



iSwitch 602

4K 6X2 HDMI 2.0 HDBT Matrix Switcher



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Version: V1.1

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1. Product Introduction

Thanks for choosing the 6x2 multi-format presentation matrix switcher! The matrix switcher simplifies meeting room and presentation space system integration by providing four HDMI inputs, one VGA input, one USB-C input, one HDBT output and one HDMI output. It also provides two audio inputs for audio embedding and two audio outputs for audio de-embedding.

The matrix switcher supports resolution up to 4K@60Hz@4:4:4, HDR. The HDBT technology allows HDMI signals to be transmitted up to 70m over a CATx cable while ensuring very high, original image quality. It is designed for using with the receiver iSwitch 602-R.

The matrix switcher supports auto switching based on 5V or TMDS activity signals sensing. It also allows users to control system functionality via Web GUI, RS232, IR and CEC.

1.1 Features

- 6x2 18G HDMI presentation switcher with matrix outputs.
- HDMI V2.0 and HDCP 2.2 compliant. Video resolution up to 4K@60Hz 4:4:4, HDR.
- Supports auto switching.
- HDMI signals transmission up to 40m at 4K and 70m at 1080p on HDBT output.
- The HDBT output supports 24V PoC for receiver.
- USB-C input supports resolution up to 4K@60Hz 4:2:0.
- Provides two audio inputs for audio embedding and two audio outputs for audio de-embedding.
- Supports audio output volume control.
- Supports EDID management.
- Supports downscaling on HDBT output and upscaling on HDMI output.
- Controllable via RS232 local and pass-through, IR local and pass-through, TCP/IP, CEC and front panel.

1.2 Package List

- 1x iSwitch 602-T 6x2 HDMI 2.0 Matrix Switcher
- 1x iSwitch 602-R HDBT receiver
- 2x Mounting Ears with 6 Screws
- 4x Plastic Cushions
- 1x IR Remote
- 2x IR Receivers
- 1x IR Emitter
- 1x RS232 Cable (3-pin to DB9)
- 1x Power Adaptor (24V DC 2.71A)
- 1x User Manual

Note: *Please contact your distributor immediately if any damage or defect in the components is found.*

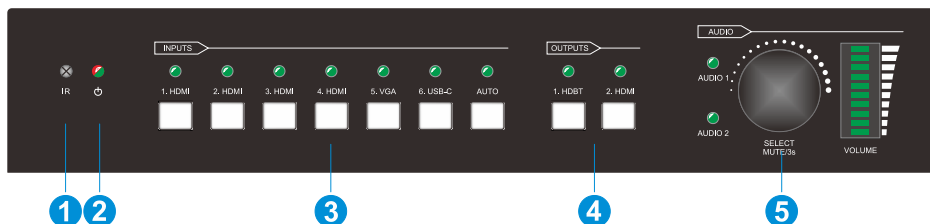
2. Specification

Video Input	
Video Input	(4) HDMI, (1) VGA, (1) USB-C
Video Input Connector	(4) Type-A female HDMI, (1) 15-pin female VGA, (1) USB-C
Video input Video Resolution	HDMI: Up to 4K@60Hz 4:4:4, HDR
	VGA: Up to 1920x1200@60Hz
	USB-C: Up to 4K@60Hz 4:2:0
Video Output	
Video Output	(1) HDBT, (1) HDMI
Video Output Connector	(1) RJ45, (1) Type-A Female HDMI
Video output Video Resolution	HDMI: Up to 4K@60Hz 4:4:4, HDR
	HDBT: Up to 4K@60Hz 4:2:0
Audio Input	
Audio Input	(1) AUDIO (VGA), (2) LINE 1&2
Audio Input Connector	(1) 3.5mm jack, (2) 3-pin terminal blocks
Frequency Response	20Hz to 20KHz, $\pm 3\text{dB}$
Max Input Level	1.0Vrms ± 0.1
L-R Level Deviation	< 0.3dB, 1kHz sine at 0dBFS level (or max level before clipping)
Input Impedance	> 10K Ω
Audio Output	
Audio Output	(2) AUDIO 1&2
Audio Output Connector	(2) 3-pin terminal blocks
Frequency Response	20Hz to 20kHz, $\pm 3\text{dB}$
Max Output Level	2.0 $\pm 0.1\text{Vrms}$
THD+N	< 0.1%, 20Hz to 20kHz bandwidth, 1 kHz sine at 0dBFS level (or max level)
SNR	> 80dB, 20Hz to 20kHz bandwidth
Crosstalk Isolation	< -70 dB, 10kHz sine at 0dBFS level
L-R Level Deviation	< 0.3 dB, 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	- 75dB
Control Part	
Control Port	(1) TCP/IP, (1) RS232, (1) FIRMWARE, (1) SYSTEM IR, (1) IR IN, (1) IR OUT
Control Connector	(1) RJ45, (2) 3-pin terminal blocks, (1) Type-A USB, (3) 3.5mm jacks
General	

HDMI Version	Up to 2.0
HDCP Version	Up to 2.2
Bandwidth	18Gbps
HDBT Transmission Distance	1080p@60Hz ≤ 230 feet (70 meters), 4K@60Hz ≤ 131 feet (40 meters)
Operation Temperature	-5 to +55°C (+23° to +131°F)
Storage Temperature	-25 to +70°C (-13° to +158°F)
Relative Humidity	10% to 90%, Non-condensing
External Power Supply	Input: AC 100~240V, 50/60Hz; Output: 24V DC 2.71A
Power Consumption	45W (Max)
Dimension (W*H*D)	250mm x 44mm x 220mm
Net Weight	1.7KG

