

BG-IPGEAR-PRO

HDMI 2.0 over IP Multicast System

with Video Wall & PoE 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 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-IPGear-PRO system is an HDMI 2.0 over IP multicast system with video wall & PoE support that boosts up your video/audio transmission distances up to 120m(396ft) in stunning UHD 4K@60. With cost effective ethernet cables, users can easily extend a UHD video from source devices such as a Blu-ray player, PS5, PC, to a distant display. Additionally, the BG-IPGear-PRO system is HDCP compliant and supports IR and RS-232 pass-through.

The BG-IPGear-PRO-C smart controller for the BG-IPGear-PRO system provides continuous system monitoring, self-recovery, along with real-time email event notifications and alerts. With a high degree of expandability, a single BG-IPGear-PRO-C can manage up to 1024 transmitters and an unlimited number of receivers at once.

The intuitive web-based GUI enables users to drag and drop any source to any display, build custom video walls, and create custom on-screen-display (OSD) messages. Users can also access and manage the system by using the free iOS, Android, Windows, and MAC applications.

Note: A supported gigabit network switch is required for the BG-IPGear-PRO system. The system is capable of Point-to-Point, Point-to-Many, and Multicasting. Network switches must support IGMP snooping and jumbo frame/large packet transfer. Multicasting requires a managed gigabit network switch with 802.1Q VLAN functionality to allow for multiple video sources.



Features

- Resolutions up to 4K@60 4:4:4 8 bits
- High Dynamic Range (HDR)*
- HDMI 2.0a compliant
- HDCP 2.2 compliant
- Flexible and scalable UHD video broadcasting: one-to-one, one-to-many & multicasting.
- Each transmitter can multicast up to 1,023 receivers for video wall applications or point-to-point.
- Full frequency, bi-directional IR signal from 20KHz to 60KHz.
- Full duplex RS-232 control up to 115,200 bps.
- Easy dip switch matching for hardcoding multicast group configurations.
- Simultaneous video wall functionality (up to a 5x5 video wall)
- 90°, 180°, and 270° clockwise image rotation in video wall mode.
- KVM support to control remote devices.
 - USB flash drive (USBolP) and keyboard/mouse (KMoIP)**
 - USB webcam and USB audio device over IP (HW-USBolP)***
- Wall mounting housing design for easy and robust installation

Notes:

* Due to the video compression, some distortion in terms of visual perception may happen in HDR modes.

** For KMoIP functions:

- A. The Tx channel ID must set between 0001 to 0008 (max quantity of Tx devices for KVM support is 8 units)
- B. The Rx channel ID must set to ID=0 [↑-↑-↑-↑-↑]
- C. Users must click the hotkey three times to switch Tx . (ex. Press the “5” key on the num pad three times to switch to ID=0005(Tx))

*** For HW-USBolP functions:

- A. Do not attach devices other than a USB webcam and USB audio device
- B. The Rx's webcam and video signal must come from the same Tx.



Controller Packing List

- 1x BG-IPGear-PRO-C
- 1x Rack-mounting ear set
- 1x DC 5V power supply
- 1x User Manual
- 1x Quick Start Guide

Transmitter Packing List

- 1x IPGear-PRO-T
- 1x IR Blaster Cable
- 1x User Manual
- 1x IR Receiver Cable

Receiver Packing List

- 1x IPGear-PRO-T
- 1x IR Blaster Cable
- 1x User Manual
- 1x IR Receiver Cable

Optional Accessories (Not Included)

- BG-VOP-ACC-RM
(Mount bracket for RM10)
- BG-VOP-ACC-RB
(Blank mount bracket for RM10)
- BG-VOP-ACC-RM10
(4RU rack mount fits 10 transmitters/receivers)



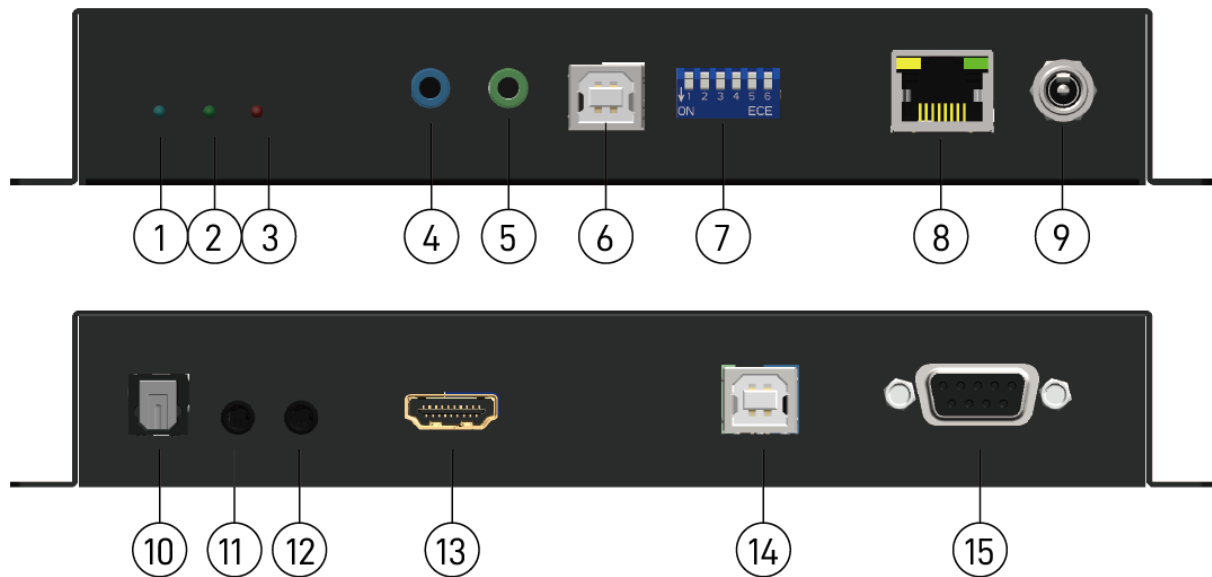
Transmitter and Receiver Specifications

Technical Specifications			
Model		BG-IPGEAR-PRO-T [Tx]	BG-IPGEAR-PRO-R [Rx]
HDMI Compliance		HDMI	
HDCP Compliance		Yes	
Video Support		Up to 4K@60 (4:4:4 8 bits)	
Latency		2 frames (33 ms) maximum	
HDMI over UTP Transmission [24-bit]		Ultra HD (4K2K60)-120m (396ft) [CAT.X]	
Audio Support		Surround sound (up to 7.1ch) or stereo digital audio	
Input TMDS Signal		1.2 Volts [peak-to-peak]	
Input DDC Signal		5 Volts [peak-to-peak, TTL]	
ESD Protection		Human body model — ±15kV [air-gap discharge] & ±8kV [contact discharge]	
IR Pass-Thru		Full-duplex bi-directional	
RS-232 Support		Yes	
Input		1x HDMI + 2x 3.5mm + 2x USB	1x RJ45 + 1x HDMI + 2x 3.5mm + 1x S/PDIF
Output		1x RJ45 + 1x S/PDIF + 2x 3.5mm	2x 3.5mm + 5x USB
In/ Out		1x DIN9	1x DIN9
HDMI Source Control		Controllable via IR pass-through from Rx to Tx and from Tx to Rx with IR extenders	
IR Remote Control		Electro-optical characteristics: = 25° / Carrier frequency: 20-60kHz	
HDMI Connector		Type A [19-pin female]	
Min DIN Connector		DIN-9	
RJ45 Connector		WE/SS 8P8C with 2 LED indicators	
3.5mm Connector		Analog audio / IR blaster & IR receiver	
Mechanical Specifications			
Housing		Metal enclosure	
Dimensions (L x W x H)	Model	194 x 133 x 28 mm[7.6" x 5.2" x 1.1"]	194 x 133 x 28 mm[7.6" x 5.2" x 1.1"]
	Package	264 x 170 x 77mm[10.3" x 6.7" x 3"]	
	Carton	430 x 358 x 291mm[1'4" x 1'2" x 11.5"]	
Weight	Model	663g [1.5 lbs]	644g [1.4 lbs]
	Package	1528g [3.4 lbs]	
Mounting		Wall mountable case with screws	
Power Supply		5V DC/ / 48V POE	
Power Consumption		6 Watts [max]	7 Watts [max]
Operation Temperature		0~40°C [32~104°F]	
Storage Temperature		-20~60°C [-4~140°F]	
Relative Humidity		20~90% RH [no condensation]	



Transmitter and Receiver Interface Descriptions

Transmitter Unit - BG-IPGear-PRO-T



1. Power LED indicator:

[Blinking] When the unit is connected to power

[Solid] After fully booting and the device has become stable

2. Link LED indicator:

[Blinking] When the unit is connected to a Cat-5/5e/6 cable

[Solid] When the transmitting unit connects to an HDMI source and is linked to the receiving unit

3. Info LED indicator: When a user clicks the LED button from the software, the LED light will blink for 30 seconds.

4. IR Blaster: Infrared 3.5mm socket for plugging in the extension cable of IR blaster

5. IR Receiver: Infrared 3.5mm socket for plugging in the extension cable of IR receiver

6. USB: reserved

7. Dip Switch: Video channel selection

8. RJ-45: Gigabit Ethernet port

9. +5V DC: Connect to 5V DC power supply

10. S/PDIF: Reserved

11. Analog audio line in: Connect to audio source

12. Analog audio line out: Connect to headphones

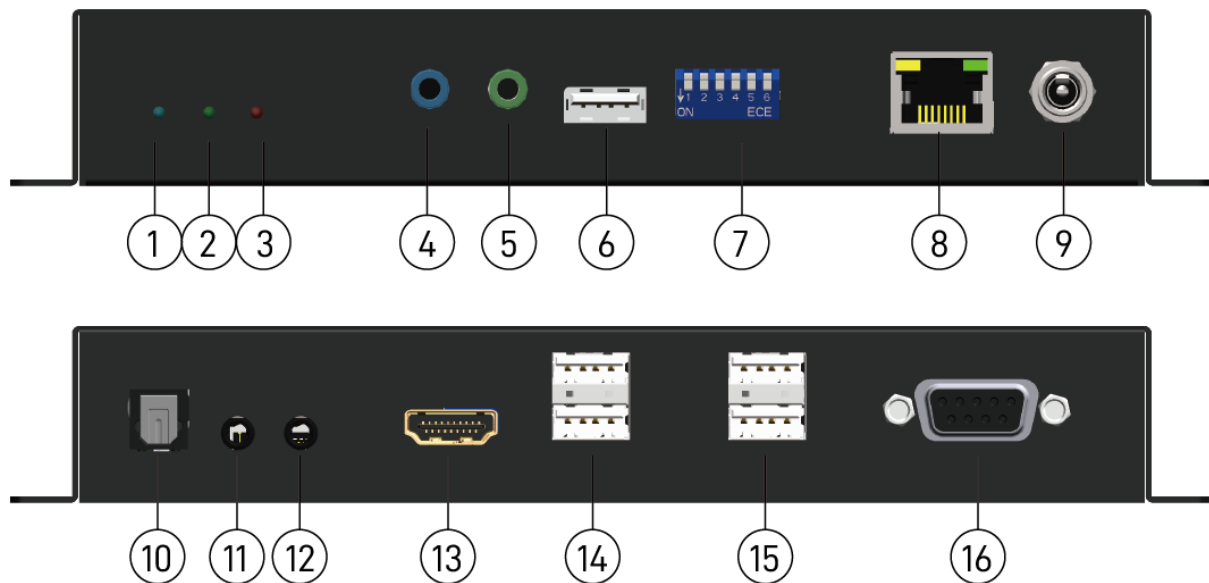
13. HDMI IN: Connects to an HDMI source with an HDMI cable

14. USB: Connect to USB host (keyboard/mouse & USB flash driver function)

15. RS-232: Connect to PC serial port with a DSUB-9 cable



Receiver Unit - BG-IPGear-PRO-R



1. **Power LED indicator:**
 [Blinking] When the unit is connected to power
 [Solid] After fully booting and the device has become stable
2. **Link LED indicator:**
 [Blinking] When the unit is connected to a Cat-5/5e/6 cable
 [Solid] When the transmitting unit connects to an HDMI source and is linked to the receiving unit
3. **Info LED indicator:** When a user clicks the LED button from the software, the LED light will blink for 30 seconds.
4. **IR Blaster:** Infrared 3.5mm socket for plugging in the extension cable of IR blaster
5. **IR Receiver:** Infrared 3.5mm socket for plugging in the extension cable of IR receiver
6. **USB (USB 2.0 port):** reserved
7. **Dip Switch:** Video channel selection
8. **RJ-45:** Gigabit Ethernet port
9. **+5V DC:** Connect to 5V DC power supply
10. **S/PDIF:** Reserved
11. **Analog audio mic in (for unicast only):** Connect to microphone
12. **Analog audio line out:** Connect to headphones
13. **HDMI OUT:** Connect to an HDMI display with an HDMI cable.
14. **USB(USB 1.1 port):** Connect to keyboard/mouse
15. **USB(USB 2.0 port):** Connect to USB flash drive or webcam
16. **RS-232:** Connect to PC serial port with a DSUB-9 cable



Transmitter and Receiver DIP Switch ID Settings

Notes:

1. For ID=1~63 refer to the table below to set up device hardware control.
2. For ID=64~1023, adjust the DIP switches to ID=0 and the ID will be decided by the controller.

