

BG-MVS4X4-4KL

**4x4 4K UHD HDMI Video Wall Processor
Seamless Matrix Switcher**

User Manual

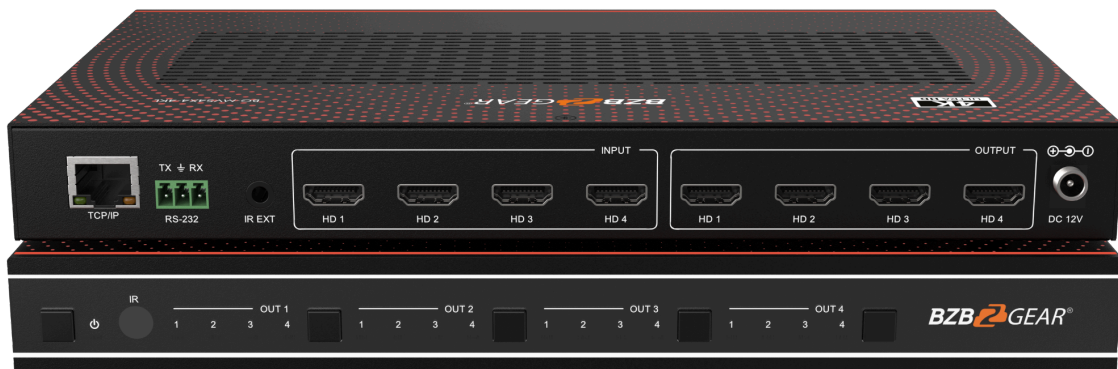






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Statement

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

Safety Precaution

- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.
- Do not expose the product to rain or moisture.
- To prevent the risk of electric shock, do not open the case. Installation and maintenance should only be carried out by qualified technicians.
- Do not use the product beyond the specified temperature, humidity or power supply specifications.
- 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-MVS4X4-4KL 4K60 4:4:4 HDMI matrix is a versatile high-speed matrix switcher and video wall processor with multiple applications. This system can be configured for two different output modes, serving as a 4×4 seamless matrix switcher, or as a 2×2, 4×1 or 1×4 video wall solution, among other possibilities.

Additionally, it is equipped with a web browser interface module for convenient control and configuration when used either as a standalone device or in conjunction with a third party control system. Control options include front-panel push buttons, an IR remote control, RS-232 interface and TCP/IP connectivity.

Features

- Compliant HDCP 2.2 and HDCP 1.4
- Features 2 operational modes:
 - 4×4 Matrix (seamless switch)
 - Video wall (2×2, 4×1 or 1×4 etc configuration)
- Seamless video switching
- Video inputs support all industry standard video resolutions including VGA-WUXGA (up to 1920×1200 @60Hz) and 480i-4K (3840 x 2160 @60Hz 4:4:4, 4096 x 2160 @60Hz 4:4:4) as specified in HDMI 2.0b
- HDMI outputs support upscale or downscale to any resolution, up to 4096 x 2160@60Hz 4:4:4
- Support LPCM, DD, DD+, DTS, Dolby TrueHD, DTS HD-master pass-through
- Advanced EDID management
- Web interface module for control and configuration of Matrix
- Control via front panel, IR, RS-232 and TCP/IP
- 3rd Party drivers available for all major home control brands

Packing List

- 1 x HDMI Matrix Switcher and Video Wall Processor
- 1 x Matrix IR Remote
- 1 x 3pin-3.81mm Phoenix Connector (male)
- 1 x 20-60KHz IR Wideband Receiver Cable (1.5 meters)
- 2 x Mounting Ears
- 4 x Machine Screws (KM3*4)
- 1 x 12V/2.5A Locking Power Adapter
- 1 x User Manual Card



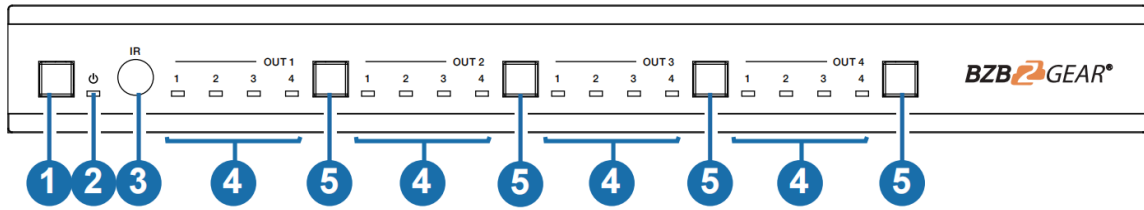
Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2/1.4
Video Bandwidth	594MHz/18Gbps
Video Resolution	Input: VGA-WUXGA (up to 1920×1200@60Hz), 480i-4K (3840x2160@60Hz 4:4:4, 4096x2160@60Hz 4:4:4)
	Output: 4096x2160p60, 4096x2160p50, 3840x2160p60, 3840x2160p50, 3840x2160p30, 1920x1080p60, 1920x1080p50, 1920x1080i60, 1920x1080i50, 1920x1200p60rb, 1360x768p60, 1280x800p60, 1280x720p60, 1280x720p50, 1024x768p60, auto
Color Space	RGB, YCbCr 4:4:4/4:2:2, YUV 4:2:0
Color Depth	8/10/12-bit
IR Level	12Vp-p
IR Frequency	38KHz
HDMI Audio Formats	LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio
Connection	
Inputs	4 x INPUT [HDMI Type A, 19-pin female]
Outputs	4 x OUTPUT [HDMI Type A, 19-pin female]
Control	1 x RS-232 [3pin-3.81mm phoenix onnector] 1 x TCP/IP [RJ45] 1 x IR EXT [3.5mm Stereo Mini-jack]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	11in (W) x 6.5in (D) x 1.2in (H) [270mm (W) x 166mm (D) x 30mm (H)]
Weight	2.6 lbs [1165g]
Power Supply	Input: AC 100 - 240V 50/60Hz Output: DC 12V/2.5A (US/EU standard, CE/FCC/UL certified)
Power Consumption	19.56W (Max)
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Relative Humidity	20~90% RH (non-condensing)



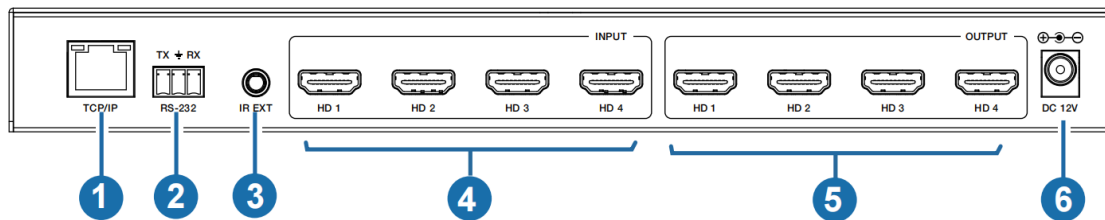
Operation Controls and Functions

Front Panel



No.	Name	Function Description
1	Power button	<ul style="list-style-type: none"> Short press this button to power on the device. Press this button for 1 seconds to enter the standby mode.
2	Power LED	The LED will illuminate in green when the product is working normally, and red when the product is on standby.
3	IR Window	IR receiver window, it only receives the IR remote signal from this product.
4	Signal source LED	Signal source indicator for the OUT 1 - OUT 4 port.
5	Input source switching button	Input source switching button for the OUT 1- OUT 4 port.

