BZBGEAR®
Amplify Your World™

BG-IPGEAR-ULTRA

(BG-IPGEAR-ULTRA-C & BG-IPGEAR-ULTRA Transceiver)

4K UHD HDMI 2.0 Over IP Multicast Transceiver with Seamless Matrix Switching/Video Wall/MultiView/KVM/USB 2.0/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-ULTRA-C** delivers advanced management for the BG-IPGEAR-ULTRA AVoIP system with robust processing powered by a state-of-the-art CPU. It features dual 1G network ports, enabling full isolation between control and video networks, with PoE support on the VIDEO LAN port. The controller supports AES256 video encryption, HTTPS/SSH security, and provides flexible control interfaces including Web GUI, TCP/IP, RS-232, IR, and GPIO.

Designed for demanding AV applications, it enables video wall processing with customizable multiview windows and marquee, seamless switching, IP camera integration, and high-definition background support for both video and images. Key capabilities include audio, video, RS-232, and KVM management, dual RS-232 ports for external device control, IR signal loop output, and GPIO ports for automation, making it a versatile and reliable solution for professional AV deployments.

The **BG-IPGEAR-ULTRA AV-over-IP transceiver** is capable of functioning as both an encoder and decoder, making it ideal for flexible system designs. It features HDMI input and output ports, allowing seamless integration with source and display devices, while an SFP slot and LAN port with PoE support provide robust connectivity options over copper or fiber networks. Additional interfaces include a balanced audio terminal block, RS-232, IR (TX/RX), and GPIO, enabling full integration with third-party control systems and external devices.

Designed for professional AV environments, the unit supports USB 2.0 and USB Host ports for KVM extension, allowing remote workstation control in distributed setups. The front panel includes status LEDs for encoder/decoder mode, network activity, speed, and system health, along with a convenient power button for local operation. With its comprehensive connectivity, control options, and reliable PoE-powered design, the BG-IPGEAR-ULTRA transceiver delivers the scalability and performance required for applications such as video walls, digital signage, command centers, and enterprise AV distribution.

Features (BG-IPGEAR-ULTRA-C)

- **High-Performance CPU:** ARM Cortex-A55 2GHz processor
- **Secure Connectivity:** HTTPS and SSH compatibility
- **Advanced Security:** AES-256 video encryption support
- **Web-Based Control:** Built-in GUI for quick setup and management
- **Intuitive Operation:** Drag-and-drop source selection with live video preview
- **Video Wall Support:** Includes customizable multiview windows, marquee, and flexible layouts
- **Seamless Switching:** Smooth transitions across the distributed system
- **KVM Collaboration:** Mouse roaming for managing multiple PCs with one operator
- **Comprehensive Control:** Video, audio, RS-232, and KVM system management
- **Dual Network Ports:** Isolated control and video networks (VIDEO LAN supports PoE)
- **IP Camera Integration:** Import IP cameras as sources
- **Custom Display Options:** High-definition background images and multi-screen splicing
- **RS-232 Control:** Dual ports for central control or external device connection
- **IR Signal Support:** Receiving and loop output via 3.5mm audio jack (12V level)
- **GPIO Control:** Four channels (5V/12V optional) for external devices
- **3rd Party Integration:** Compatible with major control system brands
- **Robust Protection:** Multi-circuit, lightning, and ESD protection
- **Flexible Power:** PoE (802.3af PD) or 12V local power supply
- **Rack Compatibility:** Fits 1U/6U V2 rack installations）

Features (BG-IPGEAR-ULTRA Transceiver)

- **Dual Operation:** Functions as both an encoder and decoder for flexible AV-over-IP deployments
- **Versatile Connectivity:** HDMI input/output, SFP slot, and LAN port with support for both fiber and copper transmission
- **PoE Powering:** Standard PoE (802.3af Class 3, PD mode) for simplified installation or local power option
- **Comprehensive Control:** Supports video, audio, RS-232, IR, GPIO, and KVM system management across distributed networks
- **KVM Extension & Management:** USB 2.0/Host ports enable remote workstation control and centralized seat management
- **Video Wall Functions:** Includes customizable multiview windows, screen preview, and flexible layout options for multi-display environments
- **Content Overlay:** Supports scrolling subtitles, character overlay, and OLED bar screen functions
- **Integrated Control System:** Built-in central control with mobile app support for touch-based operation

- **User Access Control:** Hierarchical management of permissions for secure and personalized account access
- **Front Panel Status:** LEDs for encoder/decoder mode, network activity, link speed, and system health plus local power button
- **Visual Interaction Mode:** Source selection, screen status, scene preview, and environment visualization in one interface
- **Professional Audio:** Balanced audio terminal block for integration with pro AV systems
- **Third-Party Integration:** Compatible with major control platforms via RS-232, IR, and GPIO
- **Reliable Protection:** Multi-circuit design with lightning, ESD, and surge protection

Packing List (BG-IPGEAR-ULTRA-C)

- 1x H.264/265 Video over IP Controller
- 1x 20kHz-60kHz 12V IR Receiver Cable (1.5 meters)
- 1x IR Blaster Cable (1.5 meters)
- 2x 3-pin 3.81mm Phoenix Connector (Male)
- 1x 6-pin 3.81mm Phoenix Connector (Male)
- 2x Mounting Ear
- 4x Machine Screw (KM3*6)
- 1x 12V/2.5A Locking Power Adaptor
- 1x User Manual

Packing List (BG-IPGEAR-ULTRA Transceiver)

- 1 x H.264/H.265 4K60 AV over IP Transceiver
- 2 x 6pin-3.81mm Phoenix Connector (male)
- 1 x 3pin-3.81mm Phoenix Connector (male)
- 1 x 12V 2.5A Locking Power Supply
- 2 x Mounting Ear
- 4 x Machine Screw (M3*4)
- 1 x User Manual

Specifications (BG-IPGEAR-ULTRA-C)

Technical Specifications	
Network Bandwidth	1G
Transmission Distance	100m (CAT5E/6/6A/7)
Control Ports	2 x 1G LAN [RJ45 connector] [VIDEO LAN supports PoE] 1 x IR IN [3.5mm audio jack, 12V level] 1 x IR OUT [3.5mm audio jack, 5V level] 1 x DIGITAL I/O [6-pin 3.81mm phoenix connector] 2 x RS-232 [3-pin 3.81mm phoenix connector] 1 x UPDATE [Micro USB, 5-pin female]
Mechanical Specifications	
Dimensions	204mm (W) × 117.5mm (D) × 21.5mm (H)
Housing	Metal Enclosure
Color	Black
Weight	597g
Power Supply	12V/2.5A
Power Consumption	6.84W
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Operating Humidity	20% ~ 80% RH (relative humidity, non-condensing)
Storage Humidity	10% ~ 90% RH (relative humidity, non-condensing)

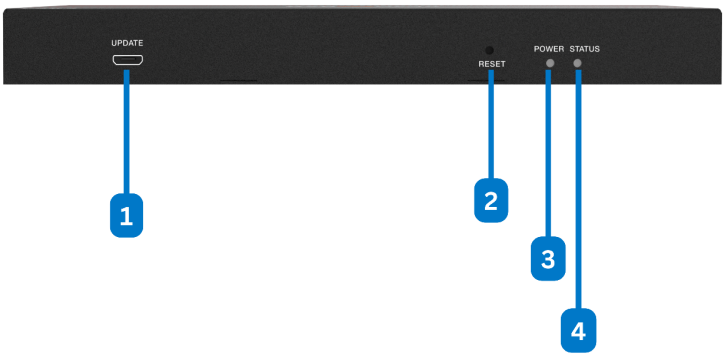
Specifications (BG-IPGEAR-ULTRA Transceiver)