ID	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6
0	↑	↑	↑	↑	↑	↑
1	↓	↑	↑	↑	↑	↑
2	↑	↓	↑	↑	↑	↑
3	↓	↓	↑	↑	↑	↑
4	↑	↑	↓	↑	↑	↑
5	↓	↑	↓	↑	↑	↑
6	↑	↓	↓	↑	↑	↑
7	↓	↓	↓	↑	↑	↑
8	↑	↑	↑	↓	↑	↑
9	↓	↑	↑	↓	↑	↑
10	↑	↓	↑	↓	↑	↑
11	↓	↓	↑	↓	↑	↑
12	↑	↑	↓	↓	↑	↑
13	↓	↑	↓	↓	↑	↑
14	↑	↓	↓	↓	↑	↑
15	↓	↓	↓	↓	↑	↑
16	↑	↑	↑	↑	↓	↑
17	↓	↑	↑	↑	↓	↑
18	↑	↓	↑	↑	↓	↑
19	↓	↓	↑	↑	↓	↑
20	↑	↑	↓	↑	↓	↑
21	↓	↑	↓	↑	↓	↑
22	↑	↓	↓	↑	↓	↑
23	↓	↓	↓	↑	↓	↑
24	↑	↑	↑	↓	↓	↑
25	↓	↑	↑	↓	↓	↑
26	↑	↓	↑	↓	↓	↑
27	↓	↓	↑	↓	↓	↑
28	↑	↑	↓	↓	↓	↑
29	↓	↑	↓	↓	↓	↑
30	↑	↓	↓	↓	↓	↑
31	↓	↓	↓	↓	↓	↑

ID	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6
32	↑	↑	↑	↑	↑	↓
33	↓	↑	↑	↑	↑	↓
34	↑	↓	↑	↑	↑	↓
35	↓	↓	↑	↑	↑	↓
36	↑	↑	↓	↑	↑	↓
37	↓	↑	↓	↑	↑	↓
38	↑	↓	↓	↑	↑	↓
39	↓	↓	↓	↑	↑	↓
40	↑	↑	↑	↓	↑	↓
41	↓	↑	↑	↓	↑	↓
42	↑	↓	↑	↓	↑	↓
43	↓	↓	↑	↓	↑	↓
44	↑	↑	↓	↓	↑	↓
45	↓	↑	↓	↓	↑	↓
46	↑	↓	↓	↓	↑	↓
47	↓	↓	↓	↓	↑	↓
48	↑	↑	↑	↑	↓	↓
49	↓	↑	↑	↑	↓	↓
50	↑	↓	↑	↑	↓	↓
51	↓	↓	↑	↑	↓	↓
52	↑	↑	↓	↑	↓	↓
53	↓	↑	↓	↑	↓	↓
54	↑	↓	↓	↑	↓	↓
55	↓	↓	↓	↑	↓	↓
56	↑	↑	↑	↓	↓	↓
57	↓	↑	↑	↓	↓	↓
58	↑	↓	↑	↓	↓	↓
59	↓	↓	↑	↓	↓	↓
60	↑	↑	↓	↓	↓	↓
61	↓	↑	↓	↓	↓	↓
62	↑	↓	↓	↓	↓	↓
63	↓	↓	↓	↓	↓	↓



Controller Technical Specifications

Technical		
Role of usage		System Controller
Input		1x RJ-45
Output		1x HDMI
HDMI connector		Type A [19-pin female]
RJ-45 connector		WE/SS 8P8C
Mechanical		
Housing		Metal enclosure
Dimensions [L x W x H]	Model	90 x 78 x 29mm [3.5" x 3" x 1.1"]
	Package	198 x 137 x 74mm [7.8" x 5.4" x 2.9"]
	Carton	420 x 400 x 300mm [1'4"x 1'3" x 11.8"]
Weight	Model	222g[0.4 lbs]
	Package	493g [1 lbs]
Fixedness		Rack-mount with ears
Power supply		5V DC
Power consumption		3.5 Watts [max]
Operation temperature		0~40°C [32~104°F]
Storage temperature		-20~60°C [-4~140°F]
Relative humidity		20~90% RH [no condensation]

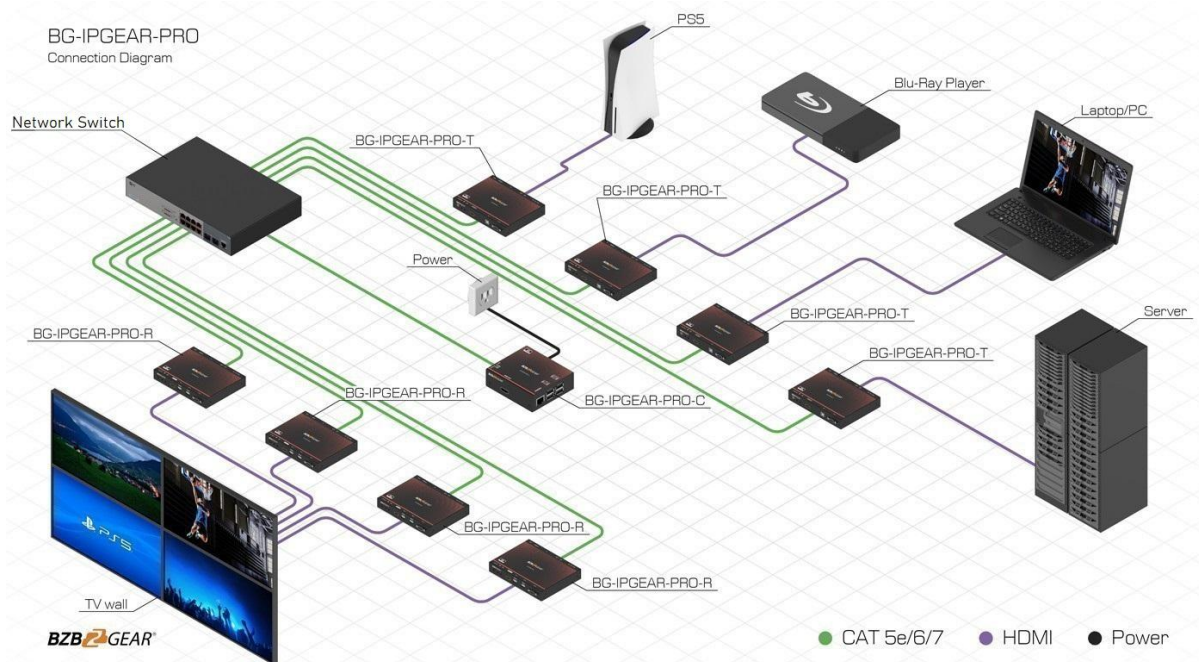
Controller Interface Descriptions



- 1. Activity LED indicator:** When the device is being used, the light will blink.
- 2. Power LED indicator:** When the unit connects to power the light will illuminate.
- 3. +5V DC:** +5V DC power jack.
- 4. Output:** HDMI output displays the information of the controller (NOTE: An HDMI cable must be plugged in before powering the unit or no image will be displayed).
- 5. RJ-45:** Ethernet control port
- 6. USB:** Not Used



Application Diagram



Network Switch Selection

1. Choosing a Network Switch

The selected network switch must support the following functions:

- Gigabit (or faster) ethernet ports
- IGMP Snooping
- IGMP v2 Snooping (multicast)
- IGMP Querier
- IGMP Snooping Fast Leave
- Multicast forwarding or filtering
- Jumbo frames/large packet transfer up to 9KB (9000 bytes)

2. Network Switch Configuration

Configuring your switch properly so it will pass data more efficiently, please refer to the following settings:

- Enable IGMP Snooping on Layer 2 switches.
- Enable IGMP Querier on the Layer 3 switches.
- Enable IGMP Fast-Leave on all switches that have IPGEAR-PRO units connected directly to them.
- Enable jumbo frame/large packet transfer on the network switch to improve data transfer efficiency.



IR Passthrough

[IR Extenders]

IR Blaster



IR Receiver



[IR Sockets]

IR BLASTER: Plug in the IR blaster to emit all IR command signals received from the IR receiver from the other end to control the devices corresponding to the IR signals.

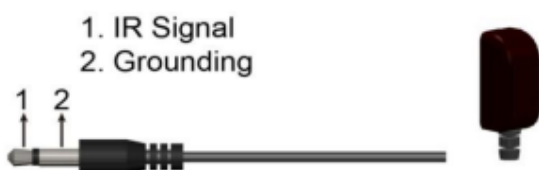
IR RECEIVER: Plug in the IR receiver to receive all IR command signals from the IR remote controls of the corresponding devices.

CAUTION!

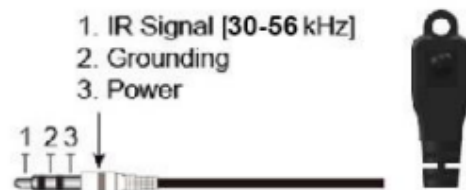
Incorrect placement of IR Blaster and Receiver may result in the failure of the IR extenders. Please check carefully before plugging in the IR extender to the respective IR sockets. Warranty will not cover the damage.

[Definition of IR Earphone Jack]

IR Blaster



IR Receiver



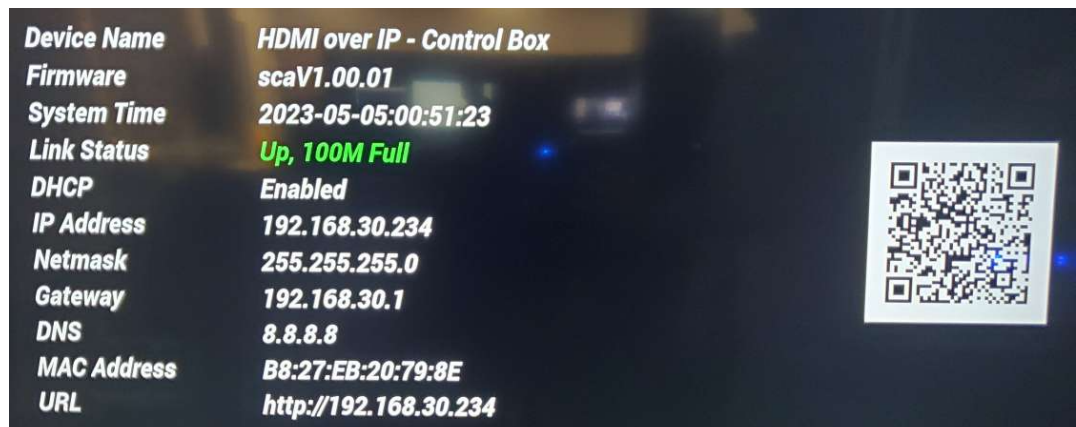
NOTE: Users can buy any IR extension cables on the market that are compatible with the IR sockets and extender for replacement use shown in the diagram above. IR cables longer than 2m (6ft) may not work.



Network Connection and System Setup

Installation Setup

1. Connect a Laptop/PC and the BG-IPGEAR-PRO-C into a Gigabit IP Switch/Router/Hub.
 - a. Ensure your Gigabit IP Switch/Router/Hub has a DHCP server enabled.
 - b. The BG-IPGEAR-PRO-C controller is preconfigured to be set to DHCP and will automatically grab an IP address from the network. If a DHCP server is not available, the unit will assign itself its own IP. The controller, transmitters, and receivers must all be on the same network/VLAN to communicate properly.
2. Plug one end of an HDMI cable into the BG-IPGEAR-PRO-C and the other end into a display.
3. Plug power into the control box and wait for the unit to boot and show its information splash screen on the display.
 - a. **NOTE:** HDMI must be plugged into the controller before it is powered on otherwise no image will be displayed.