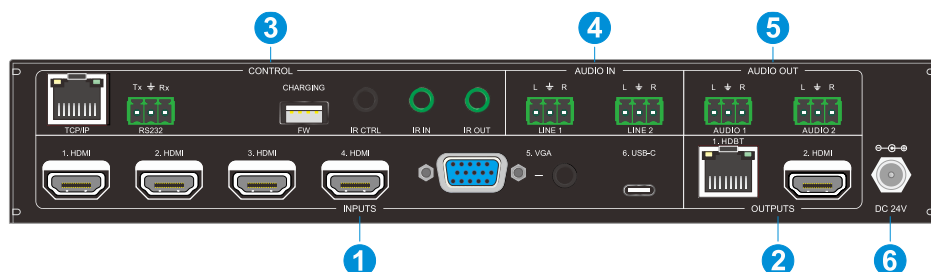
3. Panel Description

3.1 Front Panel



- ① **IR:** Built-in IR sensor for receiving IR signals from IR remote to control the matrix.
- ② **POWER:** The LED illuminates green when the device is powered on, red when the device is in standby mode.
- ③ **INPUTS:** Total seven buttons with green LED.
 - HDMI 1 input selector.
 - HDMI 2 input selector.
 - HDMI 3 input selector.
 - HDMI 4 input selector.
 - VGA input selector.
 - USB-C input selector.
 - Auto switching mode selector.
- ④ **OUTPUTS:** Two buttons with blue LED.
 - HDBT output selector.
 - HDMI output selector.
- ⑤ **VOLUME:**
 - Press the volume knob in to toggle among **AUDIO 1** and **AUDIO 2** output audio control, and the corresponding LED will illuminate blue.
 - Rotate the knob to increase or decrease the volume of the selected audio.
 - Press and hold the knob at least three seconds to mute/unmute the selected audio.

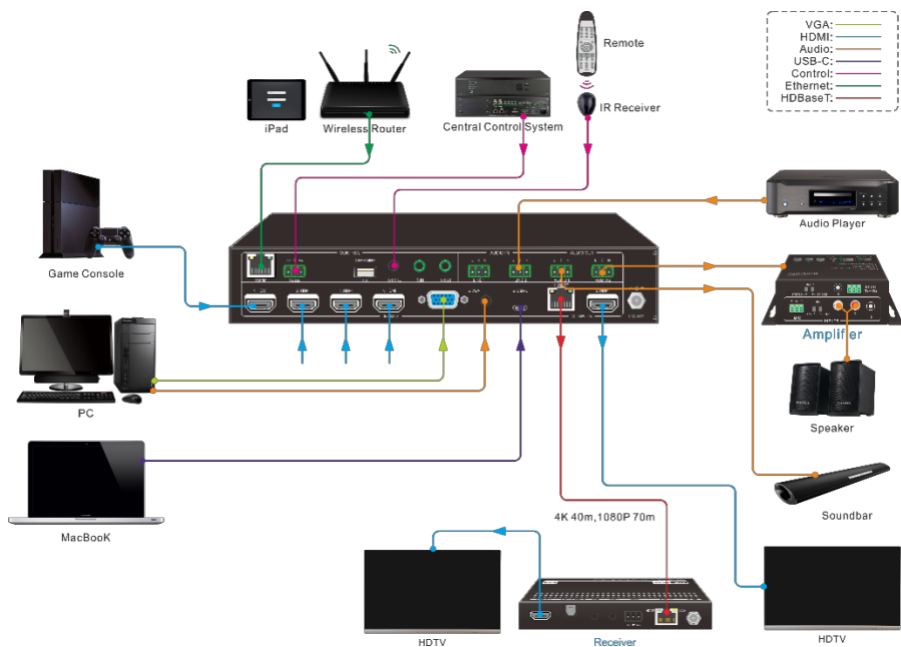
3.2 Rear Panel



- ① **INPUTS:** Total six video inputs and three audio inputs.
 - **HDMI 1~4:** Connects to HDMI source devices.
 - **VGA:** Connects to the VGA source. One stereo auxiliary audio input (3.5mm jack) can be embedded in the VGA video.
 - **USB-C:** Connects to the USB-C source devices.
- ② **OUTPUTS:**
 - **HDBT:** Connects to the HDBT input of a compatible receiver to extend AV signal, IR and RS232 control signal.
 - **HDMI:** Connects to the video display device.
- ③ **CONTROL:**
 - **TCP/IP:** Connects to a control device (e.g. PC) to control the switcher by GUI.
 - **RS232:** Connects to the control device (e.g. PC) to control the switcher by sending RS232 commands.
 - **FIRMWARE:** Type-A USB port for firmware upgrade.
 - **SYSTEM IR:** Connects to IR receiver to control the switcher by the IR remote.
 - **IR IN:** Connects to IR receiver for IR pass-through control.
 - **IR OUT:** Connects to IR emitter for IR pass-through control.
- ④ **AUDIO IN:**
 - **LINE 1:** Connects to audio source device for audio embedding.
 - **LINE 2:** Connects to audio source device for audio embedding.
- ⑤ **AUDIO OUT:**
 - **AUDIO 1:** Connects to audio playback device for audio de-embedding. The audio output can be de-embedded from the HDBT or HDMI output selected via RS232 command. It's de-embedded from HDBT output by default.

- **AUDIO 2:** Connects to audio playback device for audio de-embedding. The audio output can be de-embedded from the HDBT or HDMI output selected via RS232 command. It's de-embedded from HDMI output by default.
- ⑥ **DC 24V:** DC connector for the power adapter connection.

4. System Connection



5. Button Control

5.1 Manual Switching

When the switcher is in manual switching mode, the AUTO LED goes out. Please follow the below steps to switch input source to output channel.

- 1) Press any one of six input buttons to select input source, and the corresponding LED turns blue.
- 2) Press either **HDBT** or **HDMI** output button to select output channel, and the corresponding LED turns blue.
- 3) Press the input button again to confirm switching setting, otherwise, it will automatically confirm after three seconds.

5.2 Auto Switching

Please follow the below steps to enable auto switching mode for **HDBT** or **HDMI** output.

- 1) Press **AUTO**, and the button LED turns blue.
- 2) Press either **HDBT** or **HDMI** output button, and the corresponding LED turns blue.
- 3) Press **AUTO** button again to confirm the setting, otherwise, it will automatically confirm after three seconds.
- 4) Repeat the above three steps can exit auto mode, but the input source will remain the current setting.

Note: The **AUTO LED** illuminates blue when the **HDMI** output or **HDBT** output is in auto mode.

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

- *The switcher will switch to the first available active input starting at input 1 to 6 by default. (The switching priority can be set by RS232 command and GUI.)*
- *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.*
- *Source removed: When an active source is removed, the switcher will switch to the first available active input according to the priority.*
- *In auto mode, the input source also can be switched by the manual switching steps.*

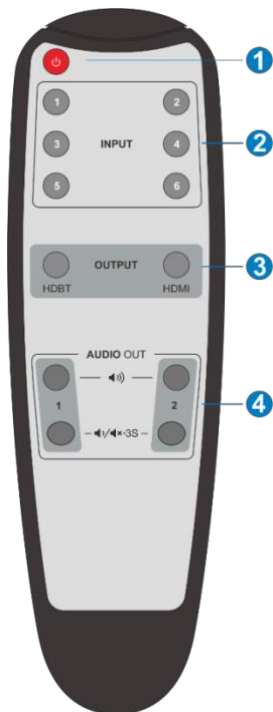
5.3 Sound Volume Control

Press volume knob to choose **AUDIO 1** or **AUDIO 2** audio needs to be adjusted, the corresponding LED will turn blue and keep on.

