

MP-SC6T-MV

6x1 4K Presentation Switcher with HDBaseT



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Version: MP-SC6T-MV_2020V1.0

Table of Contents

1. Product Introduction.....	1
1.1. Features	1
1.2. Package List.....	1
2. Specification	2
2.1. MP-SC6T-MV Switcher.....	2
2.2. MP-MVRX Receiver	4
3. Panel Description.....	5
3.1. Switcher Front Panel	5
3.2. Switcher Rear Panel.....	6
3.3. Receiver Front and Rear Panel	7
3.4. System Connection	7
4. Front Panel Control.....	8
4.1. Multi-view Mode Selection	8
4.2. Full Screen Setting	8
4.3. Swap Window Setting.....	8
4.4. Window Size Setting.....	9
4.5. Video Signal Switching	9
4.6. Switching Status Inquiry	10
4.7. Audio Control	10
5. IR Remote Control	11
6. GUI Control.....	12
6.1. Control Tab	13
6.1.1. Video Control.....	13
6.1.2. Display Control	13
6.1.3. Audio Control	14
6.2. Multiview Tab	15
6.3. Display Setting Tab.....	16
6.4. Resolution Tab.....	17
6.5. CEC Tab	18
6.5.1. Source Control.....	18
6.5.2. Display Control	18
6.5.3. User-defined CEC Command.....	19

6x1 4K Presentation Switcher with HDBaseT

6.6. EDID Tab	19
6.6.1. EDID Setting	19
6.6.2. EDID Upload	20
6.7. Network Tab	20
6.8. Tags Tab	21
6.9. Security Tab	21
6.10. Additional Tab	22
6.11. GUI Upgrade	22
7. RS232 Control	23
7.1. System Commands	23
7.2. Signal Switching Commands	24
7.3. Audio Setting Commands	25
7.4. Function Setting Commands	26
7.5. CEC Commands	30
7.6. Special Commands	32
8. Firmware Upgrade	34

1. Product Introduction

Thank you for selecting the 6x1 4k presentation switcher. The 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 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

MP-SC6T-MV (NR) Switcher

- 1x 6x1 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

MP-MVRX Receiver

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

2. Specification

2.1. MP-SC6T-MV Switcher

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

6x1 4K Presentation Switcher with HDBaseT

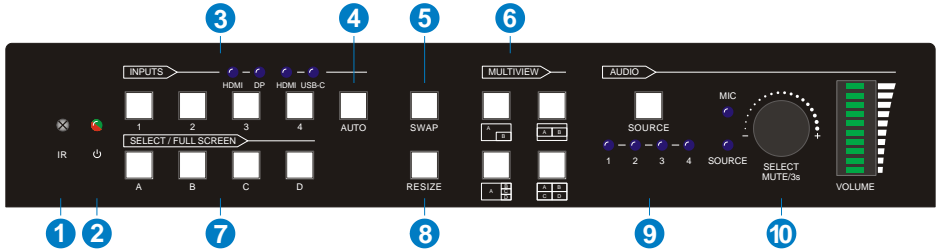
L-R Level Deviation	< 0.3dB, 1kHz sine at 0dBFS level (or max level before clipping)
Output Load Capability	1K Ω and higher (Supports 10x paralleled 10K Ω loads)
Noise Level	-80dB
SPDIF Audio Output	
SPDIF Out	(1) SPDIF
Audio Out Connector	(1) Toslink
Max Output level	\pm 0.3dBFS
Frequency Response	20Hz ~ 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

2.2. MP-MVRX 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	10 watts
Operation Temperature	-5°C ~ +55°C
Storage Temperature	-25°C ~ +70°C
Operating Humidity	0% ~ 90%
Power Supply	Input Power: 12VDC 1A or Power over Cable (PoC); AC Adaptor Input Power: 100~240VAC, 50/60Hz
Dimension (W*H*D)	106mm x 16mm x 84mm
Net Weight (g)	250g