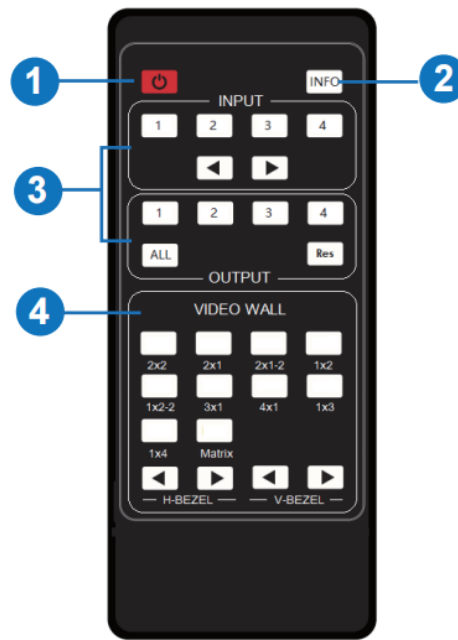
Rear Panel



No.	Name	Function Description
1	TCP/IP	The link port for TCP/IP control, connected to an active Ethernet link with an RJ45 cable to control the Matrix via Web.
2	RS-232	RS-232 serial command control port, connected to a PC or control system to control the Matrix.
3	IR EXT	If the IR receiver window of the unit is blocked or the unit is installed in a closed area out of infrared line of sight, the IR receiver cable can be inserted to the “IR EXT” port to receive the IR remote signal.
4	HDMI INPUT	HDMI signal input port, connected to signal source device.
5	HDMI OUTPUT	HDMI signal output port, connected to HDMI display device.
6	DC 12V	DC 12V/2.5A power input port.



IR Remote

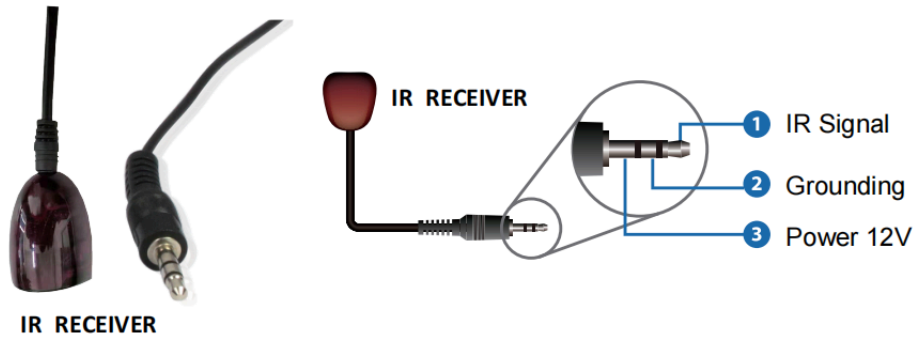


- ① **Power on or Standby:** Power on the Matrix or set it to standby mode.
- ② **INFO:** Press this button to display the serial port baud rate and IP address in the upper right corner of the screen. (The information will disappear after 5 seconds.)
- ③ **INPUT/OUTPUT**
- INPUT 1/2/3/4:** Select the signal input channel.
 ◀ ▶ Select the last or next signal input channel.
- OUTPUT 1/2/3/4:** Select the signal output channel.
- ALL:** Select all output channels simultaneously. For example, when you press the “ALL” button and then press INPUT 1 button, at this time the INPUT 1 signal will be output to all display devices.
- Note: After the matrix is turned on, the ALL key is selected by default. For example, after turning on the matrix, press the INPUT 1 button directly, and the INPUT 1 signal will be output to all display devices simultaneously.*
- Res:** Press this button to switch output channel resolution.
 Matrix mode: Press **OUTPUT 1/2/3/4** or **ALL**, then press Res to switch the output resolution circularly.
 Video wall mode: Press **Res** directly to switch the output resolution for four output channels simultaneously.
- Operation Instruction:** You need to press the OUTPUT button firstly and then press the INPUT button to select the corresponding input source. For example, Press OUTPUT-X (X means output button from 1 to 4, including “ALL” button), then press INPUT-Y (Y means input button from 1 to 4).
- ④ **VIDEO WALL:**
- Video wall mode selection:**
 Press the video wall mode button directly to enter corresponding mode.
- Source selection for the video wall group:**
 Press **OUTPUT 1/2/3/4** or ◀ ▶ to select the video wall group firstly, then press **INPUT 1/2/3/4** or ◀ ▶ to select the input source.
- Bezel Adjustment:** Press ◀ ▶ of H-BEZEL / V-BEZEL to adjust the bezel.



IR Pin Definition

IR Receiver pin's definition is as below:



Note: When the angle between the IR receiver and the remote control is $\pm 45^\circ$, the transmission distance is 0-5 meters; when the angle between the IR receiver and the remote control is $\pm 90^\circ$, the transmission distance is 0-8 meters.

EDID Management

This Matrix has 12 factory defined EDID settings, 2 user-defined EDID modes and 4 copy EDID modes. You can select defined EDID mode or copy EDID mode to input port through RS-232 control or Web GUI.

RS-232 control operation: Connect the Matrix to PC with a serial cable, then open a Serial Command tool on PC to send ASCII command “s edid in x from z!” to set EDID. For details, please refer to “EDID Setting” in the ASCII command list of “11. RS-232 Control Command”.

Web GUI Operation: Please check the EDID management in the “Input Settings” page of “10. Web GUI User Guide”.

The screenshot shows the BZBGEAR web GUI interface. The main content area is titled "Input Settings" and contains a table with the following data:

Inputs	Active	Edit Name	EDID
HDMI 1	Connected	Input1	4K2K60 444, Stereo Audio 2.0
HDMI 2	Disconnected	Input2	4K2K60 444, Stereo Audio 2.0
HDMI 3	Disconnected	Input3	4K2K60 444, Stereo Audio 2.0
HDMI 4	Disconnected	Input4	4K2K60 444, Stereo Audio 2.0

Below the table, there are two sections for EDID management:

- Load EDID to User Memory:** Includes a "Select EDID File" field with a "Browse" button and a "Select Destination" dropdown menu set to "User Define1". An "Upload" button is at the bottom.
- Download EDID to User Memory:** Includes a "Select EDID File" dropdown menu set to "HDMI 1" and a "Download" button.

The left sidebar contains navigation options: Main (Product Information), Configuration (Mode, Preset), Settings (Input Settings, Output Settings, Network Settings, System Settings), and Logout. Contact information for support is provided at the bottom of the sidebar.



EDID Settings List:

EDID Mode	EDID Description
1	4k2k60_444, stereo audio 2.0
2	4k2k60_444, dolby/dts 5.1
3	4k2k60_444, hd audio 7.1
4	4k2k30_444, stereo audio 2.0
5	4k2k30_444, dolby/dts 5.1
6	4k2k30_444, hd audio 7.1
7	1080p, stereo audio 2.0
8	1080p, dolby/dts 5.1
9	1080p, hd audio 7.1
10	1920x1200, stereo audio 2.0
11	1360x768, stereo audio 2.0
12	1024x768, stereo audio 2.0
13	user define1
14	user define2
15	copy from hdmi output 1
16	copy from hdmi output 2
17	copy from hdmi output 3
18	copy from hdmi output 4

Video Wall

The matrix supports 10 categories of display modes as below:



User can select display modes via IR remote, Web GUI or RS-232 commands.



Web GUI User Guide

The BG-MVS4X4-4KL may be controlled via a Web GUI. The operation method is shown as below:

Step 1: Get the current IP Address.

The default IP address is 192.168.0.100. You can get the current Matrix IP address in two ways:

The first way: You can get the IP address via remote controller. Press “INFO” button on the remote control, the IP address will show the upper right corner of the screen.