Technical Specifications	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Compression Standard	H.264/H.265
Video Bandwidth	18Gbps
Network Port	1000M Base-T (supporting POE)
Video Resolution	1024x768 ~ 3840x2160@60Hz (Note: The decoder supports custom resolution output.)
Color Space	RGB 4:4:4, YCbCr 4:4:4/4:2:2/4:2:0
Color Depth	8/10/12bit
Encoding Sampling Rate	48KHz
HDMI Audio Formats	LPCM 2.0CH, 16bit, 48k
Analog Audio Formats	Left and right stereo analog audio
ESD Protection	Human-body Model: ±8kV (Air-gap discharge), ±4kV (Contact discharge)
Connection Specifications	
Input	1x HDMI IN [Type A, 19-pin female]
	2x AUDIO IN [3-pin phoenix connector, stereo balanced linear interface]
Output	1x HDMI OUT [Type A,19-pin female]
	2x AUDIO OUT [3-pin phoenix connector, stereo balanced linear interface]
Control	1x LAN (POE) [RJ45, supporting POE]
	1x RS-232 [3-pin phoenix connector]
	1x USB HOST [USB Type-C]
	2x USB KVM [USB Type-C]

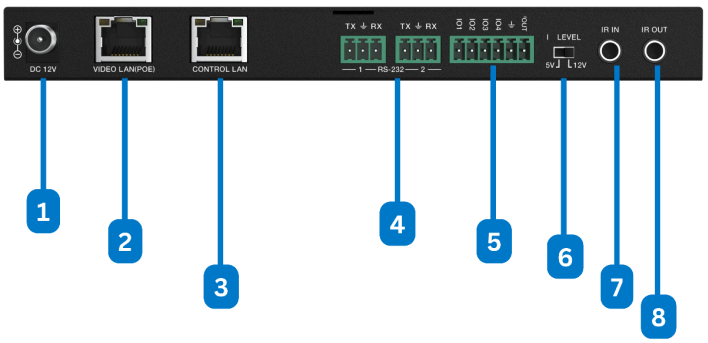
	2x USB 2.0 [USB Type-C]
	1 x SFP [Fiber slot]
Mechanical Specifications	
Housing	Metal Enclosure
Color	Black
Dimensions (W x D x H)	8in x 5.2in x 1.2in [204mm x 132mm x 30mm]
Weight	1.7 lbs [760g]
Power Supply	Input: AC 100 - 240V 50/60Hz
	Output: DC 12V/2.5A
	(US/EU standards, CE/FCC/UL certified)
Power Consumption	5.4W
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 and Rear Panel (BG-IPGEAR-ULTRA-C)



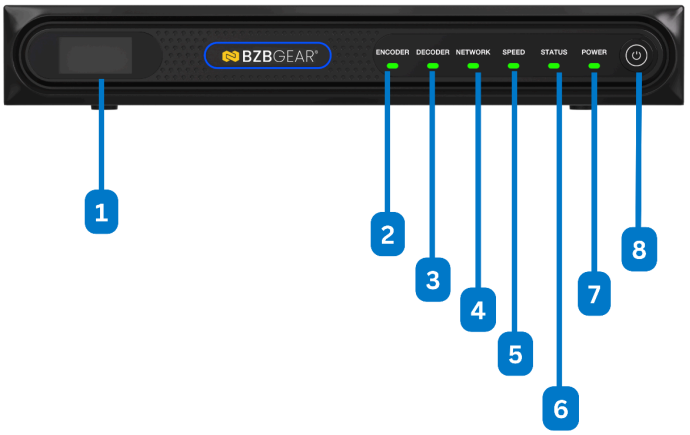
Front Panel		
No.	**Name**	**Function Description**
1	UPDATE	Firmware update port. Note: Must keep no connection on this port when Controller works in normal mode.
2	RESET Button	Press and hold this button (about 10 seconds) until STATUS LED starts flashing, Controller will be reset automatically.
3	POWER LED	The red LED will light on when the Controller is powered on.
4	STATUS LED	The status LED will flash in yellowish-green every 1 second until Controller boots up completely and Control LAN is ready, then it becomes solid.



Rear Panel		
No.	**Name**	**Function Description**
1	DC 12V	DC 12V/2.5A power input port.

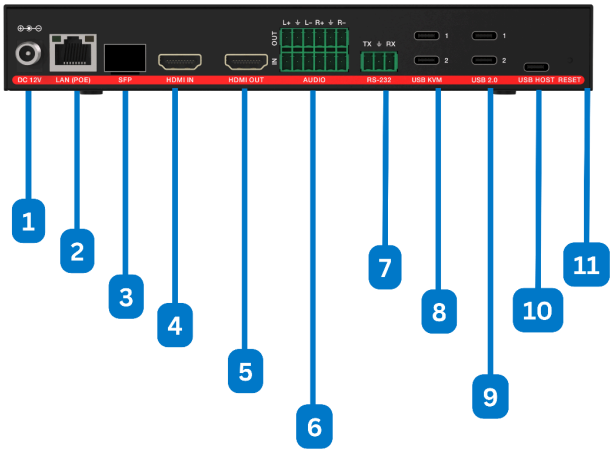
2	VIDEO LAN (POE)	1G Video LAN port, supporting PoE function. Note: When POE is enabled, DC 12V/2.5A power supply is not required.
3	CONTROL LAN	The TCP/IP control network port.
4	3-pin Phoenix Connectors	Two identical RS-232 serial communication ports.
5	6-pin Phoenix Connector	4 channel I/O level outputs, 1 channel grounding, 1 channel power supply (supports up to 12V/0.5A) to the outside.
6	IO LEVEL DIP Switch	Used to control I/O level output and VOUT voltage. Switch to left: 5V I/O level output, VOUT is 5V. Switch to right: 12V I/O level output, VOUT is 12V.
7	IR IN	12V IR signal input port.
8	IR OUT	5V IR signal output port.

Front and Rear Panel (BG-IPGEAR-ULTRA Transceiver)



Front Panel		
No.	**Name**	**Function Description**
1	OLED display screen	The name and IP address of the device will be displayed after the device is turned on. The screen will go off after 90 seconds.
2	ENC LED	The Encoder mode indicator light, normally off.
3	DEC LED	The Decoder mode indicator light, normally off.
4	LINK LED	When the network is connected normally, the green LINK LED flashes.

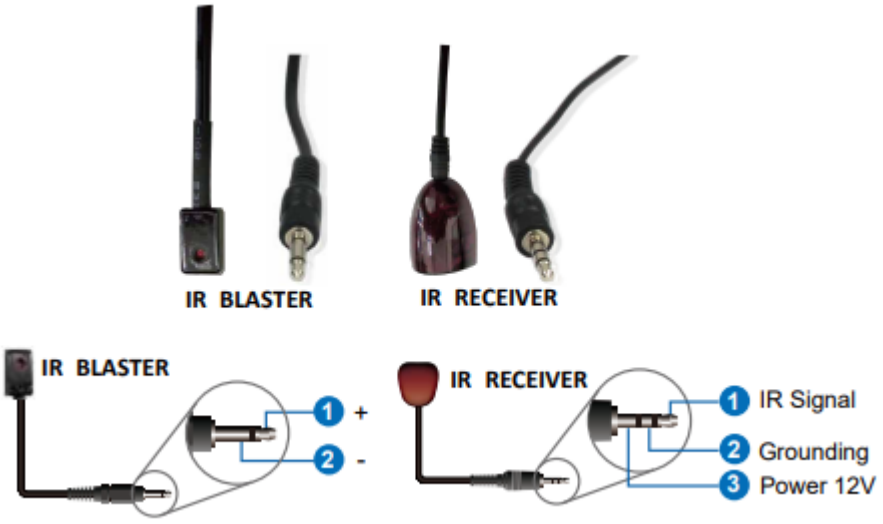
5	100M(Y)/1000M(G) LED	Network connection rate indicator: – When the device is connected to a 100M network, the yellow indicator is on. – When the device is connected to a 1000M network, the green indicator is on.
6	READY LED	– When the system is running normally and no fault occurs, the green LED is on. – When the device is in standby mode, the green LED is off. – If a fault occurs while the system is running, the green LED flashes at a frequency of 1Hz.
7	POWER LED	– When the device is working normally, the green POWER LED is on. – When the device is in standby mode or powered off, the green POWER LED is off.
8	Power button	The power button supports power-off memory function. – When the device is working normally, short press the power button to view the current mode and IP address on the OLED display screen. Press and hold the power button for more than 2 seconds to turn off the device. – When the device is off, press the power button to turn the device on. – When the device is in standby mode, power off and power on again, it will enter the standby mode automatically. – When the two power supply modes are used at the same time, the local DC 12V power supply is preferred.



