

BG-UMV-HA41

**4X1 4K UHD HDMI Seamless Multiviewer/Switcher/Scaler with
Audio and RS-232 Support**

User Manual







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Statement

Please read these instructions carefully before connecting, operating, or configuring this product. Please save this manual for future reference.

Safety Precaution

- To avoid falling or damage, please do not place this unit on an unstable cart, stand, or table.
- Operate unit only on the specified supply voltage.
- Disconnect power cord by connector only. Do not pull on the cable portion.
- Do not place or drop heavy or sharp-edged objects on the power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check power cord for excessive wear or damage to avoid possible fire / electrical hazards.
- Ensure the unit is properly grounded at all times to prevent electrical shock hazard.
- Do not operate the unit in hazardous or potentially explosive atmospheres. Doing so could result in fire, explosion, or other dangerous results.
- Do not use this unit in or near water.
- Do not allow liquids, metal pieces, or other foreign materials to enter the unit.
- Handle with care to avoid shocks in transit. Shocks may cause malfunction. When you need to transport the unit, use the original packing materials or alternate adequate packing.
- This product does not contain parts that can be maintained or repaired by users. Damage caused by dismantling the product without authorization from BZBGear is not covered under the warranty policy.
- Installation and use of this product must strictly comply with local electrical safety standards.



Introduction

The BG-UMV-HA41 is a 4K multiviewer and seamless video switcher with scaling functionality designed to be compatible with 4K displays. The switcher features four HDMI inputs and one HDMI output which allows you to display four video sources on one display simultaneously. It also provides a line input, 1 mix input, 1 SPDIF output and 1 analog output for audio processing.

Control is quick and comprehensive, whether you are using the front panel, the remote control, RS232 commands, or the fully featured web GUI.

Features

- 4 HDMI inputs, 1 HDMI output.
- 4K@30Hz 4:4:4, HDCP 2.2.
- Seamless switching between 4 input ports.
- Auto Scaler in each source input.
- Audio embedding mixing, and audio de-embedding.
- Auto-switching for a single window.
- Cycles through the windows from A to D via the swap button.
- Layout and size of the windows can be customized.
- Resizes the windows in 3 different sizes.
- 16 predefined layouts for multi-view.
- Multiple control methods, including an assignable front panel, IR remote, web GUI and RS232 port.

Packing List

- | | |
|---------------------------------|-----------------------------------|
| • 1x 4K 4x1 Seamless Switcher | • 1x IR Remote |
| • 4x Plastic Cushions | • 2x Surface Mounting Ears |
| • 4x Mounting Screws | • 2x 3-pin Terminal Block |
| • 1x RS232 Cable (3-pin to DB9) | • 1x Power Adapter (24V DC 1.25A) |
| • 1x User Manual | |



Specifications

Video	
Video Input	(4) HDMI IN (1~4)
Video Input Connector	(4) Type-A female HDMI
HDMI Input Resolution	Up to 4K@30Hz 4:4:4
Video Output	(1) HDMI
Video Output Connector	(1) Type-A female HDMI
HDMI Output Resolution	Up to 4K@30Hz RGB
HDMI Standard	HDMI 1.4
HDCP Version	Up to HDCP 2.2
Audio IN	
Audio In	(1) LINE IN, (1) MIX IN.
Audio In Connector	(2) 3-pin terminal connectors
Frequency Response	20Hz to 20kHz, ± 3 dB
Max Input Level	2.0Vrms ± 0.5 dB. 2V=16 B headroom above -10dBV (316 mV) nominal consumer line level signal.
L-R level deviation	< 0.3dB, 1kHz sine at 0dBFS level (or max level before clipping)
Input Impedance	> 10kohm
Audio Format	PCM 2CH
SPDIF OUT	
SPDIF Out	(1) SPDIF
Audio Out Connector	(1) Toslink
Max Output level	± 0.05 dBFS
Frequency Response	20Hz ~ 20kHz, ± 1 dB
THD+N	< 0.05%, 20Hz ~ 20kHz bandwidth, 1kHz sine at 0 dBFS level (or max level)
Signal-to-Noise Ratio	> 90dB, 20Hz-20 kHz bandwidth
Crosstalk isolation	< -70dB, 10kHz sine at 0dBFS level (or max level before clipping)
Noise	-90dB
Audio Format	PCM 2CH
AUDIO OUT	
Audio Out	(1) AUDIO
Audio Out Connector	(1) 3.5mm mini jack
Frequency Response	20Hz ~ 20kHz, ± 1 dB
Max Output Level	2.0Vrms ± 0.5 dB. 2V=16dB headroom above -10dBV (316 mV) nominal consumer line level signal
THD+N	< 0.05%, 20Hz ~ 20kHz bandwidth, 1kHz sine at 0dBFS level (or max level)
Signal-to-Noise Ratio	> 80dB, 20Hz ~ 20kHz bandwidth
Crosstalk Isolation	< -80dB, 10kHz sine at 0dBFS level (or max level before clipping)
L-R Level Deviation	< 0.05dB, 1kHz sine at 0dBFS level (or max level before clipping)
Output Load Capability	1k ohm and higher (supports 10x paralleled 10k ohm loads)
Noise	-80dB
Control	
Control port	(1) RS232, (1) TCP/IP
Control Connector	(1) 3-pin terminal connector, (1) RJ45.

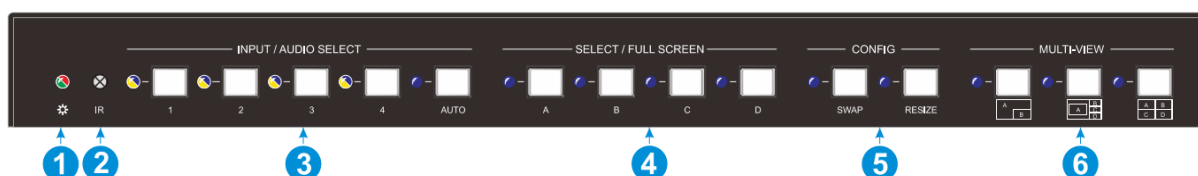


General	
Operation Temperature	-5°C ~ +55°C
Storage Temperature	-25°C ~ +70°C
Relative Humidity	10% ~ 90%
External Power Supply	Input: AC 100~240V, 50/60Hz; Output: 24V DC 1.25A.
Power Consumption	13w(Max)
Dimension (W*H*D)	285mm x 27mm x 172.5mm
Net Weight	1.24Kg

Note: The resolution 1080i 60Hz and HDR are not supported.