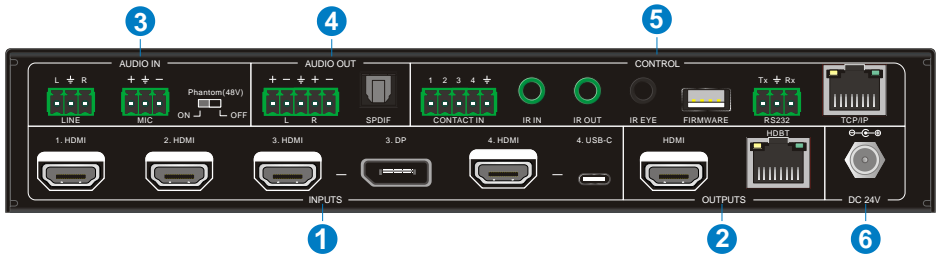
3. Panel Description

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



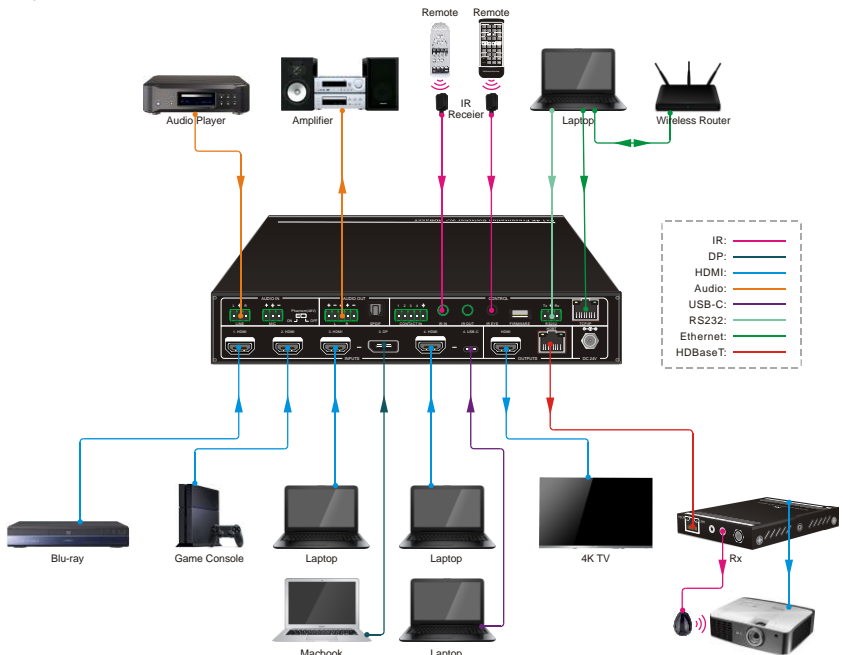
- ① **INPUTS:** Four HDMI inputs, one DisplayPort and one USB-C input.
- ② **OUTPUTS:** One HDMI and one HDBaseT output. The HDBaseT output supports 48V PoC.
- ③ **AUDIO IN:**
 - LINE: Line audio input which can be embedded in any HDMI input.
 - MIC: Microphone input for audio mixing. Set 48V phantom 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 **POWER LED:** Illuminates red when device is powered on.
- ② **RS232:** 3-pin terminal block for RS232 control.
- ③ **HDMI Output**
- ④ **CTRL/UPDATE:** Switch for determining the behavior of the RS232 connection.
 - CTRL: It serves as an RS232 serial extender.
 - UPDATE: Update the Valens IC program.
- ⑤ **HDBaseT input**
- ⑥ **IR IN:** Connects to IR receiver for IR pass-through.
- ⑦ **IR OUT:** Connects to IR emitter for IR pass-through.
- ⑧ **DC 12V:** DC connector for power adapter connection.

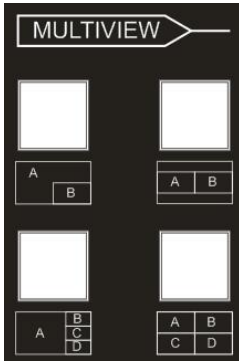
3.4. System Connection



4. Front Panel Control

4.1. Multi-view Mode Selection

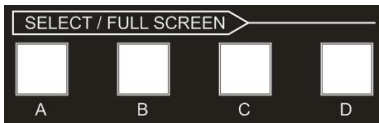
There are four multi-view modes can be selected by front panel buttons.



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

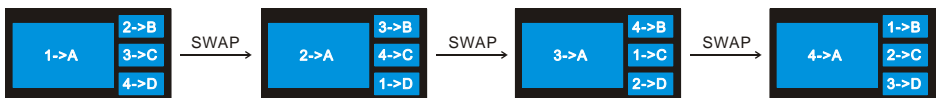


Press **Windows A~D** button to select the corresponding window to display in full-screen. Meanwhile, the corresponding input source button LED and window button A LED illuminate blue, other window buttons and previous multi-view mode button LED goes out.

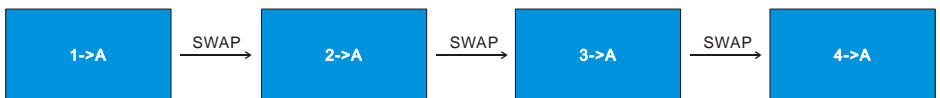
4.3. Swap Window Setting

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



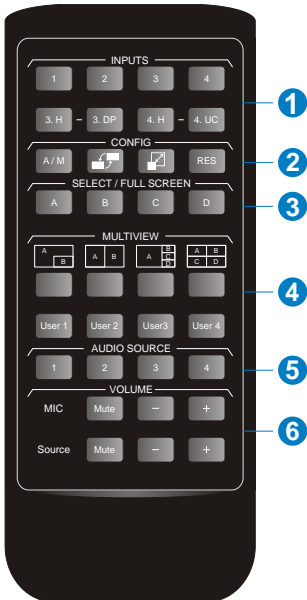
By default, the HDMI and HDBT output audio follows the video source in the full screen mode, but in the Multi-view mode, the output audio is from the 1-HDMI input. The audio source can be changed by pressing the **SOURCE** button.

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.



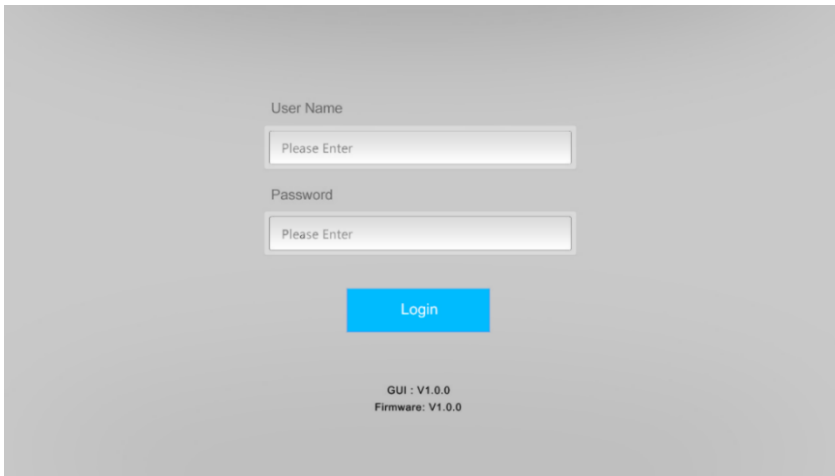
- ① **INPUTS:** Six buttons for input source selection.
- ② **CONFIG:**
 - A/M button for auto-switching mode setting.
 - SWAP button for cycle swap the video source of window display.
 - RESIZE button for window size adjustment.
 - RES button for output resolution selection.
- ③ **SELECT/FULL SCREEN:** 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.