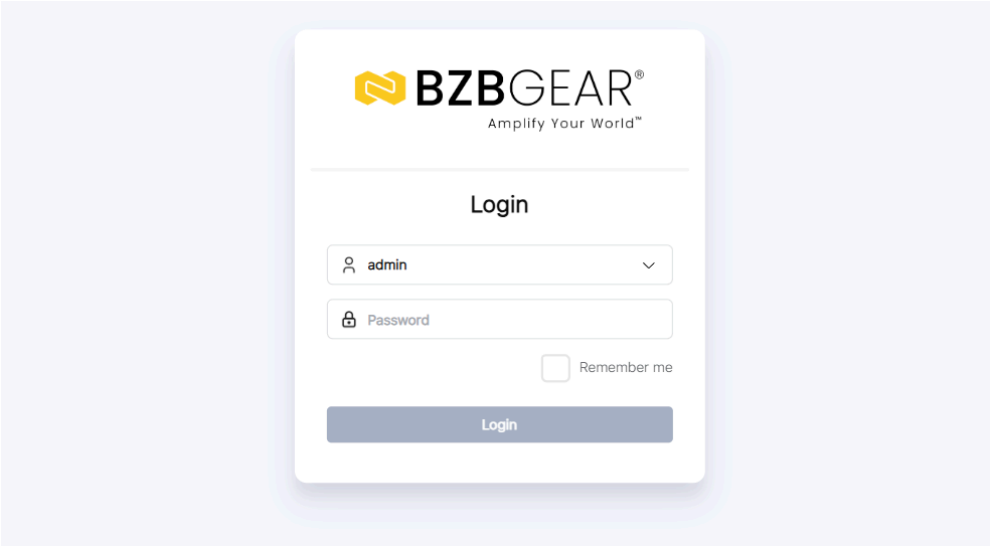
Rear Panel		
No.	**Name**	**Function Description**
1	DC 12V	DC 12V/2.5A power input port. Note: The device can be powered via two methods: (a) Local DC 12V power supply, (b) POE from Network Switch. Device acts as PD mode.

		When the two power supply modes are used at the same time, the local DC 12V power supply is preferred.
2	LAN (POE) port	RJ45 network control port, supporting POE power supply.
3	SFP port	1G fiber optical port.
4	HDMI IN port	HDMI 2.0 input
5	HDMI OUT port	HDMI 2.0 output port
6	AUDIO IN/OUT port	Stereo balanced line input port/6pin-3.81mm Phoenix connector
7	RS-232 port	RS-232 serial port, relay RS-232 command transmission from the Control Server.
8	USB KVM	USB device ports, connected to keyboard and mouse in DEC mode.
9	USB 2.0	Connect to a USB flash drive or other USB devices.
10	USB HOST	USB Host port, connected to computer in ENC mode.
11	RESET button	System reset button. Long press this button for 5 seconds and reboot the device manually, the system will be restored to the factory default setting.

IR Pin Definition (BG-IPGEAR-ULTRA-C)



Web GUI Setup (BG-IPGEAR-ULTRA-C)



Step 1: Open a web browser on your PC and enter the Controller's default IP address or URL in the address bar:

- **Control LAN port:** 192.168.6.100
- **Video LAN port:** 169.254.8.100
- **URL:** http://controller.local

This will take you to the Web GUI login page.

When logging in for the first time:

- Username: **admin**
- Password: **1234**
- Select your preferred language

Click **Login** to continue. You will then be prompted to change the default password.

Important: Please set a six-digit password using letters or numbers. Use this new password to log in to the Web GUI.

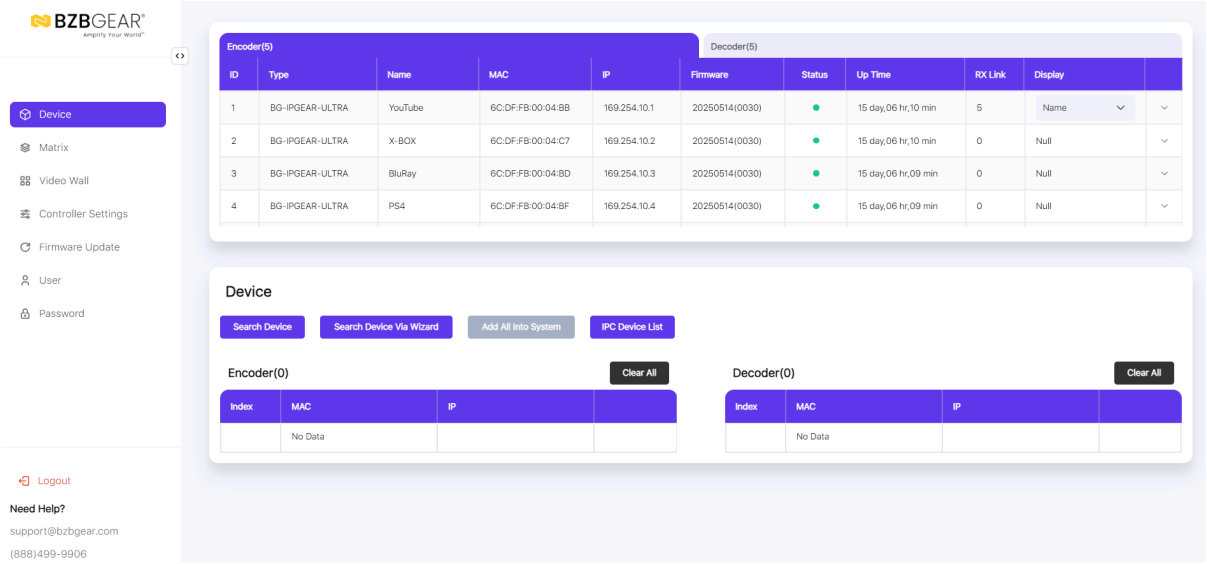
Step 2: On the initial setup page, click Close to load an existing system (If Applicable) directly in the web page, or click Next to continue with system setup.

Step 3: Select Automatically managed by Controller Box as the IP mode for the Video LAN. In this mode, the Controller automatically assigns IP addresses to the Video LAN port, Encoder, and Decoder.

Select "Automatically add Encoders and Decoders to system", and click the "Next" button to enter the Device page. The system starts to search for devices. All the connected devices will be searched and added to the system (presented in the Encoder/Decoder list) automatically.

Web GUI Functions and Operations (BG-IPGEAR-ULTRA-C)

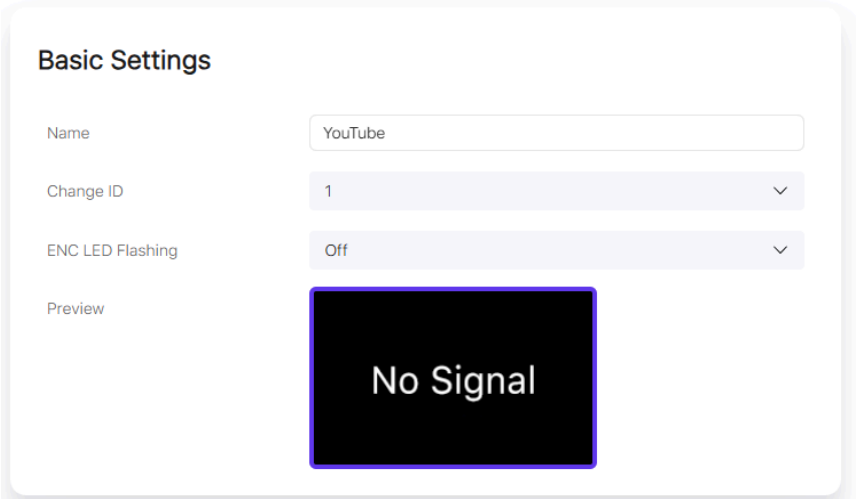
Device Page



On this page, click the **Encoder/Decoder** tab to view detailed information about all Encoders and Decoders in the system. The available information includes: **ID, Name, MAC Address, IP Address, Firmware Version, Online/Offline Status, Up Time, RX Link, and Member/Source.**

You can also configure individual Encoders or Decoders by clicking the drop-down icon located to the left of the **ID** field.