4. The splash screen will display the IP Address, Network Mask, Gateway, and URL if the network had DHCP configured properly as shown in the image above.
 - a. Users can also use a mobile device connected to the same network to scan the QR code on the display to access the web page for management.
5. Next, assign each transmitter (BG-IPGEAR-PRO-T) in the system a unique ID by using the DIP switch panel on the side of the unit (for specific DIP switch settings see the previous chart).



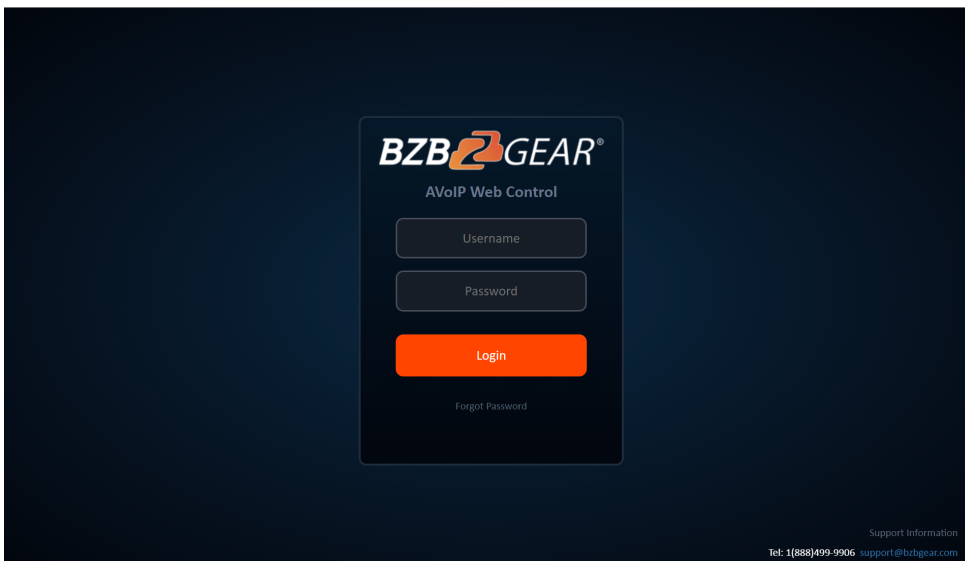


6. Receivers (BG-IPGEAR-PRO-R) can be set to receive signals from any transmitter or a specific one. To receive signal from any transmitter, leave all dip switches in the 0 position (up). To receive signal only from a specific transmitter, toggle the DIP switches on the receiver to match the positions on the desired transmitter.
7. When the dipswitches are set, plug the transmitters and receivers into the PoE network switch to power them on.
 - a. Connect sources to transmitters and displays to receivers using HDMI cables.
 - b. When powered, connected to a display, and unpaired from a transmitter the receivers will display the following image:



Web Control

1. Type in the URL shown by the BG-IPGEAR-PRO-C into your preferred web browser or scan the QR code using a mobile device connected to the same network as the controller.
2. The login page will be displayed if the system and network were configured correctly as shown below.

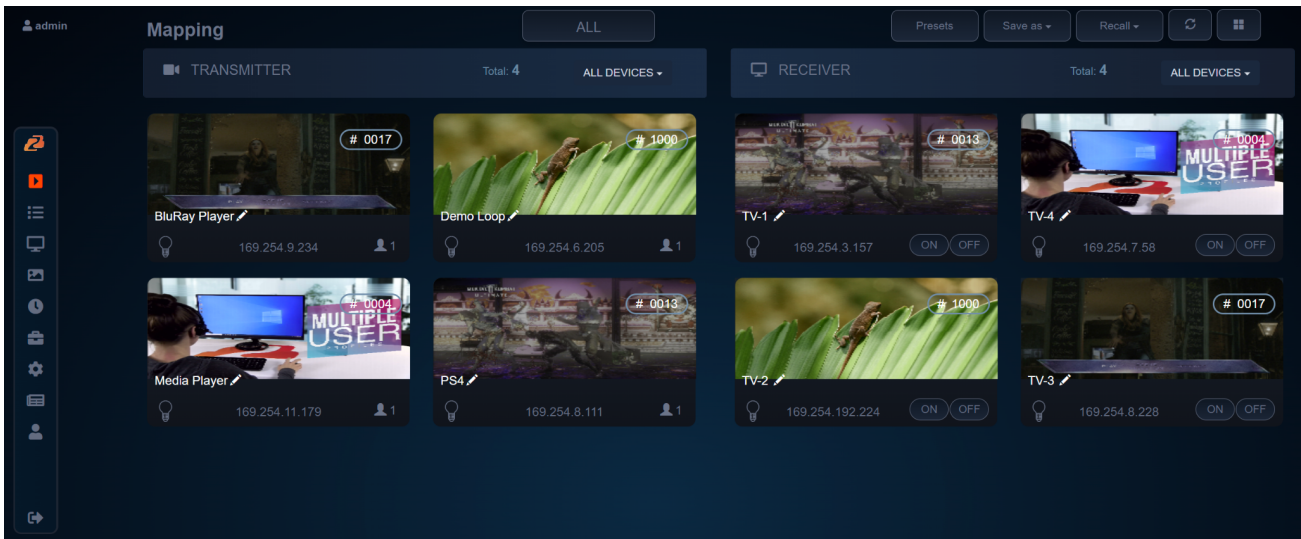


3. Enter the default credentials to login to the system.
 - a. Default account: **admin**
 - b. Default password: **admin**

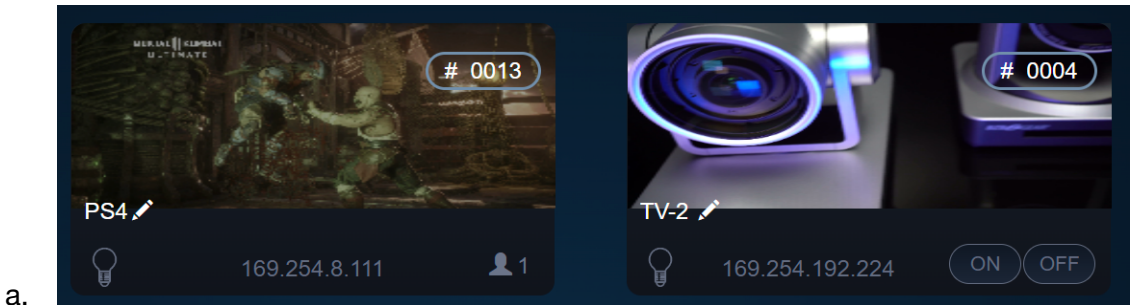


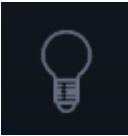
Mapping

1. Upon logging in you will be taken to the systems Mapping page.

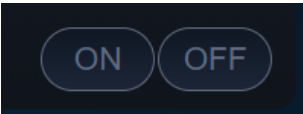


2. On this screen users can pair transmitters and receivers together, view and manage presets, as well as view grouped units.
3. The image previews on the Mapping page display useful information such as the group/pair ID in the top right, editable device name in the bottom left, and device IP address.



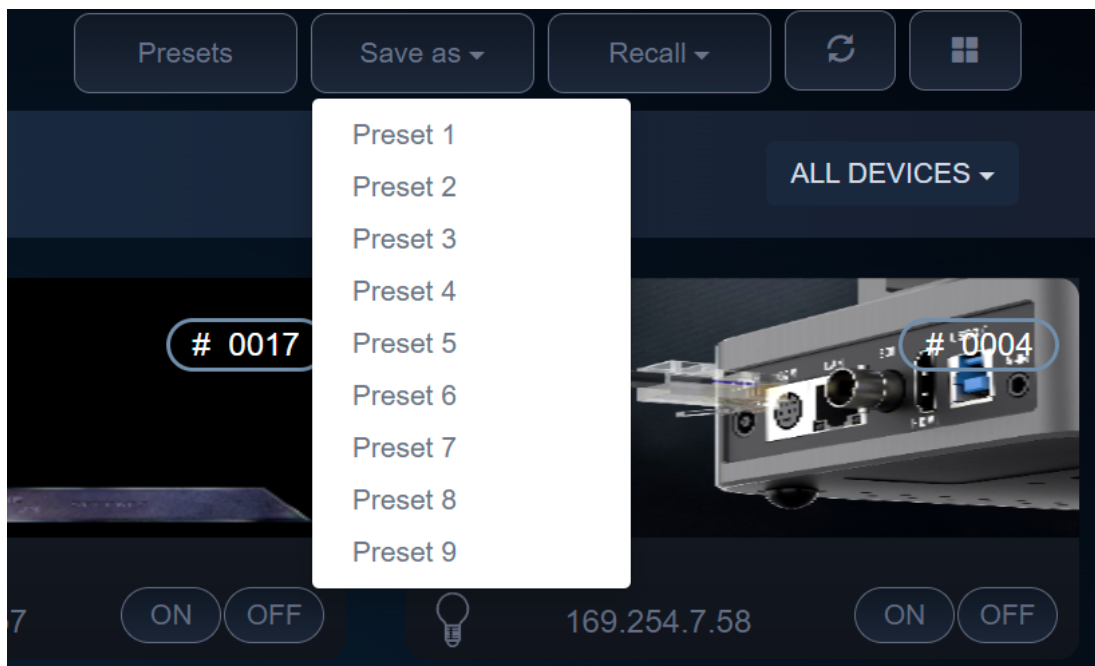
- b. The lightbulb symbol  will illuminate red when clicked  which will cause the corresponding units red LED indicator light to blink for a short period of time to assist with identification.

- c. On transmitting units the paired symbol  shows the number of receivers that the transmitter is currently broadcasting too.

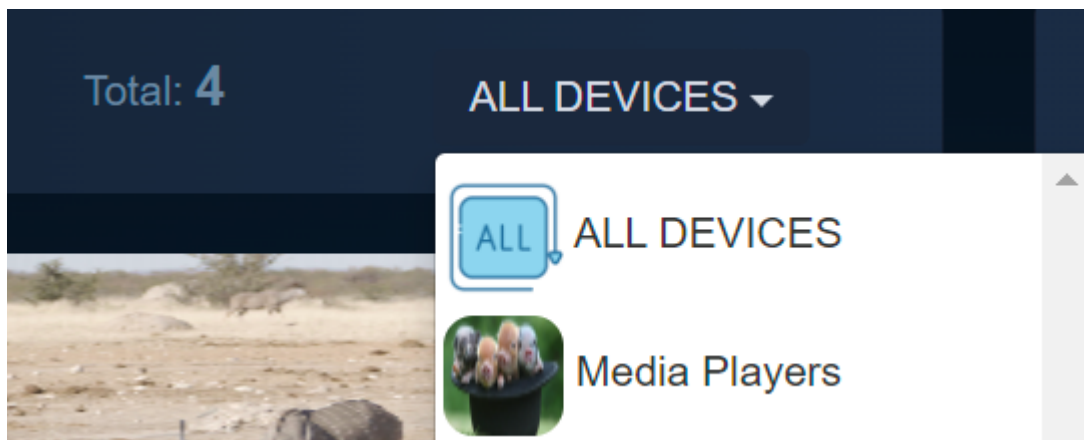
- d. On receiver units the ON/OFF  buttons send CEC commands to compatible displays to turn them on or off.



4. To set a configuration as a preset click “Save as” dropdown and select the desired preset location. To recall a preset click the “Recall” drop down and select a preset that has been previously saved.



