click “Manual”, the projection screen starts to roll up or drop down, and then click “Manual” again to stop process. After setting the auto stop time, click “Auto”, the projection screen starts to roll up or drop down until the auto stop time is up.

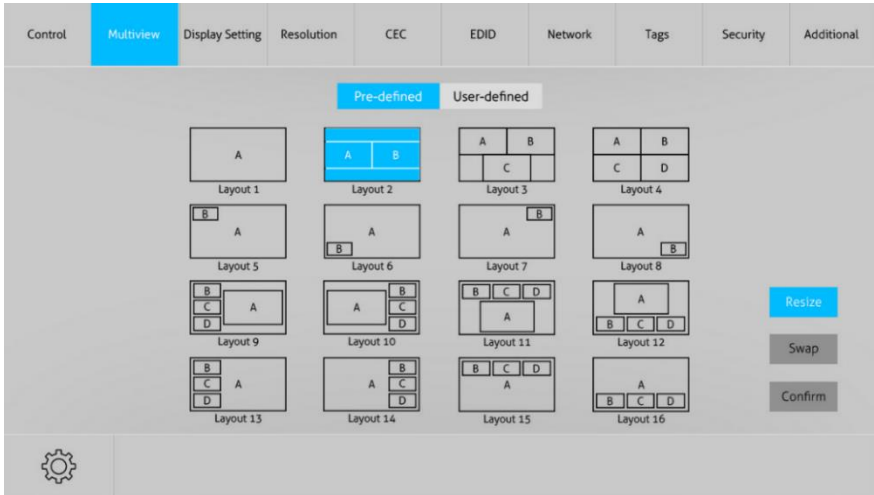
6.1.3. Audio Control



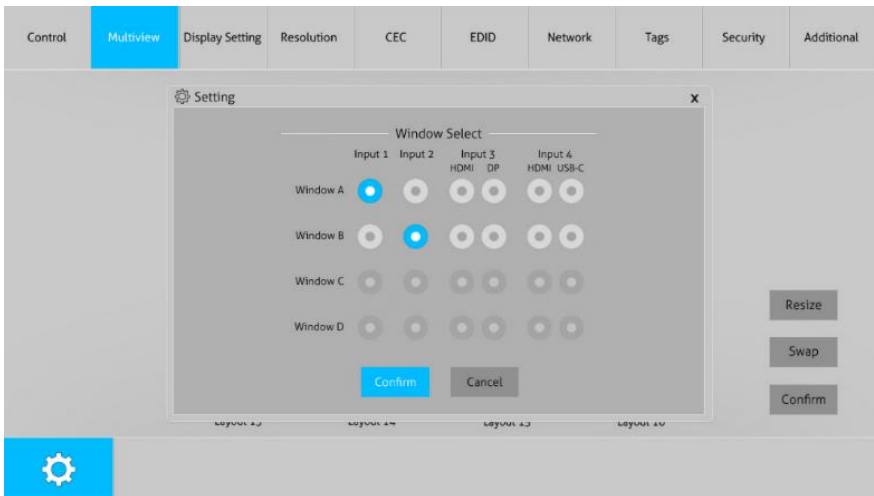
- **Source:** Select audio source for audio outputs, HDMI and HDBaseT outputs.
- **Source Volume:** Volume bar, volume up, volume down and mute buttons for source audio control.
- **Audio Out Delay:** Set the delay time of audio output to 0~150ms.
- **MIC:** Turn on or off microphone input.
- **MIC Volume:** Volume bar, volume up, volume down and mute buttons for microphone audio control.

6.2. Multiview Tab

1) Pre-defined



- Up to 16 multi-view modes can be selected.
- **RESIZE:** Click the button to adjust the window size. Note that only Layout 2, Layout 5~Layout 8, Layout 9~Layout 12 can be adjusted window size.
- **SWAP:** Click the button to cycle swap the video source of window display in anticlockwise.
- Click gear icon to enter the below interface to select input source for each window.