Encoder Configuration



Basic Settings

1. **Name**: Allows you to rename the Encoder.
    - Maximum length: **16 characters**

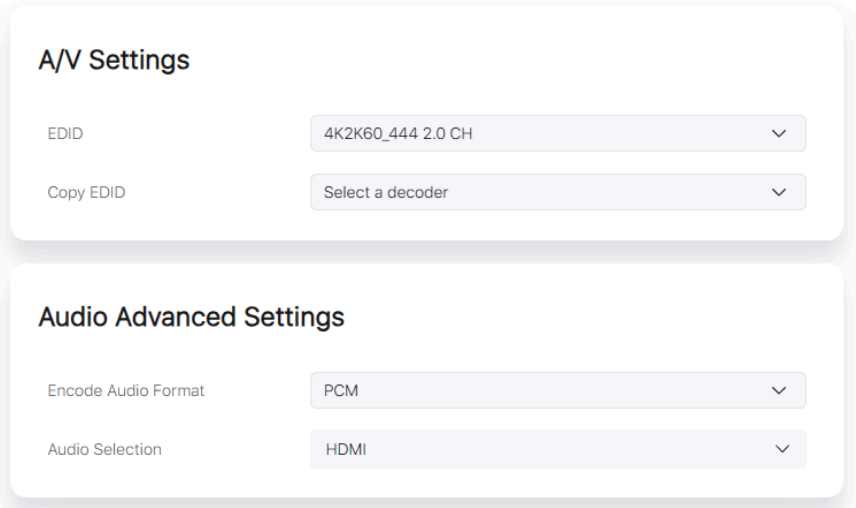
- Special characters are **not supported**

2. **Change ID**: Assign a unique ID to the Encoder.
   - Valid range: **1–762**
   - **Note:** Both the ID and Name must be unique.

3. **ENC LED**: Activates the “Show Me” function to quickly identify the device.
   - Use the drop-down menu to turn the front panel LED **On/Off**.

4. **Preview**: Displays a preview of the Encoder’s video stream.

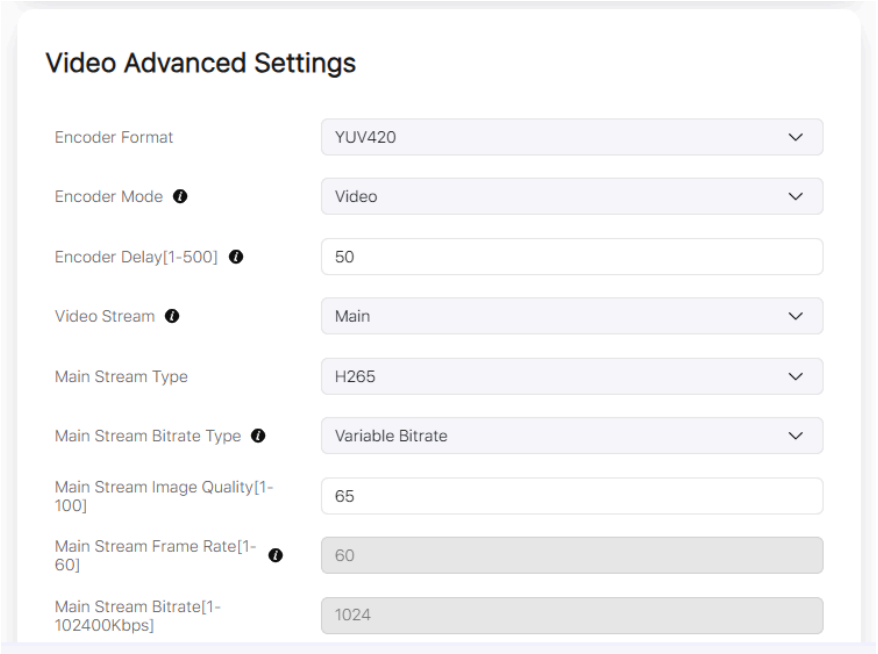
A/V Settings



1. **EDID**: Use the drop-down menu to select the EDID for the Encoder.
2. **Copy EDID**: Select a Decoder from the drop-down menu to copy its EDID settings.
3. **Audio Selection**: Choose the audio input source:

   - **HDMI** – The Encoder’s HDMI input is used as the audio source for the Decoder’s audio output.
   - **Analog** – The Encoder’s analog audio input is used as the audio source for the Decoder’s audio output.

Video Advanced Settings

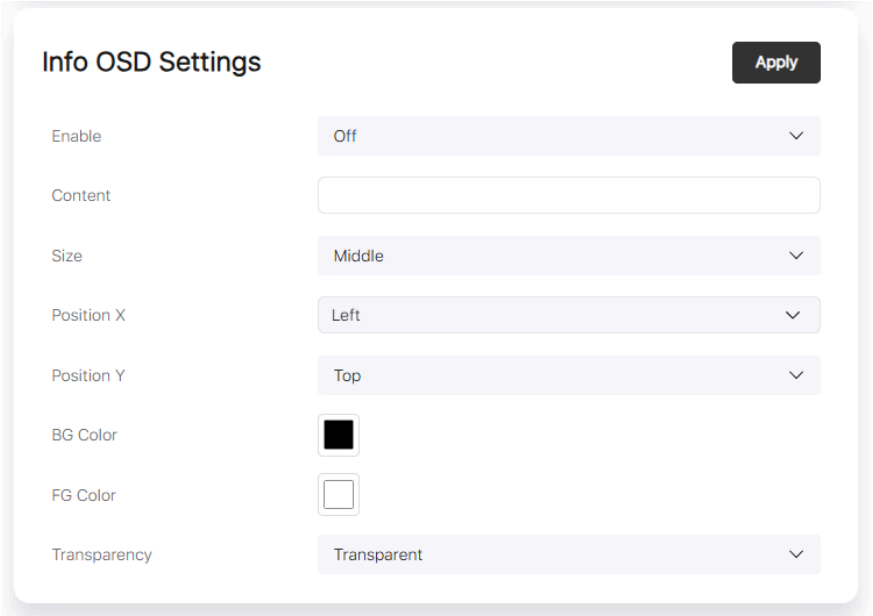


1. **Encoder Format:** Select the encoder format from the drop-down menu.
2. **Encoder Mode:** Choose the encoder mode (Video/Text).
3. **Encoder Delay [50–500]:** Enter a value between 50–500 to set the encoder delay.
4. **Video Stream:** Select the desired video stream (Main / Sub / Preview / SDK / SDK Sub).
5. **Main Stream Type:** Choose the video encoding format for the main stream (H.264 / H.265).
6. **Main Stream Frame Rate [1–120]:** Enter a value between 1–120 to set the frame rate.
7. **Main Stream Bitrate Type:** Select the bitrate type (Fixed / Variable).
8. **Main Stream Bitrate [1–102400]:** Enter a value between 1–102400 to set the bitrate.
9. **Main Stream Image Quality [1–100]:** Enter a value between 1–100 to adjust image quality.

Audio Advanced Settings

1. **Audio Format:** Select the audio encoding format (PCM / AAC).
2. **Audio Interface:** Choose the audio input interface (HDMI / Analog).

OSD Settings

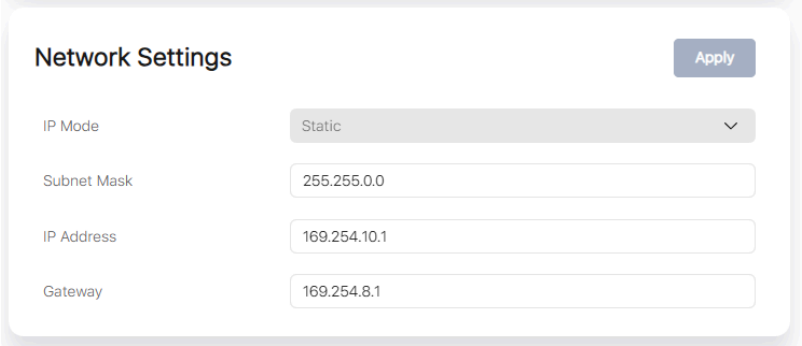


1. **Content:** Enter the text to display in the OSD.
2. **Size:** Select the OSD size (Small / Medium / Large).
3. **Position X:** Choose the horizontal position of the OSD (Left / Center / Right).
4. **Position Y:** Choose the vertical position of the OSD (Top / Center / Bottom).
5. **Background Color:** Set the OSD background color.
6. **Foreground Color:** Set the OSD foreground (text) color.
7. **Transparency:** Select the OSD transparency type (Transparent / Opaque).
8. **Enable:** Toggle On/Off to enable or disable the OSD display.