5. To select a set of grouped transmitters or receivers select the drop down at the top of each respective section.

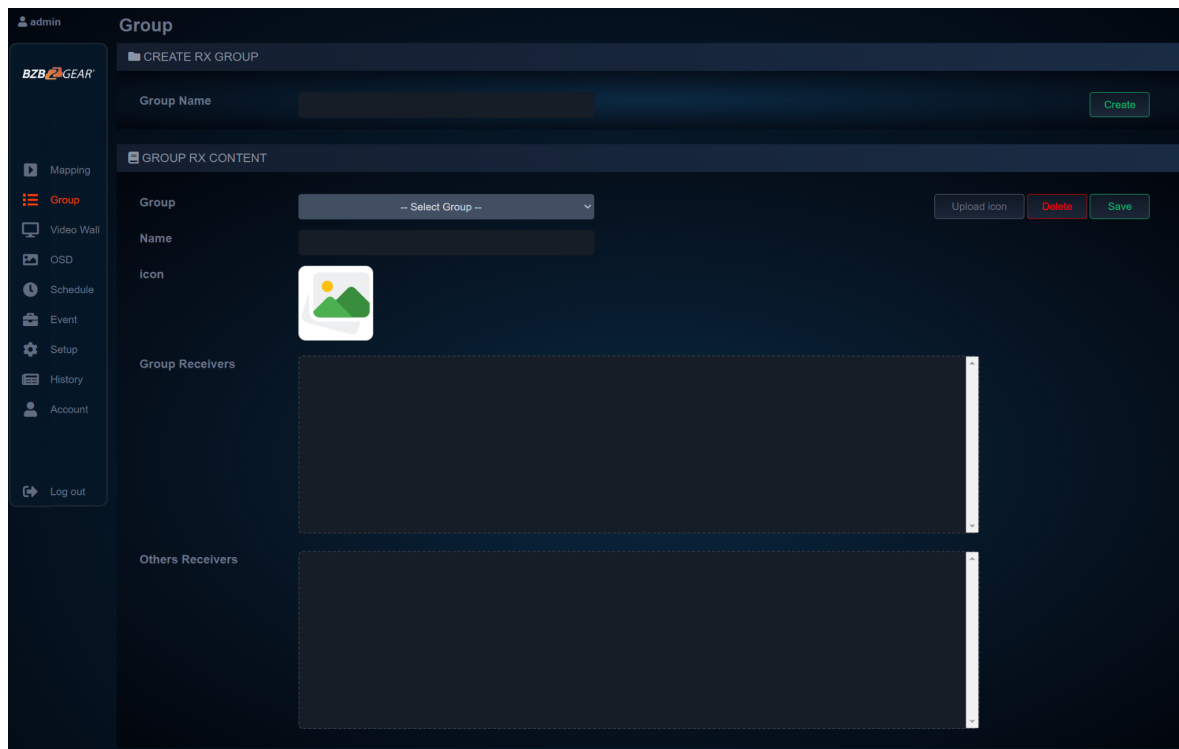


- a. Selecting a group of transmitters or receivers will make the system display only units in that group for easier identification and management.

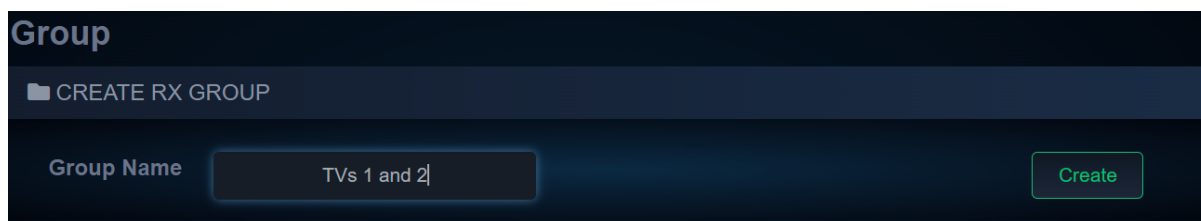


Groups

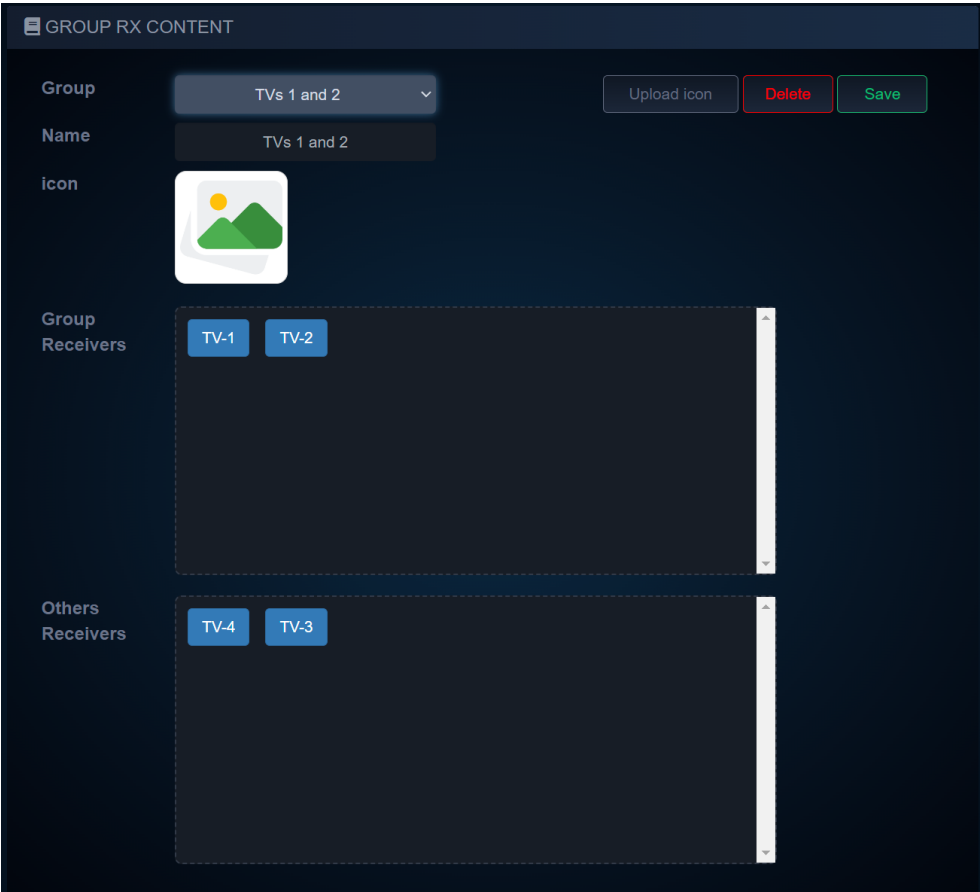
Transmitters or receivers can be grouped together for easier identification and system management. To create or manage device groups select the “Group” tab from the menu on the left hand side of the web interface.



1. To create a receiver or transmitter group, type in a “Group Name” and click “Create.”



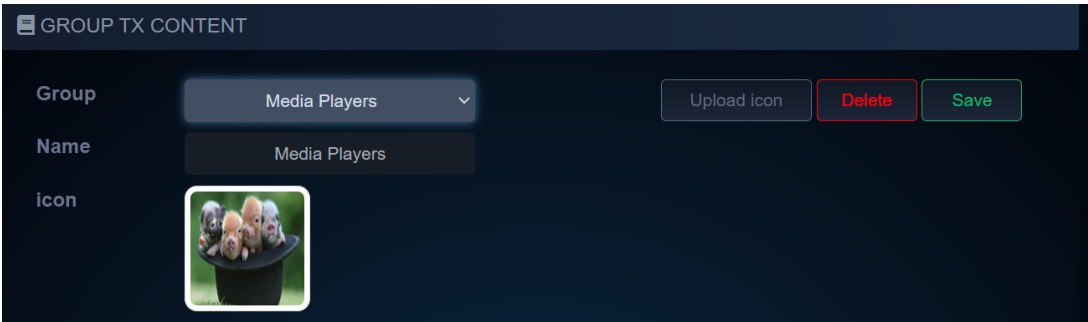
2. Once the group is created, move to the next section on the screen and select the group name you just created from the “Group” dropdown menu.



- a.
- b. Click and drag devices from the bottom “Others” box to the “Group” box above.



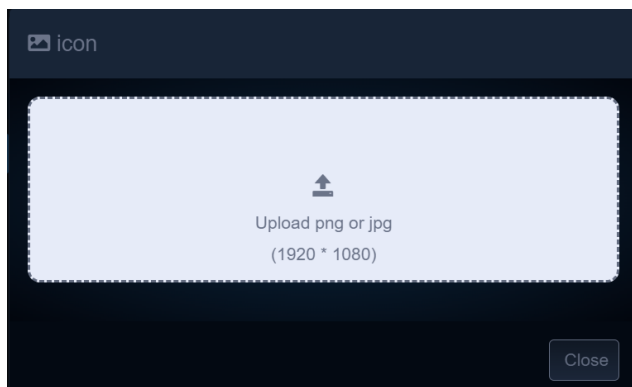
- 3. Users can also choose to upload an icon for the group to assist with identification.





- a. Click the “Upload icon” button to choose an image to upload for the group.

Note: Group images must be .png or .jpg file formats and no larger than 1920x1080.



- b.

4. When you are done editing the group, click the “Save” button to save the group.

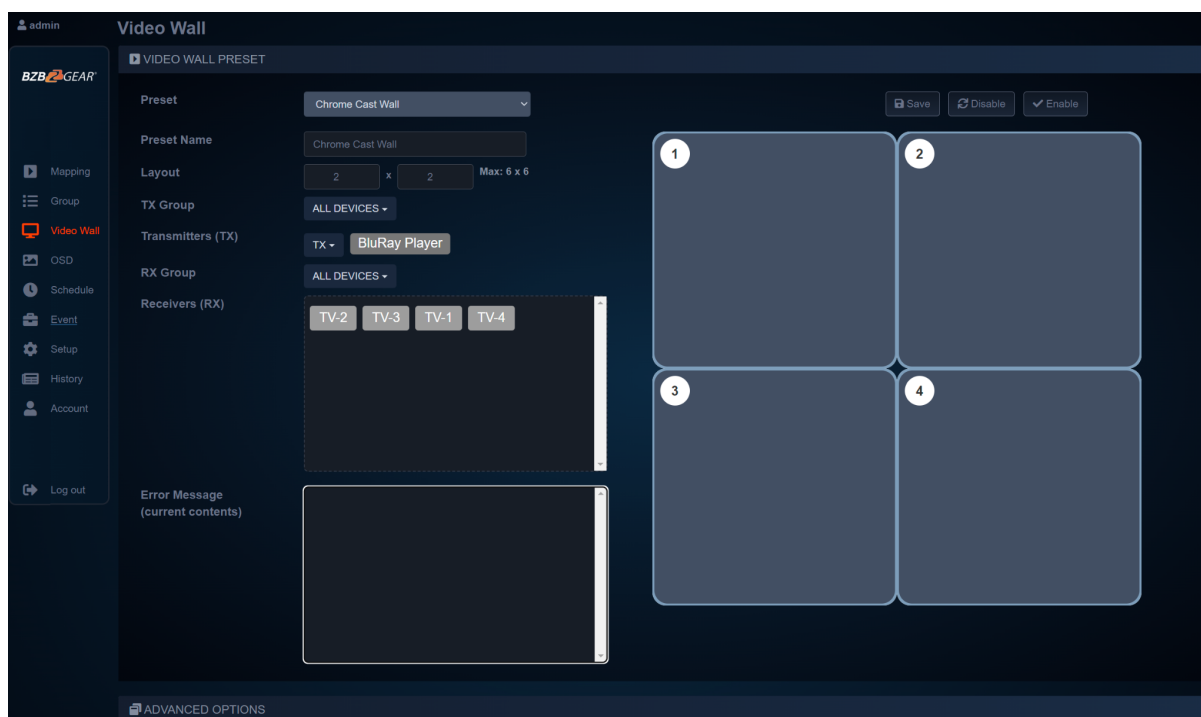


- a.

5. The grouped device can now be filtered on the Mapping page using their respective drop down menus.

Video Wall Setup

The BG-IPGear-PRO system is capable of forming multiple video walls simultaneously (maximum size 6x6 or 36 displays). To create a video wall select the “Video Wall” tab from the left hand menu.





