BZBGEAR®

Solutions to Amplify Your World™

BG-QuadFusion-JR

**4-Channel 1080P FHD Live Streaming HDMI/DP Switcher Mixer
with PIP and USB 3.0 Capture Card**

User Manual

Table of Contents

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.

- Unplug this device during lightning storms

- Clean only with a soft dry microfiber cloth.

- 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.

- Only use accessories specified by the manufacture

- Product specifications may be subject to technical upgrades without further notice

- Do not hot plug when it is working.

Introduction

The BG-QuadFusion-JR is a 4-channel HDMI production switch with a built-in audio mixer and USB 3.0 capture card. It supports 4 HDMI inputs as well as 1 alternative DisplayPort input for increased connectivity for a total of 5 video signals. Four of the video signals can be viewed simultaneously using the HDMI multiview output. Live content can be output via the HDMI PGM output for local viewing or via the built-in USB 3.0 capture card which makes live streaming your productions a snap.

The BG-QuadFusion-JR also supports audio embedding and extraction. Audio can be inserted from another source directly into the HDMI or USB streams or extracted using the 3.5mm stereo jack to be connected to another audio system. The video resolutions of all inputs are automatically scaled to suit the unit for the best performance possible. Its compact and sturdy design makes this unit ideal for mobile production setups. Thanks to the BG-QuadFusion-JR, managing and making high quality video productions has never been easier.

Features

- 4x 1080P@60Hz HDMI Inputs and 1x 1080P@60Hz DisplayPort Input

- 1x Program (PGM) HDMI output and 1x Multiview HDMI output

- Metal aluminum alloy provides a high strength, lightweight, and portable design

- Hall sensor T-Bar

- 2x dedicated 3.5mm microphone inputs

- 1x 3.5mm analog audio input and 1x 3.5mm output

- Broadcast & TV standard Tally interface support via GPI control interface

- Screen freeze function and FTB black functions

- Picture-in-Picture functionality

- Hard CUT and AUTO transition effects with variable rates

- 2 channel audio embedding and extraction

- Audio follow video and Mixing functionality

- Direct to Micro SD recording of PGM outputs

- Supports Luma and Chroma Key

Package Contents

- 1 x BG-QuadFusion-JR
- 1 x Power Adapter (12V DC)
- 1 x User Manual
- 1 x USB 3.0 A to B cable

Specifications

Technical Specifications		
Video Input Signal	Input Connections	4x HDMI 1x DisplayPort
	Data Rate	270Mbps - 18Gbps
	Signal Amplitude	800mV±10%
	Impedance	100Ω
	Balance	Adaptive
	HDMI/DP Resolutions	480i, 576i, 480p, 576p, 720p, 1080i, 1080p 1920x1080, 1680x1050, 1600x900, 1440x1050, 1366x768, 1360x768, 1280x1020, 1280x960, 1280x800, 1280x768, 1280x720, 1280x600, 1152x864, 1024x768, 800x600
Video Output Signal	Output Connections	1x HDMI Multiview Output 1x HDMI PGM Output 1x USB 3.0 Type-B
	Output Resolutions	1080p60, 1080p50, 1080p30, 1080p25, 1080p24, 1080i60, 1080i50
	Data Rate	270Mbps - 18Gbps
	Return Loss	>15dB 5MHz-3GHz
	Signal Amplitude	800mV±10%
	Impedance	100Ω
Control	RJ45 15-Pin Serial	Baud Rate: 9600 Data Bits: 8 Stop Bits: 1 Parity: None

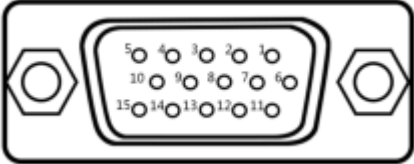| Mechanical Specifications	
Dimensions (W x D x H)	280mm x 110mm x 36mm
Working Humidity	20%-70%RH
Operating Temperature	32°F to 122°F (0°C to 50°C)
Storage Temperature	-4°F to 167°F (-20°C to 75°C)
Power Supply	12V
Power Rate	≤25w