- *Adjusting the knob in clockwise direction to increase sound volume.*
- *Adjusting the knob in anti-clockwise direction to decrease sound volume.*
- *Press and hold the knob at least three seconds to mute/unmute the selected audio.*

6. IR Remote Control

Connect IR receiver to the **SYSTEM IR** port, the switcher can be controlled by the following IR remote.



- ① Power on/off the switcher.
- ② Select input source.
- ③ Select output channel.
- ④ Audio output control:
 - De-embedded audio 1 control: Mute, Volume Down and Volume Up.
 - De-embedded audio 2 control: Mute, Volume Down and Volume Up.

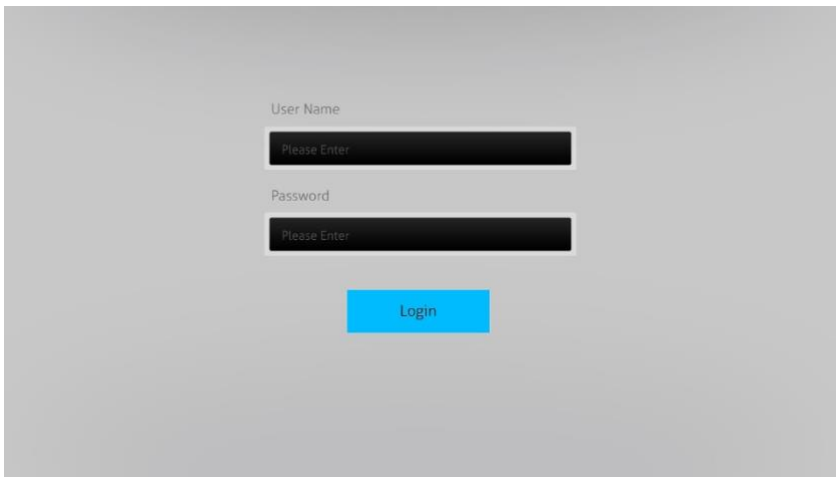
7. GUI Control

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:



The screenshot shows a login interface with a light gray background. It features two input fields: the first is labeled 'User Name' and the second is labeled 'Password'. Both fields have a dark gray border and contain the placeholder text 'Please Enter'. Below these fields is a blue button with the word 'Login' in white text.

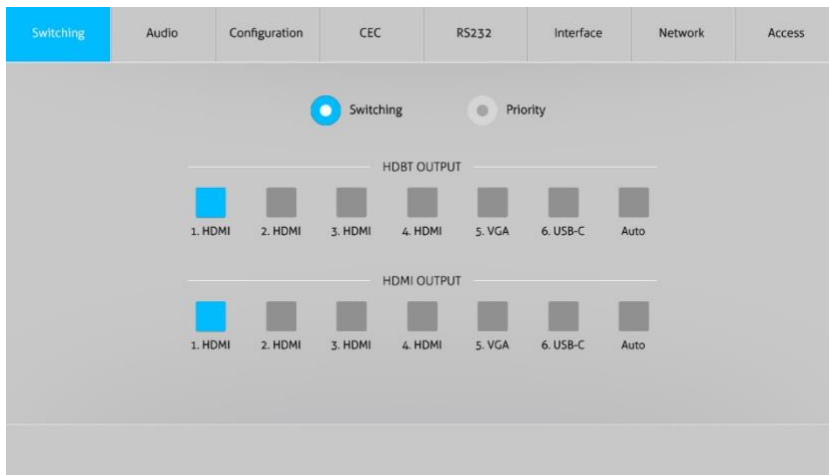
Username: admin

Password: admin

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

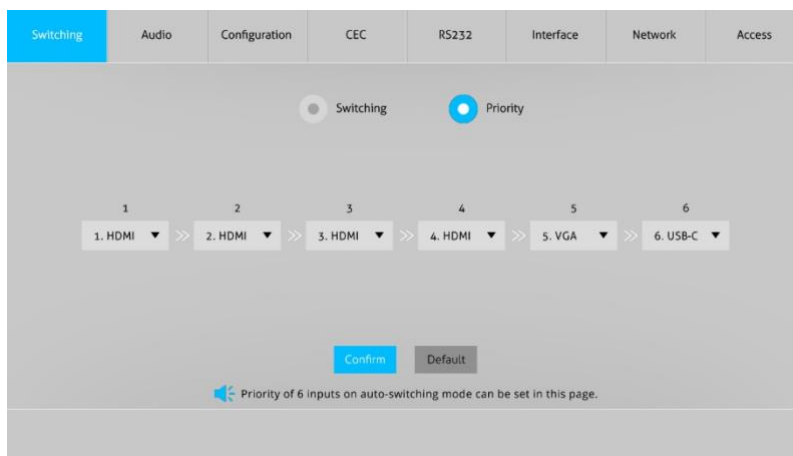
7.1 Switching Tab

7.1.1 Signal Switching



- **HDBT OUTPUT:** Select an input source for HDBT output. Click **AUTO** to enable/disable auto switching mode.
- **HDMI OUTPUT:** Select an input source for HDMI output. Click **AUTO** to enable/disable auto switching mode.

7.1.2 Switching Priority Setting



- Set the switching priority for auto switching mode.