Other Settings

1. **Encode Sync Level:** Select the sync level (Low / Medium / High).
2. **KVM OS Select:** Choose the operating system for KVM control (Linux / Windows / macOS).
3. **Transfer Type:** Toggle On/Off to enable or disable multicast transfer.

Network Settings



1. **IP Mode:** Select the IP mode (Static / DHCP).
2. **IP Address:** Displays or sets the IP address of the encoder.
3. **Subnet Mask:** Displays or sets the subnet mask of the encoder.
4. **Gateway:** Displays or sets the gateway of the encoder.

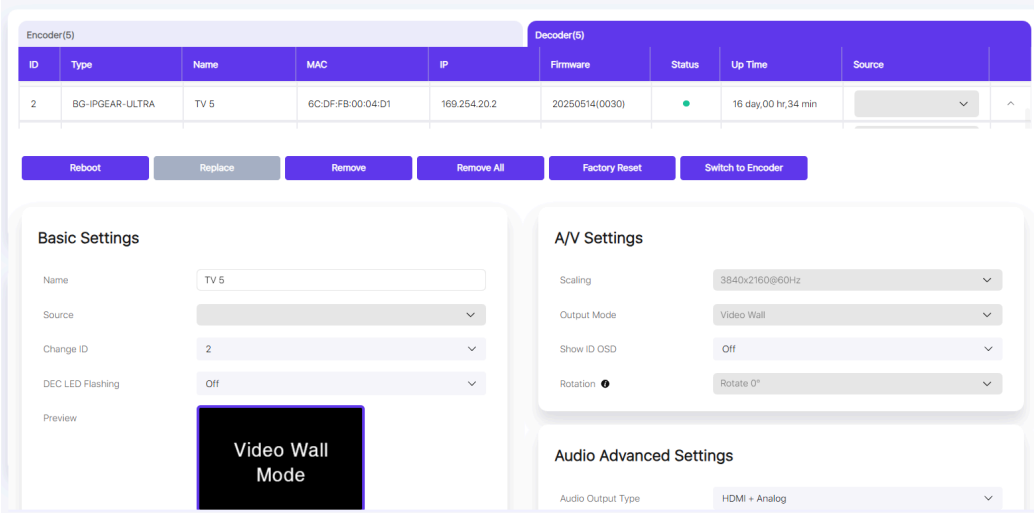
Notes:

- If **IP Mode** is set to *Static*, you can manually configure the IP Address, Subnet Mask, and Gateway. Click **Apply** to confirm changes.
- If **IP Mode** is set to *DHCP*, the encoder will automatically obtain an IP address from the router.
- If the encoder is online but configured with an incorrect network segment, it may appear as “offline.” In this case, you can still modify its network settings (including IP address).

Additional Functions

- **Reboot:** Restarts the encoder.
- **Replace:** Reserved for device replacement (not active).
- **Remove:** Removes the selected encoder from the system.
- **Remove All:** Removes all encoders from the system.
- **Factory Reset:** Restores the encoder to factory default settings.
- **Switch to Decoder:** Switches the encoder to decoder mode.
    - A confirmation prompt will appear. Selecting **Yes** removes the encoder from the current system. You will need to run a **Scan** to add it back again.

Decoder Configuration



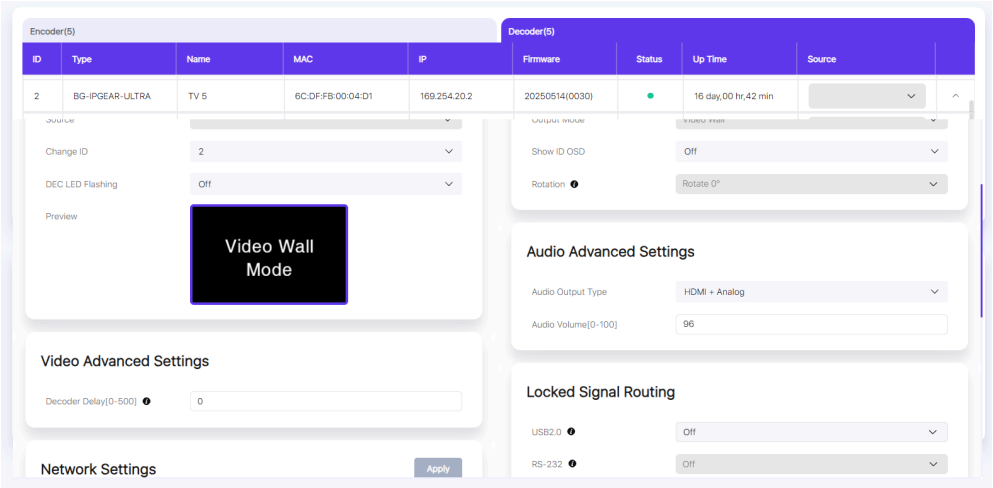
Basic Settings

1. **Name:** Set the decoder name (max. 16 characters, no special characters).
    - *Note: Decoder name and ID must not be duplicated.*
2. **Source:** Select the signal source for the decoder from the drop-down menu.
3. **Change ID:** Assign an ID to the decoder (range: 1–762).
4. **DEC LED:** Enables the “Show Me” function to help locate the decoder. Select On/Off to toggle the front-panel LED.
5. **Preview:** Displays a live preview of the decoder.

Decoder Configuration

Audio/Video Settings

- **Video Advanced Settings**
    1. **Decoder Format:** Select the decoder format from the drop-down menu.
    2. **Decoder Delay [0–500]:** Enter a value between 0–500 to set the decoder delay.
- **Output Settings**
    1. **Output Mode:** Displays the current output mode (Matrix / Video Wall).
    2. **Scaling:** Select the video output resolution from the drop-down menu.



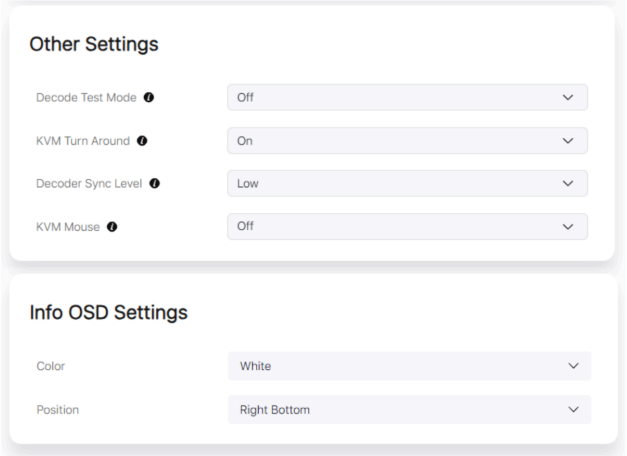
Video Advanced Settings

1. **Decoder Format**: Select the desired decoder format from the drop-down menu.
2. **Decoder Delay [0–500]**: Enter a value between 0 and 500 to configure the decoder delay.
3. **Output Mode**: Displays the current video output mode (Matrix/Video Wall).
4. **Scaling**: Select the preferred video output resolution from the drop-down menu.

Audio Advanced Settings

1. **Audio Output Type**: Choose the audio output type (HDMI/DVI) from the drop-down menu.
2. **Audio Volume [0–100]**: Enter a value between 0 and 100 to set the output volume.