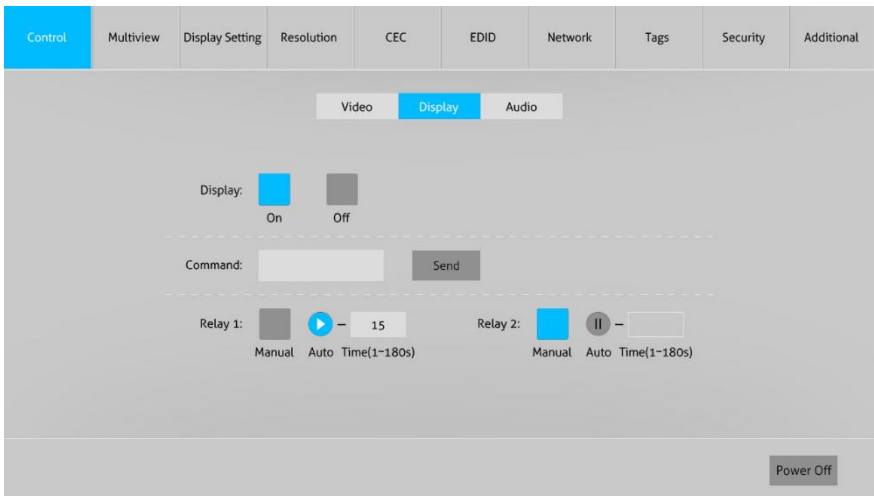
6.1. Control Tab

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.

- **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.

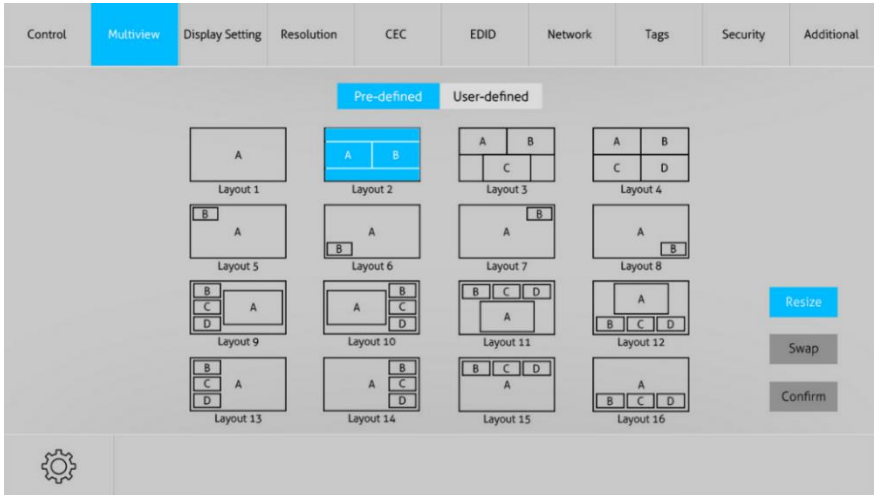
6.1.3. Audio Control



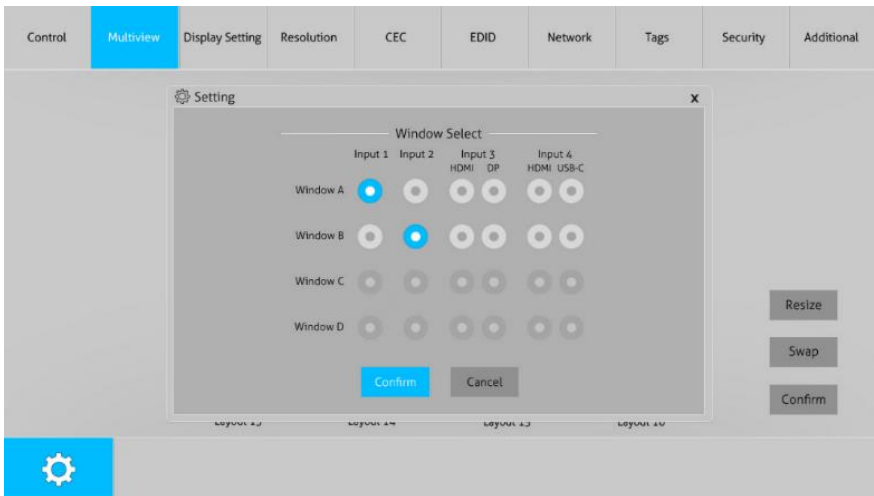
- **Source:** Select audio source for audio outputs, HDMI and HDBaseT outputs.
- **Source Volume:** Volume bar, volume up, volume down and mute buttons for source audio control.
- **Audio Out Delay:** Set the delay time of audio output to 0~150ms.
- **MIC:** Turn on or off microphone input.
- **MIC Volume:**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

The screenshot shows the 'User-defined' configuration interface. At the top, there are tabs for 'Control', 'Multiview', 'Display Setting', 'Resolution', 'CEC', 'EDID', 'Network', 'Tags', 'Security', and 'Additional'. The 'Multiview' tab is active. Below the tabs, there are two sub-tabs: 'Pre-defined' and 'User-defined'. The 'User-defined' sub-tab is selected. On the left, there is a 'User Layout' section with four numbered boxes (1, 2, 3, 4) and a diagram showing a coordinate system with 'Start Position' and 'End Position' labels. On the right, there is a 'Window Select' table with columns for 'None', 'Input 1', 'Input 2', 'Input 3 (HDMI DP)', and 'Input 4 (HDMI USB-C)', and rows for 'Window A', 'Window B', 'Window C', and 'Window D'. Each cell contains a radio button. Below the table are 'Save', 'Recall', and 'Default' buttons.

- **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.