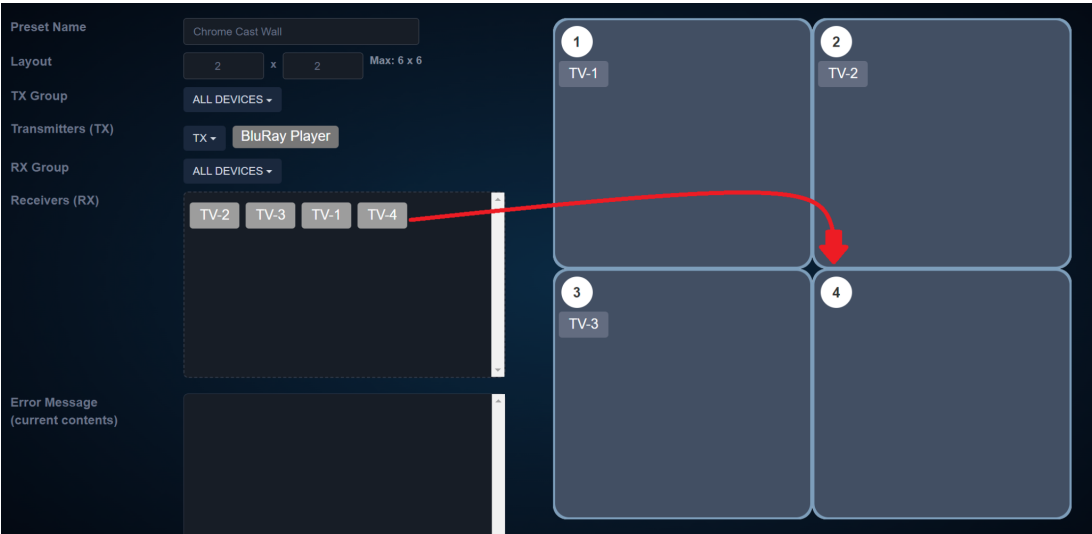
1. To create or edit a video wall select a Preset from the dropdown menu

2. Users can edit the video wall “Preset Name” by typing in a desired name in the text field.

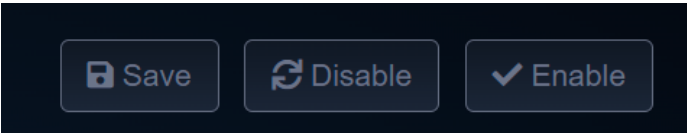
3. To edit the size of the video wall adjust the number of rows and columns up to a maximum of 6x6.
 - a. If you have previously created device groups use the “TX Group” and “RX Group” dropdowns to filter your selection
4. Select a Transmitter from the “TX” dropdown that will act as the source device for the video wall.



5. Click and drag receivers to their respective spot on the video wall to coordinate with the display position.



6. Once your receivers are placed in their position on the wall click “Save” to save the video wall layout. Press “Enable” to start the video wall feed and “Disable” to stop the video wall.



a.

Bezel Adjustments

1. To adjust the bezel alignment of a display on the video wall users can use the quick options by clicking the display name shown under the position number or Advanced Options which requires measuring the display but can be more accurate..



a.



b.



- c. Use the sliders to adjust the bezel alignment of the selected screen.
 - i. **For vertical edges** positive values shift the image up and negative values shift the image down.
 - ii. **For horizontal edges** positive values shift the image to the right and negative values shift the image to the left.
- d. Click “Apply” to finalize the bezel adjustment changes for the selected screen.
- e. Repeat these steps for each screen in the video wall as necessary.

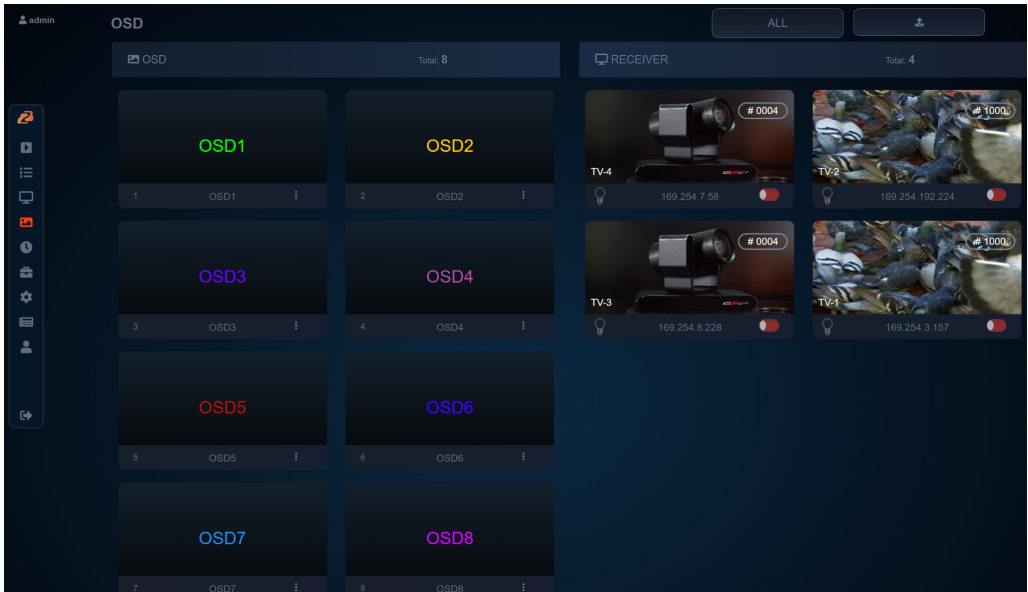
The “**Advance Options**” section allows for even greater control of bezel adjustment.

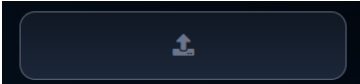
2. Select a Receiver from the “RX List” and use the diagram to the right to assist with taking measurements of the display. All measurements are in millimeters (mm).
3. Define the layout of the wall and the display placement on the wall by entering its row and column. (The top left display in the video wall (TV 1) will be at Row Position 0, Column Position 0.)
4. **OW** and **OH** represent Outside Width and Outside Height. These measurements should be obtained by measuring from the outside edges of the display frame (bezel).
5. **VW** and **VH** represent Video Width and Video Height. These measurements should be obtained by measuring from the edges of the image area of the display (usually the inside edge of the bezel).
6. Click “Apply” to finalize changes for the display.

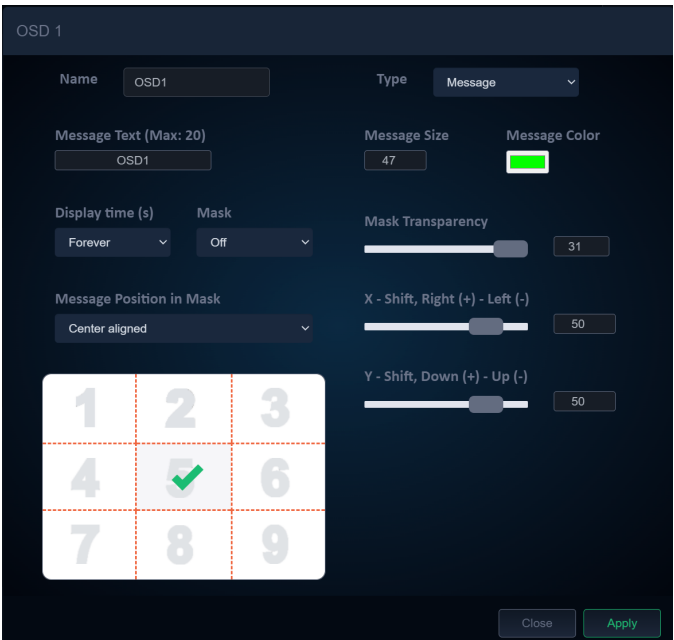


On Screen Display (OSD)

The OSD menu allows users to brand video streams with a image or text overlay.



1. Users can upload their own.jpg or .png with a 1920*1080 resolution by clicking the

upload button in the top right.
2. By clicking the settings icon (3 dots) beneath one of the OSD windows users can
adjust the message text, image selection, transparency, position, color, and size.

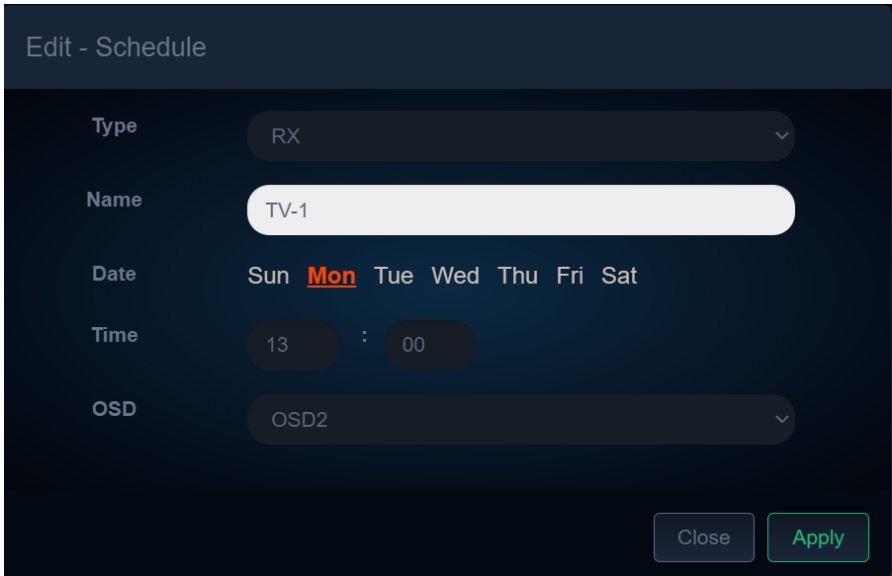
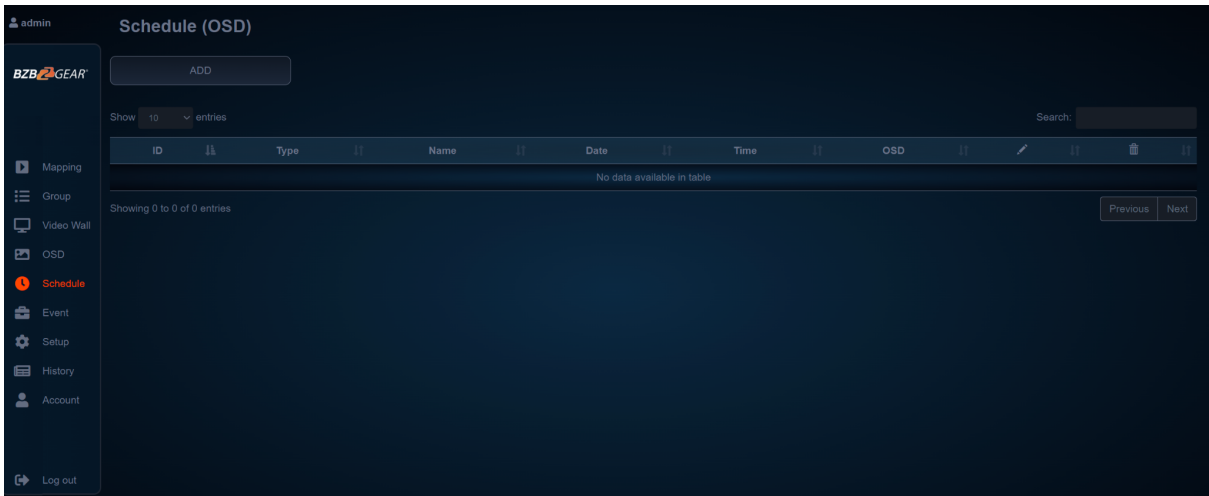


3. Click and drag the desired image/text from the OSD panel to the receiver of your
choice on the right. Use the red/green toggle on the bottom of each receiver to
either display or hide the OSD image on the unit.



Schedule (OSD)

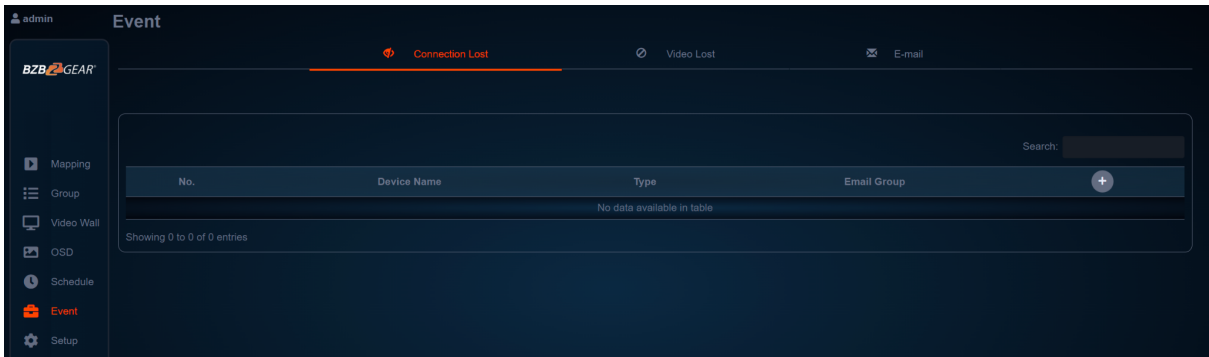
The Schedule (OSD) tab allows users to set a day and time for a message to automatically appear on a screen.