The second way: You can get the IP address via RS-232 control. Send the ASCII command “ r ip addr!” through a Serial Command tool, then you’ll get the feedback information as shown below:

```
ip address:192.168.0.100
```

IP:192.168.0.100 in the above figure is the current Matrix IP address (this IP address is variable, depending on what the specific machine returns).

For the details of RS-232 control, please refer to “11. RS-232 Control Command”.

Step 2: Connect the TCP/IP port of the Matrix to a PC with an UTP cable (as shown in the following figure), and set the IP address of the PC to be in the same network segment with the Matrix.

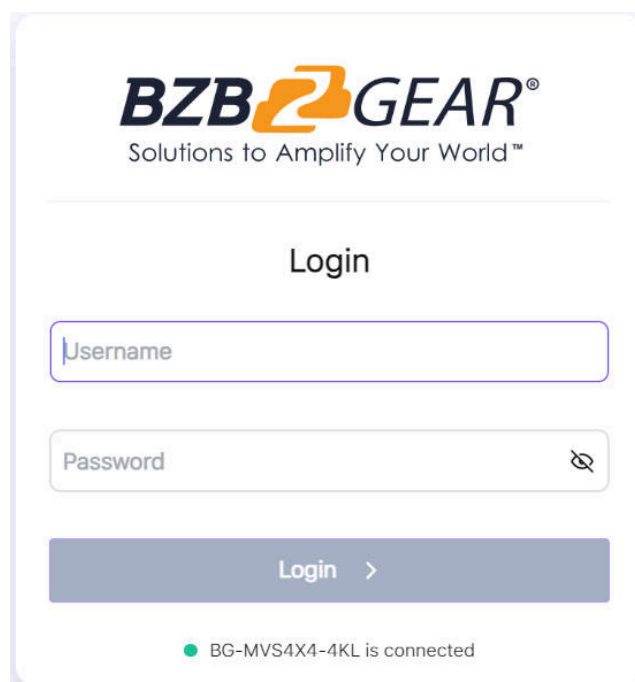


PC

Step 3: Input the current IP address of Matrix into your browser on the PC to enter Web GUI page.



After entering the Web GUI page, there will be a Login page, as shown below:



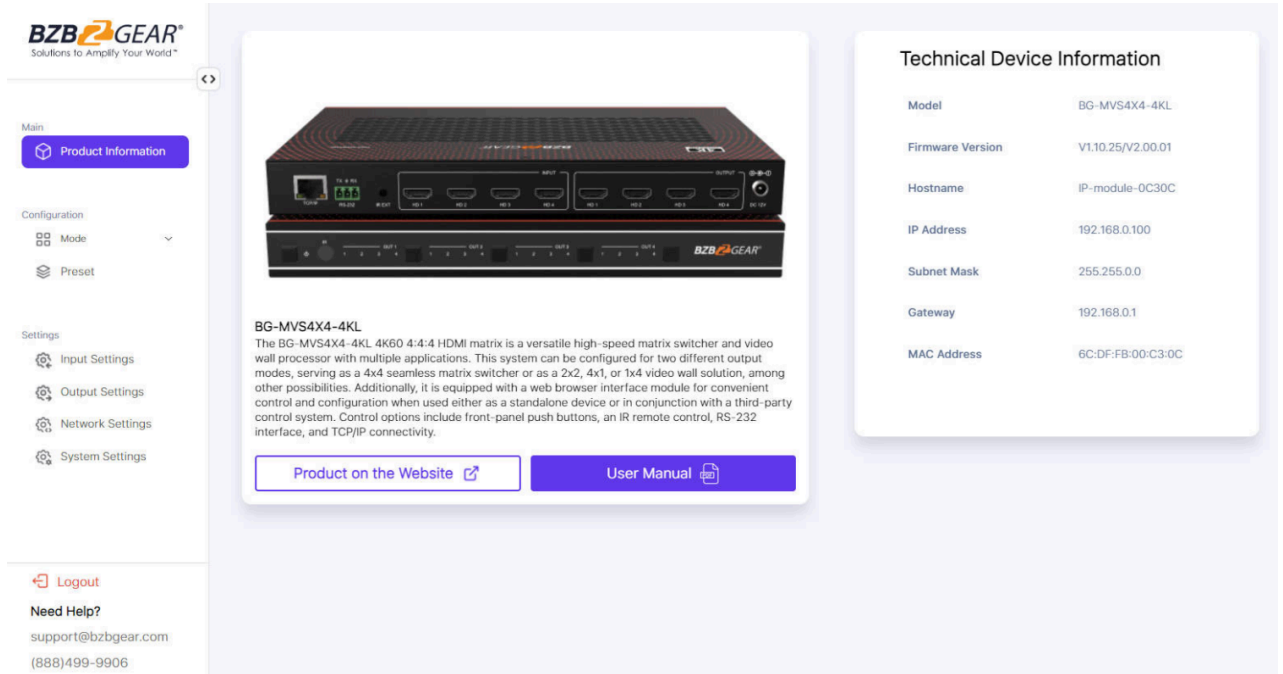


Enter the Username and Password. The default passwords are:

Username	User	Admin
Password	user	admin

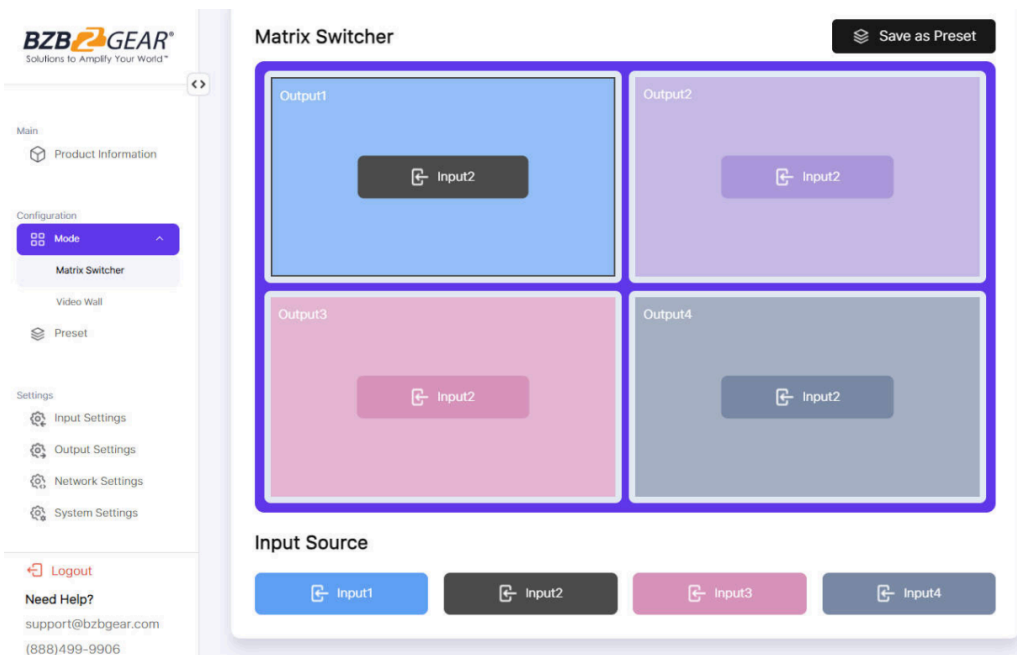
Then click the “Login” button and the following Main page will appear.

Main Page



The Main page provides the product information about the product picture, product overview and technical device information. In addition, you can click “Product on the Website” to check the details of the product on the Website, and click “User Manual” to check the product’s User Manual.