Operation Controls and Functions

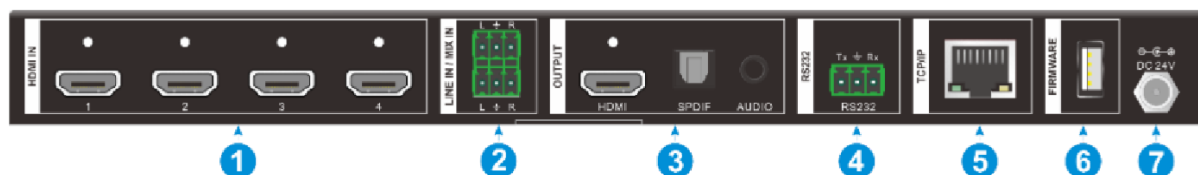
Front Panel



No.	Name	Function Description
1	POWER LED	The LED illuminates green when the unit is on and red when it is standby.
2	IR LED	Built-in IR sensor, receives IR signal sent from IR remote.
3	INPUT/AUDIO SELECT	- Press 1~4 button to select the corresponding HDMI input and its LED illuminates yellow when there is a video signal and blue when the video signal is chosen as the input source. - In multiview mode, press and hold a 1~4 button for at least 3 seconds to select the corresponding HDMI audio source for output and its LED will illuminate blue, and then it will go out when there is no operation within 3 seconds. - Press AUTO button to enable auto switching and the LED will illuminate blue. - In multiview mode, press and hold the AUTO button for at least 3 seconds to select LINE audio for output.
4	FOUR SELECT/FULL SCREENS	Press the buttons to select the corresponding input source as Full Screen, its LED illuminates blue when it is selected.
5	CONFIG	Press the SWAP button to select the window display screen in a counterclockwise direction. The LED illuminates blue when it is selected. Press the RESIZE button to readjust the windows size, its LED illuminates blue when it is pressed.
6	THREE MULTI-VIEWS	Press the buttons to choose different available Multi-view modes, its LED illuminates blue when it is selected.



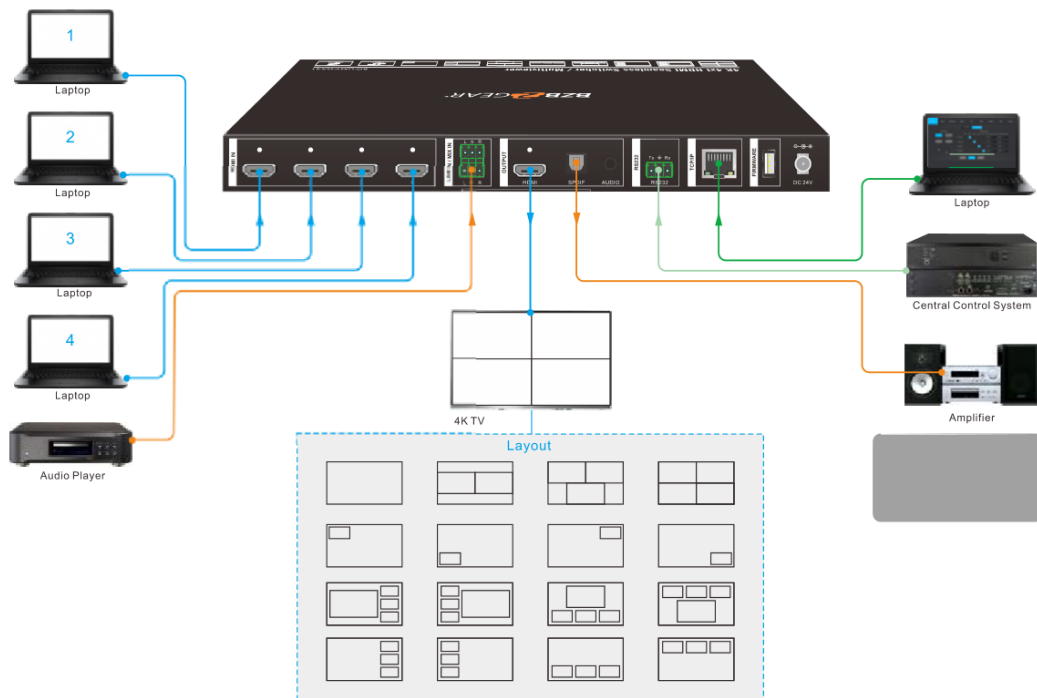
Rear Panel



No.	Name	Function Description
1	HDMI IN	Four type-A female HDMI input ports to connect HDMI source devices
2	LINE IN	3-pin terminal block to connect audio source devices to embed into HDMI audio sources.
	MIX IN	3-pin terminal block to connect audio source to mix HDMI audio sources.
3	HDMI OUTPUT	Type-A female HDMI output port to connect display device.
	SPDIF OUTPUT	Toslink for audio extraction from HDMI output.
	AUDIO OUTPUT	3.5mm mini jack for audio extraction from HDMI output.
4	RS232	3-pin terminal block to connect the RS232 control device (e.g. PC) or a third-party device to be controlled by RS232 commands.
5	TCP/IP	RJ45 port to connect the control device (e.g. PC) to control the switcher by GUI.
6	FIRMWARE	Type-A USB port for firmware upgrade.
7	DC 24V	DC connector for power adapter connection



System Connection



Cascade Connection:





Front Panel Control

Multiview Selection

Factory default is four quarter views and default input and output is as follows: input1 -> window A, input2 -> window B, input3 -> window C, input 4-> window D. Press one of the other two multi-view buttons to change the layout and the selected multiview mode LED will illuminate blue.

Full Screen mode: 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 will turn off.

Video Signal Switching

- **In the Multi-view mode**

Operation: Input# + Window#

Example: Switch Input 1 to Window B:

Press **INPUT 1**(The input 1 LED illuminates blue, the windows A-D LEDs flash.)

Press **Window B** (The window 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: Input# + Window#

Example: Switch Input 2 to Window 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 enter auto-switching mode, and the corresponding LED illuminates blue.

When in the AUTO mode, signal switching complies with the following principles:

- Input sources priority: HDMI 1 > HDMI 2 > HDMI 3 > HDMI 4. When input source and output window are connected, the corresponding LEDs illuminate blue.
- When a new input signal is detected the unit will automatically switch to the input.
- The switcher will retain the last input source when powered off.
- Manual switching is available in the auto switching mode.
- When AUTO mode changes to multiview mode AUTO mode will not be turned off.



Video Switching Status Inquiry

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

Operation: Window#

Example: Long press **Window B** button for more than 3s (Window A, C and D LEDs will turn off and then the corresponding input source LED will illuminate blue). After 3 seconds, Window A, B, C and D LEDs will illuminate blue.

Audio Select

Factory default is HDMI IN1 audio source. In the Multi-view mode, long press any **INPUT** buttons for more than 3s to replace all output audios with corresponding input audio source, meanwhile, the input LED illuminates blue. If there is no operation within 3 seconds the input LED will go out.

Long press **AUTO** button for 3s to replace all output audios with **LINE IN** audio source.