Event

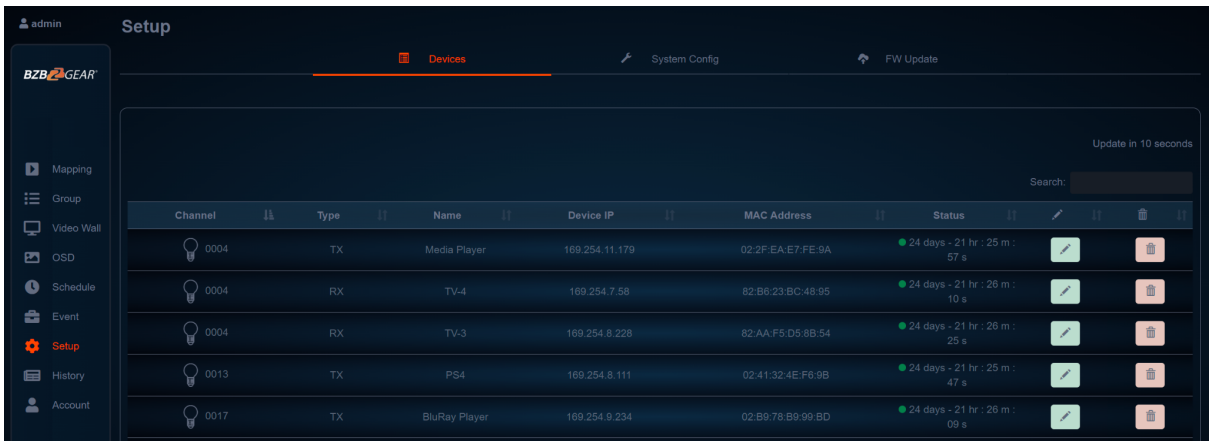
Using the event feature, users can set the system to automatically send notifications in the event of video loss or a system device going offline, helping administrators efficiently manage the system.



Setup

After connected BG-IPGear-PRO transmitters and receivers are discovered by the control unit, the devices will be visible on the “Setup” tab under the “Devices” page. This page refreshes every 10 seconds automatically.

The Status page includes the device’s Group ID, Name, IP Address, MAC Address, and uptime.



By clicking the green pencil icon users can edit settings of a particular transmitter or receiver.



Receiver Setup

From the Receiver Setup screen users can view device information and edit its settings.

The screenshot displays the 'Receiver Setup' interface with the following sections and settings:

- Identification**
 - Name: TV-3
 - Type: RX
 - Device IP: 169.254.8.228
 - System Version: A7.2.0 Build 3213
 - Alive Time: 24 days - 21 hr : 31 m : 21 s
 - Group: 0004
 - MAC Address: 82:AA:F5:D5:8B:54
- Status**
 - LAN: On
 - TV: On
- HDMI CEC**
 - HDMI CEC: On Off
- Information**
 - Name: TV-3
 - Channel: 0004
 - [Apply]
- AV Setting**
 - Streaming Video: On
 - Scaling: Ultra HD 2160p30
 - Rotate: 0
 - [Apply]
- RS232 Setting**
 - BaudRate: 115200
 - (It requires rebooting extender for taking effect)
 - [Apply]

At the bottom of the screen, there are three buttons: Factory Reset, Reboot, and Blink LED.

- **Name** - Edits the device's name.
- **Streaming Video** - Mutes the receiver's video output.
- **Scaling** - Scales the output resolution to match a connected display.
- **Rotate** - Rotates the output image for video walls and digital signage applications.
- **RS232 Baud Rate** - Sets the baud rate for RS232 signal extension



Transmitter Setup

From the Transmitter Setup screen users can view device information and edit its settings.

The screenshot shows the 'Transmitter Setup' interface with a dark theme. It includes a back arrow, a title 'Transmitter Setup', and several sections: 'Identification' with fields for Name, Type, Device IP, System Version, Alive Time, Group, and MAC Address; 'Status' with LAN and Source toggle switches; 'Information' with input fields for Name and Channel; 'AV setting' with Streaming Video and Loop-Out toggle switches and a Bit Rate dropdown; and 'RS232 Setting' with a BaudRate dropdown. At the bottom are buttons for Factory Reset, Reboot, and Blink LED.

Identification			
Name	Media Player	Alive Time	24 days - 21 hr : 34 m : 43 s
Type	TX	Group	0004
Device IP	169.254.11.179	MAC Address	02:2F:EA:E7:FE:9A
System Version	A7.2.0 Build 3213		

Status			
LAN	On	Source	On

Information			
Name	Media Player	(Max 20 characters)	Apply
Channel	0004		Apply

AV setting			
Streaming Video	On	Loop-Out	On
Bit Rate	auto		Apply

RS232 Setting			
BaudRate	115200	(It requires rebooting extender for taking effect)	Apply

Factory Reset Reboot Blink LED

- **Name** – Edits the device's name.
- **Group ID** – Edits the device's Group ID. It is recommended that users allow the system to automatically assign the Group ID.
- **Streaming Video** – Mutes the transmitter's video output stream.
- **Loop-Out** – Enable/Disable the HDMI Loop-Out port.
- **Bit Rate** – Limits the transmitter's output data rate. It is recommended that users leave this setting on Auto. Compressing the output signal can result in video artifacts if done incorrectly. The system should be installed with sufficient bandwidth available for the signal to be transmitted without additional compression.
- **RS232 Baud Rate** – Sets the baud rate for RS232 signal extension



History

The History tab displays a list of recent system events for a specified date range (up to 500 entries). The event history can be cleared by clicking the red trash icon or exported by hitting the blue download button in the top right.

admin

BZBGear

Mapping

Group

Video Wall

OSD

Schedule

Event

Setup

History

Account

Log out

History

Date Range2023-05-22 - 2023-05-22

Show10entries

Search:

Time	Type	Event
2023/05/22-02:31	Mapping	TV-2 is offline
2023/05/22-02:31	Mapping	TV-3 is offline
2023/05/22-02:31	Mapping	Demo Loop is offline
2023/05/22-02:31	Mapping	TV-1 is offline
2023/05/22-02:31	Mapping	Demo Loop is online
2023/05/22-02:31	Mapping	TV-1 is online
2023/05/22-02:31	Mapping	TV-2 is online
2023/05/22-02:31	Mapping	TV-3 is online
2023/05/22-04:37	Mapping	Media Player is offline
2023/05/22-04:37	Mapping	Media Player is online

Showing 1 to 10 of 28 entries (filtered from 500 total entries)

Previous

1

2

3

Next



Account

The Account page allows Admin users to change passwords, create other admin or standard user accounts, and set device permissions.

admin

BZBGear

Mapping

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Event

Setup

History

Account

Log out

Account

CHANGE PASSWORD

Old Password

New Password

Confirm Password

Apply

CREATE ACCOUNT

Role

Administrator

Username

Password

Email

Create

ACCOUNT LIST

Show 10 entries

Search:

ID	User name	Role	Email	Date		
1	admin	Administrator	ipgear@bzbgear.com	2023-02-14 12:00:00		
2	test	Member	alex@bzbgear.com	2023-05-04 06:41:42		

Showing 1 to 2 of 2 entries

Previous

1

Next

DEVICE PERMISSION

Username

test

Show 10 entries

Search:

ID	Name	Type	Mac Address	
1	TV-3	RX	82-AA:F5:D5:8B:54	
2	BluRay Player	TX	02:B9:78:B9:99:BD	
3	Demo Loop	TX	02:B7:C4:BF:58:30	

Standard users do not have access to control or edit video walls or OSD messages. They can also be restricted to access/manage certain transmitters or receivers visible to the system by using the toggle switches in the Device Permissions section.

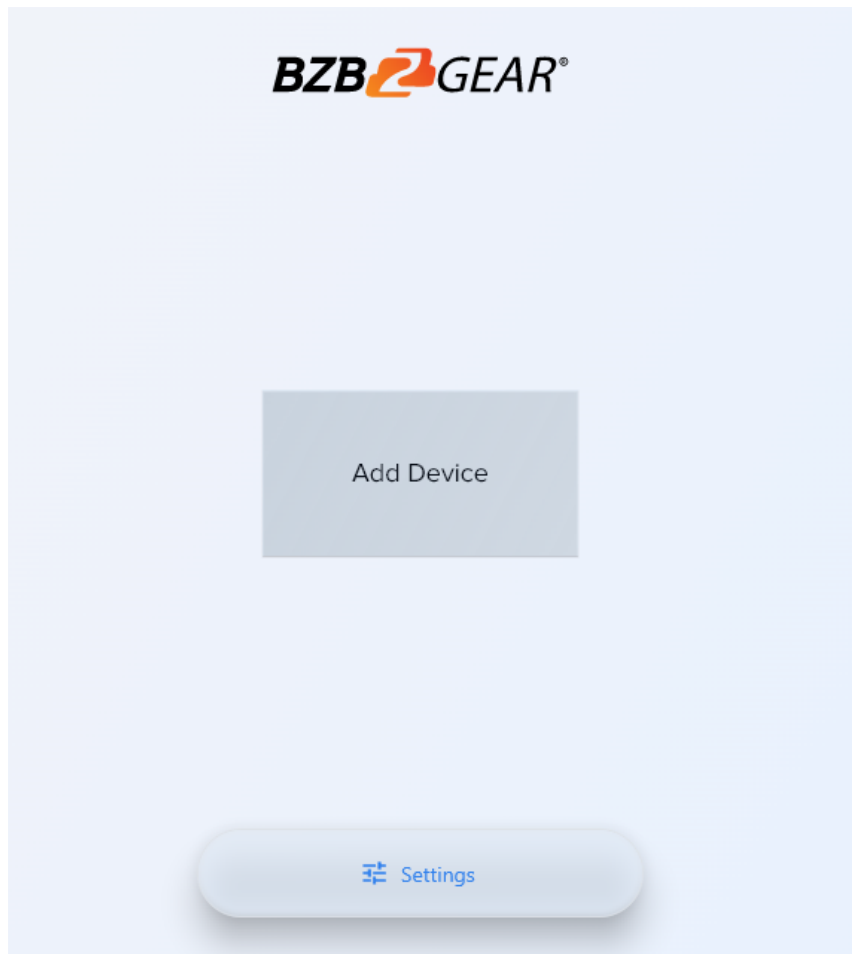


BZBGear Switcher Control Application

A switcher control application developed by BZBGear specifically for our products is available to control the IPGear-PRO system. It is available for iOS, MAC, PC, and can be found on the controller product page on our website or via the Windows or Apple app stores.

Adding a Device to the Switcher Control Application

After installing the app on your device and opening it, you will be navigated to the “Add Device” screen. Click the “Add Device” button to begin adding a device.





From the “New Device” popup, select your device you wish to control from the model selection drop down. Type in a name for easy identification (optional). Next, type in the IP address of the device you wish to control. For the IPGear PRO system the IP address can be found on the splash screen of the controller when it is connected to a display via HDMI.

A light blue rounded rectangle popup titled "NEW DEVICE" in blue text. It contains three input fields: a dropdown menu with "BG-UHD-44M" selected, a text field labeled "Name (optional)" with a character count "0/18" to its right, and an "IP address" text field. At the bottom are two buttons: a light blue "Cancel" button and a green "Save" button.

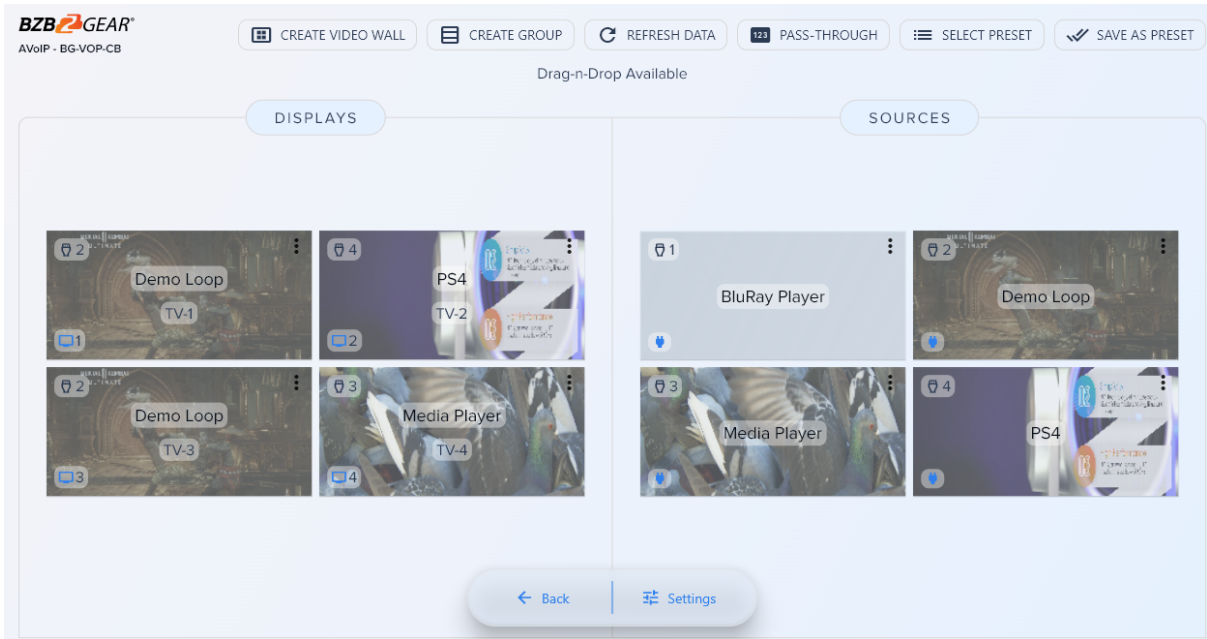
Click “Save” and you will be navigated automatically back to the “Add Device” screen where your system should now be viewable and selectable if added correctly.