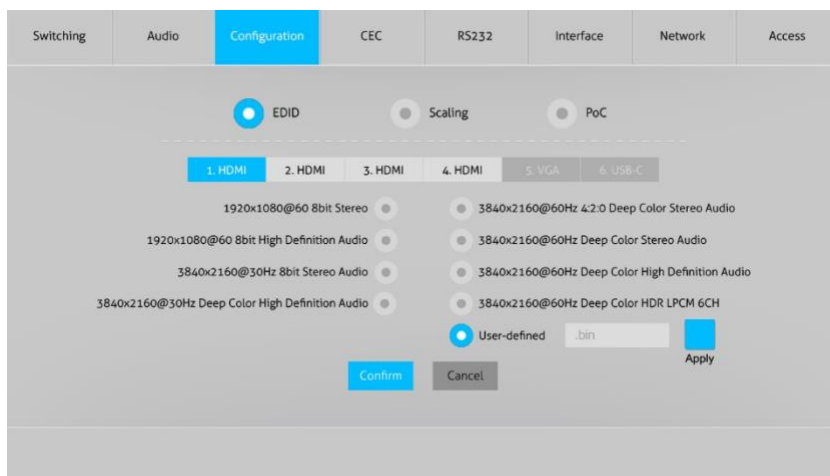
7.2 Audio Tab



- **AUDIO EMBEDDEDING:**
 - ✓ Select the external LINE 1 or LINE 2 audio to be embedded in HDBT output.
 - ✓ Select the external LINE 1 or LINE 2 audio to be embedded in HDMI output.
- **AUDIO DE-EMBEDDEDING:**
 - ✓ Select the HDBT output or HDBT output audio to be de-embedding by Audio 1 output.
 - ✓ Select the HDBT output or HDBT output audio to be de-embedding by Audio 2 output.
- **VOLUME:** Volume bar; Volume down, Volume up and Mute buttons.

7.3 Configuration Tab

7.3.1 EDID Setting



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

- Upload user-define EDID by the below steps:

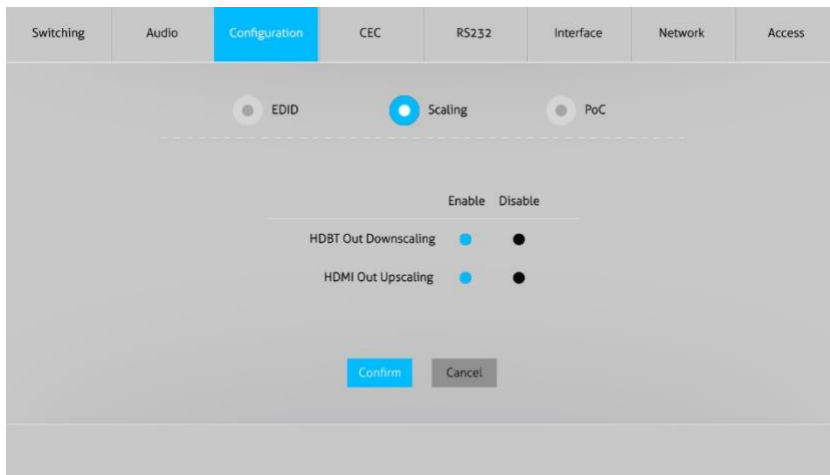
Step 1: Prepare the EDID file (.bin) on the control PC.

Step 2: Select the user-defined.

Step 3: Click the black box , and then select the EDID file (.bin) according the tooltip.

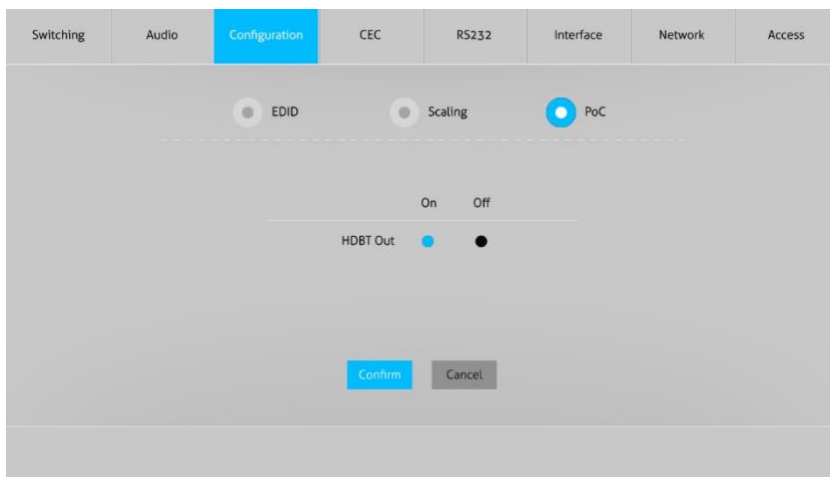
Step 4: Click **APPLY** to upload the user-defined EDID.

7.3.2 Scaling Setting



- Enable or disable HDBT output downscaling. The 4K video can be degraded to 1080p output after enabling HDBT output downscaling.
- Enable or disable HDMI output upscaling. The 1080p video can be upgraded to 4K output after enabling HDMI output upscaling.

7.3.3 PoC Setting



- Turn on/off PoC for HDBT output.

7.4 CEC Tab

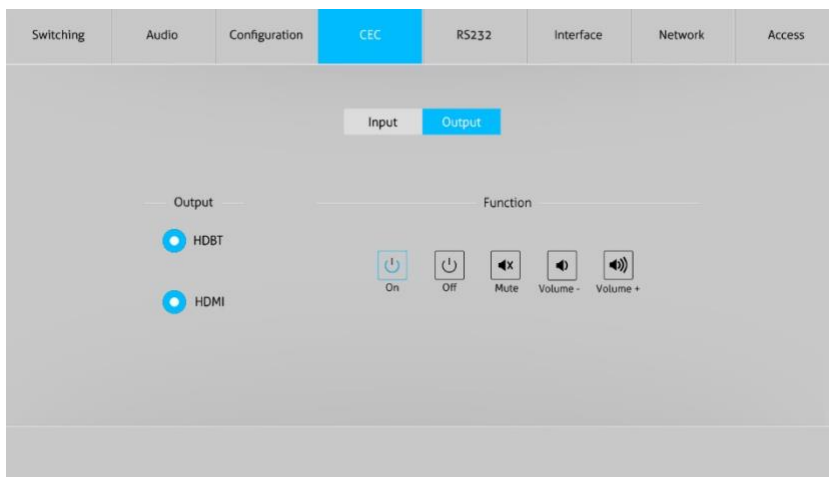
If the input source devices and display devices support CEC, they can be controlled by the below control buttons to replace IR remote.