Config Buttons

SWAP: Press **Swap** button to cycle display windows in a counterclockwise direction in multiview mode. The SWAP LED will blink once on button press.

Example: **In the Multi-view mode**

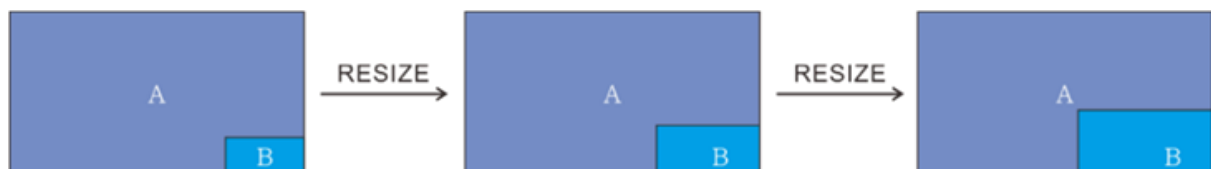


Example: **In the Full Screen mode**



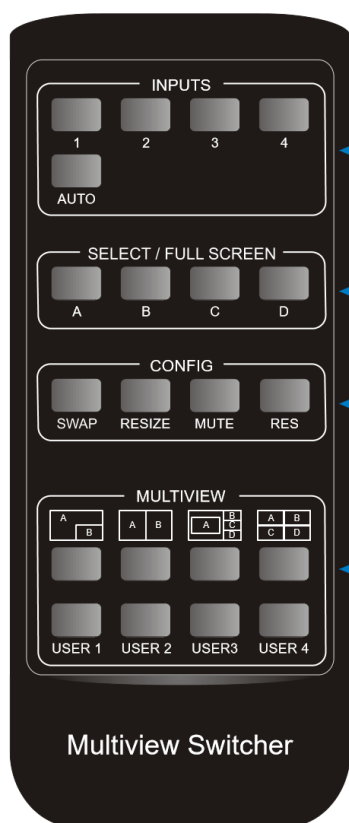
RESIZE: Press **RESIZE** button to readjust the window sizes. Please refer to the “GUI Multiview Tab” section of this manual for more details.

Example: **In PIP mode**





IR Remote



1. **INPUTS:** Press buttons 1-4 to select an input source. Press the **AUTO** button to automatically detect the input source.
2. **SELECT / FULL SCREEN:** Press the A-D buttons to display the corresponding input in full-screen mode.
3. **CONFIG:** Press the **SWAP** button to cycle the display screen in a counterclockwise direction. Press the **RESIZE** button to adjust the window size. Press the **MUTE** button to mute audio. Press the **RES** button to adjust the output resolution.
4. **MULTIVIEW:** Multiview includes eight buttons, the first four buttons are used to choose different multiview modes and the **USER1-4** buttons are used to enter user-defined multiview presets created in the web interface..

Note: There is no long press functionality on this IR remote but otherwise its button functions are the same as the front panel buttons.



GUI Control

The switcher can be controlled via a web user interface. The default IP settings are:

IP Address: 192.168.0.178
Subnet Mask: 255.255.255.0

The computer must be on the same subnet as the BG-UMV-HA41 to connect successfully. Therefore, the computer must be connected to the 192.168.0.# subnet where # is any number from 2-254 except 178.

To adjust your computer's network, open the Local Area Connection Properties on the computer.

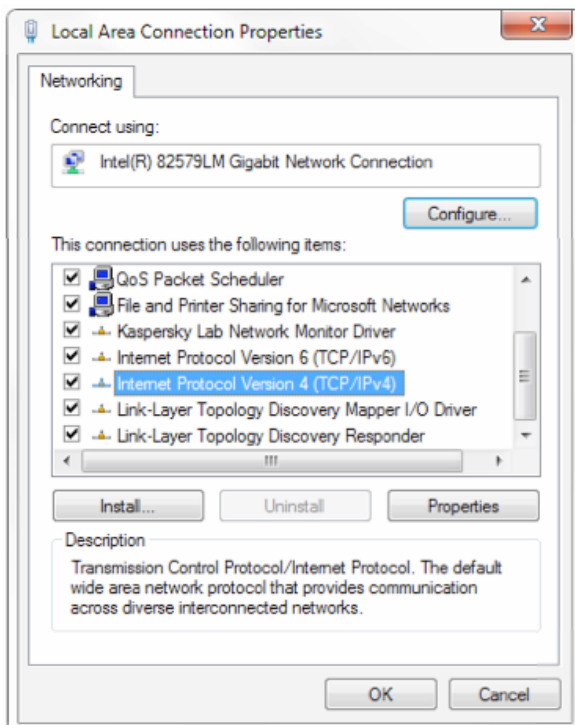
For Windows users right-click on the internet connection in the lower right corner of the desktop.

Select **“Open Network & Internet Settings”**.

Select **“Change Adapter Options”**.

Right-click on your connection (Wi-Fi or Ethernet) and select **“Properties”**.

Select **“Internet Protocol Version 4 (TCP/IPv4)”** as shown below and click **“Properties”**.





Click on the bubble for **“Use the following IP address”**

In the **IP address** field enter a non-conflicting IP address on the same subnet as the unit. If there is another device with the same IP address you will not be able to connect.

In the **Subnet mask** field enter 255.255.255.0

In the **Default gateway** field type 192.168.0.1

You can leave the DNS fields blank.

Click **OK** to apply your settings.

NOTE: When you are finished configuring the device you will need to return to this screen and click the bubbles for **“Obtain an IP address automatically”** and **“Obtain DNS server automatically”** to restore internet connectivity to your computer. Also make sure to reconnect any ethernet cables you may have unplugged.

Type **192.168.0.178** in your internet browser and it will display the login web page below:

The screenshot shows a login web page with a dark background. It features two input fields: 'User Name' and 'Password', both containing the placeholder text 'Please Enter'. Below these fields is a 'Login' button. At the bottom of the page, the text 'GUI : V1.0.0' and 'Firmware : V1.0.3' is displayed.