The "Add Device" screen features the BZBGear logo at the top. Below it, there is a light blue button labeled "Add Device". To the right of this button is a list of added devices. The first device shown is "BG-VOP-CB" with a vertical ellipsis menu icon to its right. Below the device name, it shows "AVoIP" and the IP address "192.168.30.234".



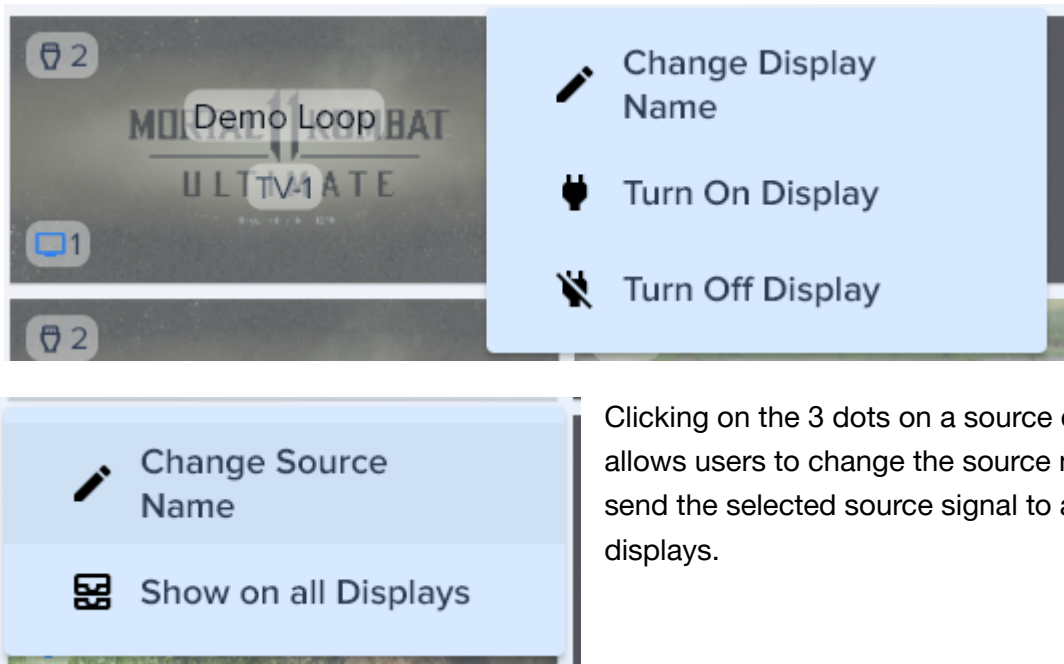
Mapping on the Switcher Control Application

The control app for the IPGear system was designed to function much like the web interface for ease of use.



On the main mapping page users can click and drag displays or sources to one another to pair devices together.

Clicking on the  in the upper right corner of a display will allow users to change the display name or, if available on the display, send CEC commands to turn the display On or Off.



Clicking on the 3 dots on a source device allows users to change the source name or to send the selected source signal to all displays.



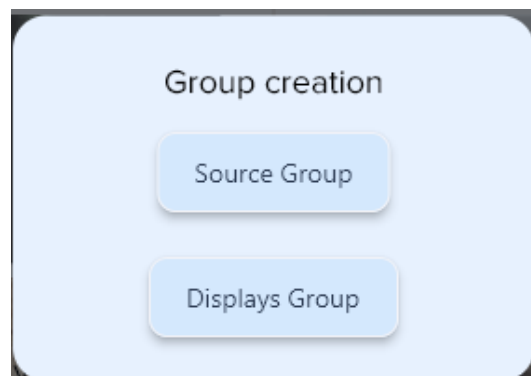
Creating a Device Group using the Switcher Controller App

For simpler management of larger systems displays and sources can be grouped together for easier identification.

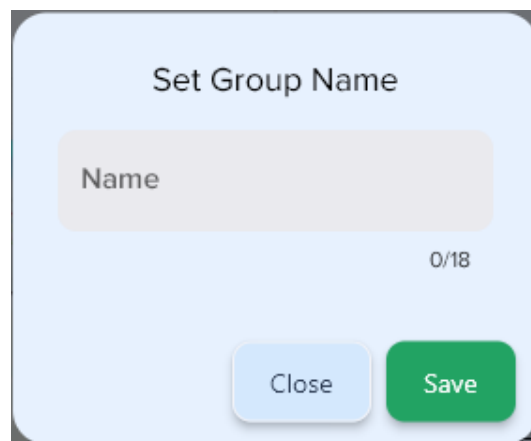
- 1) From the options on the top of the Mapping page select the “Create Group” button to begin creating a group.



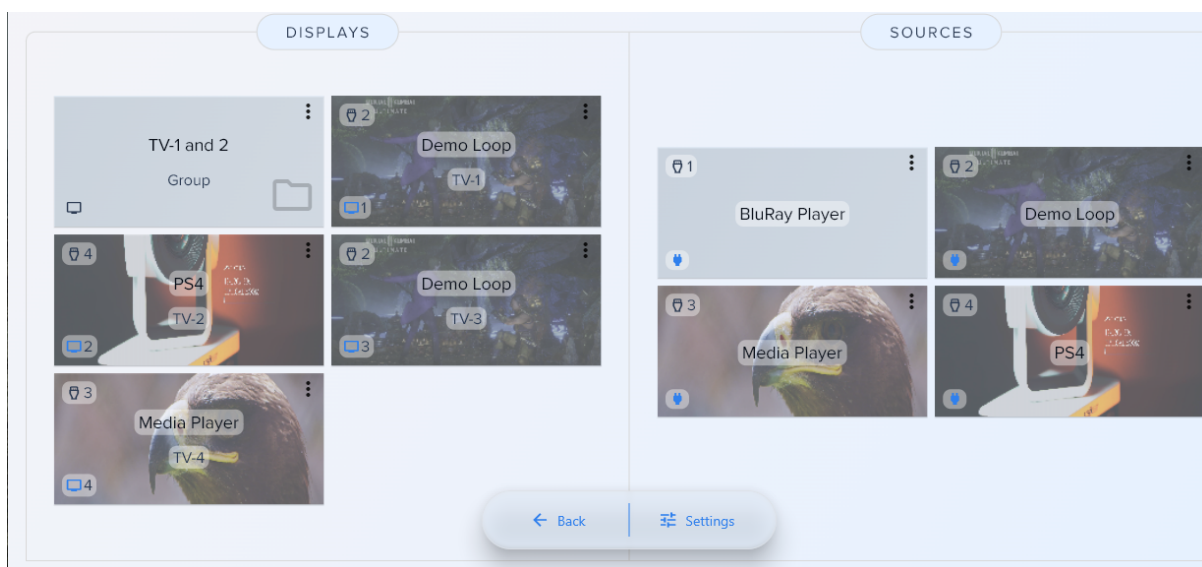
- 2) Next select whether your group is going to be for source or display devices.



- 3) Type in a name for your group. (Note group names can only be 18 characters long.)

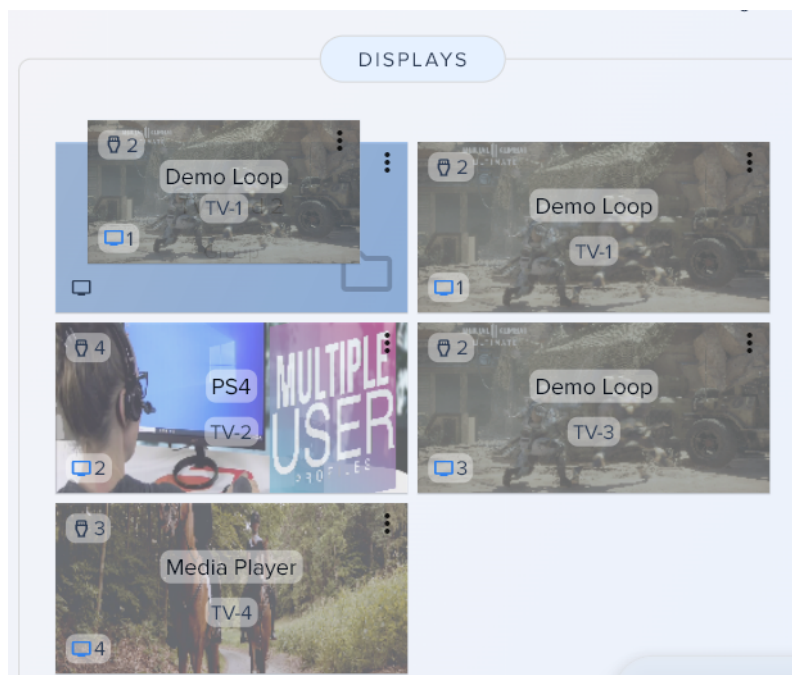


- 4) Once created your group will appear under its relevant section.

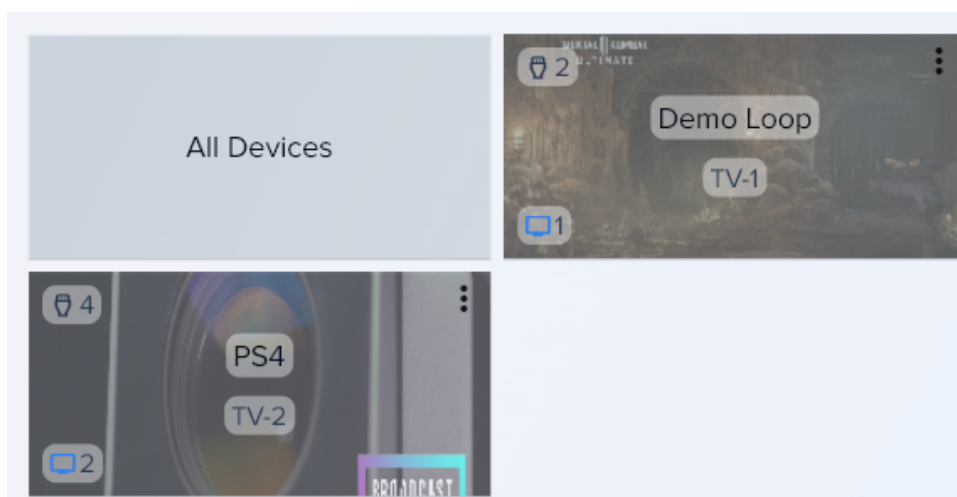
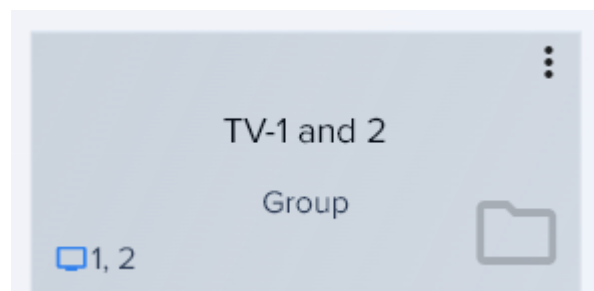




- 5) Click and drag the displays or sources to the group and they will be moved from the available list into the group folder.



- 6) Click on the group to view and manage the devices inside. Click “All Devices” to return to the main mapping page to view all groups and/or ungrouped devices.



Note: Groups cannot be dragged. However, dragging a source to a “Display Group” will change all display devices in that group to the selected source.