1) Input Source Control



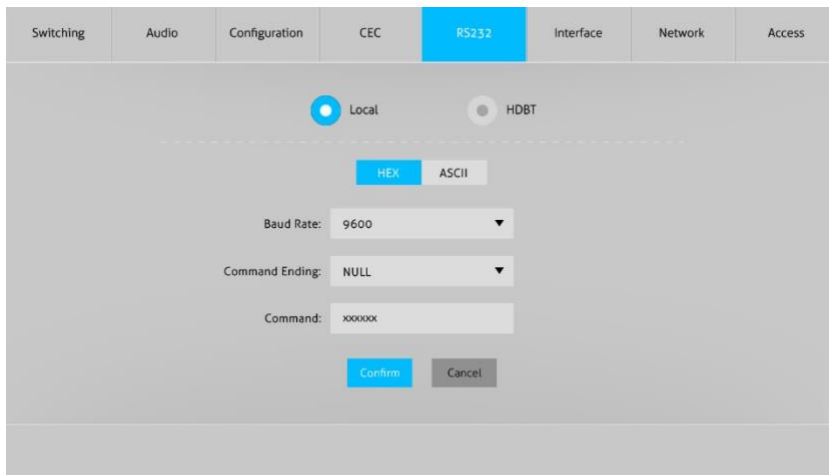
- Select the input source which needs to be controlled, then press function buttons.

2) Output Display Control



- Select the output display which needs to be controlled, then press function buttons.

7.5 RS-232 Tab



- Select **Local** or **HDBT Out** control mode.
 - ✓ **Local:** Send RS232 commands to control the local third-party which is connected to the RS232 port of the switcher.
 - ✓ **HDBT Out:** Send RS232 commands to remote via HDBT.
- Set the command format to **HEX** or **ASCII**.
- **Baud Rate:** Supports 9600, 19200, 38400, 57600 and 115200.
- **Command Ending:** NULL, CR, LF or CR+LF can be chosen.
- **Command:** Type command in this textbox to be sent.

7.6 Interface Tab

Switching	Audio	Configuration	CEC	RS232	Interface	Network	Access																								
Title Bar Label: Button Labels: <table border="1"> <thead> <tr> <th colspan="4">Input</th> <th colspan="2">Output</th> </tr> </thead> <tbody> <tr> <td>1. HDMI</td> <td>1. HDMI</td> <td>4. HDMI</td> <td>4. HDMI</td> <td>HDBT</td> <td>HDBT</td> </tr> <tr> <td>2. HDMI</td> <td>2.HDMI</td> <td>5. VGA</td> <td>5. VGA</td> <td>HDMI</td> <td>HDMI</td> </tr> <tr> <td>3. HDMI</td> <td>3. HDMI</td> <td>6. USB-C</td> <td>6. USB-C</td> <td></td> <td></td> </tr> </tbody> </table> Confirm Cancel								Input				Output		1. HDMI	1. HDMI	4. HDMI	4. HDMI	HDBT	HDBT	2. HDMI	2.HDMI	5. VGA	5. VGA	HDMI	HDMI	3. HDMI	3. HDMI	6. USB-C	6. USB-C		
Input				Output																											
1. HDMI	1. HDMI	4. HDMI	4. HDMI	HDBT	HDBT																										
2. HDMI	2.HDMI	5. VGA	5. VGA	HDMI	HDMI																										
3. HDMI	3. HDMI	6. USB-C	6. USB-C																												

- **Title Bar Label:** Modify the name of matrix switcher.
- **INPUT:** Modify the label of input sources.
- **OUTPUT:** Modify the label of outputs.

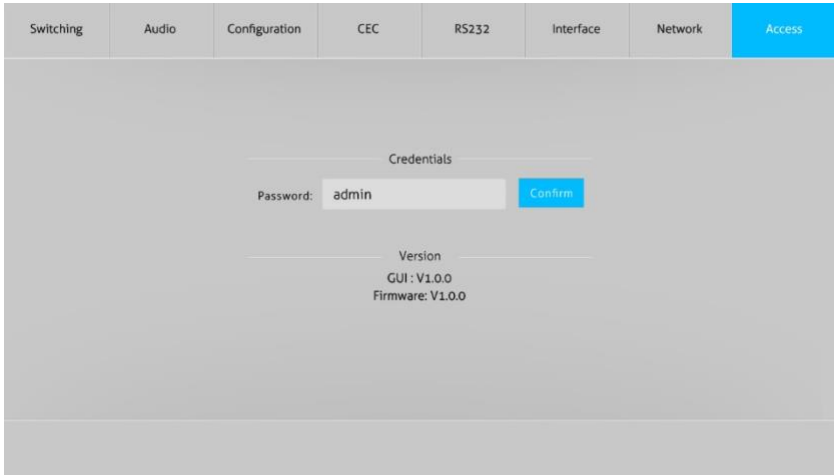
7.7 Network Tab

Switching	Audio	Configuration	CEC	RS232	Interface	Network	Access
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 Confirm Cancel							

- Static IP or Dynamic Host Configuration Protocol (DHCP).

- Modify the static IP Address, Subnet Mask, and Gateway.

7.8 Access Tab



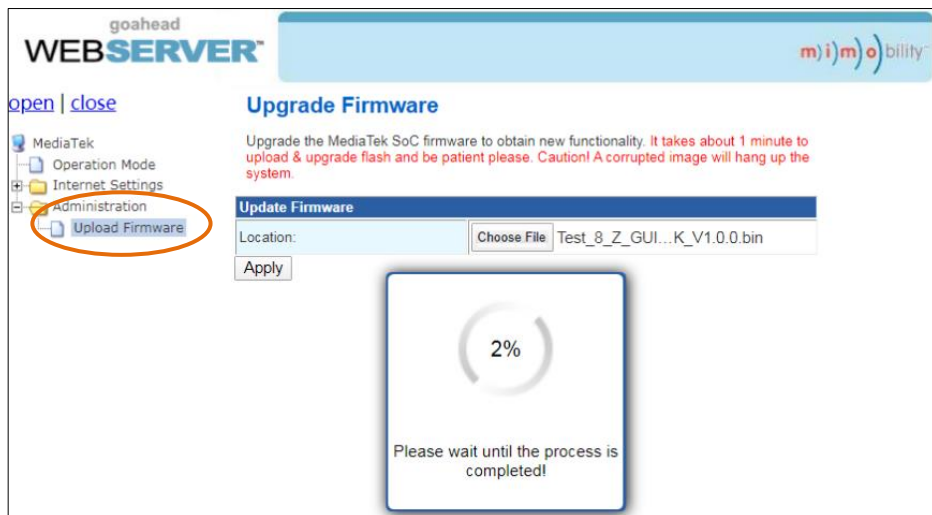
Switching	Audio	Configuration	CEC	RS232	Interface	Network	Access
Credentials Password: admin <button>Confirm</button> Version GUI : V1.0.0 Firmware: V1.0.0							

- Modify the login password.
- Shows the GUI and firmware version.