Username: admin

Password: admin

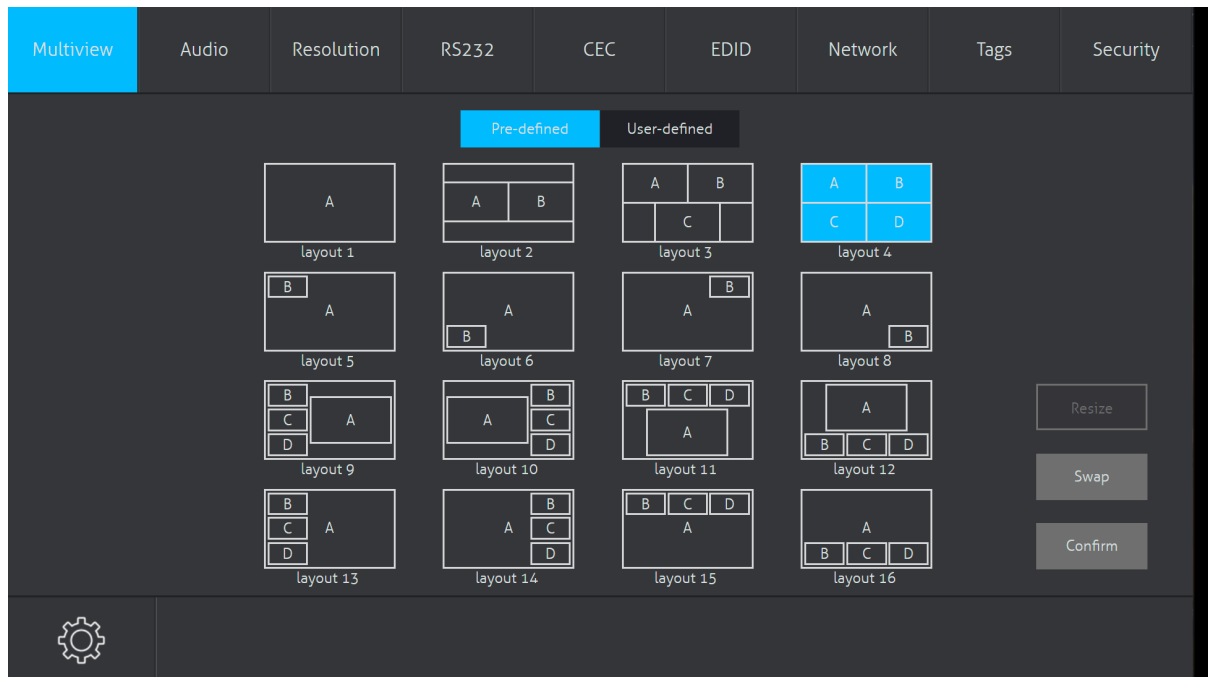
Type the username and password, and then click Login to enter the section for video switching.



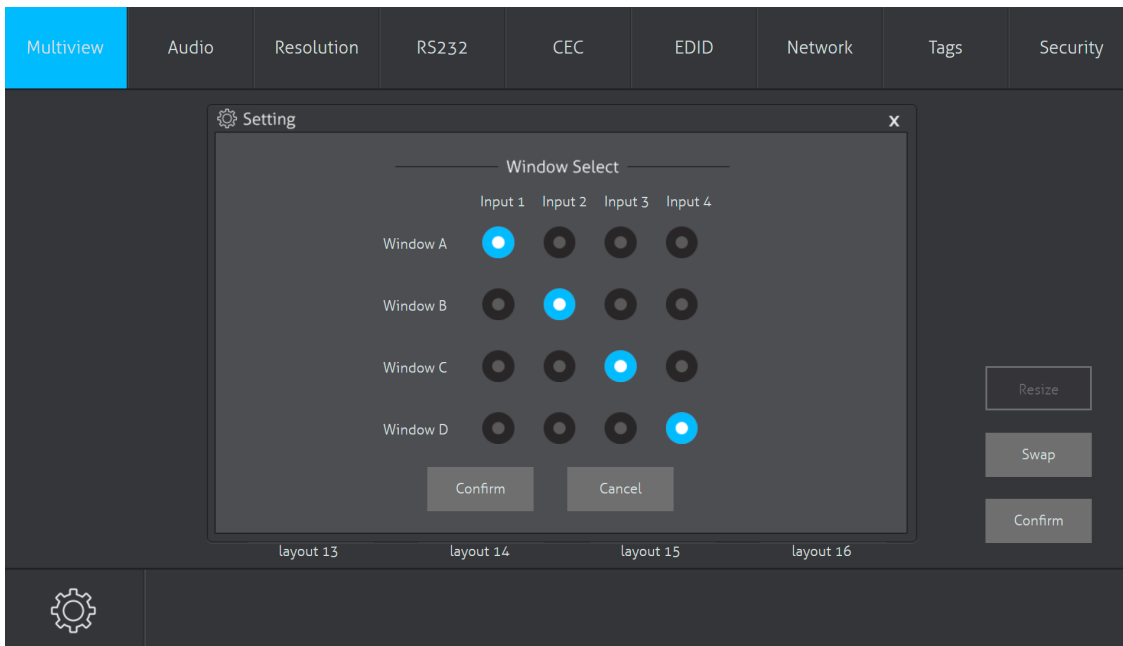
Multiview Tab

Once logged in the unit will enter the Multiview Tab shown below:

1. Pre-defined:

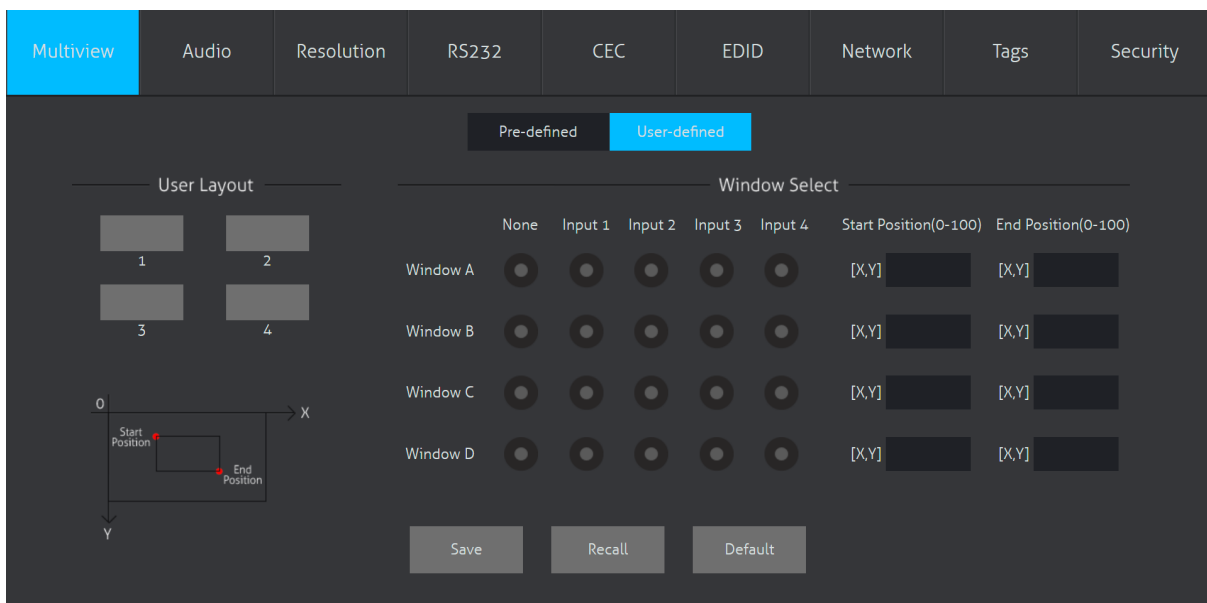


- Click the corresponding layout (layout 1~16) to select a display mode.
- Click Layout 2 and Layout 5~12 to enable the Resize function.
- Press the SWAP button to cycle the displays in a counterclockwise direction.
- Click the Confirm button to complete the selection.