Panel Descriptions
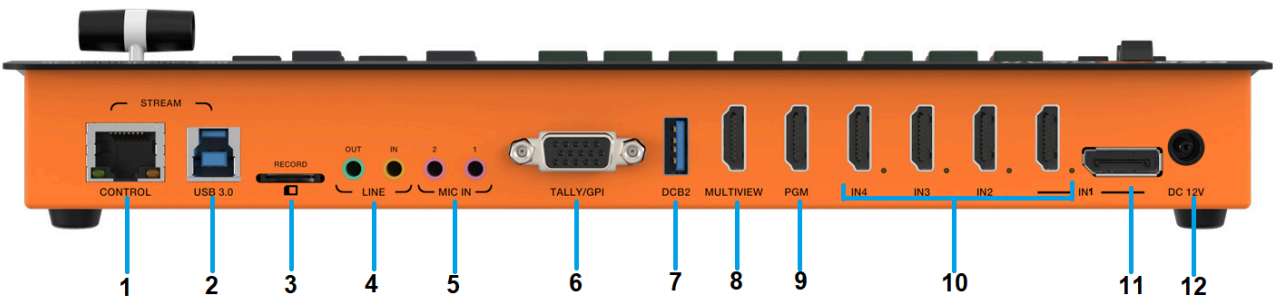
No.	Name	Description
1	Control	RJ45 LAN connector for network control and RTMP Stream
2	USB 3.0	USB 3.0 Type-B UVC stream capture port
3	Micro SDXC	Micro SDXC card port for direct PGM recording
4	Line In/Out	3.5mm Stereo audio input / output
5	MIC In	2x 3.5mm stereo microphone inputs
6	Tally/GPI	DB-15 port for serial control or GPI Tally system
7	DCB2	External control for keyboard, wireless tally, or device cascade
8	Multiview	HDMI 1.4, 19-pin female multiview output
9	PGM	HDMI 1.4, 19-pin female program live output
10	HDMI Input	4x HDMI 1.4, 19-pin female video inputs
11	DisplayPort Input	DisplayPort video input which can replace HDMI IN1
12	DC 12v	Power input

Tally/GPI Pinout

PIN	Tally Function	Pin	GPI Function
11	PGM-IN 1	1	GPI-IN 1
12	PGM-IN 2	2	GPI-IN 2
13	PGM-IN 3	3	GPI-IN 3
14	PGM-IN 4	4	GPI-IN 4
6	PVW-IN 1	10	GPI-IN 5
7	PVW-IN 2	15	GPI-IN 6
8	PVW-IN 3	5	GND
9	PVW-IN 4		

GPI Optional Feature List:

GPI-INx	Optional Feature	Description
1	PGM 1	Simulate PGM 1 button
2	PGM 2	Simulate PGM 2 button
3	PGM 3	Simulate PGM 3 button
4	PGM 4	Simulate PGM 4 button
5	PGM_BAR	Simulate PGM BAR button
6	CUT	Simulate CUT transition button
7	AUTO	Simulate AUTO transition button
8	MUTE	Simulate MUTE button
9	FTB	Simulate Fade to Black (FTB) button
10	STILL	Simulate STILL button

Multiview Window

- The selected preview (PVW) window is shown on the top left and highlighted in green.

- The select program (PGM) window is shown on the top right and highlighted in red.

- The 4 windows below correspond to the input sources 1 - 4. Sources can be toggled between the HDMI and DisplayPort connections for each input.

- This image below represents the corresponding button selection on the unit and will illuminate to match the windows shown above on the multiview screen. PGM buttons will illuminate red when selected while PVW buttons will illuminate green.

Button Descriptions

Menu and Directional Arrows
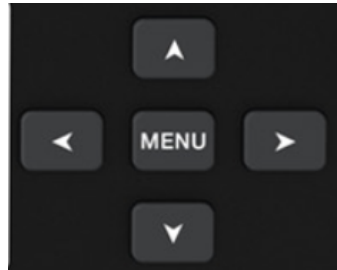
MENU: Press the Menu button to open / enter / select a highlighted on screen menu item in the multiview window.

Directional Arrows: Use the Directional Arrows to navigate the menu or to change values.

PGM and PVW Buttons

PGM: Use the PGM buttons to select which source is being used as the two HDMI Program outputs.

PVW: Use the PVW buttons to select which source will be used next / swapped with the current PGM source.

BAR: Displays and outputs the currently selected test pattern for the selected source.

Audio Mixer

The BG-QuadFusion-JR supports analog balanced audio input and output, HDMI audio extraction, as well as audio matrixing using the Audio Follow Video (AFV) and MIX functions.

- **Volume Sliders**

    - **Master**: Overall system volume can be controlled by moving the Master slider up and down and it affects all audio channels.