OSD & Other Settings



OSD Settings

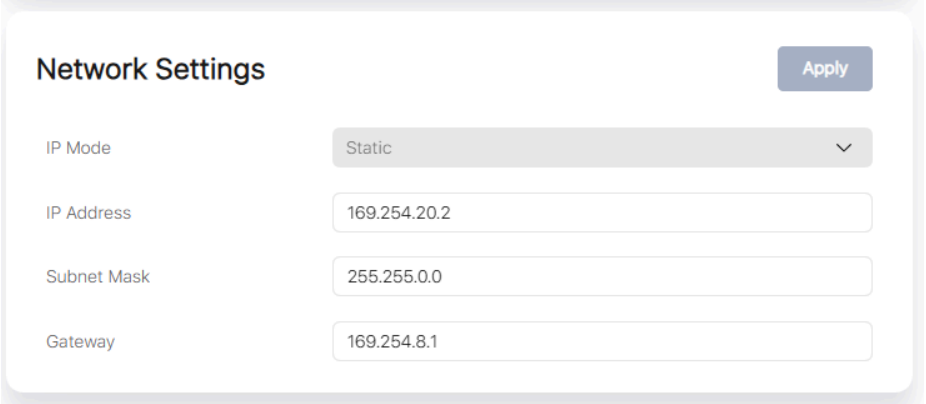
1. **Color**: Set the OSD color (White/Black).
2. **Position**: Choose the OSD display position from the drop-down menu (Top Left / Top Right / Bottom Left / Bottom Right).

3. **Show ID OSD**: Toggle On/Off to enable or disable the ID display on the OSD.

Other Settings

1. **Decode Test Mode**: Select the desired test mode from the drop-down menu (Off / Gray / Color / Geo / Message / White / Red / Green).
2. **Decoder Sync Level**: Choose the sync level (Low / Medium / High).
3. **KVM Turn Around**: Toggle On/Off to enable or disable the KVM turn-around function.
4. **KVM Mouse**: Toggle On/Off to enable or disable KVM mouse control.

Network Settings

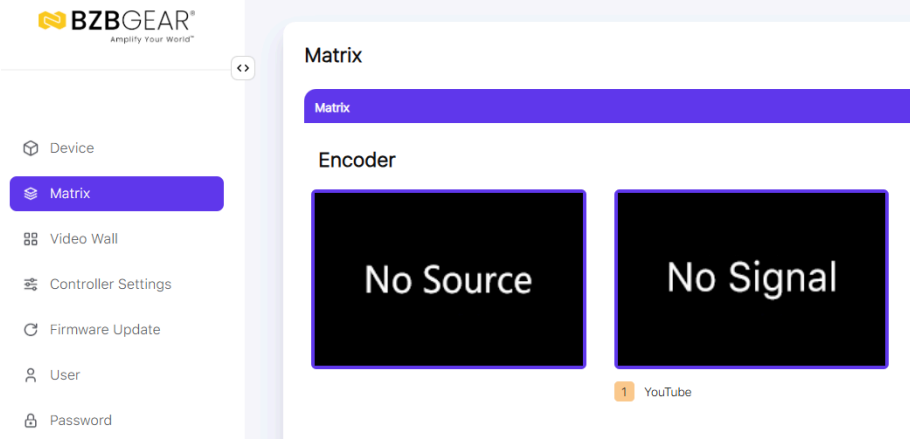


1. **IP Mode**: Select the IP mode (Static/DHCP) from the drop-down menu.
2. **IP Address**: Displays or allows entry of the decoder's IP address.
3. **Subnet Mask**: Displays or allows entry of the decoder's subnet mask.
4. **Gateway**: Displays or allows entry of the decoder's gateway address.

Notes:

- If **Static** is selected, you can manually configure the IP Address, Subnet Mask, and Gateway. Click **Apply** for changes to take effect.
- If **DHCP** is selected, the decoder will automatically obtain its IP Address from the router.
- If the decoder is active but configured with an incorrect network segment, it may appear offline. However, its network settings (including IP address) can still be modified.

Matrix Page



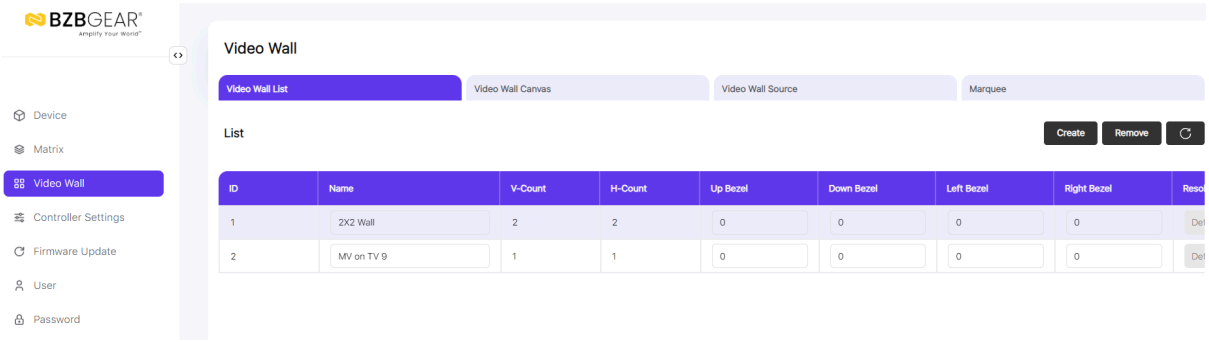
Matrix Switching Function

① To perform one-to-one switching, left-click an Encoder, drag it to a Decoder, and release the mouse.

② To perform one-to-all switching, left-click an Encoder, drag it to *All Decoders*, and release the mouse.

③ To perform one-to-many switching, left-click an Encoder, drag it to multiple Decoders, and release the mouse.

Video Wall Page



Video Wall Creation

On the **Video Wall List** page, you can create and configure video walls as needed. Follow the steps below:

Step 1: Create a Video Wall

- Click **“Create”**. A dialog box will appear.
- Set the **Video Wall ID**, **Name**, **Row Number**, **Column Number**, and **Resolution**.
- Click **“Go”** to create the video wall.

- If **Custom Resolution** is selected, you can configure additional settings as shown in the example figure.

Note: The video wall name can be modified after creation.

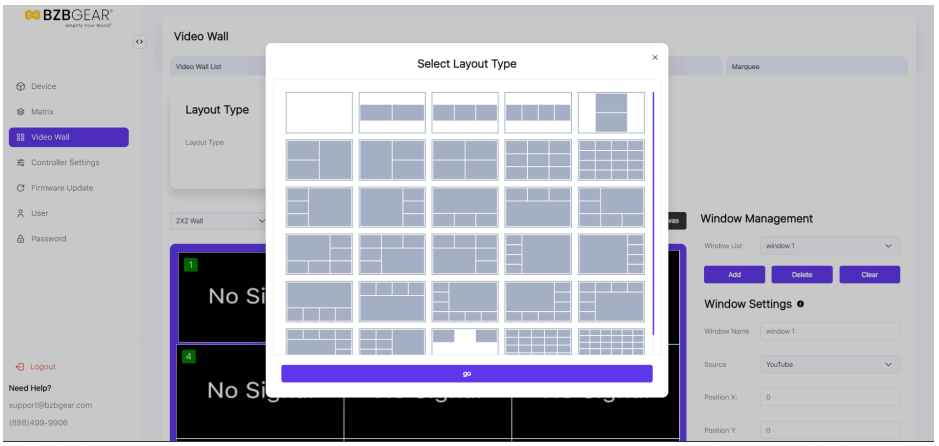
Step 2: Assign Decoders

- Select the video wall you want to configure.
- Click **"Assign Decoder"** at the bottom of the Video Wall List page.
- In the assignment interface, click each screen and choose the corresponding Decoder device.
- Click **"Apply"** to save the configuration.

Note: A Decoder can only be assigned to one video wall.

Video Wall Canvas

After creating and configuring a video wall, click the Video Wall Canvas tab to adjust the layout, create and manage presets, and configure multiview options.



(1) Video Wall Layout

Follow these steps to set up the video wall layout:

Step 1: Select Layout

- In the **Layout Type** area, click the desired layout.
- The selected layout will appear in the video wall canvas.

Step 2: Configure Multiview Windows

- Click a window in the layout to edit it.
- In the **Window Settings** area, you can rename the window, select a source, and adjust its position, width, and height.
- Alternatively, drag the window directly on the canvas to resize or reposition it.