- Click Settings gear in the bottom left to enter Window Select to modify the input for a window.

2. User-defined



- Click 1, 2, 3, or 4 buttons to choose User Layout.
- Select the corresponding input to set the size and position for each window that you want to display on the layout.
- Click Save button to save the preset and display the results from the modifications.
- “User-defined if the Bandwidth limit exceeded” will display if the parameters entered are not appropriate/functional.

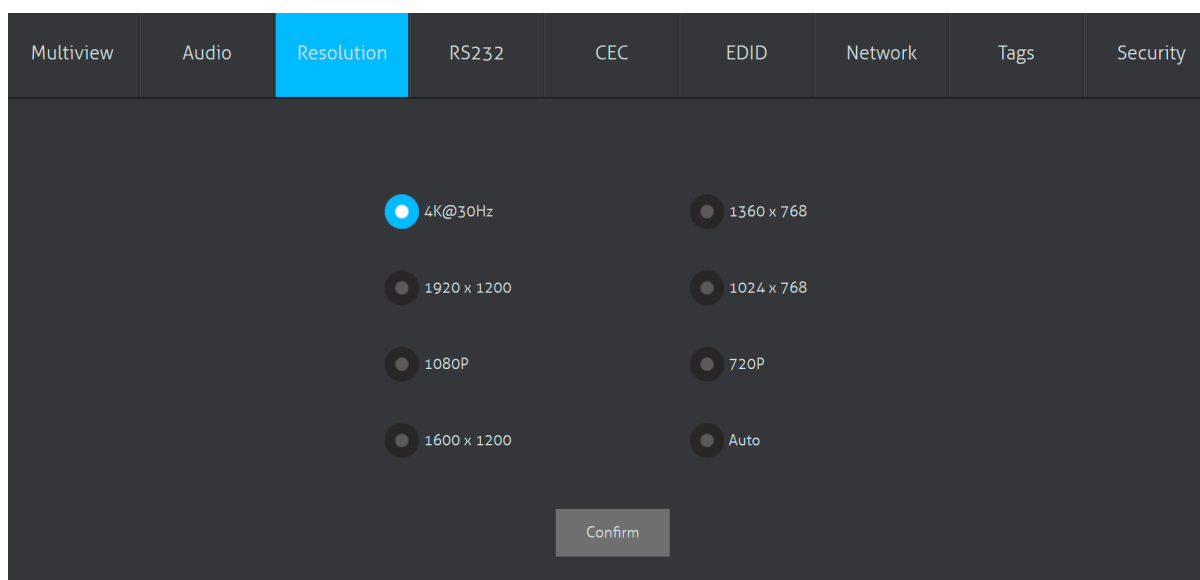


Audio Tab



- Click the On button to enter Mix mode, Click the Off button to exit Mix mode.
- Click the Unmute or Mute button to enable/disable audio output.
- Select one audio input from inputs 1-4 or line audio to set as the audio source.

Resolution Tab



- Click any of the resolutions to be output to the display device or click the Auto button to have the unit try and pick the best resolution for the display automatically.
- Click the Confirm button to apply changes.



RS232 Tab

The RS232 configuration interface includes the following elements:

- Format Selection:** Radio buttons for ASCII (selected) and HEX.
- Baud Rate:** A dropdown menu currently set to 9600.
- Command Ending:** A dropdown menu currently set to NULL.
- Command:** A text input field for entering custom commands.
- Display On:** A text input field with a 'Send' button.
- Display Off:** A text input field with a 'Send' button.
- Global Send:** A 'Send' button at the bottom center.

- ASCII or HEX command formats can be selected.
- **Baud Rate:** Supports 2400, 4800, 9600, 19200, 38400, 57600 or 115200.
- **Command Ending:** NULL, CR, LF or CR+LF can be chosen.
- **Command:** Type a command in this box to control a third-party device which is connected to the RS232 port of the switcher.
- **Display On:** Send the Display ON via RS232 command.
- **Display Off:** Send the Display OFF via RS232 command.

CEC Tab

1. Source

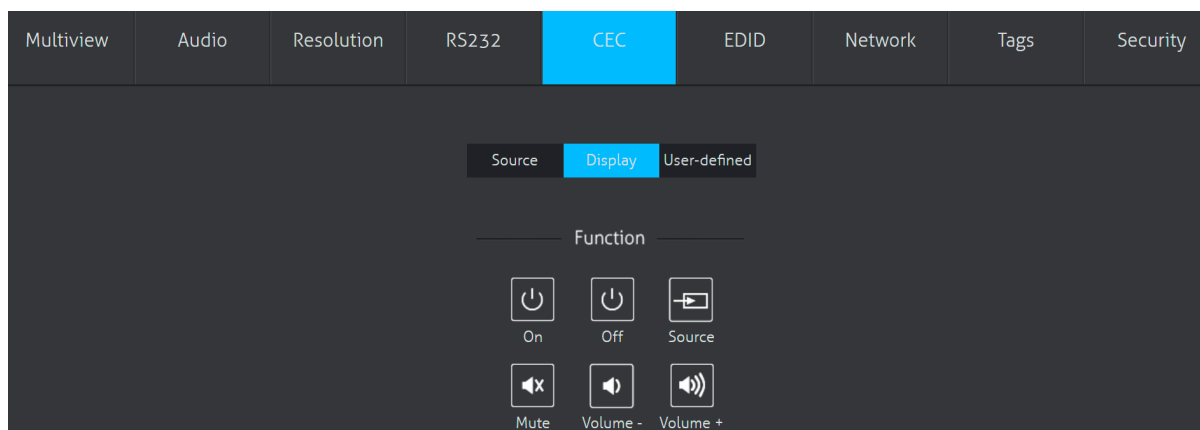
The CEC configuration interface is divided into two main sections:

- Source:** Four radio buttons for selecting the HDMI input source (HDMI 1 is selected).
- Function:** A 4x4 grid of buttons for sending CEC commands:
 - Row 1: On, Off, Menu, Play
 - Row 2: Back, Up, Enter, Stop
 - Row 3: Left, Down, Right, Pause
 - Row 4: Previous, Next, REW, FF

- Click a Source button to select an HDMI input source and then click a Function to send a command.