7.9 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, and then click **Upload Firmware**, select the desired update file and press **Apply**, it will start upgrading then.



8. Auto-trigger CEC

Both outputs can send power on or power off CEC commands to the TV automatically by detect source inputs. User can choose one output or both via RS232 command.

Please refer to **chapter 9.1** for more details.

8.1 Power on Command

When the first source input is detected, the switcher will automatically send CEC command to turn on the TV.

8.2 Power off Command

When the last source input was removed, the switcher will automatically send CEC command to turn off the TV.

9. Scaling

9.1 Upscaling table on HDMI output

Input	Output
1080p 60Hz 4:4:4	4K 60Hz 4:4:4
1080p 60Hz 4:2:2	4K 60Hz 4:2:2
1080p 60Hz RGB	4K 60Hz RGB
1080p 30Hz 4:4:4	4K 30Hz 4:4:4
1080p 30Hz 4:2:2	4K 30Hz 4:2:2
1080p 30Hz RGB	4K 30Hz RGB

9.2 Downscaling table on HDBT output

Input	Output
4K 60Hz 4:4:4	1080p 60Hz 4:4:4
4K 60Hz 4:2:2	1080p 60Hz 4:4:4
4K 60Hz 4:2:0	1080p 60Hz 4:4:4
4K 60Hz RGB	1080p 60Hz RGB
4K 30Hz 4:4:4	1080p 30Hz 4:4:4
4K 30Hz 4:2:2	1080p 30Hz 4:4:4
4K 30Hz RGB	1080p 30Hz 4:4:4

10. RS232 Control

Connect the **RS232** port to control device (e.g. PC) to control the switcher by RS232 commands, the RS232 command can also be forwarded to the receiver.

RS232 commands can be used to control the unit via TCP/IP on port 23.

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 need 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.*

10.1 System Control Commands

Command	Description	Command Example and Feedback
>SetKeyLock [Lockparam]	Lock/ unlock front panel buttons. [Lockparam] = On, Off On - Locked Off - Unlock	>SetKeyLock Off
		<KeyLock Off
>GetKeyLock	Get the locking status of front panel buttons.	<KeyLock Off
>FactoryReset	Factory reset.	<FactoryReset
>Help	Get the command list.	<V1.0.0 1.">SetVideo param1 To param2,..."
>SetIP <XXX.XXX.XXX.XXX> <YYY.YYY.YYY.YYY> <ZZZ.ZZZ.ZZZ.ZZZ>	Set IP address. XXX = 0 ~ 255(IP ADDRESS) YYY = 0 ~ 255(MASK) ZZZ = 0 ~ 255(GATE)	>SetIP <192.168.1.10> <> <>
		<SetIP <192.168.1.10> <255.255.255.0> <192.168.0.1>
>GetIP	Get the IP address.	<IP:192.168.1.10>
>GetStatus	Get the system status.	<V1.0.0 <Video OUT 01 02 IN 01 02 <Audio OUT A01 A02 01 02 IN S01 S02 S00 S00
>SetPower[param]	Power on/off the switcher. >SetPower param param = On, Off On: power on Off: power off	>SetPower On
		<Power On
>GetPower	Get power status of the switcher.	>GetPower
		<Power On
>SetAutoTVPower	Set the outputs of auto-trigger power on/off CEC command. >SetAutoTVPower param param = 1, 2, 3, 4 1: HDBT output	>SetAutoTVPower 1
		<AutoTVPower 1

Command	Description	Command Example and Feedback
	2: HDMI output 3: Both HDBT and HDMI outputs 4: No output	
>GetAutoTVPower	Get the outputs of auto-trigger power on/off CEC command.	>GetAutoTVPower
		<AutoTVPower 1

10.2 Signal Switching Commands

Command	Description	Command Example and Feedback
>SetVideo [Inparam] To [Outparam]	Video signal switching. [Inparam] = 01~06, ON, FF 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - VGA IN 06 - USB-C IN ON - ON (Cancel Black screen) FF - OFF (Black screen) [Outparam] = 01, 02, Null 01 - HDBT OUT 02 - HDMI OUT Null - All outputs	>SetVideo 01 To 01 >SetVideo 01
		<Video OUT 01 IN 01 OUT 02 IN 02
>GetVideo	Get the current switching status.	<Video OUT 01 IN 01 OUT 02 IN 02
>SetAutoSwitch [Outparam] [Staparam]	Set the auto switching mode. [Outparam] = 01, 02, Null 01 - HDBT OUT 02 - HDMI OUT Null - All outputs [Staparam] = On, Off On - Auto switching mode (Default) Off - Manual switching mode	>SetAutoSwitch 01 On >SetAutoSwitch On
		<AutoSwitch OUT 01 On
>GetAutoSwitch	Get auto switching status.	<AutoSwitch OUT 01 02 STA On On

Command	Description	Command Example and Feedback
>SetSwitchPriority [Prioparam1] [Prioparam2] [Prioparam3] [Prioparam4] [Prioparam5] [Prioparam6]	Set the switching priority in auto switching mode. [Prioparam1] ~ [Prioparam6] = 01~06 01 = HDMI IN 1 02 = HDMI IN 2 03 = HDMI IN 3 04 = HDMI IN 4 05 = VGA IN 06 = USB-C IN	>SetSwitchPriority 06 05 04 03 02 01
		<AutoSwitchPriority 06 05 04 03 02 01
>GetSwitchPriority	Get the switching priority in auto switching mode.	<AutoSwitchPriority 06 05 04 03 02 01
>SetSignalDetectMode [Modeparam]	Set the detect mode of Auto-switching. [Modeparam] = 5V, TMDS 5V - detected by 5V signal. TMDS - detected by TMDS signal.	>SetSignalDetectMode 5V
		<SignalDetect 5V
>GetSignalDetectMode	Get the detect mode of Auto-switching.	>GetSignalDetectMode
		<SignalDetect 5V
>SavePreset [Presetparam] [Staparam]	Save the current switching status to preset. [Presetparam] = 01 ~ 10. The number of preset. [Staparam] = FF, Null. FF: Clear the preset. Null: Save the preset.	>SavePreset 01 >SavePreset 01 FF
		<SavePreset 01
>RecallPreset [Presetparam]	Recall the preset. [Presetparam] = 01 ~ 10.	>RecallPreset 01
		<RecallPreset 01
>GetPreset [Presetparam]	Get the preset. [Presetparam] = 01 ~ 10.	>GetPreset 01
		<Preset Video OUT 01 02 IN 01 02 Preset Audio OUT A01 A02 01 02 IN S01 S02 S00 S00
>SetVGAVideoType [Typeparam]	Set video type of VGA input. Typeparam = VGA, C-Video, YPbPr VGA: VGA signal C-Video: C-Video signal	>SetVGAVideoType VGA
		<VGAVideoType VGA