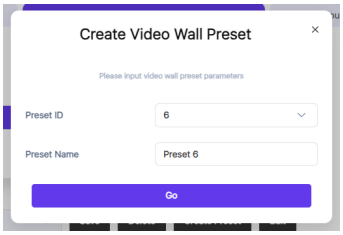
- Click **“Apply”** to confirm and save the changes.

Step 3: Assign Sources and Save Preset

- Repeat the process to assign signal sources and adjust the size/position for each window as needed.
- Once complete, click **“Apply”** above the video wall canvas to save the configuration as **Preset 1** and activate it.

(2) Preset Creation

Follow these steps to create and configure a video wall preset:



Step 1: Create a Preset

- Click **“Create Preset”**. A dialog box will appear.
- Set the **Preset ID** and **Name**, then click **“Go”** to create the preset.

Step 2: Configure the Layout

- In the **Layout Type** area, select the desired layout and configure the windows as needed.
- Click **“Apply”** above the video wall canvas to save the preset.

(3) Windowing Configuration

Follow these steps to create and configure windowing:

Step 1: Add a Window

- In the **Window Management** area, click **“Add”**. A dialog box will appear.
- Set the **ID**, **Name**, **Source**, **Position**, and **Size**, then click **“Go”**.
- The newly created window will appear on top of the video wall.

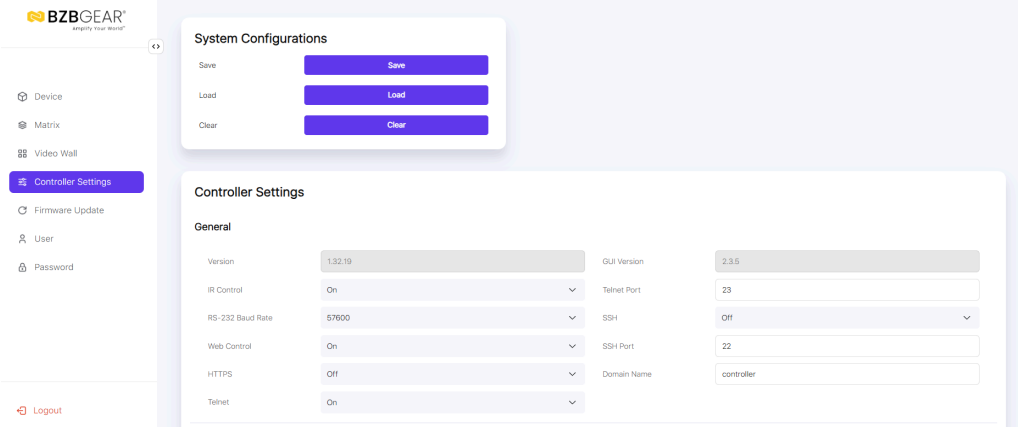
Step 2: Manage Windows

- To add more windows, repeat the process above.
- To adjust a window, select it and drag to reposition or resize.
- To delete a window, select it in the **Window List**, click **“Delete”**, and confirm by clicking **“Yes”**.
- To remove all windows, click **“Clear”**. *Use this option with caution.*

Additional Options:

- Adjust window layering using **“Bring to Top”** or **“Bring to Bottom”** in the **Window Layer** area.
- Upload a background image in the **Background Full Image** area.
- Click **“Drag”** above the video wall canvas to reposition the video wall within the canvas for better preview.

Controller Settings



System Configurations

- **Save:** Click to save the current system configuration.
- **Load:** Click to load a saved configuration file, replacing the current system settings. *(It is strongly recommended to save the current configuration before loading a new one.)*
- **Clear:** Click to clear all configurations currently set in the Controller. After clearing, the system must be set up again.

Controller Settings

① **General**

General settings of the Controller include:

- Viewing the **Controller Version** and **GUI Version**
- Configuring **Telnet Port**, **SSH Port**, and **Domain Name**
- Setting control options via drop-down menus: **IR Control**, **RS-232 Baud Rate**, **Web Control**, **HTTPS**, **Telnet**, and **SSH**

② **Control Network**

This configures the network port for connecting the Controller to a router, PC, or network switch (where the control PC is located):

- **DHCP Off:** Manually set **IP Address**, **Subnet Mask**, and **Gateway**, then click **Apply**.
- **DHCP On:** The system automatically obtains an IP Address assigned by the router.

③ **Video Network**

This configures the network port connected to the network where Encoders and Decoders reside.

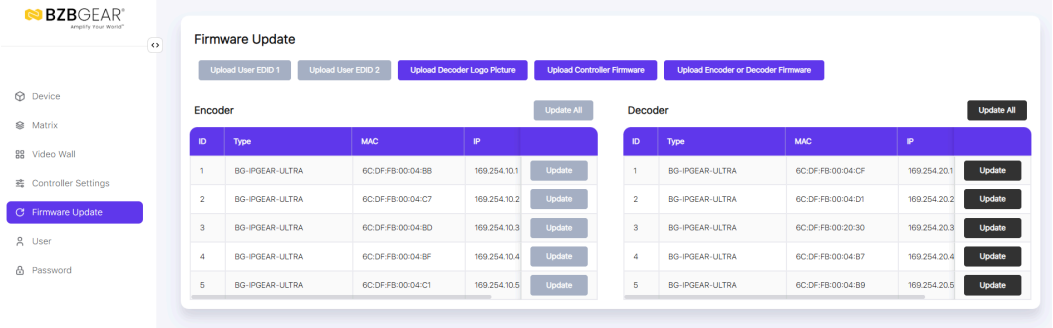
Note: *Modification of this network is currently not supported.*

④ **Controller Reset**

- **Settings Reset:** Resets all Controller settings except network settings.
- **Network Reset:** Resets only the Controller's network settings.
- **Reset All:** Resets all Controller settings, including network settings.

Note: *After modifying any Controller settings on this page, the Controller will automatically reboot to apply changes.*

Firmware Update Page



Upload Functions

① Upload User EDID 1/2

Click the button to open an EDID binary file and upload it to **User EDID 1/2**.

Note: This function is temporarily unavailable.

② Upload Decoder Logo Picture

Click the button to open a **BMP picture file** and upload it as the Decoder Logo. Then:

- Click **Update All** to apply the logo to all Decoders.
- Click **Update** to apply the logo to a single Decoder.

Requirements for the BMP image:

- File size: greater than 500 kB and less than or equal to 25 MB
- Image resolution: between 960×360 and 3840×2160

③ Upload Controller Firmware

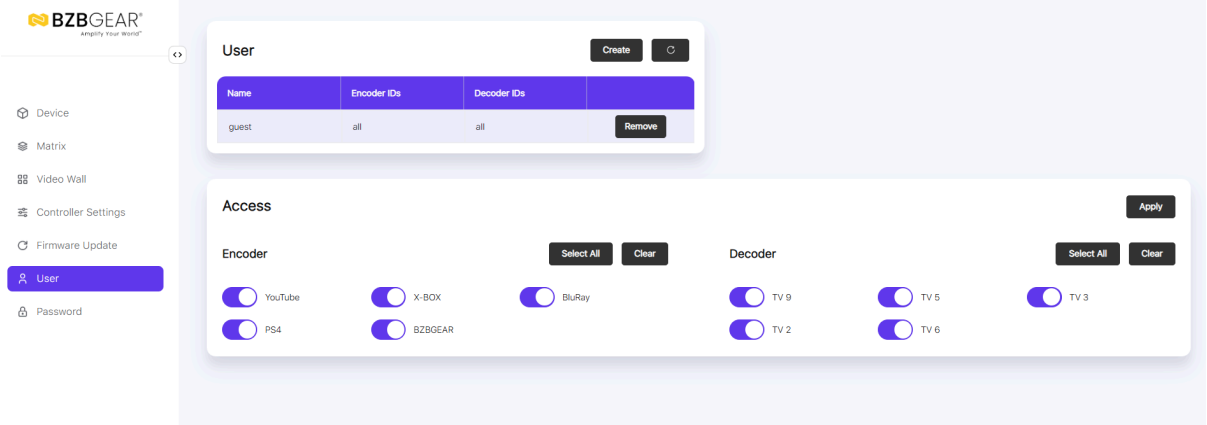
Click the button to upload firmware for the Controller.