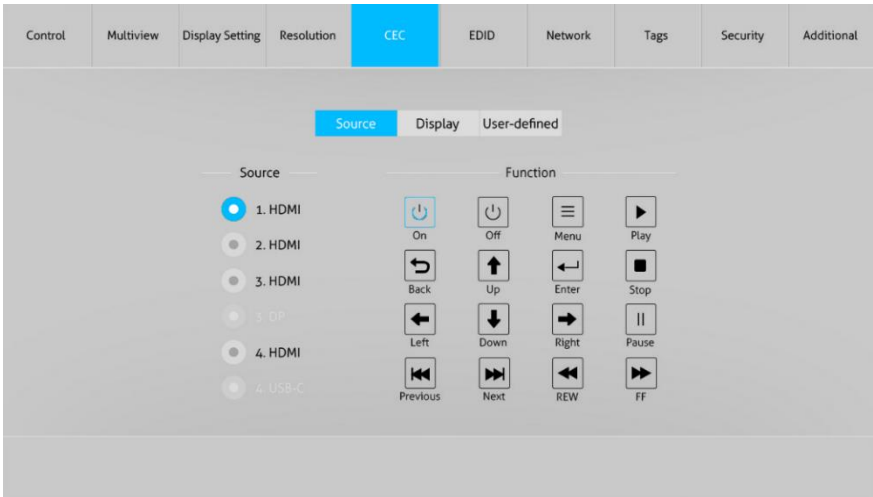
6.3. Display Setting Tab

The screenshot shows the 'Display Setting' configuration interface. At the top, there are tabs for 'Control', 'Multiview', 'Display Setting', 'Resolution', 'CEC', 'EDID', 'Network', 'Tags', 'Security', and 'Additional'. The 'Display Setting' tab is active. The page shows various settings including 'Automatic Display Control' (ON), 'No Signal Timeout' (10 s), 'Baud Rate' (9600), 'Command Ending' (NULL), 'Display On', 'Input Delay' (3 s), 'Hex' (checked), 'Display Off', 'Display Off x2 Delay' (1 s), and 'Display Input Select'. Each setting has a 'Save' button. A 'Send' button is also present for the 'No Signal Timeout' setting.

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

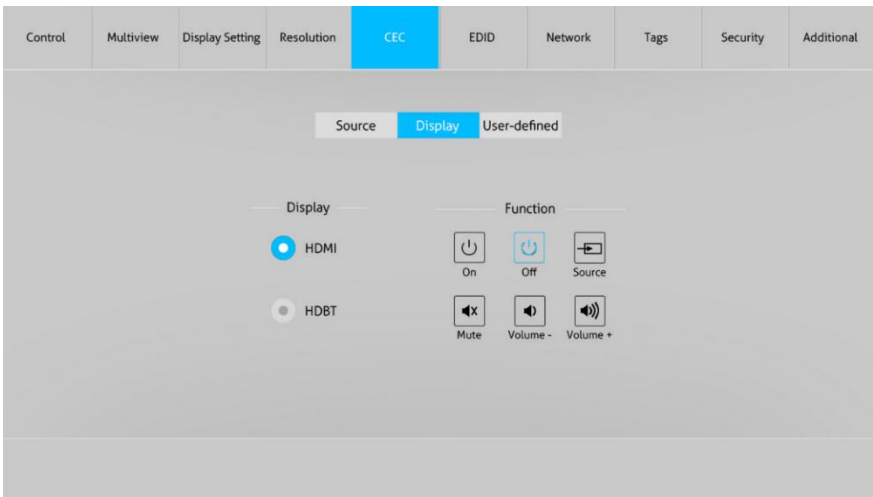
6.5. CEC Tab

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.

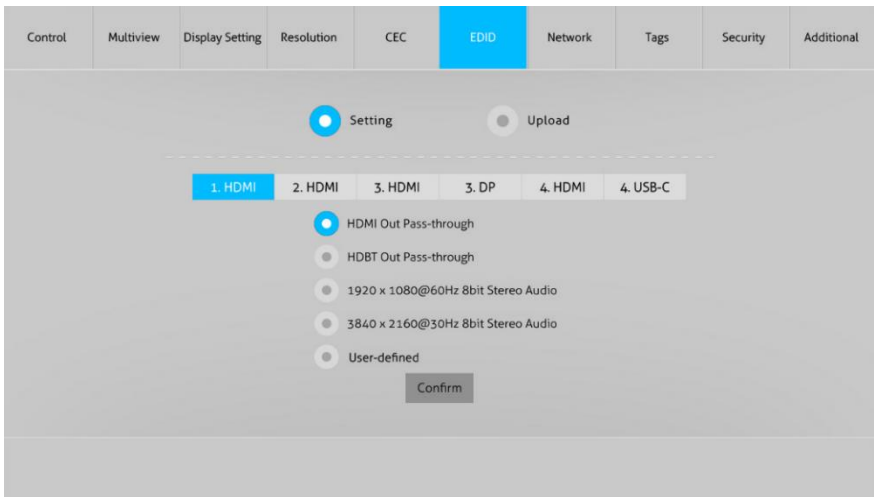
6.5.3. User-defined CEC Command



- 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

The screenshot shows the 'EDID' tab selected in the top navigation bar. Below the navigation bar, there are two radio buttons: 'Setting' (unselected) and 'Upload' (selected). A dashed horizontal line is positioned below the 'Upload' radio button. Underneath the line, there is a text input field labeled 'User-defined' containing the file extension '.bin'. At the bottom of the main content area, there is a grey 'Apply' button.

- 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

The screenshot shows the 'Network' tab selected in the top navigation bar. The main content area displays the following configuration options:
MAC Address: 44-33-4C-C9-35-12
DHCP: Static IP:
IP Address: 192.168.0.178
Subnet Mask: 255.255.255.0
Gateway: 192.168.0.1
At the bottom of the configuration area, there is a blue 'Confirm' button.

- 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"/>									

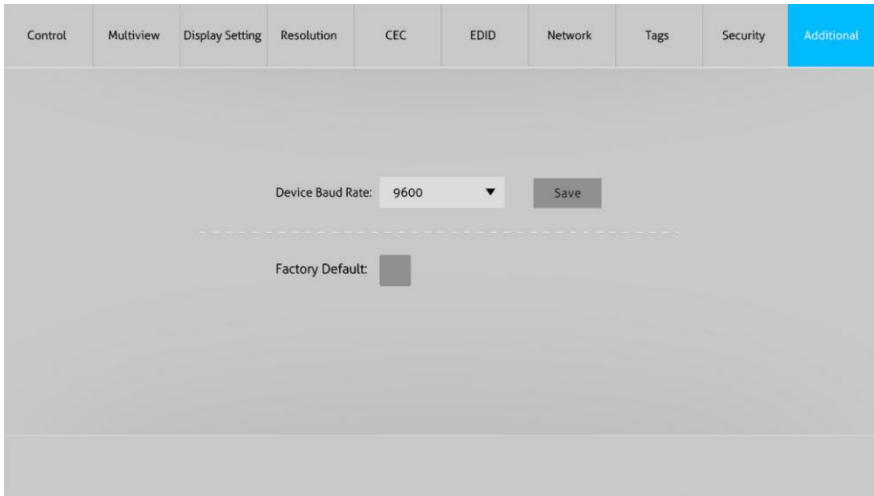
- Modify the multiview layout labels.