Configuration Page



You can set the video mode on this page. There are two modes: Matrix Switcher and Video Wall. In each mode, you can set, save, call or delete preset scenarios if needed, supporting up to 8 presets. The preset name can be modified (max length: 32 characters).

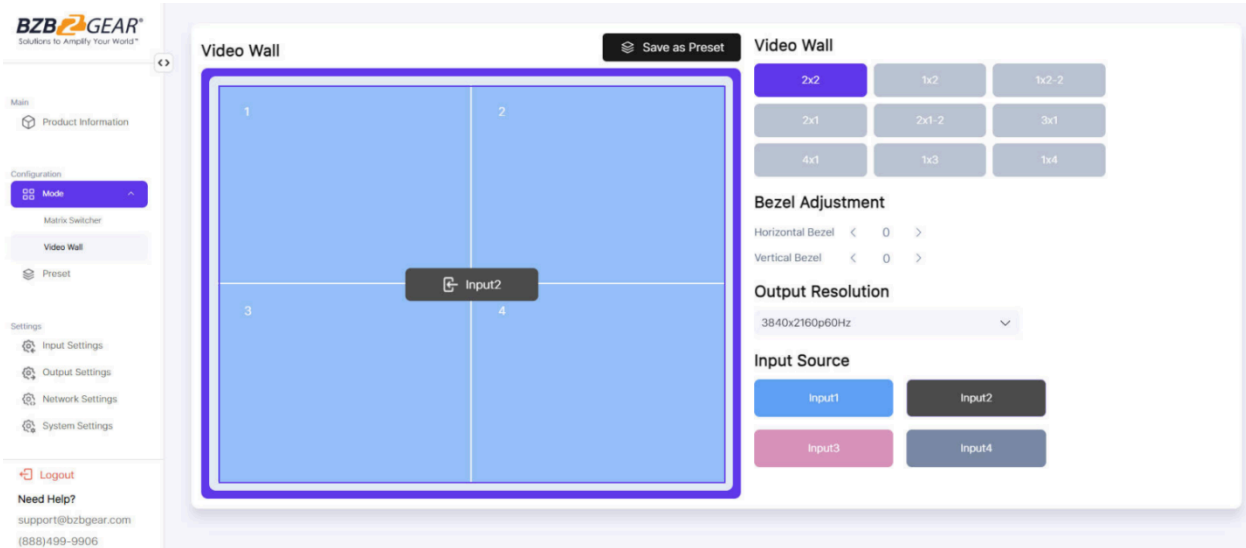


① **Matrix Switcher:** Click the “Matrix Switcher” tab to enter the Matrix Switcher interface.

In Matrix Switcher mode, you can click the window to select an output (1~4) firstly, and then click the Input1/2/3/4 button select an input source (1~4) which will appear on the selected output area. One route of video output configuration is completed. You can click the “Save as Preset” button at the upper right corner to save the settings as a preset.

Note: You can drag and drop any input source on the bottom to the corresponding output easily and quickly.

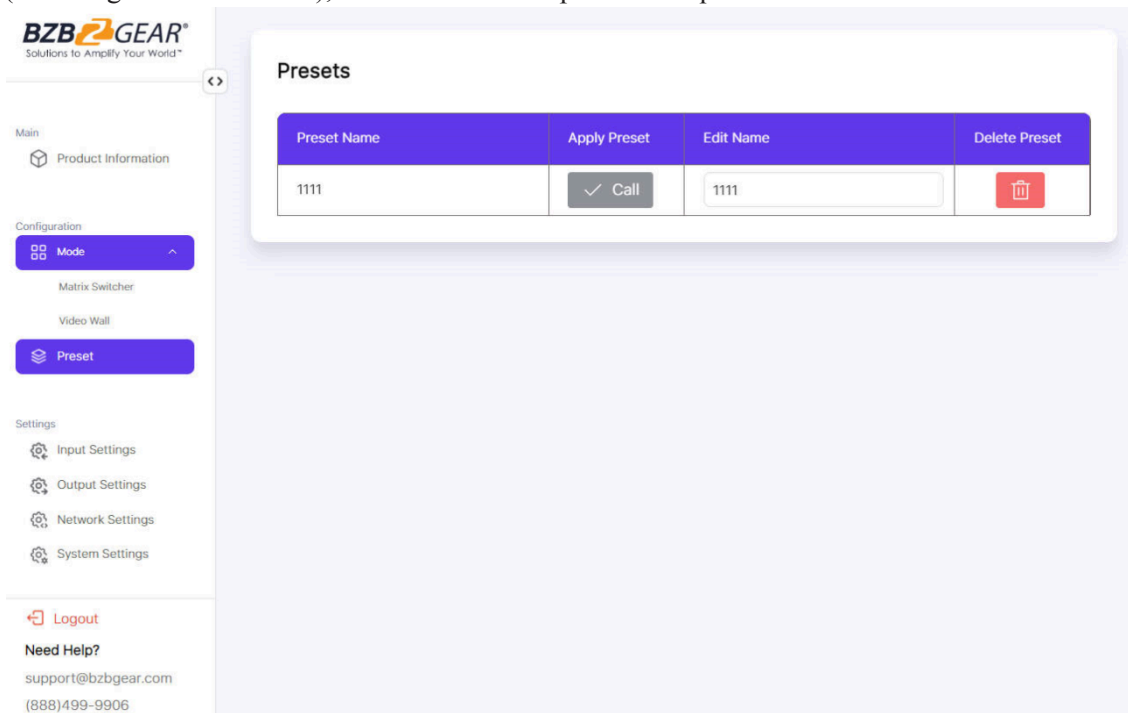
② **Video Wall:** Click the “Video Wall” tab to enter the Video Wall interface. Then click the video wall mode button to select a splicing screen mode. There are 9 modes to be selected.



In Video Wall mode, you can select a window (1~4) firstly, and then select an input source (1~4) which will appear on the selected output area. Click >/< to adjust the corresponding Horizontal/Vertical Bezel (0-10). Set the output resolution for current output by clicking the drop-down list. After setting, you can click the “Save as Preset” button at the upper right corner to save the settings as a preset.

Note: You can drag and drop any input source on the right to the corresponding window easily and quickly.

③ **Preset:** Click the “Preset” tab to enter the Preset interface. On this page, you can edit the preset name (max length: 32 characters), call and delete the preset as required.





Settings Page

You can set the input, output, network and system on this page.

Input Settings

Input Settings

Inputs	Active	Edit Name	EDID
HDMI 1	● Connected	Input1	4K2K60 444,Stereo Audio 2.0
HDMI 2	● Disconnected	Input2	4K2K60 444,Stereo Audio 2.0
HDMI 3	● Disconnected	Input3	4K2K60 444,Stereo Audio 2.0
HDMI 4	● Disconnected	Input4	4K2K60 444,Stereo Audio 2.0

Load EDID to User Memory

Select EDID File: [Browse](#)

Select Destination:

Download EDID to User Memory

Select EDID File:

Click the “Input Settings” tab to enter the Input Settings interface.

- ① **Inputs:** Input channel of the device.
- ② **Active:** It indicates whether the channel is connected to a signal source. When the input port is connected to the signal, it shows green, otherwise, it shows red.
- ③ **Edit Name:** The input channel’s name. You can modify it by entering the corresponding name (max length: 32 characters) in the input box.
- ④ **EDID:** You can set the current channel’s EDID. Click drop-down list to select.
- ⑤ **Load EDID to User Memory:** Set EDID for the User.