Command	Description	Command Example and Feedback
	YPbPr: YPbPr signal	
>GetVGAVideoType	Get video type of VGA input.	>GetVGAVideoType
		<VGAVideoType VGA
>SetVGAOutResolution[Resparam]	Set the resolution of VGA. >SetVGAOutResolution Resparam Resparam= 01,02,03,04,05,06 01 - 1920x1080 02 - 1920x1200 03 - 1600x1200 04 - 1024x768 05 - 1280x720 06 - 1360x768	>SetVGAOutResolution 01
		<VGAOutResolution 1920x1080
>GetVGAOutResolution	Get the resolution of VGA.	>GetVGAOutResolution
		<VGAOutResolution 1920x1080
>UpgradeSoftware	Upgrade the VGA IC software.	>UpgradeSoftware
		<UpgradeSoftware

10.3 Audio Setting Commands

Command	Description	Command Example and Feedback
>SetAudioMute [Audioparam] [Staparam]	Mute/Unmute audio output. [Audioparam] = A01, A02, Null A01 - Output AUDIO 1 A02 - Output AUDIO 2 Null - Output AUDIO 1 & AUDIO 2 [Staparam] = ON, FF ON – AUDIO OUTPUT DISABLE FF – AUDIO NORMAL OUTPUT	>SetAudioMute A01 ON >SetAudioMute A01 FF
		<AudioMute A01 On <AudioMute A02 On
>GetAudioMute	Get the audio output status.	<AudioMute A01 On <AudioMute A02 On
>SetAudio [Inparam] To [Outparam1],...	Audio switching. [Inparam] = S01, S02, A01, A02, S00 S01 - The audio of HDBT output S02 - The audio of HDMI output A01 - LINE1 input audio A02 - LINE2 input audio	>SetAudio S00 To 01,02

Command	Description	Command Example and Feedback
	S00 - Restore the output audio to the same source as the video. [Outputparam] = A01, A02, 01, 02, Null A01 - Output AUDIO 1 A02 - Output AUDIO 2 01 - The audio of HDBT output 02 - The audio of HDMI output Null - All audio outputs. Note: The [Inparam] = S01/ S02 only can be selected for [Outputparam] = A01/ A02. The [Inparam] = A01/ A02/ S00 only can be selected for [Outputparam] = 01/ 02.	<Audio OUT A01 IN S01 <Audio OUT A02 IN S02 <Audio OUT 01 IN A01 <Audio OUT 02 IN A02
>GetAudio	Get the current audio switching status.	<Audio OUT A01 IN S01 <Audio OUT A02 IN S02 <Audio OUT 01 IN A01 <Audio OUT 02 IN A02
>SetOutVOL [Audioparam] [Volparam]	Set the audio volume. [Audioparam] = A01, A02, Null A01 - Output AUDIO 1 A02 - Output AUDIO 2 Null - Output AUDIO 1 & AUDIO 2 [Volparam] = 0~60 (Volume value)	>SetOutVOL A01 60
		<OutVOL A01 60 <OutVOL A02 60
>GetOutVOL	Get the output audio volume.	<OutVOL OUT A01 A02 VOL 60 60

10.4 Function Setting Commands

Command	Description	Command Example and Feedback
>SetEDID [Inparam] To [EDIDparam]	Set the EDID of input source. [Inparam] = 01 ~ 04, Null 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 06 - USB-C IN Null - All inputs(except VGA)	>SetEDID 01 To 01
		<EDID IN 01 02 03 04 STA 08 08 08 08

Command	Description	Command Example and Feedback
	[EDIDparam] = 01 ~ 09 01 - HDBT OUTUPT BYPASS 02 - HDMI OUTPUT BYPASS 03 - 1920x1080@60 8bit Stereo Audio 04 - 1920x1080@60 8bit High Definition Audio 05 - 3840x2160@30 8bit Stereo Audio 06 - 3840x2160@30 Deep Color HDR LPCM 6CH 07 - 3840x2160@60 4:2:0 Deep Color Stereo Audio 08 - 3840x2160@60 Deep Color Stereo Audio 09 - 3840x2160@60 Deep Color High Definition Audio 10 - 3840x2160@60 Deep Color HDR LPCM 6CH 11 - User-defined 1 12 - User-defined 2	
>GetEDID	Get the EDID of input source.	<EDID IN 01 02 03 04 STA 08 08 08 08"
>SetUpdateEDID [EDIDparam]	Upgrade the user-defined EDID. [EDIDparam] = 01, 02 01 - User-defined 1 02 - User-defined 2	>SetUpdateEDID 01
		<User edid 01 ready, please send edid data in 10s.
>SetHDCPMode [param1] To [param2]	Set the HDCP mode of output. [param1] = 01, 02 01 - HDBT OUT 02 - HDMI OUT Null - All outputs. [param2] = 01 ~ 05 01 - By Src 02 - Force HDCP1.4 03 - Force HDCP2.2 04 - HDCP OFF 05 - By Sink	>SetHDCPMode 01 To 01
		<HDCPMode OUT 01 02 STA 01 01

Command	Description	Command Example and Feedback
>GetHDCPMode	Get the HDCP mode.	<HDCPMode OUT 01 02 STA 01 01
>SetRS232Baud [Baudparam]	Set the RS232 baud rate. [Baudparam] = 9600, 19200, 38400, 57600, 115200.	>SetRS232Baud 115200
		<RS232Baud 115200
>GetRS232Baud	Get the RS232 baud rate.	>GetRS232Baud
		<RS232Baud 115200
>SetAutoDownScaling [param]	Enable/ Disable auto downscaling function of HDBT output. [param] = On, Off On - Enable Off - Disable	>SetAutoDownScaling On
		<AutoDownScaling On
>GetAutoDownScaling	Get auto downscaling function of HDBT output.	<AutoDownScaling On
>SetAutoUpScaling [param]	Enable/ Disable auto upscaling function of HDMI output. [param] = On, Off On - Enable Off - Disable	>SetAutoUpScaling On
		<AutoUpScaling On
>GetAutoUpScaling	Get auto upscaling function of HDMI output.	<AutoUpScaling On
>SetPoC [param]	Enable/ Disable the PoC of HDBT output. [param] = On, Off On - Enable Off - Disable	>SetPoC On
		<HDBTOutPoC On
>GetPoC	Get the PoC status of HDBT output.	<HDBTOutPoC On

10.5 CEC Control Commands

If the input sources and displays support CEC, they can be controlled by sending CEC commands to replace IR remote.