6.9. Security Tab

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

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

6.10. Additional Tab

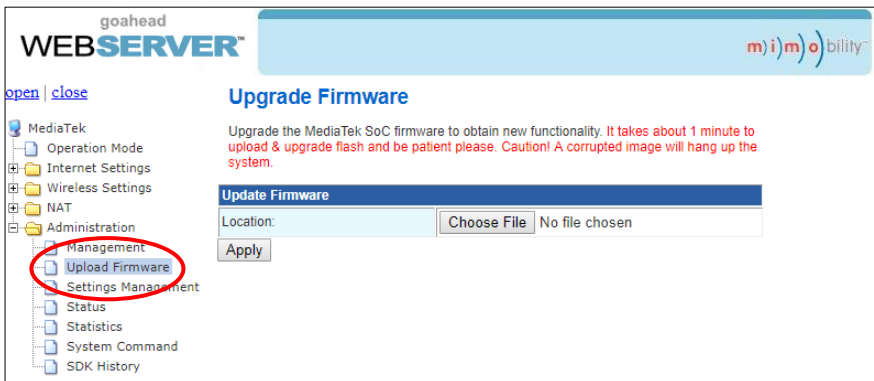


- Set the baud rate of switcher and restore the switcher to factory default setting.

6.11. GUI Upgrade

Please visit at <http://192.168.0.178:100> for GUI online upgrade.

Type the username and password (the same as the GUI log-in setting, modified password will be available only after rebooting) to login the configuration interface. After that, click “Administration” in the source menu to get to “Upload Firmware” as shown below:



Select the desired update file and press “Apply”, it will start upgrading then.

Note: Please don't do anything during the upgrade process to avoid upgrade failure.

7. RS232 Control

The RS232 port of switcher has two control methods.

- 1) Local control: Connect the RS232 port to control device (e.g.PC) to control the switcher by RS232 commands.
- 2) Display device control: The RS232 port is used with the RS232 port of far-end HDBaseT receiver to control the display device (e.g. Projector).

RS232 Commands:

The command lists are used to control the switcher. The RS232 control software (e.g. docklight) needs to be installed on the control PC to send RS232 commands.

After installing the RS232 control software, please set the parameters of COM number, bound rate, data bit, stop bit and the parity bit correctly, and then you are able to send command in command sending area.

Baud rate: 9600

Data bit: 8

Stop bit: 1

Parity bit: none

Note:

- All commands needs to be ended with "<CR><LF>".
- In the commands, “[” and ”]” are symbols for easy reading and do not need to be typed in actual operation.
- Type the command carefully, it is case-sensitive.

7.1. System Commands

Command	Description	Command Example and Feedback
>GetFirewareVersion	Get the firmware version.	<V1.0.0
>SetFactoryReset	Factory Default	<FactoryReset_True
>SetReboot	System reboot.	<Reboot_EN
>SetHelp [Param]	Get the command details. [Param] = Any command. [Param] = Null (All commands)	>SetHelp SetAV <Select the input source >SetAV InParam,OutParam InParam = 1~6 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3

6x1 4K Presentation Switcher with HDBaseT

Command	Description	Command Example and Feedback
		4 - DP 3 5 - HDMI 4 6 - TYPE-C 4 OutParam = A ~ D(NO THIS PARAMETER TO SET TO A)
>GetIpAddress	Get the IP to access GUI.	<IpAddress: 192.168.0.178 <SubNetMask: 255.255.255.0 <GateWay: 192.168.0.1
>SetKeyboardLock [Param]	Lock/unlock the front panel buttons. [Param] = EN,Dis EN - Lock Dis - Unlock (Default)	>SetKeyboardLock EN
		>SetKeyboardLock Dis <KeyboardLock True <KeyboardLock False
>GetKeyboardLock	Get the front buttons locking status.	<KeyboardLock True
>SetPowerOn [Param]	Enter/exit standby mode [Param] = EN,Dis EN - Exit standby (Default) Dis – Enter standby	>SetPowerOn EN
		>SetPowerOn Dis <PowerOn True <PowerOn False
>GetPowerOn	Get the system standby status.	<PowerOn True
>GetStatus	Get the system status.	<V1.0.0 <Video OUT A B C D IN 1 2 3 5 <AudioSource 1 <OutputResolution 8

7.2. Signal Switching Commands

Command	Description	Command Example and Feedback
>SetAV [InParam],[OutParam]	Switch input source to output window. [InParam] = 1 ~ 6 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3	>SetAV 3 >SetAV 1,A

6x1 4K Presentation Switcher with HDBaseT

Command	Description	Command Example and Feedback
	4 - DP 3 5 - HDMI 4 6 - USB-C 4 [OutParam] = A ~ D (No this parameter when switching input source to window A)	<AV 3,A <AV 1,A
>GetAV [OutParam]	Get the input source of window [OutParam]. [OutParam] = A~D (No this parameter when get input sources of all windows)	>GetAV >GetAV A
		<Video OUT A B C D IN 1 2 3 4 <AudioSource 1 <Video 1, A
>SetAutoSwitch [Param]	Enable/disable auto switching mode. [Param] = EN,Dis EN - Enable (Default) Dis - Disable	>SetAutoSwitch EN >SetAutoSwitch Dis
		<AutoSwitch True <AutoSwitch False
>GetAutoSwitch	Get the auto switching status.	<AutoSwitch True
>SetInput3Type [Param]	Select the input source for the third input channel. [Param] = H,Dp H - HDMI input Dp - DP input	>SetInput3Type H
		<Input3Type H
>GetInput3Type	Get the input source of the third input channel.	<Input3Type H
>SetInput4Type	Select the input source for the fourth input channel. [Param] = H, C H - HDMI input C – USB-C input	>SetInput4Type H
		<Input4Type H
>GetInput4Type	Get the input source for the fourth input channel.	<Input4Type H