    - **CH1/CH2**: Changes the output volume for the selected audio channel.

- **AFV:** Audio Follow Video (AFV) means the current video source is tied to its audio source. When the video is switched, the audio also switches to the new source.

- **MIX:** Allows users to change the audio source of the selected channel for the PGM video outputs. Audio can come from another HDMI source or the balanced audio inputs.

- **CH1/VOL-/VOL+:** Pressing the CH1 button cycles which audio source is being used. The adjacent VOL- and VOL + control the audio source/input volume level.

- **CH2/VOL-/VOL+:** Pressing the CH2 button cycles which audio source is being used. The adjacent VOL- and VOL + control the audio source/input volume level.
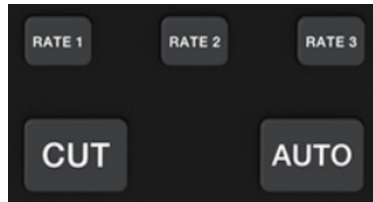
Transition Types

- The transition mode section contains the following options:

    - **MIX:** Superimposes the PVW image over the current PGM image.

    - **Fade:** Dissolve the images in and out

    - **Wipe Up/Left/Down/Right:** Transition between inputs using a wipe direction.

Transition Controls

- **CUT**: Immediately switches the PVW and PGM outputs with no transition.

- **AUTO**: Automatically transition between PVW and PGM selections using the selected transition type.

- **Rate 1 - Rate 3**: Set the speed at which the AUTO transition button functions. Rate 1 is the highest speed while Rate 3 is the slowest speed.

- **T-BAR**: Manually control the transition rate between PVW and PGM selections.
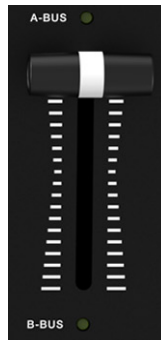
Function Keys

- **PIP:** Picture-in-Picture (PIP) overlays a smaller image of the currently selected preview (PVW) source on top of the current program (PGM) output.

○   The PIP window will be active when the T-BAR is in the B-Bus state.

○   The PIP window can have its position, size, and border modified using the control application or on screen menu.

● **STILL:** The PGM video will freeze on the currently displayed image. The STILL button will illuminate green while active. Pressing the STILL button a second time will resume normal playback.

F1 - F9 and FTB

F1: Reso resolution control Press F1 on the keypad to adjust the screen output resolution. Each time you press the button, you can adjust the output resolution. The resolutions are 1080P60Hz / 1080P50Hz / 1080P30Hz / 1080P25Hz / 1080P24Hz / 1080I60Hz / 1080I50Hz.

F2: Source channel switching control Press F2 on the keypad to select the input source of the fourth channel. When the HDMI and DP signals are connected to the back interface of the switcher at the same time, you can choose between IN1-HDMI and IN1-DP after pressing F2.

F3: Mute one-key mute Press F3 on the key panel to switch to the mute function, turn off all the audio volume output

F4: RCE one-key recording function Press the F4 button and the light is on F5--- PAUSE pause recording When recording, press F5 to pause recording, the F5 button light is on, the recording icon shows a double vertical line, and the F5 button is pressed and the light is off to continue recording;

F6: Stream RTMP network port one-click streaming function Enter the WEB background interface through the STREAM network port in advance, save the platform's push stream address to the switcher, and then press F6 to push the stream. The push stream is successful. The multi-screen status page displays the square icon behind RTMP. If it is unsuccessful Gray and error messages will be displayed;

F7: KEY Alternate function key F7 is a multiplexing key. You need to enter the system settings of the menu to set the function of this key. Setting the chroma key is the keying function, setting the brightness key is the superimposing subtitle function, and setting the vertical screen OSD needs to cooperate with DeviceWell PM1005/PM1007 monitors are only effective