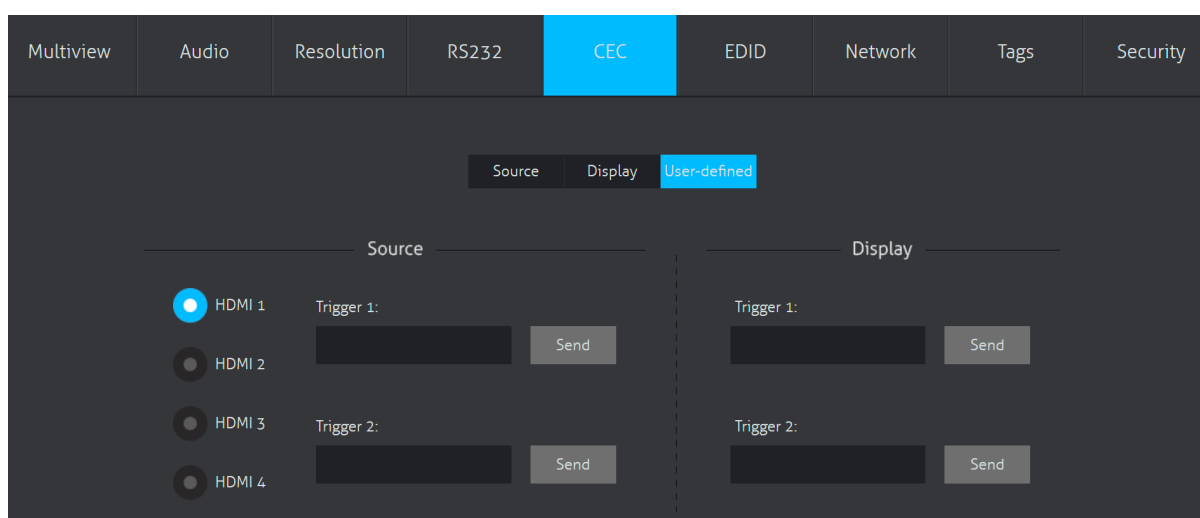


2. Display



- Click a display function button to control connected display devices.

3. User-defined



- Select a corresponding input source device and display devices to control via CEC commands.

NOTE: Not all devices are compatible with CEC or every function show may not be available.



EDID Tab

1. Upload

User-defined EDID can be customized using the following steps:

- Step 1: Click the User-defined box and a file explorer will pop up.
- Step 2: Select the EDID file (.bin) and click Open.
- Step 3: Click Apply to upload the user-defined EDID.

2. Setting

- Click the Setting button to set built-in EDID options.
- Click the HDMI 1-4 tabs to select an input source to modify.
- Click any of the built-in EDIDs and then click Confirm to apply changes.



Network Tab

Multiview	Audio	Resolution	RS232	CEC	EDID	Network	Tags	Security
-----------	-------	------------	-------	-----	------	---------	------	----------

MAC Address : CC-8C-DA-AA-C4-62

DHCP ☐ Static IP ☒

IP Address: 192.168.0.178

Subnet Mask: 255.255.255.0

Gateway: 192.168.0.1

Confirm

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

Tags Tab

Multiview	Audio	Resolution	RS232	CEC	EDID	Network	Tags	Security
-----------	-------	------------	-------	-----	------	---------	------	----------

Layout 1	layout 1	Layout 2	layout 2	Layout 3	layout 3	Layout 4	layout 4
Layout 5	layout 5	Layout 6	layout 6	Layout 7	layout 7	Layout 8	layout 8
Layout 9	layout 9	Layout 10	layout 10	Layout 11	layout 11	Layout 12	layout 12
Layout 13	layout 13	Layout 14	layout 14	Layout 15	layout 15	Layout 16	layout 16
User Layout 1	1	User Layout 2	2	User Layout 3	3	User Layout 4	4

Confirm

- Modify the Layout names in the multiview tab.



Security Tab

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

RS-232 Control

Connect to the RS-232 port to control the unit via a RS-232 cable.

The below command lists are used to control the switcher. The RS-232 control software (e.g. Docklight) needs to be installed on the control PC to send RS-232 commands.

After installing RS-232 control software, set the parameters for COM number, baud rate, data bit, stop bit, and parity bit correctly as shown below to be able to send commands.

- Baud rate: 9600
- Data bit: 8
- Stop bit: 1
- Parity bit: none



System Control

Note:

- In the commands below “[” and “]” are symbols for ease of reading and are not typed in actual operation.
- Commands are case-sensitive.

The ending mark of a command is “<CR><LF>” (in docklite “r” and “n” are the shortcut keys for the ending commands for ASCII or “0D 0A” for HEX)

Command	Description	Command & Feedback Example
#GET_FIRMWARE_VERSION	Get the firmware version	@V1.0.0
#FACTORY_RESET	Factory Default	@FACTORY_RESET
#REBOOT	System reboot	@REBOOT
#HELP [PARAM]	Get the command details [PARAM]=Any command (Random commands and without symbol “#”, it means the feedback command describes its usage). [PARAM]=Null (Report all commands).	#HELP SET_AV @Select the input source. #SET_AV INPARAM TO OUTPARAM INPARAM = 1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4 OUTPARAM = A ~ D
#GET_IP_ADDR	Get the IP to access GUI.	@IP_ADDR: 192.168.0.178 @SUBNET_MASK: 255.255.255.0 @GATEWAY: 192.168.0.1

Signal Switching

The ending mark of a command is “<CR><LF>” (in docklite “r” and “n” are the shortcut keys for the ending commands for ASCII or “0D 0A” for HEX)

Command	Description	Command & Feedback Example
#SET_AV [INPARAM] TO [OUTPARAM]	Switch an input AV signal to one or more outputs. [INPARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4 [OUTPARAM]=A ~ D. [OUTPARAM]=Null. Switch any input to window A.	#SET_AV 1 #SET_AV 1 TO @AV 1 TO A
#GET_AV [PARAM]	Get the current AV switching status of input or output channel. [PARAM]=A ~ D. [PARAM]=Null. Get all switching status.	#GET_AV @VIDEO OUT A B C D IN 1 2 3 4 @AUDIO_SRC 1
#SET_AUTO_SWITCH [PARAM]	Enable/disable auto switching mode. [PARAM]=0~1. 0 - Disable 1 - Enable	#SET_AUTO_SWITCH 1 @AUTO_SWITCH 1
#GET_AUTO_SWITCH	Get the auto switching status.	@AUTO_SWITCH 1



Audio Switching

The ending mark of a command is "<CR><LF>" (in docklite "r" and "n" are the shortcut keys for the ending commands for ASCII or "0D 0A" for HEX)