Click the “Browse” button to select the bin file, select the destination “User Define1” or “User Define2”, then click “Upload” to upload the EDID file.

⑥ **Download EDID to User Memory:**

Click the drop-down box of “Select EDID File” to select the corresponding input channel. Then click “Download” to download the corresponding EDID file.

Output Settings

Output Settings

Outputs	Cable	Edit Name	Output Resolution	HDCP	H mirror	V mirror	Stream
HDMI 1	● Disconnected	Output1	3840x2160p60Hz	1.4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HDMI 2	● Disconnected	Output2	3840x2160p60Hz	1.4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HDMI 3	● Disconnected	Output3	3840x2160p60Hz	1.4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HDMI 4	● Disconnected	Output4	3840x2160p60Hz	1.4	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Click the “Output Settings” tab to enter the Output Settings interface.

- ① **Outputs:** Output channel of the device.
 - ② **Cable:** It indicates the connection status of output ports. When the output port is connected to the display, it shows green, otherwise, it shows red.
 - ③ **Edit Name:** The current output channel’s name. You can modify it by entering the corresponding name (max length: 32 characters) in the input box.
 - ④ **Output Resolution:** Set the current output resolution mode. Click the drop-down list to select other resolutions.
 - ⑤ **HDCP:** Set the HDCP version that the current output port supports.
 - ⑥ **H mirror:** Turn on/off the horizontal mirroring of the output signal.
 - ⑦ **V mirror:** Turn on/off the vertical mirroring of the output signal.
 - ⑧ **Stream:** Turn on/off the signal output stream of the output port.
- Note:** User cannot set each output resolution separately in video wall mode.

Network Settings

The screenshot shows the BZB Gear Network Settings interface. On the left is a navigation menu with options like Main, Product Information, Configuration (Mode, Preset), Settings (Input Settings, Output Settings, Network Settings, System Settings), and Logout. The main content area is titled 'IP Settings' and contains several input fields and buttons. Below that is the 'Web Login Settings' section with password fields and a 'Product Model' field. At the bottom are 'Set Network Defaults' and 'Save' buttons.

Click the “Network Settings” tab to enter the Network Settings interface.

① Modify Network Setting

On the IP Settings interface, You can click to set the IP Mode (Static/DHCP).

If the IP Mode is set to “Static”, you can manually set the IP Address, Subnet, TCP Port, Gateway and Telnet Port as required. Then click “Save” to take effect.

If the IP Mode is set to “DHCP”, it will search and be filled with the IP Address assigned by the router automatically. You can't modify it now.



① **Modify User Password**

On the Web Login Settings interface, You can click the “User” button, enter the correct Old Password, New Password and Confirm Password, then click “Save” to modify the password.

Note: Input rules for changing passwords:

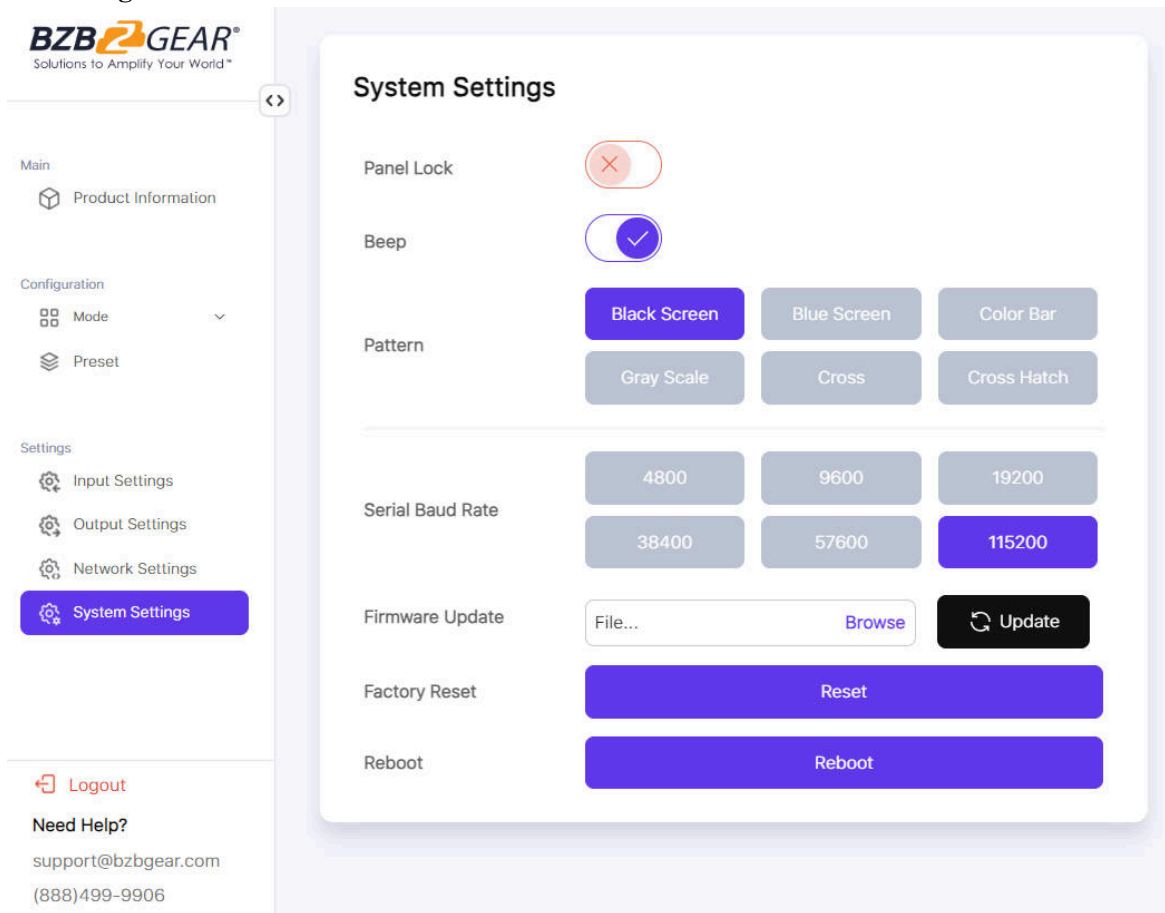
- (1) The password can’t be empty.
- (2) New Password can’t be the same as Old Password.
- (3) New Password and Confirm Password must be the same.

In addition, the Product Model can be modified (max length: 32 characters).

② **Set the Default Network**

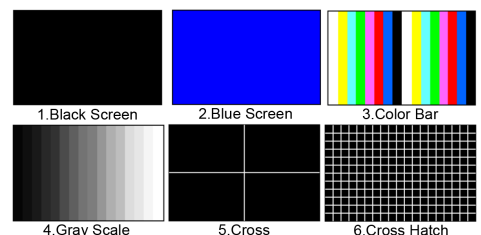
Click “Set Network Defaults” button, then click “OK” in the pop-up prompt window to search the IP Address again. After searching is completed, it will switch to the login page, the default network setting is completed.

System Settings



Click the “System Settings” tab to enter the System Settings interface.

- ① **Panel Lock:** Click to lock/unlock panel buttons.
- ② **Beep:** Click to turn on/off the beep.
- ③ **Pattern:** Click to select from 6 available patterns to display in case no input source is selected. When no input source is connected, the selected pattern will be showed at output display without delay.
- ④ **Serial Baud Rate:** Click the value to set the Serial Baud Rate.
- ⑤ **Firmware Update:** Click “Browse” to select the update file, then click “Update” to complete firmware update.
- ⑥ **Factory Reset:** Reset the unit to factory defaults by clicking “Reset”.
- ⑦ **Reboot:** Reboot the unit by clicking “Reboot”.