④ Upload Encoder or Decoder Firmware

Click the button to upload firmware for Encoders or Decoders. After uploading:

- Click **Update All** to update firmware for all devices.
- Click **Update** to update firmware for a single device.

User Page



User Management

On this page, you can create new user accounts with customizable control privileges. This allows each user to have a unique login and restrict access to specific inputs, outputs, or functions.

Steps to Create a New User:

Step 1: Click **Create**. A pop-up dialog box will appear.

Step 2: Enter the following information:

- **User Name**
- **User Password**
- **Confirm Password**

Click **Go** to create the user.

Notes:

1. User Name: 6–12 characters, no special characters.
2. Password: 6–8 characters. **Password** and **Confirm Password** must match.

Assign Device Access:

- After creating a user, select Encoders and Decoders the user can access by checking devices at the bottom of the page, or click **Select All** to give access to all devices.
- Click **Apply** to save the settings.

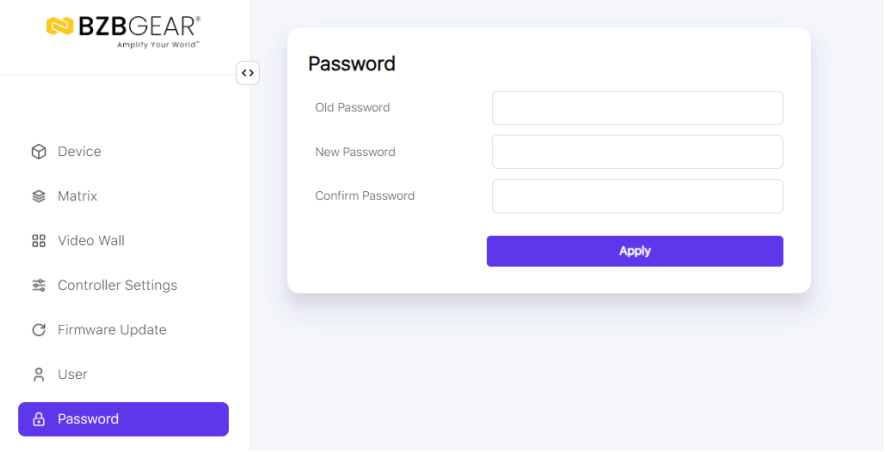
Assign KVM Access:

- Click **KVM**, select the Encoders and Decoders to use for KVM control, then click **Apply**.

Other User Management Functions:

- **Password:** Click to change the user's password.
- **Remove:** Click to delete the user.
- **Login as New User:** Click the logout icon at the top right corner, then log in with the new user credentials.

Password Page



Change Password

On this page, you can change your password by entering the following information:

- **Old Password**
- **New Password**
- **Confirm Password**

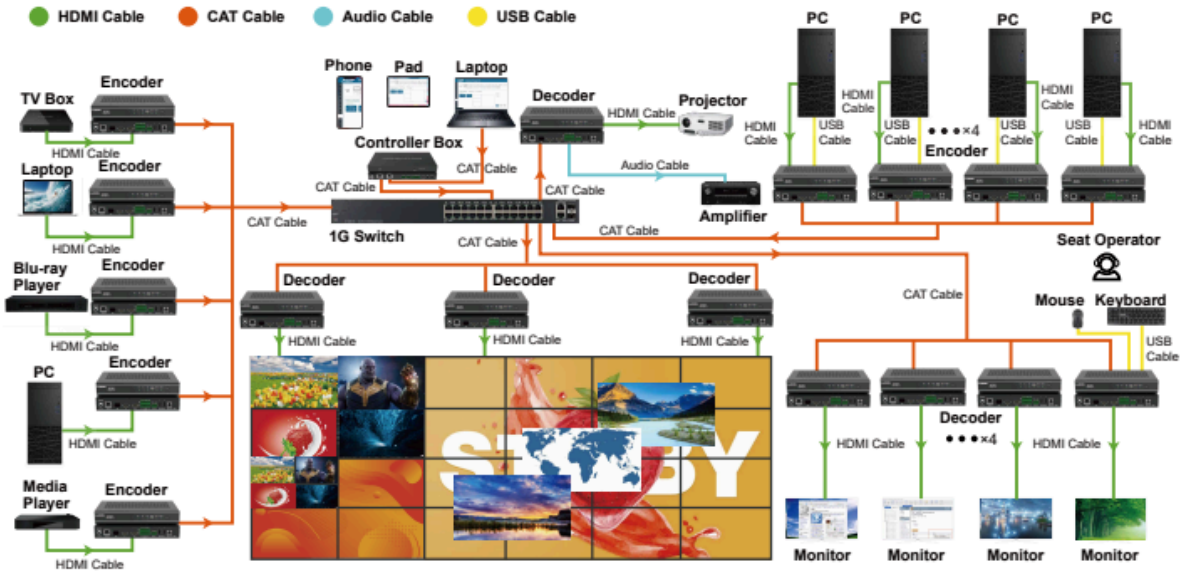
Click **Apply** to save the changes.

Notes:

1. Password length must be between 6 and 8 characters. Special characters are not supported.
2. The **New Password** cannot be the same as the **Old Password**.
3. **New Password** and **Confirm Password** must match.
4. After changing the password, the system will automatically return to the Web GUI login interface. You will need to log in again using the new password.

Additionally, a **logout icon** is located in the upper-right corner of every Web GUI page. Clicking this icon will exit the Web GUI and automatically return you to the login interface.

Connection Diagram



FAQ

FAQ: Network and Connection Notes

Q1: Why does the Controller have two LAN ports?
The Controller includes a **Video LAN** and a **Control LAN** port to keep the AV network separate from the control network. This design improves **network security** and prevents AV traffic from interfering with control and management functions.

- **Recommended setup:**
  - Connect **Video LAN** and all Encoders/Decoders to one network switch.
  - Connect **Control LAN** and the control PC to a different switch.
  - Control is then managed via **Web GUI, Telnet, SSH, or API commands** through the Controller, which bridges commands to the Video LAN.

- **Simplified setup (not recommended for sensitive systems):**
  - You may connect Encoders, Decoders, and the PC directly to the **Video LAN**.
  - Leave the **Control LAN** unconnected.
  - This is only suitable for systems without strict network isolation or traffic sensitivity.

⚠️ **Note:** Using only the Control LAN while leaving the Video LAN disconnected is **not allowed**.

Q2: What is the default IP mode for the Control LAN port?
By default, the Control LAN is set to **DHCP**. Ensure your PC is also set to **"Obtain an IP address automatically."** An optional DHCP server (such as a router) is recommended for easier setup.

Q3: What if there is no DHCP server on the network?
If no DHCP server is present, the Controller assigns itself the static IP:

- **Controller IP:** `192.168.6.100`

- **PC requirement:** Manually set your PC to the same subnet, for example:

- **PC IP:** `192.168.6.88`

Q4: How do I access the Controller's Web GUI?

You can access the Web GUI by entering one of the following in your browser:

- `http://controller.local`
- `192.168.6.100` (if no router/DHCP server is available)

Q5: Do I need to configure the Video LAN port?

No. The **Video LAN port is managed automatically** by the Controller. No manual settings are required.

Q6: What if my network switch does not support PoE?

If PoE is not supported, power the **Encoders, Decoders, and Controller Box** using their DC power adapters.

Troubleshooting

Problems	Causes	Solutions
No Power / All LED off	Power supply not connected, connected fully, or wrong power supply.	Check if the power supply is connected correctly and the output voltage value is within recommended specifications.
No sound or sound issues	The HDMI connection is faulty, the audio format is not supported by the displays, or the source player is set to another port for audio output	Check if the HDMI cables are connected correctly. Check if the audio format is supported by the display and that a user has not changed the supported audio format on the player`s audio output. Ensure output settings from the HDMI source device as set correctly.
No picture or picture flickers	The HDMI cable may be faulty or the category cable quality is faulty.	Check if the HDMI and category cable connections are correct and undamaged. Change to another good working HDMI cable or category cable (CAT6 or better cable is recommended).

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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