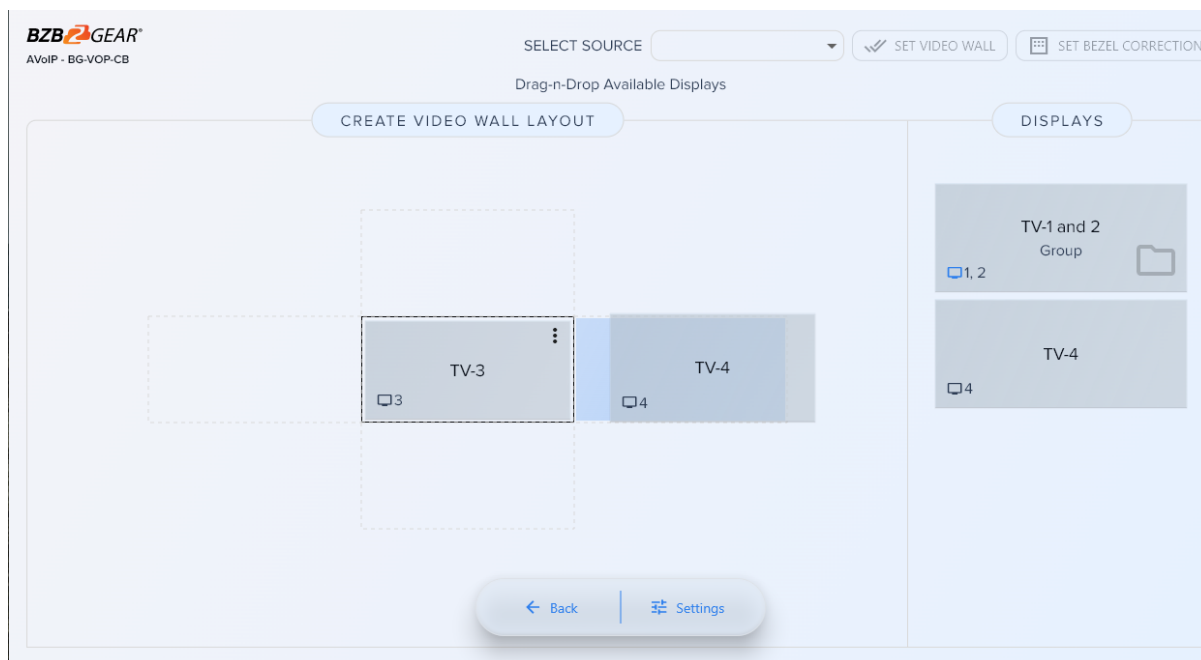
Creating a Video Wall using the Switcher Controller App

- 1) To create a video wall using the Switcher Control app click the “Create Video Wall”

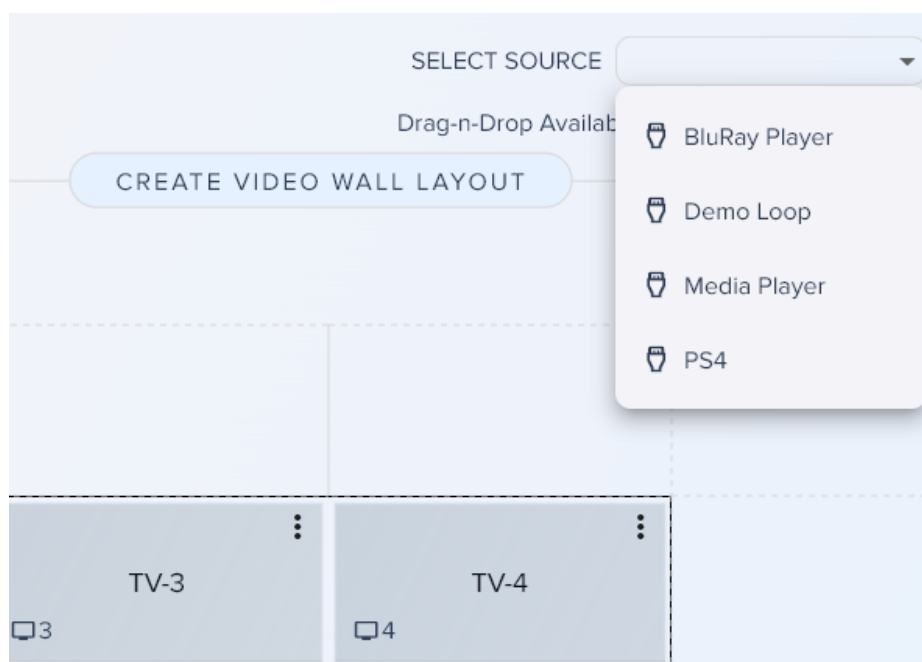
button at the top of the application.



- 2) On the Video Wall page click and drag displays to their respective position in the video wall. **Note:** If a display group has been created it will also be shown here for easier identification. Simply click the group to expand it and show grouped displays.

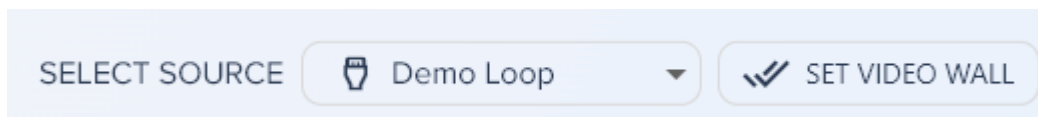


- 3) Once your displays are positioned correctly on the template, click the “Select Source” drop down at the top of the application to pick a source for the video wall.





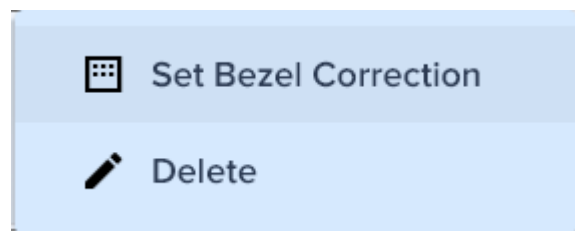
- 4) Once a source is selected click the “Set Video Wall” button to create the video wall.



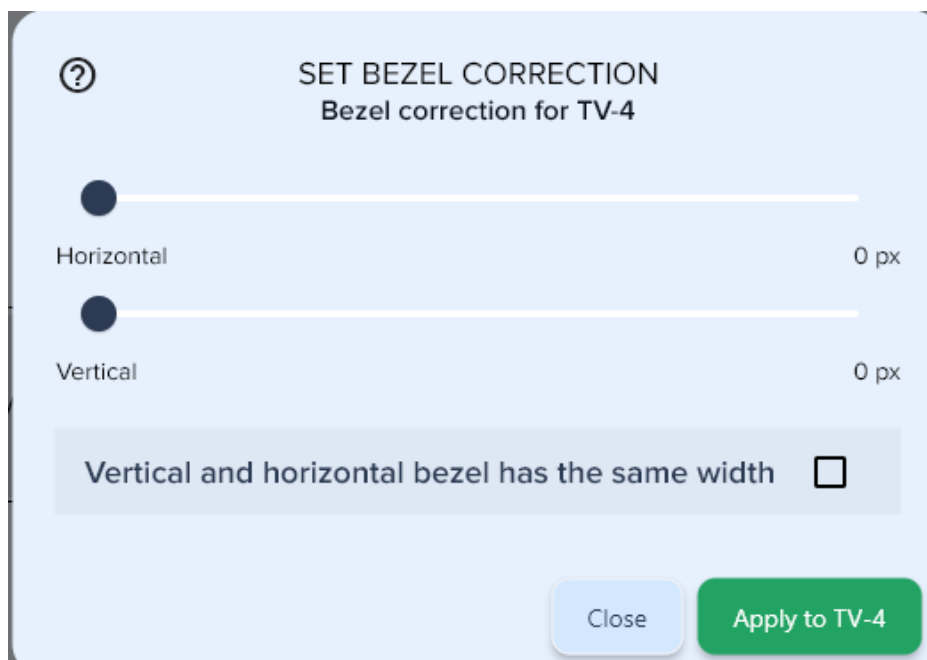
- 5) Use the “Set Bezel Correction” button at the top to adjust the image on the video wall to compensate for the border on all displays simultaneously.



- 6) To adjust each display individually, select the  in the upper right corner of the display in the video wall and select “Set Bezel Correction” from the pop up menu.



- 7) Move the sliders to adjust the image to compensate for the TV bezel/frame.

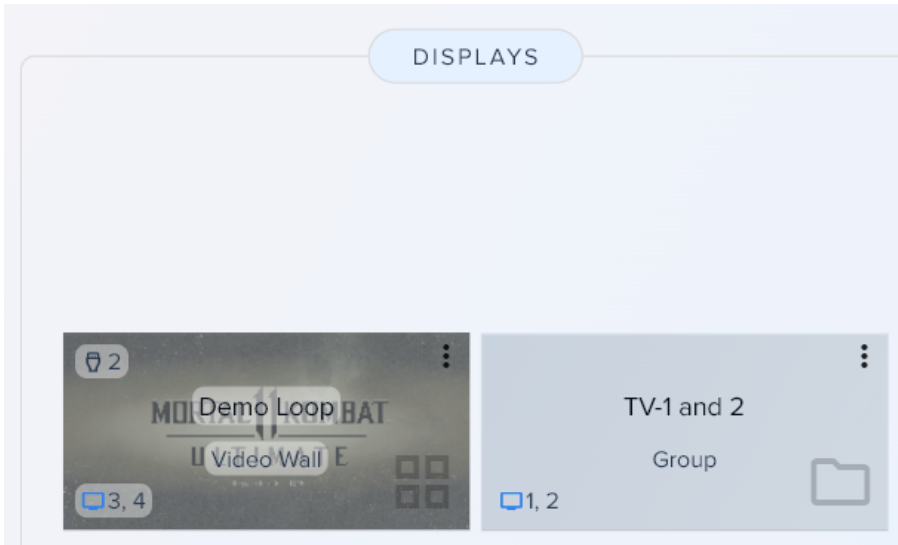


- 8) Return to the main mapping page by clicking the “Back” button at the bottom.





The video wall can now be viewed under the display section of the mapping page. To change the source of the video wall simply drag a source device to the Video Wall.



Switcher Control Application Presets

To save a mapping configuration as a preset select the “Save as Preset” button in the top right corner.

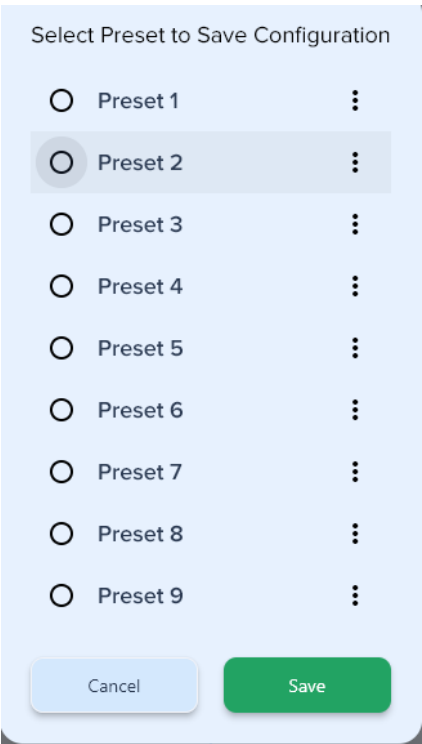


Select the preset position you wish to save. Click the  to rename the preset if desired.

To recall a saved preset click the “Select Preset”



button and then select your desired preset from the menu.





Troubleshooting

- 1) **No image/splash screen from control box:**
 - a) Ensure HDMI and ethernet cables are plugged in and power cycle the control box.

- 2) **Transmitters or receivers are not populating in the control software/web interface.**
 - a) Power cycle the transceivers by unplugging their ethernet cable and ensure the control box is plugged into the same network/VLAN as the transceivers.
 - b) Factory reset the transceiver by logging into the unit via its IP address displayed on screen while in receiver mode.

- 3) **Image will not display from the receiver unit.**
 - a) Ensure the receiver is paired with a transmitter unit.
 - b) Ensure HDMI is plugged into the output port on the transceiver.
 - c) Ensure resolution is set on the receiver unit in settings to match the display it is connected to (4K2K will not display on a 1080p TV).

- 4) **Image previews on the mapping page are not updating correctly.**
 - a) Clear your browser cache and restart your browser.

- 5) **Transmitter will not pair with another device or a receiver will only pair to one transmitter.**
 - a) Ensure transmitters are set to a unique ID using the dipswitch panel.
 - b) Ensure the receiver dipswitch panel is set to 0 for all switches.



Technical 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

1.888.499.9906

Email

support@bzbgear.com

Live Chat

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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