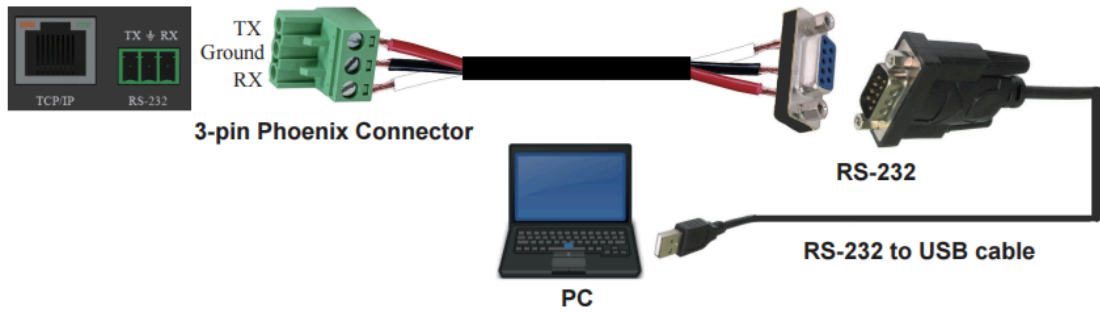


Note: After reset/reboot, it will switch to the login interface.



RS-232 Control Commands

The BG-MVS4X4-4KL supports RS-232 command control. Connect the RS-232 port of the product to a PC with a 3-pin phoenix connector cable and an RS-232 to USB cable. The connection method is as follows.



Open a Serial Command tool on a PC such as Access Port or DockLite to send ASCII commands to control the Matrix.

ASCII Command List:

ASCII Command				
Serial port protocol: Baud rate: 115200 (default) Data bits: 8 Stop bits: 1 Check bit: 0				
x - Parameter 1, y - Parameter 2, z - Parameter 3, ! - Delimiter				
Command Code	Function Description	Example	Feedback	Default Setting
System setting				
help!	Lists all commands	help!		
r status!	Get device current status	r status!	get the unit all status: power, beep, lock, in / out connection, video/ audio crosspoint, edid, scaler, network status	
r type!	Get device model	r type!	4x4 hdmi seamless matrix	
r fw version!	Get firmware version	r fw version!	mcu fw version x.xx.xx	
s power z!	Power on/off the device,z=0~1 (z=0 power off, z=1 power on)	s power 1!	power on system initializing... initialization finished! mcu fw version x.xx.xx	
r power!	Get current power state	r power!	power on /power off	
s beep z!	Enable/disable buzzer function, z=0~1 (z=0 beep off, z=1 beep on)	s beep 1!	beep on beep off	beep on
r beep!	Get buzzer state	r beep!	beep on / beep off	beep on
s lock z!	Lock/unlock front panel button, z=0~1 (z=0 lock off,z=1 lock on)	s lock 1!	panel button lock on panel button lock off	panel button lock off
r lock!	Get panel button lock state	r lock!	panel button lock on/off	



Command Code	Function Description	Example	Feedback	Default Setting
s reboot!	Reboot the device	s reboot!	reboot... system initializing... initialization finished! mcu fw version x.xx.xx	
s reset!	Reset to factory defaults	s reset!	reset to factory defaults system initializing... initialization finished! mcu fw version x.xx.xx	
s recall preset z!	Call saved preset z scenarios (z=1~8)	s recall preset 1!	recall from preset 1	
r preset z!	Get preset z information (z=1~8)	r preset 1!	video/audio crosspoint	
Output setting				
s in x av out y!	Set input x to output y, x=1~4, y=0~4 (0=all)	s in 1 av out 2!	input 1 -> output 2	ptp
r av out y!	Get output y signal status y=0~4 (0=all)	r av out 0!	input 1 -> output 1 input 2 -> output 2 input 4 -> output 4	
s output y res x!	Set output y resolution (y=0~4, x=1~16) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 1. 4096x2160p60, 2. 4096x2160p50, 3. 3840x2160p60, 4. 3840x2160p50, 5. 3840x2160p30, 6. 1920x1080p60, 7. 1920x1080p50, 8. 1920x1080i60, 9. 1920x1080i50, 10. 1920x1200p60rb, 11. 1360x768p60, 12. 1280x800p60, 13. 1280x720p60, 14. 1280x720p50, 15. 1024x768p60, 16. auto	s output 1 res 3!	output 1 resolution: 3840x2160p60	3840x2160p60
r output y res!	Get output y resolution (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	s output 1 csc 1!	output 1 resolution: 3840x2160p60	



Command Code	Function Description	Example	Feedback	Default Setting
s output y csc x!	Set output y color space (y=0~4, x=1~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=1. rgb444 x=2. ycbcr444 x=3. ycbcr422 x=4. ycbcr420	s output 1 csc 1!	output 1 csc: rgb444	rgb444
r output y csc!	Get output y color space status (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 1 csc!	output 1 csc: rgb444	
s output y hdcp x!	Set output hdcp (y=0~4, x=1~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=1. hdcp 1.4 x=2. hdcp 2.2 x=3. follow sink x=4. follow source	s output 1 hdcp 1!	output 1 hdcp: hdcp 1.4	hdcp1.4
r output y hdcp!	Get output y hdcp status (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 1 hdcp!	output 1 hdcp: hdcp 1.4	
s output y hmirror x!	Set output y h mirror (y=0~4,x=0,1) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=0. h mirror off x=1. h mirror on	s output 1 hmirror 1!	output1 h mirror on	output 1 h mirror off output 2 h mirror off output 3 h mirror off output 4 h mirror off
s output y vmirror x!	set output y v mirror (y=0~4,x=0,1) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=0. v mirror off x=1. v mirror on	s output 1 vmirror 0!	output1 v mirror off	output 1 v mirror off output 2 v mirror off output 3 v mirror off output 4 v mirror off
r output y mirror!	Get output y mirror status (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 0 mirror!	output 1 h mirror on, v mirror off output 2 h mirror on, v mirror off output 3 h mirror on, v mirror off output 4 h mirror on, v mirror off	



Command Code	Function Description	Example	Feedback	Default Setting
s output y stream x!	Set output y stream enable/disable (y=0~4, x=0~1) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4 x=0. stream disable x=1. stream enable	s output 1 stream 1!	output 1 stream: enable	enable
r output y stream!	Get output y stream status. (y=0~4) y=0. output all y=1. output 1 y=2. output 2 y=3. output 3 y=4. output 4	r output 1 stream!	output 1 stream: enable	
s output bg x!	Set output no signal background display mode (x=1~6) x=1. black screen x=2. blue screen x=3. color bar x=4. gray scale x=5. cross x=6. cross hatch	s output bg 1!	output background: black screen	black screen
r output bg!	Get output no signal background display mode	r output bg!	output background: black screen	
EDID setting				
s edid in x from z!	Set hdmi input x edid mode (x=0~4,z=1~18) x=0. all input x=1. input1 x=2. input2 x=3. input3 x=4. input4 z=1. 4k2k60_444, stereo audio 2.0 z=2. 4k2k60_444, dolby/dts 5.1 z=3. 4k2k60_444, hd audio 7.1 z=4. 4k2k30_444, stereo audio 2.0 z=5. 4k2k30_444, dolby/dts 5.1 z=6. 4k2k30_444, hd audio 7.1 z=7. 1080p, stereo audio 2.0 z=8. 1080p, dolby/dts 5.1 z=9. 1080p, hd audio 7.1 z=10. 1920x1200, stereo audio 2.0 z=11. 1360x768, stereo audio 2.0 z=12. 1024x768, stereo audio 2.0 z=13. user define1 z=14. user define2 z=15. copy from hdmi output 1 z=16. copy from hdmi output 2 z=17. copy from hdmi output 3 z=18. copy from hdmi output 4	s edid in 1 from 1! s edid in 0 from 1!	input 2 edid: 1080p, stereo audio 2.0 all inputs edid: 1080p, stereo audio 2.0	4k2k60_444, stereo audio 2.0
r edid in x!	Get input x edid mode (x=0~4) x=0. all input x=1. input1 x=2. input2 x=3. input3 x=4. input4	r edid in 0!	input 1 edid: 4k2k60_444, stereo audio 2.0 input 2 edid: 4k2k60_444, stereo audio 2.0 input 3 edid: 4k2k60_444, stereo audio 2.0 input 4 edid: 4k2k60_444, stereo audio 2.0	