7.3. Audio Setting Commands

Command	Description	Command Example and Feedback
>SetMicAudioMute [Param]	Mute/Unmute microphone audio. [Param] = EN, Dis EN - Mute. Dis - Unmute (Default)	>SetMicAudioMute EN >SetMicAudioMute Dis
		<MicAudioMute True <MicAudioMute False
>GetMicAudioMute	Get the microphone audio mute status	<MicAudioMute False
>SetMicVOL [Param]	Set the microphone audio volume to [Param]. [Param] = 0~60 (Default: 60)	>SetMicVOL 6
		<MicVOL 6
>GetMicVOL	Get the microphone audio volume.	<MicVOL 6

6x1 4K Presentation Switcher with HDBaseT

Command	Description	Command Example and Feedback
>SetSourceAudioMute [Param]	Mute/Unmute source audio. [Param] = EN, Dis EN - Mute. Dis - Unmute (Default)	>SetSourceAudioMute EN >SetSourceAudioMute Dis
		<SourceAudioMute True <SourceAudioMute False
>GetSourceAudioMute	Get the source audio mute status	<SourceAudioMute True
>SetSourceVOL [Param]	Set the source audio volume to [Param]. [Param] = 0~60 (Default: 60)	>SetSourceVOL 6
		<SourceVOL 6
>GetSourceVOL	Get the source audio volume.	<SourceVOL 60
>SetAudioSource [Param]	Set the source audio of output to [Param]. [Param] = 1~5. 1 - HDMI 1 (Default) 2 - HDMI 2 3 - HDMI/DP 3 4 - HDMI/USB-C 4 5 - LINE IN	>SetAudioSource 2
		<AudioSource 2
>GetAudioSource	Get the source audio of output.	<AudioSource 1
>SetAudioMix [Param]	Enable/Disable audio mixing. [Param] = EN, Dis EN - Enable (Default) Dis - Disable	>SetAudioMix EN
		<AudioMix True
>GetAudioMix	Get audio mixing status.	<AudioMix True
>SetFullModeAudioSwitch [Param]	Set whether the audio follows video switching in full screen mode. [Param] = EN, Dis EN - Enable (Default) Dis - Disable	>SetFullModeAudioSwitch EN
		<FullModeAudioSwitch True
>GetFullModeAudioSwitch	Get whether the audio follows video switching in full screen mode.	<FullModeAudioSwitch True
>SetAudioDelay [Param]	Set the delay time of audio output to [Param]. [Param] = 0 ~ 170 (ms) (Default: 0).	>SetAudioDelay 20
		<AudioDelay 20
>GetAudioDelay	Get the delay time of audio output.	<AudioDelay 20

7.4. Function Setting Commands

Command	Description	Command Example and Feedback
>SetRS232Baudrate [Param]	Set the baud rate of RS232 port to [Param]. [Param] = 1 ~ 5 1 - 115200 2 - 57600	>SetRS232Baudrate 5
		<RS232Baudrate 5

6x1 4K Presentation Switcher with HDBaseT

Command	Description	Command Example and Feedback
	3 - 38400 4 - 19200 5 - 9600 (Default)	
>GetRS232Baudrate	Get the baud rate of RS232 port.	<RS232Baudrate 5
>SetOutputResolution [Param]	Set the output resolution to [Param]. [Param] = 1 ~ 8 1 - 1024x768@60Hz 2 - 1280x720@60Hz 3 - 1360x768@60Hz 4 - 1600x1200@60Hz 5 - 1920x1080@60Hz 6 - 1920x1200@60Hz 7 - 3840x2160@30Hz (Default) 8 - AUTO	>SetOutputResolution 4
		<OutputResolution 4
>GetOutputResolution	Get the output resolution.	<OutputResolution 4
>GetInputResolution [Param]	Get the input resolution. [Param] = 1~4. 1 - HDMI 1 2 - HDMI 2 3 - HDMI/DP 3 4 - HDMI/USB-C 4	>GetInputResolution 1
		<InputResolution: 1 1920x1080 60Hz
>SetHdcpHdmiOutput [Param]	Set the HDCP mode of output port [Param] = 1 ~ 3 1 - HDCP 1.4 (Default) 2 - HDCP 2.2 3 - OFF	>SetHdcpHdmiOutput 1
		<HdcpHdmiOutput 1
>GetHdcpHdmiOutput	Get the HDCP mode of output port.	<HdcpHdmiOutput 1
>SetInPortEdid [Param1],[Param2]	Set the EDID of input source. [Param1] = 1 ~ 6 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - DP 3 5 - HDMI 4 6 - USB-C 4 [Param2] = 1 ~ 5 1 - 1920x1080 60HZ PCM 2CH 2 - 3840x2160 30HZ PCM 2CH (Default) 3 - BYPASS HDMI 4 - BYPASS HDBT 5 - USER	>SetInPortEdid 1,1
		<InPortEdid 1,1