2) User-defined

	None	Input 1	Input 2	Input 3 HDMI DP	Input 4 HDMI USB-C	Start Position(0-100)	End Position(0-100)
Window A	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	[X, Y] 0, 0	[X, Y] 20, 20
Window B	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	[X, Y] 0, 0	[X, Y] 10, 10
Window C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	[X, Y] 5, 5	[X, Y] 50, 50
Window D	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	[X, Y] 50, 50	[X, Y] 80, 80

- **User Layout:** Select the user-defined layout number 1~4.
- **Window Select:** Select the input source for each window, and then adjust window size by setting start position and end position. Click “Save” to save the user-defined layout.

6.3. Display Setting Tab

Automatic Display Control: ON

No Signal Timeout: 10 s

Baud Rate: 9600 Hex

Command Ending: NULL Display Off: x2

Display On: Display Off x2 Delay: 1 s

Input Delay: 3 s Display Input Select:

Trigger: Display On ->Wait Delay ->Send Display Input Select

- **Automatic Display Control:** Enable or disable the function to automatically control display device.

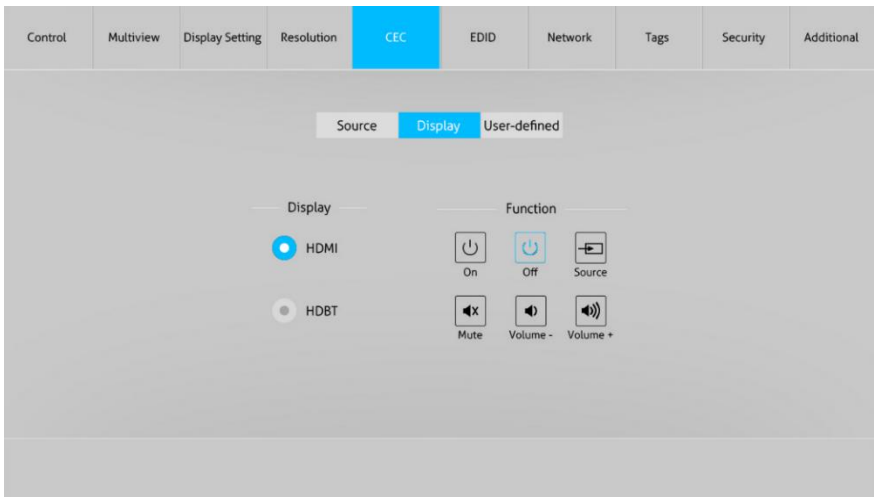
6.5. CEC Tab

6.5.1. Source Control



- Select the HDMI input source which needs to be control, and then click function buttons.

6.5.2. Display Control



- Select the output display device which needs to be control, and then click function buttons.

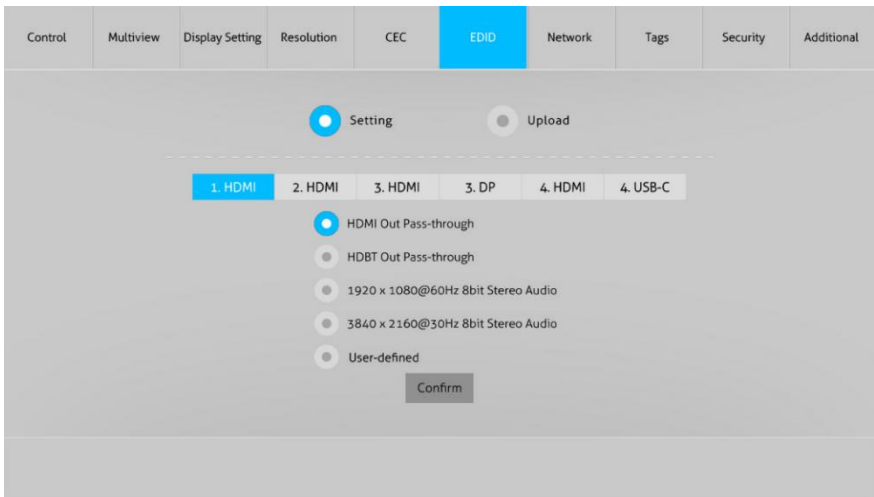
6.5.3. User-defined CEC Command



- Select input source or display device, and then type CEC command in the corresponding Trigger 1 or Trigger 2 box to be sent to control the selected device.