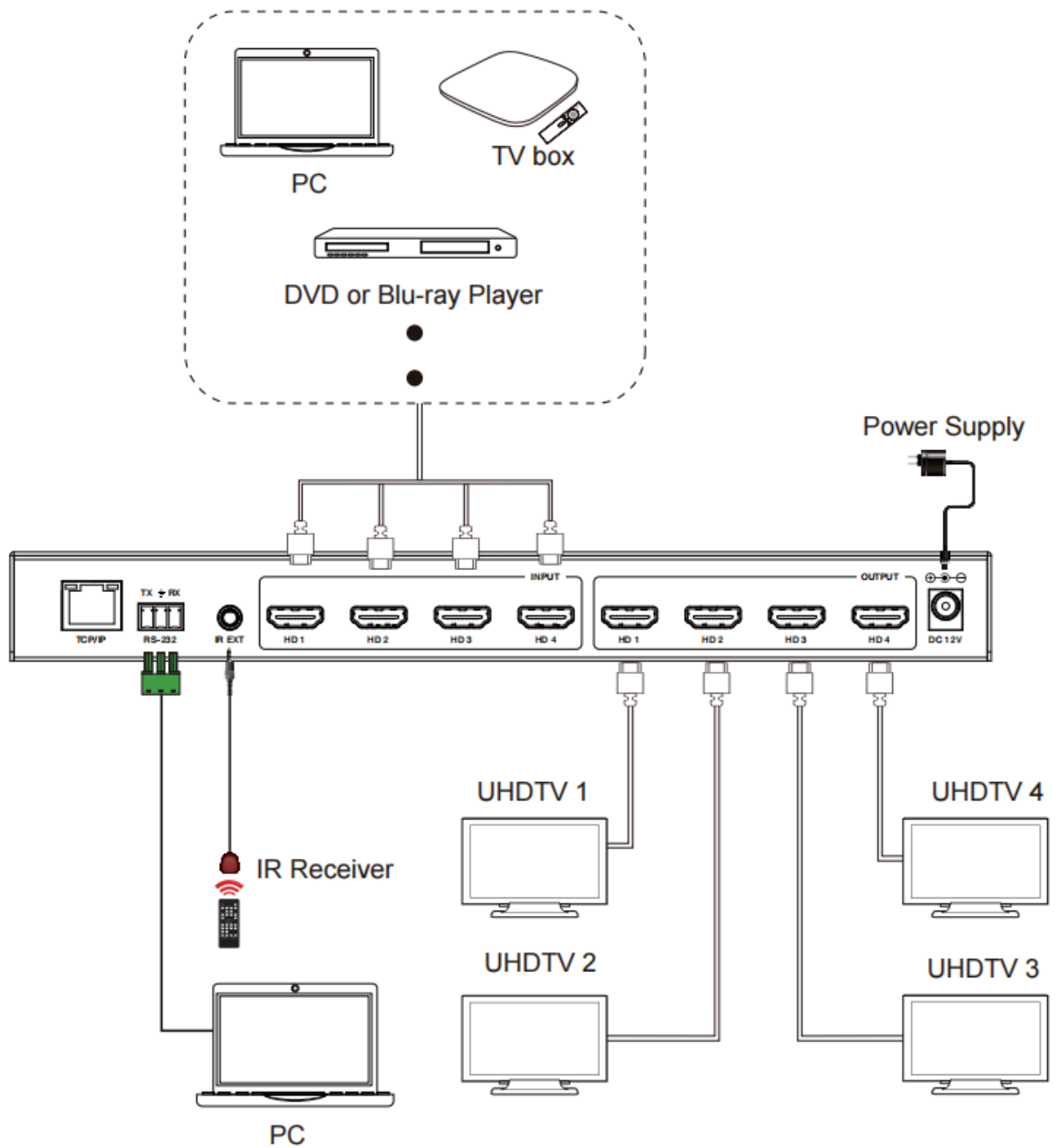
Command Code	Function Description	Example	Feedback	Default Setting
Video wall setting				
s tw mode x!	Set tv wall display mode(x=1~10) x=1. 2x2 mode x=2. 2x1 mode x=3. 2x1-2 mode x=4. 1x2 mode x=5. 1x2-2 mode x=6. 3x1 mode x=7. 4x1 mode x=8. 1x3 mode x=9. 1x4 mode x=10. matrix mode	s tw mode 1!	tv wall mode: 2x2	tv wall mode: 2x2
r tw mode!	Get tv wall display mode	r tw mode!	tv wall mode: 2x2	
s tw h bezel x!	set tv wall horizontal bezel (x=0~10,+,-)	s tw h bezel 0!	tv wall horizontal bezel: 0	tv wall horizontal bezel: 0
r tw h bezel!	Get tv wall row bezel	r tw h bezel!	tv wall horizontal bezel: 0	
s tw v bezel x!	Set tv wall vertical bezel (x=0~10,+,-)	s tw v bezel 0!	tv wall vertical bezel: 0	tv wall vertical bezel: 0
r tw v bezel!	Get tv wall vertical bezel	r tw v bezel!	tv wall vertical bezel: 0	
s tw group y input x!	Set tv wall group y display which source input (y=0~4, x=1~4) y=0. tv wall group all y=1. tv wall group 1 y=2. tv wall group 2 y=3. tv wall group 3 y=4. tv wall group 4 x=1. hdmi input 1 x=2. hdmi input 2 x=3. hdmi input 3 x=4. hdmi input 4	s tw group 1 input 1!	tv wall group 1 input: hdmi input 1	tv wall group 1 input: hdmi input 1
r tw group y source!	Get tv wall group y display which source input (y=0~4) y=0. tv wall group all y=1. tv wall group 1 y=2. tv wall group 2 y=3. tv wall group 3 y=4. tv wall group 4	r tw group 0 source!	tv wall group 1 input: hdmi input 1 tv wall group 2 input: hdmi input 2 tv wall group 3 input: hdmi input 3 tv wall group 4 input: hdmi input 4	
s tw res x!	Set tv wall resolution (x=1~15) 1. 4096x2160p60, 2. 4096x2160p50, 3. 3840x2160p60, 4. 3840x2160p50, 5. 3840x2160p30, 6. 1920x1080p60, 7. 1920x1080p50, 8. 1920x1080i60, 9. 1920x1080i50, 10. 1920x1200p60rb, 11. 1360x768p60, 12. 1280x800p60, 13. 1280x720p60, 14. 1280x720p50, 15. 1024x768p60.	s tw res 3!	tv wall resolution: 3840x2160p60	3840x2160p60
r tw res!	Get tv wall resolution	r tw res!	tv wall resolution: 3840x2160p60	3840x2160p60