● **LUMA:** Removes the color black from the background of the PVW image and overlays the remaining imager on top of the PGM output. Typically used to place a watermark, logo, text, or subtitles on the PGM output
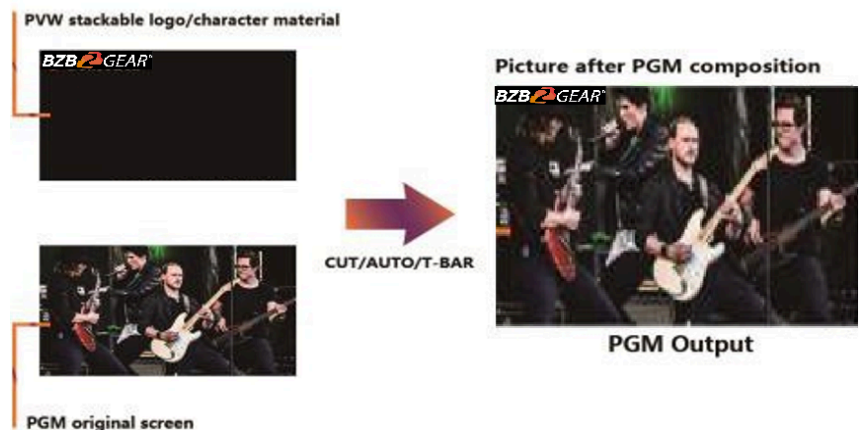
- **CHROMA:** Removes the specified image background color (Blue or Green), and then overlays the PGM source over the PVW background source.
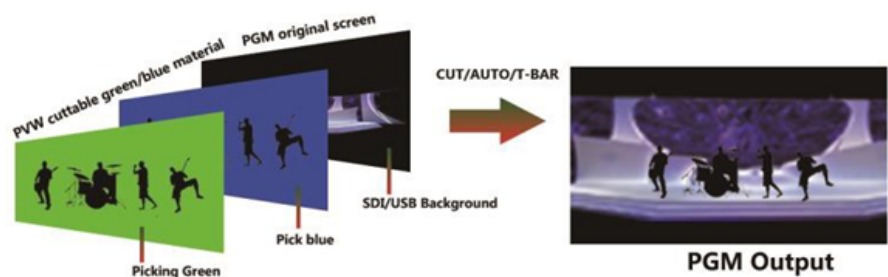
Main Menu / System Settings

Using the on screen multiview menu or control software users can access the Main Menu or System Settings to set the IP address on the device, restore the system to factory default settings, change the language and more.

- To access the Main Menu, press the Menu Key when no options are highlighted on the Status Menu. Press the up arrow to deselect the top Status option.

Web Interface

By default, the BG-QuadFusion-Jr is automatically set to DHCP. This means the unit will automatically pull an IP address from the local network when it is connected. To find the unit's current IP address, navigate to the "Stream Settings" options in the on screen multiview menu.

Type in the IP address shown in your web browser of choice to open the Web UI Settings page. From here, users can modify the IP address, RTMP rate, and RTMP Stream settings as shown in the image below.+

PC QuadFusion Control Application

A free Windows PC control software is provided for both of the QuadFusion production switches and allows for full remote control of the connected device. Software can be found and downloaded from the device product page on www.BZBGEAR.com.

After downloading the application, extract the BG-QuadFusion.exe file to your desired location. Double click the application to start. BG-QuadFusion.exe
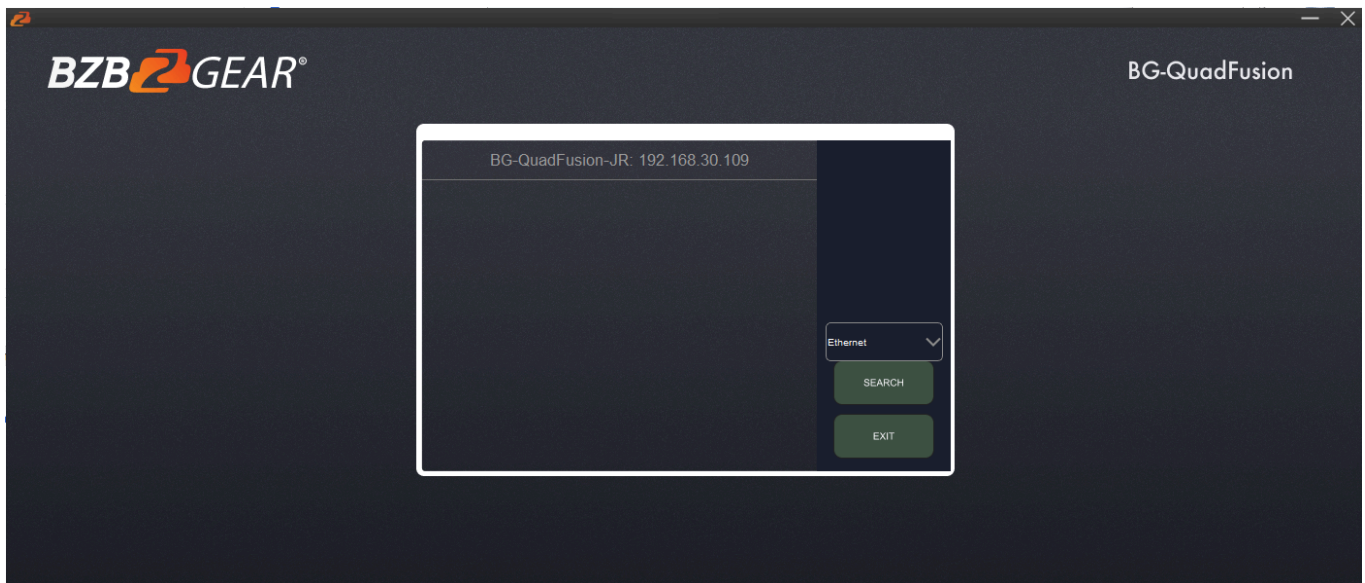
Upon opening the application, your device should be listed in the box in the center along with its IP address if both the device and computer are on the same network. You can also use the dropdown on the right to select a different internet adapter if your computer has more than one or to search again if the device was not found initially.