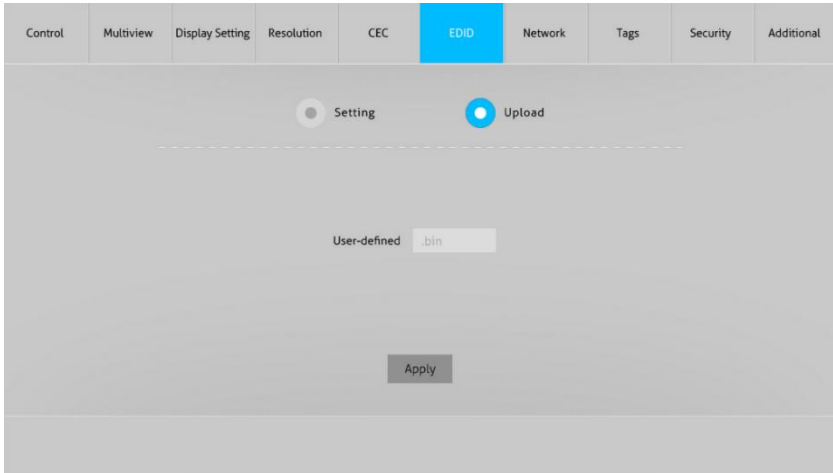
6.6. EDID Tab

6.6.1. EDID Setting



- Select the compatible built-in EDID for the selected input source.

6.6.2. EDID Upload



- Upload user-defined EDID by the below steps:
Step 1: Prepare the EDID file (.bin) on the control PC.
Step 2: Click the user-defined box, and then select the EDID file (.bin).
Step 3: Click “Apply” to upload the user-defined EDID.

6.7. Network Tab



- Static IP or Dynamic Host Configuration Protocol (DHCP).
- Modify the static IP Address, Subnet Mask, and Gateway.

6.8. Tags Tab

Control	Multiview	Display Setting	Resolution	CEC	EDID	Network	Tags	Security	Additional
Layout 1	<input type="text"/>	Layout 2	<input type="text"/>	Layout 3	<input type="text"/>	Layout 4	<input type="text"/>		
Layout 5	<input type="text"/>	Layout 6	<input type="text"/>	Layout 7	<input type="text"/>	Layout 8	<input type="text"/>		
Layout 9	<input type="text"/>	Layout 10	<input type="text"/>	Layout 11	<input type="text"/>	Layout 12	<input type="text"/>		
Layout 13	<input type="text"/>	Layout 14	<input type="text"/>	Layout 15	<input type="text"/>	Layout 16	<input type="text"/>		
User Layout 1	<input type="text"/>	User Layout 2	<input type="text"/>	User Layout 3	<input type="text"/>	User Layout 4	<input type="text"/>		
<input type="button" value="Confirm"/>									

- Modify the multiview layout labels.

6.9. Security Tab

Control	Multiview	Display Setting	Resolution	CEC	EDID	Network	Tags	Security	Additional
Credentials									
Password:	<input type="text" value="admin"/>	<input type="button" value="Confirm"/>							
Front Panel Lock									
ON	<input checked="" type="checkbox"/>	OFF							

- Modify the login password.
- Lock or unlock the front panel buttons.

6.10. Additional Tab

Control Multiview Display Setting Resolution CEC EDID Network Tags Security Additional

Device Baud Rate: 9600 ▼ Save

Factory Default: [Button]

- Set the baud rate of switcher and restore the switcher to factory default setting.