Command Code	Function Description	Example	Feedback	Default Setting
Network setting				
r ipconfig!	Get the current ip configuration	r ipconfig !	ip mode: static ip: 192.168.0.100 subnet mask: 255.255.255.0 gateway: 192.168.0.1 tcp/ip port=8000 telnet port=23 mac address: 00:1c:91:03:80:01	
r mac addr!	Get network mac address	r mac addr!	mac address: 00:1c:91:03:80:01	
s ip mode z!	Set network ip mode to static ip or dhcp,z=0~1 (z=0 static, z=1 dhcp)	s ip mode 0!	set ip mode:static. (please use "s net reboot!" command or repower device to apply new config!)	
r ip mode!	Get network ip mode	r ip mode!	ip mode: static	
s ip addr xxx.xxx.xxx.xxx!	Set network ip address	s ip addr 192.168.0.100!	set ip address: 192.168.0.100 (please use "s net reboot!" command or repower device to apply new config!) dhcp on, device can't config static address, set dhcp off first.	
r ip addr!	Get network ip address	r ip addr!	ip address: 192.168.0.100	
s subnet xxx.xxx.xxx.xxx!	Set network subnet mask	s subnet 255.255.255.0!	set subnet mask: 255.255.255.0 (please use "s net reboot!" command or repower device to apply new config!) dhcp on, device can't config subnet mask, set dhcp off first.	
r subnet!	Get network subnet mask	r subnet!	subnet mask: 255.255.255.0	
s gateway xxx.xxx.xxx.xxx!	Set network gateway	s gateway 192.168.0.1!	set gateway: 192.168.0.1 (please use "s net reboot!" command or repower device to apply new config!) dhcp on, device can't config gateway, set dhcp off first.	
r gateway!	Get network gateway	r gateway!	gateway:192.168.0.1	
s tcp/ip port x!	Set network tcp/ip port (x=1~65535)	s tcp/ip port 8000!	set tcp/ip port:8000	
r tcp/ip port!	Get network tcp/ip port	r tcp/ip port!	tcp/ip port:8000	
s telnet port x!	Set network telnet port(x=1~65535)	s telnet port 23!	set telnet port:23	
r telnet port!	Get network telnet port	r telnet port!	telnet port:23	
s net reboot!	Reboot network modules	s net reboot!	network reboot... ip mode: static ip: 192.168.0.100 subnet mask: 255.255.255.0 gateway: 192.168.0.1 tcp/ip port=8000 telnet port=10 mac address: 00:1c:91:03:80:01	



Application Diagram



HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

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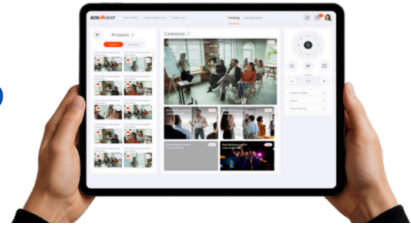


BZBGear Switch Control App

BG-Switch-Control | Quick User Guide



BZBGear Switch Control App



Overview

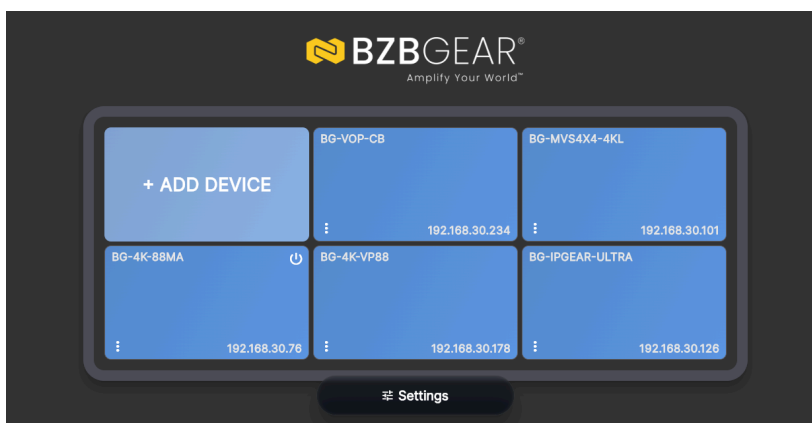
The **BZBGear Switch Control App (BG-Switch-Control)** is a multi-platform network control application for compatible BZBGear matrix switchers. It provides centralized control of **video routing, audio routing, presets, and video wall configurations** through an intuitive graphical interface.

Platform Compatibility

Supported operating systems:

- **Windows**
- **macOS**
- **iOS**
- **Android**
- All control devices must be connected to the **same local network** as the matrix switcher.

Connection & Startup



1. Connect the BZBGear matrix switcher to the local network.
2. Connect the control device (PC, tablet, or smartphone) to the same network.
3. Launch the **BG-Switch-Control App**.
4. Select the correct product from the (Add Device) drop-down list



- Fill in the device information (IP address, name, etc.)

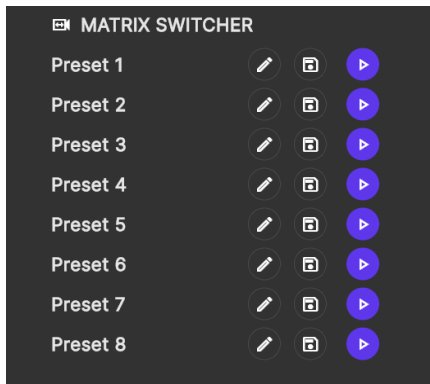
Matrix Switching



- Rename input and output sources (Optional)
- Press and hold an input source.
- Drag the input from the **Inputs panel** to the desired output.
- Release to complete the assignment.
- A single input can be routed to **multiple outputs simultaneously**.

Preset Management

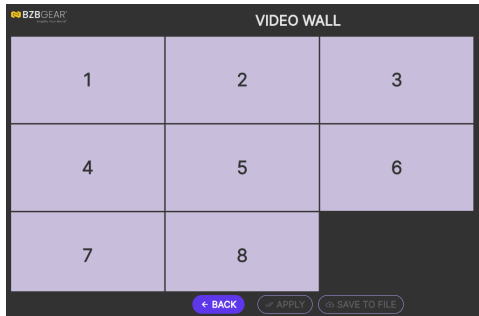
Presets allow quick saving and recall of system configurations.



1. Configure routing or video wall settings.
2. Select **Save as Preset**.
3. Assign a preset number and name.
4. Recall presets at any time to instantly restore configurations.



Video Wall Control



- Select **Create Video Wall**.
- Drag and arrange outputs into the desired layout.
- Select a source to span across the video wall.
- Select **Set Video Wall** to apply.
 - Video walls appear on the main screen and support **real-time switching** and **preset storage**.

Pass-Through Mode

Pass-Through mode restores a direct, default input-to-output mapping.

This mode is useful for:

- System resets
- Testing
- Simplified routing

Refresh Data

The **Refresh Data** function resynchronizes the app with the connected switcher.

Use this if configuration changes are made or if the interface appears out of sync.

App Capabilities

- Matrix video routing
- Video wall creation and control
- Preset save and recall
- Audio matrix control (*supported devices*)
- Multi-user access with role-based permissions
- Multi-platform operation



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:

Phone	Email	Live Chat
1.888.499.9906	support@bzbgear.com	bzbgear.com

Limited Product Warranty Terms

Pro Line: 5-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Essential Line: 3-year warranty from the date of purchase for AV/Broadcasting products bought on or after August 1, 2024.

Cables: Lifetime Limited Product Warranty.

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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