Double click on the device name in the center to access the virtual production switch as shown below.
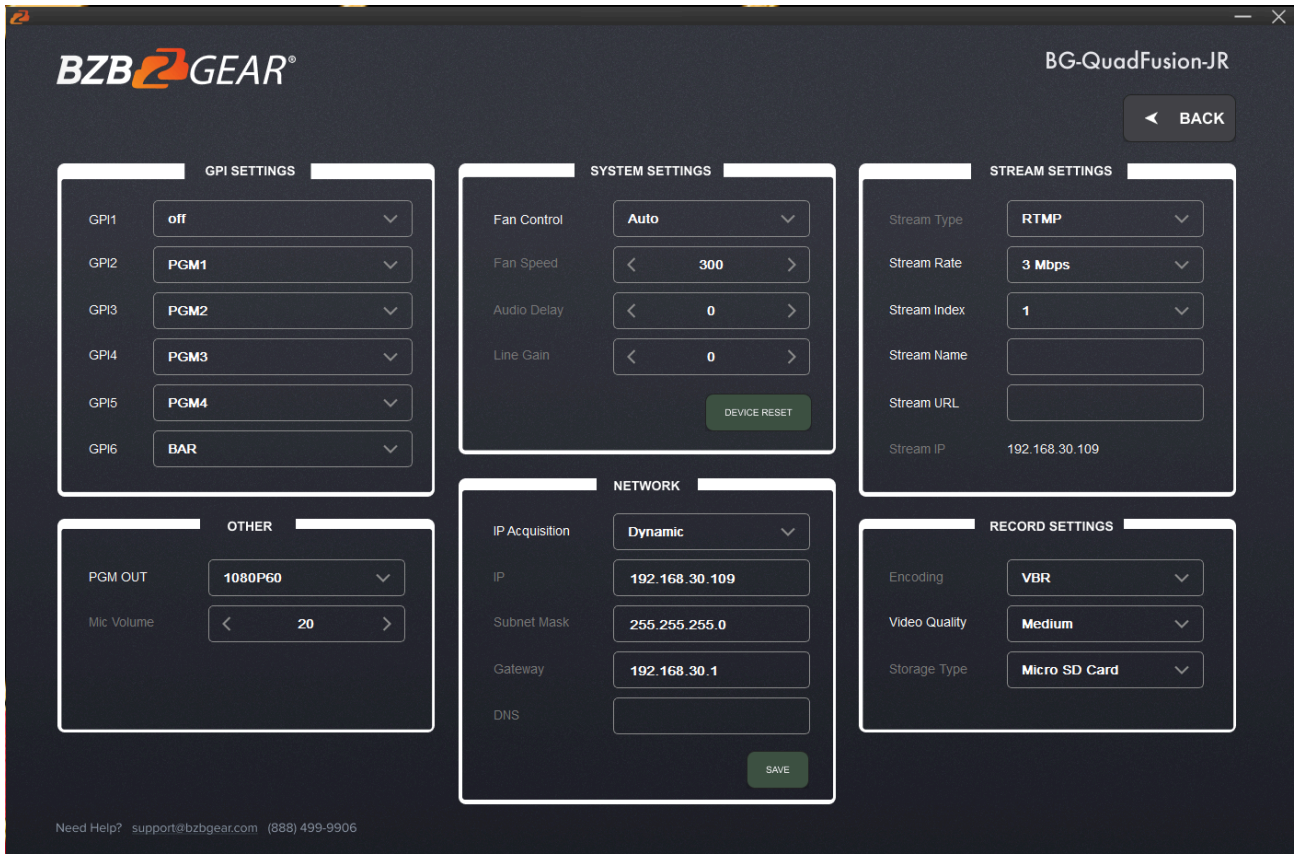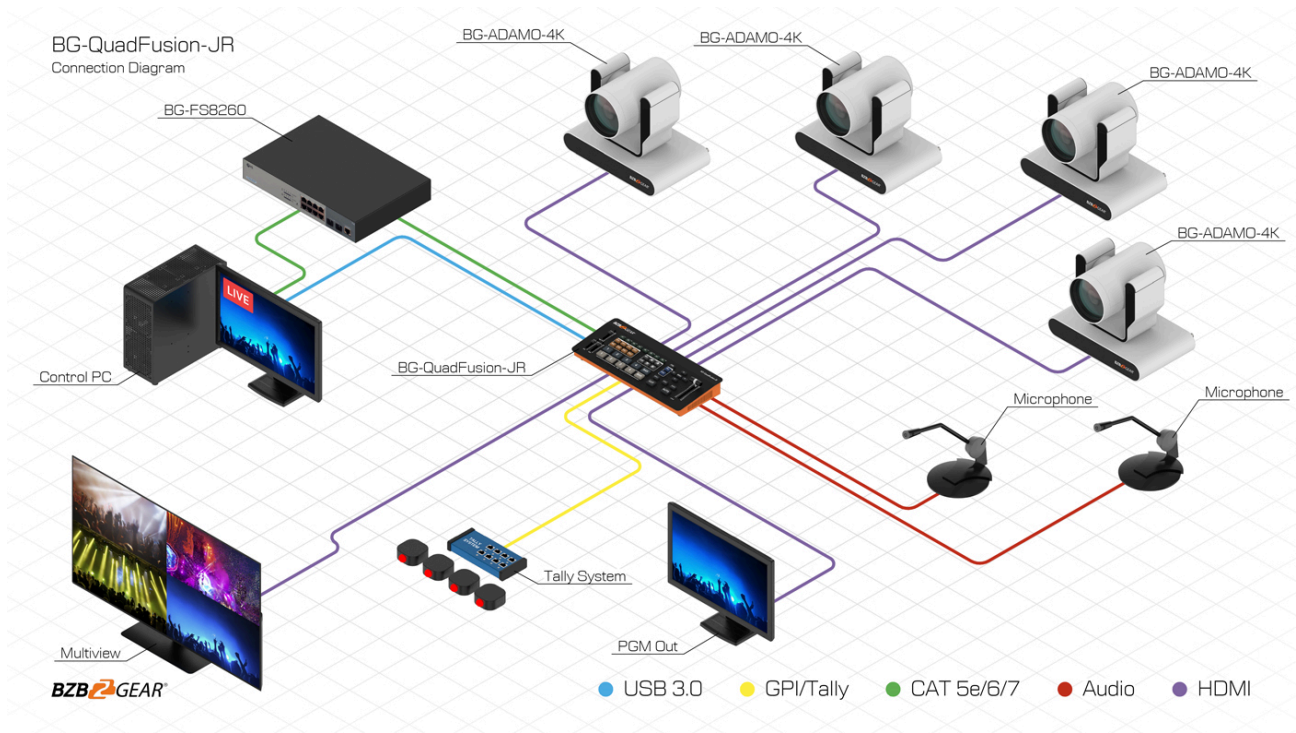
The virtual software functions exactly the same as if you were pressing the buttons on the unit itself and it will cause the physical unit to mirror your actions. NOTE: T-Bar and volume sliders will re-adjust when they are physically moved on the unit.

The Settings button in the top right will open a menu which provides most of the multiview on screen settings and web interface options as shown below.

Application Diagram

BG-QuadFusion-JR
Connection Diagram

BG-FS8260

BG-ADAMO-4K
BG-ADAMO-4K
BG-ADAMO-4K
BG-ADAMO-4K

Control PC

BG-QuadFusion-JR

Microphone
Microphone

Multiview

Tally System

PGM Out

● USB 3.0 ● GPI/Tally ● CAT 5e/6/7 ● Audio ● HDMI

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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