Command	Description	Command Example and Feedback
	Volume up for input source.	>SetCecSrcVolUp 01

Command	Description	Command Example and Feedback
>SetCecSrcVolUp [Inparam]	[Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	<CecSrcVolUp 01
>SetCecSrcVolDown [Inparam]	Volume down for input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcVolDown 01
		<CecSrcVolDown 01
>SetCecSrcMenu [Inparam]	Menu button for input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcMenu 01
		<CecSrcMenu 01
>SetCecSrcUp [Inparam]	Up arrow button for input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcUp 01
		<CecSrcUp 01
>SetCecSrcDown [Inparam]	Down arrow button for input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcDown 01
		<CecSrcDown 01
>SetCecSrcLeft [Inparam]	Left arrow button for input source. [Inparam] = 01 ~ 05	>SetCecSrcLeft 01

Command	Description	Command Example and Feedback
	01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	<CecSrcLeft 01
>SetCecSrcRight [Inparam]	Right arrow button for input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcRight 01
		<CecSrcRight 01
>SetCecSrcBack [Inparam]	Back arrow button for input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcBack 01
		<CecSrcBack 01
>SetCecSrcEnter [Inparam]	Enter button for input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcEnter 01
		<CecSrcEnter 01
>SetCecSrcOn [Inparam]	Power on the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcOn 01
		<CecSrcOn 01
>SetCecSrcOff [Inparam]	Power off the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4	>SetCecSrcOff 01
		<CecSrcOff 01

Command	Description	Command Example and Feedback
	05 - USB-C IN	
>SetCecSrcStop [Inparam]	Stop button for the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcStop 01
		<CecSrcStop 01
>SetCecSrcPlay [Inparam]	Play button for the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcPlay 01
		<CecSrcPlay 01
>SetCecSrcPause [Inparam]	Pause button for the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcPause 01
		<CecSrcPause 01
>SetCecSrcPrev [Inparam]	Previous button for the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcPrev 01
		<CecSrcPrev 01
>SetCecSrcNext [Inparam]	Next button for the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcNext 01
		<CecSrcNext 01

Command	Description	Command Example and Feedback
>SetCecSrcRewind [Inparam]	Rewind button for the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcRewind 01
		<CecSrcRewind 01
>SetCecSrcFastForward [Inparam]	Forward button for the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcFastForward 01
		<CecSrcFastForward 01
>SetCecSrcFastForward [Inparam]	FastForward button for the input source. [Inparam] = 01 ~ 05 01 - HDMI IN1 02 - HDMI IN2 03 - HDMI IN3 04 - HDMI IN4 05 - USB-C IN	>SetCecSrcFastForward 01
		<CecSrcFastForward 01
>SetCecDisplayOn [Outparam]	Power on the display device. [Outparam]= 01, 02 01 - HDBT OUT 02 - HDMI OUT	>SetCecDisplayOn 01
		<CecDisplayOn 01
>SetCecDisplayOff [Outparam]	Power off the display device. [Outparam]= 01, 02 01 - HDBT OUT 02 - HDMI OUT	>SetCecDisplayOff 01
		<CecDisplayOff 01
>SetCecDisplaySource [Outparam]	Switch the input source for display device. [Outparam]= 01, 02 01 - HDBT OUT 02 - HDMI OUT	>SetCecDisplaySource 01
		<CecDisplaySource 01
>SetCecDisplayMute [Outparam]	Mute display device. [Outparam]= 01, 02 01 - HDBT OUT 02 - HDMI OUT	>SetCecDisplayMute 01
		<CecODisplayMute 01

Command	Description	Command Example and Feedback
>SetCecDisplayVOLUp [Outparam]	Volume up display device. [Outparam]= 01, 02 01 - HDBT OUT 02 - HDMI OUT	>SetCecDisplayVOLUp 01
		<CecDisplayVOLUp 01
>SetCecDisplayVOLDown [Outparam]	Volume down display device. [Outparam]= 01, 02 01 - HDBT OUT 02 - HDMI OUT	>SetCecDisplayVOLDown 01
		<CecDisplayVOLDown 01

10.6 Third-party Device Control Commands

Command	Description	Command Example and Feedback
>SendChar_[param1], [param2]:xxx	Send ASCII string to the switcher RS232 control port or to remote. [param1] = 01,02 01 - Switcher RS232 control port 02 - Remote [param2] = 01 ~ 05 01 - 115200 02 - 57600 03 - 38400 04 - 19200 05 - 9600 xxxx = ASCII string	>SendChar_01,01:abcdefg
		abcdefg
>SendChar_[param1], [param2]:xx xx	Send HEX string to the switcher RS232 control port or to remote via HDBT. [param1] = 01,02 01 - Switcher RS232 control port 02 - Remote [param2] = 01 ~ 05 01 - 115200 02 - 57600 03 - 38400 04 - 19200 05 - 9600 xx xx = HEX string	>SendHEX_01,01:31 32 33 34
		1234

11. Firmware Upgrade

Please follow the steps as below to upgrade firmware by the **FIRMWARE** port on the rear panel:

- 1) Prepare the latest upgrade file (.bin) and rename it as "FW_MERG.bin" on PC.
- 2) Power off the switcher, and connect the **FIRMWARE** port of switcher to the PC with USB cable.
- 3) Power on the switcher, and then the PC will automatically detect a U-disk named of "BOOTDISK".
- 4) Double-click the U-disk, a file named of "READY.TXT" will be shown.
- 5) Directly copy the latest upgrade file (.bin) to the "BOOTDISK" U-disk.
- 6) Reopen the U-disk to check the filename "READY.TXT" whether automatically becomes "SUCCESS.TXT", if yes, the firmware was updated successfully, otherwise, the firmware updating is fail, the name of upgrade file (.bin) should be confirm again, and then follow the above steps to update again.
- 7) Remove the USB cable after firmware upgrade.