6x1 4K Presentation Switcher with HDBaseT

Command	Description	Command Example and Feedback
>GetInPortEdid [Param]	Get the EDID of input source. [Param] = 1 ~ 6 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - DP 3 5 - HDMI 4 6 - USB-C 4	>GetInPortEdid 1
		<InPortEdid 1,1
>SetUpdateEdid_EN	Upload the user-defined EDID.	<User edid ready,Please send edid data in 10s. <SetUpdateEdid_True/False / <Time out to send edid
>SetMvMode [Param]	Set multiview mode. [Param] = 1 ~ 20 1 - 1 WINDOWS Full 2 - 2 WINDOWS PBP 3 - 3 WINDOWS 2U1D 4 - 4 WINDOWS SAME SIZE (Default) 5 - 2 WINDOWS PIP LU 6 - 2 WINDOWS PIP LD 7 - 2 WINDOWS PIP RU 8 - 2 WINDOWS PIP RD 9 - 4 WINDOWS PBP 3L1R 10 - 4 WINDOWS PBP 1L3R 11 - 4 WINDOWS PBP 3U1D 12 - 4 WINDOWS PBP 1U3D 13 - 4 WINDOWS PIP 1F3L 14 - 4 WINDOWS PIP 1F3R 15 - 4 WINDOWS PIP 1F3U 16 - 4 WINDOWS PIP 1F3D 17 - USER CONFIG 1 18 - USER CONFIG 2 19 - USER CONFIG 3 20 - USER CONFIG 4	>SetMvMode 1
		<MvMode 1
>GetMvMode	Get multiview mode	<MvMode 1
>SetSwapSrouce	Swap input source of window.	<Video OUT A B C D IN 2 5 1 3 <AudioSource 1
>SetResizeWin	Resize display windows.	<ResizeWin

6x1 4K Presentation Switcher with HDBaseT

Command	Description	Command Example and Feedback
>SetAutoCec [Param]	Set whether to automatically send CEC commands after signal detection. [Param] = EN, Dis EN - Enable (Default) Dis - Disable	>SetAutoCec EN
		<AutoCec True
>GetAutoCec	Get whether to automatically send CEC commands after signal detection.	<AutoCec True
>SetAutoCommand [Param]	Set whether to automatically send RS232 commands after signal detection. [Param] = EN, Dis EN - Enable (Default) Dis - Disable	>SetAutoCommand EN
		<AutoCommand True
>GetAutoCommand	Get whether to automatically send RS232 commands after signal detection.	<AutoCommand True
>SetAutoStandby [Param]	Enable/disable auto standby after no signal detection. [Param] = EN, Dis EN - Enable Dis - Disable (Default)	>SetAutoStandby EN
		<AutoStandby True
>GetAutoStandby	Get auto standby setting status.	<AutoStandby True
>SetAutoRelay [Param]	Enable/Disable auto power off function of relay. [Param] = EN, Dis EN - Enable Dis - Disable (Default)	>SetAutoRelay EN
		<AutoRelay True
>GetAutoRelay	Get auto power off setting status of relay.	<AutoRelay True
>SetPanelCEC [Param]	Set the delay time to send CEC, RS232 and standby commands after removing input signal removed. [Param] = 0~1800 (s) (Default: 600s)	>SetPanelCEC 9
		<PanelCEC 9
>GetPanelCEC	Get the delay time to send CEC, RS232 and standby commands after removing input signal removed.	<PanelCEC 9
>SetOffMsgLoopCnt [Param]	Set the number of times of sending Display Off command. [Param] = 1 ~ 2 (Default: 1)	>SetOffMsgLoopCnt 1
		<OffMsgLoopCnt 1
>GetOffMsgLoopCnt	Get the number of times of sending Display Off command.	<OffMsgLoopCnt 1
>SetOffMsgLoopDelayTime [Param]	Set the delay time of sending Display Off command. [Param] = 5 ~ 100 (1=100ms) (Default: 10)	>SetOffMsgLoopDelayTime 5
		<OffMsgLoopDelayTime 5
>GetOffMsgLoopDelayTime	Get the delay time of sending Display Off command.	<OffMsgLoopDelayTime 5

6x1 4K Presentation Switcher with HDBaseT

Command	Description	Command Example and Feedback
>SetInputMsgDelayTime [Param]	Set the delay time of sending Display Input Select command. [Param] = 1 ~ 100 (s) (Default: 3)	>SetInputMsgDelayTime 10
		<InputMsgDelayTime 10
>GetInputMsgDelayTime	Get the delay time of sending Display Input Select command.	<InputMsgDelayTime 10
>SetDisplayOn [Param]	Power on/off the display device. (Send RS232 and CEC commands at the same time). [Param] = EN, Dis EN - Power on Dis - Power off	>SetDisplayOn EN >SetDisplayOn Dis
		<DisplayOn True <DisplayOn False
>SetHdbtPOCon [Param]	Enable or disable PoC. [Param] = EN, Dis EN - Enable (Default) Dis - Disable	>SetHdbtPOCon EN
		<HdbtPOCon True
>GetHdbtPOCon	Get PoC status.	<HdbtPOCon True

7.5. CEC Commands

Command	Description	Command Example and Feedback
>SetCecSrcMenu [Param]	Send CEC MENU command to source device. [Param] = 1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	>SetCecSrcMenu 1
		<CecSrcMenu 1
>SetCecSrcUp [Param]	Send CEC UP command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcUp 1 <CecSrcUp 1
>SetCecSrcDown [Param]	Send CEC DOWN command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcDown 1 <CecSrcDown 1
>SetCecSrcLeft [Param]	Send CEC LEFT command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcLeft 1 <CecSrcLeft 1
>SetCecSrcRight [Param]	Send CEC RIGHT command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcRight 1 <CecSrcRight 1
>SetCecSrcBack [Param]	Send CEC BACK command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcBack 1 <CecSrcBack 1
>SetCecSrcEnter [Param]	Send CEC ENTER command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcEnter 1 <CecSrcEnter 1
		>SetCecSrcOn 1