Command	Description	Command & Feedback Example
#SET_AUDIO_MUTE [PARAM]	Mute/Unmute audio. [PARAM]=0~1. 0 - Disable 1 - Enable	#SET_AUDIO_MUTE 1
		@AUDIO_MUTE 1
#GET_AUDIO_MUTE	Get the audio mute status.	@AUDIO_MUTE 1
#SET_AUDIO_SRC [PARAM]	Set the audio output source. [PARAM]=1 ~ 5 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4 5 - LINE IN	#SET_AUDIO_SRC 1
		@AUDIO_SRC 1
#GET_AUDIO_SRC	Get the audio output source.	@AUDIO_SRC 1
#SET_AUDIO_MIX [PARAM]	Enable/Disable audio mix. [PARAM]=0~1. 0 - Disable 1 - Enable	#SET_AUDIO_MIX 1
		@AUDIO_MIX 1
#GET_AUDIO_MIX	Get audio mix status.	@AUDIO_MIX 1
#SET_FULL_SWAUD [PARAM]	Enable/disable whether the audio follows the video switching when fullscreen mode is selected. [PARAM]=0~1. 0 - Disable 1 - Enable	#SET_FULL_SWAUD 1
		@FULL_SWAUD 1
#GET_FULL_SWAUD	Get whether the audio follows the video switching when full-screen mode is selected.	@FULL_SWAUD 1

Function Setting

The ending mark of a command is "<CR><LF>" (in docklite "r" and "n" are the shortcut keys for the ending commands for ASCII or "0D 0A" for HEX)

Command	Function	Command & Feedback Example
#SET_RS232_BAUD [PARAM]	Set the RS232 baud rate. [PARAM]=1 ~ 7 1 - 115200 2 - 57600 3 - 38400 4 - 19200 5 - 9600 6 - 4800 7 - 2400	#SET_RS232_BAUD 0
		@RS232_BAUD 5
#GET_RS232_BAUD	Get the RS232 baud rate	#GET_RS232_BAUD @RS232_BAUD 5
#SET_OUTPUT_RES [PARAM]	Set the output resolution. [PARAM]= 1 ~ 8 1 - 1024x768 60 HZ 2 - 1280x720 60 HZ 3 - 1360x768 60 HZ 4 - 1600x1200 60 Hz 5 - 1920x1080 60 HZ 6 - 1920x1200 60 HZ 7 - 3840x2160 30 HZ 8 - Auto	#SET_OUTPUT_RES 7
		@OUTPUT_RES 7



Command	Function	Command & Feedback Example
#GET_OUTPUT_RES	Get the output resolution	@OUTPUT_RES 4
#GET_INPUT_RES [PARAM]	Get the input resolution. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	@INPUT_RES: 1920x1080 60HZ
#SET_OUTPUT_HDCP [PARAM]	Set the HDCP mode for output port. [PARAM]=1 ~ 3 1 - HDCP1.4 2 - HDCP2.2 3 - OFF	#SET_OUTPUT_HDCP 1 @OUTPUT_HDCP 1
#GET_OUTPUT_HDCP	Get the HDCP mode of output port.	@OUTPUT_HDCP 1
#SET_EDID_MODE [PARAM1] [PARAM2]	Set the EDID of HDMI input. [PARAM1]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4 [PARAM2]=1 ~ 4 1 - 1920x1080 60HZ PCM 2CH 2 - 3840x2160 30HZ PCM 2CH 3 - BYPASS 4 - USER	#SET_EDID_MODE 1 1 @EDID_MODE 1 1
#GET_EDID_MODE [PARAM]	Get the EDID of input. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#GET_EDID_MODE 1 @EDID_MODE 1 1
#UPLOAD_USER_EDID	Upload the user defined EDID.	@USER_EDID READY PLEASE SEND EDID DATA IN 10S OK
#SET_KEYPAD_LOCK [PARAM]	Lock/unlock the keypad. [PARAM]=0~1. 0 - Unlock. 1 - Lock.	#SET_KEYPAD_LOCK 1 @KEYPAD_LOCK 1
#GET_KEYPAD_LOCK	Get the keypad locking status	#GET_KEYPAD_LOCK
#SET_POWER [PARAM]	Enter/exit standby mode [PARAM]=0 ~ 1 0 - Standby mode. 1 - Power on mode.	#SET_POWER 1 @POWER 1
#GET_POWER	Get the standby status	@POWER 1



Command	Function	Command & Feedback Example
#SET_MV_MODE [PARAM]	Set multiview mode. [PARAM]=1 ~ 20 1 - 1 WINDOWS Full 2 - 2 WINDOWS PBP 3 - 3 WINDOWS 2U1D 4 - 4 WINDOWS SAME SIZE 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	#SET_MV_MODE 1
		@MV_MODE 1
#GET_MV_MODE	Get multiview mode	@MV_MODE 1
#GET_STATUS	Get the system status	@V1.0.0 @VIDEO OUT A B C D IN 1 2 3 4 @AUDIO_SRC 1 @OUTPUT_RES 7 @AUTO_SWITCH 1 @EDID_MODE 1 2 ...
#SET_SWAP_SRC	Swap input source	@SWAP_SRC @VIDEO OUT A B C D IN 1 2 3 4 @AUDIO_SRC 1
#SET_RESIZE_WIM	Resize display windows.	@RESIZE_WIM
#SET_SYNCACT_CEC [PARAM]	Enable/Disable whether automatically send corresponding CEC command when detecting Power on/off signal. [PARAM]= 0 ~ 1 0 - Disable 1 - Enable	#SET_SYNCACT_CEC 1 @SYNCACT_CEC 1
#GET_SYNCACT_CEC	Get whether automatically send corresponding CEC command when detecting Power on/off signal.	#GET_SYNCACT_CEC
		@SYNCACT_CEC 1
#SET_SYNCACT_RS232 [PARAM]	Enable/Disable whether automatically send corresponding RS232 command when detecting Power on/off signal. [PARAM]= 0 ~ 1 0 - Disable 1 - Enable	#SET_SYNCACT_RS232 1
		@SYNCACT_RS232 1
#GET_SYNCACT_RS232	Get whether automatically send corresponding RS232 command when detecting Power on/off signal.	#GET_SYNCACT_RS232
		@SYNCACT_RS232 1
#SET_DTIME [PARAM1]:[PARAM2]	Set the delay time of auto sending Display OFF command when no signal is detected. [PARAM1]=0 ~ 30 minus [PARAM2]=0 ~ 1800 seconds (PS: All the time in 0s ~ 30m)	#SET_DTIME 1:30
		@DTIME 1:30



Command	Function	Command & Feedback Example
#GET_DTIME	Get the delay time of auto sending Display OFF command when no signal is detected.	@DTIME 1:30
#SET_AUTO_POWER [PARAM]	Enable/Disable auto standby function. [PARAM]=0 ~ 1 0 - Disable 1 - Enable	#SET_AUTO_POWER 1
		@AUTO_POWER 1
#GET_AUTO_POWER	Get the auto standby function status.	@AUTO_POWER 1
#SET_OFF_CNT [PARAM]	Set the number of times to send the DISPLAY OFF command. [PARAM]=1 ~ 2	#SET_OFF_CNT 1
		@OFF_CNT 1
#GET_OFF_CNT	Get the number of times to send the DISPLAY OFF command.	@OFF_CNT 1
#SET_OFF_DELAY [PARAM]	Set the sending interval between two Display OFF commands. [PARAM]=5 ~ 100 (1=100ms)	#SET_OFF_DELAY 5
		@OFF_DELAY 5
#GET_OFF_DELAY	Get the the sending interval between two Display OFF commands.	@OFF_DELAY 5