6x1 4K Presentation Switcher with HDBaseT

Command	Description	Command Example and Feedback
>SetCecSrcOn [Param]	Send CEC ON command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	<CecSrcOn 1
>SetCecSrcOff [Param]	Send CEC OFF command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcOff 1 <CecSrcOff 1
>SetCecSrcStop [Param]	Send CEC STOP command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcStop 1 <CecSrcStop 1
>SetCecSrcPlay [Param]	Send CEC PLAY command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcPlay 1 <CecSrcPlay 1
>SetCecSrcPause [Param]	Send CEC PAUSE command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcPause 1 <CecSrcPause 1
>SetCecSrcPrev [Param]	Send CEC PREV command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcPrev 1 <CecSrcPrev 1
>SetCecSrcNext [Param]	Send CEC NEXT command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcNext 1 <CecSrcNext 1
>SetCecSrcRewind [Param]	Send CEC REWIND command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcRewind 1 <CecSrcRewind 1
>SetCecSrcFastForward [Param]	Send CEC Fast-forward command to source device. [Param] = 1 ~ 4 (HDMI 1~4)	>SetCecSrcFastForward 1 <CecSrcFastForward 1
>SetCecDisplayOn [Param]	Send CEC ON command to display device. [Param] = 1 ~ 2 (1 - HDMI, 2 - HDBT)	>SetCecDisplayOn 1 <CecDisplayOn 1
>SetCecDisplayOff [Param]	Send CEC OFF command to display device. [Param] = 1 ~ 2 (1 - HDMI, 2 - HDBT)	>SetCecDisplayOff 1 <CecDisplayOff 1
>SetCecDisplaySource [Param]	Send CEC SOURCE command to display device. [Param] = 1 ~ 2 (1 - HDMI, 2 - HDBT)	>SetCecDisplaySource 1 <CecDisplaySource 1
>SetCecDisplayMute [Param]	Send CEC MUTE command to display device. [Param] = 1 ~ 2 (1 - HDMI, 2 - HDBT)	>SetCecDisplayMute 1 <CecDisplayMute 1
>SetCecDisplayVol+ [Param]	Send CEC VOLUME UP command to display device. [Param] = 1 ~ 2 (1 - HDMI, 2 - HDBT)	>SetCecDisplayVol+ 1 <CecDisplayVol+ 1
>SetCecDisplayVol- [Param]	Send CEC VOLUME DOWN command to display device. [Param] = 1 ~ 2 (1 - HDMI, 2 - HDBT)	>SetCecDisplayVol- 1 <CecDisplayVol- 1

7.6. Special Commands

Note: The below commands don't need ending mark.

Command	Description	Command Example and Feedback
>SetDisplayInputSendChar_[Param]:XXXX	Set the ASCII "Display Input Select" command "XXXX" to be sent to display device when power on the switcher. [Param] = 1~5 (Baud rate of RS232 port) 1 - 115200 2 - 57600 3 - 38400 4 - 19200 5 - 9600 XXXX= ASCII data to be sent (Up to 48 characters).	>SetDisplayInputSendChar_5:1234567
		<Baudrate: 9600 <Display input select to send:1234567
>SetDisplayInputSendHex_[Param]:XX XX	Set the HEX "Display Input Select" command "XX XX" to be sent to display device when power on the switcher. [Param] = 1~5 (Baud rate of RS232 port) 1 - 115200 2 - 57600 3 - 38400 4 - 19200 5 - 9600 XX XX= HEX data to be sent (X = 0~9, A~F and up to 20 XX).	>SetDisplayInputSendHex_5:30 31 32 33
		<Baudrate: 9600 <Display input select to send HEX:30 31 32 33
>SetPowerOnSendChar_[Param]:XXXX	Set the ASCII "Power On" command "XXXX" to be sent to display device when power on the switcher. [Param] = 1~5 (Baud rate of RS232 port) 1 - 115200 2 - 57600 3 - 38400 4 - 19200 5 - 9600 XXXX= ASCII data to be sent (Up to 48 characters).	>SetPowerOnSendChar_5:1234567
		<Baudrate: 9600 <Power on to send:1234567
>SetPowerOnSendHex_[Param]:XX XX	Set the HEX "Power On" command "XX XX" to be sent to display device when power on the switcher. [Param] = 1~5 (Baud rate of RS232 port) 1 - 115200	>SetPowerOnSendHex_5:30 31 32 33

6x1 4K Presentation Switcher with HDBaseT

Command	Description	Command Example and Feedback
	2 - 57600 3 - 38400 4 - 19200 5 - 9600 XX XX= HEX data to be sent (X = 0~9, A~F and up to 20 XX).	<Baudrate: 9600 <Power on to send HEX:30 31 32 33
>SetSleepSendChar_[Param]:XXXX	Set the ASCII "Power Off" command "XXXX" to be sent to display device when the switcher enter standby mode. [Param] = 1~5 (Baud rate of RS232 port)	>SetSleepSendChar_5:AB CDEFG
	1 - 115200 2 - 57600 3 - 38400 4 - 19200 5 - 9600 XXXX= ASCII data to be sent (Up to 48 characters).	<Baudrate: 9600 <Enter sleep to send:ABCDEFG
>SetSleepSendHex_[Param]:XX XX	Set the HEX "Power Off" command "XX XX" to be sent to display device when the switcher enter standby mode. [Param] = 1~5 (Baud rate of RS232 port)	>SetSleepSendHex_5:41 42 43 44
	1 - 115200 2 - 57600 3 - 38400 4 - 19200 5 - 9600 XX XX= HEX data to be sent (X = 0~9, A~F and up to 20 XX).	<Baudrate: 9600 <Enter sleep to send HEX:41 42 43 44

8. Firmware Upgrade

- 1) Prepare the latest upgrade file (.bin) and rename it as "FW_MV bin" on PC.
- 2) Power off the switcher and connect the **FIRMWARE** port of switcher to the PC with type-A USB cable.
- 3) Power on the switcher and then the PC will automatically detect a U-disk named of "BOOTDISK".
- 4) Directly copy the latest upgrade file (.bin) to the "BOOTDISK" U-disk.
- 5) Reopen the U-disk to check whether there is a filename "SUCCESS.TXT", if yes, the firmware was updated successfully, otherwise, the firmware updating is fail, the name of upgrade file (.bin) should be confirmed again, and then follow the above steps to update again.
- 6) Remove the type-A USB cable after firmware upgrade.
- 7) After firmware upgrade, the switcher should be restored to factory default by sending command.