CEC Command

The ending mark of a command is "<CR><LF>" (in docklite "r" and "n" are the shortcut keys for the ending commands for ASCII or "0D 0A" for HEX)

Command	Function	Command & Feedback Example
#SET_SRC_MENU [PARAM]	Send CEC MENU command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_MENU 1
		@SRC_MENU 1
#SET_SRC_UP [PARAM]	Send CEC UP command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_UP 1
		@SRC_UP 1
#SET_SRC_DOWN [PARAM]	Send CEC DOWN command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_DOWN 1
		@SRC_DOWN 1
#SET_SRC_LEFT [PARAM]	Send CEC LEFT command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_LEFT 1
		@SRC_LEFT 1
#SET_SRC_RIGHT [PARAM]	Send CEC RIGHT command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_RIGHT 1
		@SRC_RIGHT 1



Command	Function	Command & Feedback Example
#SET_SRC_BACK [PARAM]	Send CEC BACK command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_BACK 1
		@SRC_BACK 1
#SET_SRC_ENTER [PARAM]	Send CEC ENTER command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_ENTER 1
		@SRC_ENTER 1
#SET_SRC_ON [PARAM]	Send CEC ON command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_ON 1
		@SRC_ON 1
#SET_SRC_OFF [PARAM]	Send CEC OFF command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_OFF 1
		@SRC_OFF 1
#SET_SRC_STOP [PARAM]	Send CEC STOP command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_STOP 1
		@SRC_STOP 1
#SET_SRC_PLAY [PARAM]	Send CEC PLAY command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_PLAY 1
		@SRC_PLAY 1
#SET_SRC_PAUSE [PARAM]	Send CEC PAUSE command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_PAUSE 1
		@SRC_PAUSE 1
#SET_SRC_PREV [PARAM]	Send CEC PREV command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_PREV 1
		@SRC_PREV 1



Command	Function	Command & Feedback Example
#SET_SRC_NEXT [PARAM]	Send CEC NEXT command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_NEXT 1
		@SRC_NEXT 1
#SET_SRC_REW [PARAM]	Send CEC rewind command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_REW 1
		@SRC_REW 1
#SET_SRC_FF [PARAM]	Send CEC fast-forward command to source device. [PARAM]=1 ~ 4 1 - HDMI 1 2 - HDMI 2 3 - HDMI 3 4 - HDMI 4	#SET_SRC_FF 1
		@SRC_MENU 1
#SET_DIS_ON	Send CEC ON command to display device.	@DIS_ON
#SET_DIS_OFF	Send CEC OFF command to display device.	@DIS_OFF
#SET_DIS_SOURCE	Send CEC SOURCE command to display device.	@DIS_SOURCE
#SET_DIS_MUTE	Send CEC MUTE command to display device.	@DIS_MUTE/UNMUTE
#SET_DIS_VOL+	Send CEC volume plus command to display device.	@DIS_VOL+
#SET_DIS_VOL-	Send CEC volume minus command to display device.	@DIS_VOL-

Special Command

Note: The below commands don't need ending mark

Command	Description	Command & Feedback Example
#SET_ON_[PARAM]:XXXX	Set the ASCII command to be sent to display device when power on the switcher. [PARAM]= 01~07 01 - 115200 02 - 57600 03 - 38400 04 - 19200 05 - 9600 06 - 4800 07 - 2400 XXXX= ASCII data to be sent (Up to 48 characters).	#SET_ON_05:1234567 @@BAUDRATE: 9600 @DISPLAY ON TO SEND:1234567



Command	Description	Command & Feedback Example
#SET_H_ON_[PARAM]:XX XX	Set the HEX command to be sent to display device when power on the switcher. [PARAM]= 01~07 01 - 115200 02 - 57600 03 - 38400 04 - 19200 05 - 9600 06 - 4800 07 - 2400 XX XX= HEX data to be sent (X = 0~9, A~F and up to 20 XX).	#SET_H_ON_05:30 31 32 33 34
		@BAUDRATE: 9600 @DISPLAY ON HEX TO SEND:30 31 32 33 34
#SET_OF_[PARAM]:XXXX	Set the ASCII command to be sent to display device when the switcher enter power off or standby mode. [PARAM]= 01~07 01 - 115200 02 - 57600 03 - 38400 04 - 19200 05 - 9600 06 - 4800 07 - 2400 XXXX= ASCII data to be sent (Up to 48 characters).	#SET_OF_05:ABCDEFG
		@BAUDRATE: 9600 @DISPLAY OFF TO SEND:ABCDEFG
#SET_H_OF_[PARAM]:XX XX	Set the HEX command to be sent to display device when the switcher enter power off or standby mode. [PARAM]= 01~07 01 - 115200 02 - 57600 03 - 38400 04 - 19200 05 - 9600 06 - 4800 07 - 2400 XX XX= HEX data to be sent (X = 0~9, A~F and up to 20 XX).	#SET_OF_05:41 42 43 44 45 46
		@BAUDRATE: 9600 @DISPLAY OFF HEX TO SEND:41 42 43 44 45 46

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 the 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 "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 confirm 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 commands.



Tech Support

Have technical questions? We may have answered them already!

Please visit BZBGear's support page (bzbgear.com/support) for helpful information and tips regarding our products. Here you will find our Knowledge Base (bzbgear.com/knowledge-base) with detailed tutorials, quick start guides, and step-by-step troubleshooting instructions. Or explore our YouTube channel, BZB TV (youtube.com/c/BZBTVchannel), for help setting up, configuring, and other helpful how-to videos about our gear.

Need more in-depth support? Connect with one of our technical specialists directly:

<u>Phone</u>	<u>Email</u>	<u>Live Chat</u>
1.888.499.9906	support@bzbgear.com	bzbgear.com

Warranty

BZBGear Pro AV products and cameras come with a three-year warranty. An extended two-year warranty is available for our cameras upon registration for a total of five years.

For complete warranty information, please visit bzbgear.com/warranty.

For questions, please call 1.888.499.9906 or email support@bzbgear.com.



Mission Statement

BZBGear is a breakthrough manufacturer of high-quality, innovative audiovisual equipment ranging from AVoIP, professional broadcasting, conferencing, home theater, to live streaming solutions. We pride ourselves on unparalleled customer support and services. Our team offers system design consultation, and highly reviewed technical support for all the products in our catalog. BZBGear delivers quality products designed with users in mind.

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