

BG-8K-22MA

**2x2 8K UHD HDMI 2.1 Matrix Switcher with Auto
Downscaling/Audio De-embedder**

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-8K-22MA is an 8K HDMI 2x2 matrix switcher that can switch any of the two HDMI input signals to either output and also distribute the a signal to two displays simultaneously. It supports video resolutions up to 8K@60Hz 4:2:0, features advanced EDID management, and audio de-embedding functionality (output through the optical and analog ports).

The ability to be used as either a splitter or a switcher, this multi-functional product can be used in various scenarios for demonstration, video conferencing, teaching, and other applications.

Features

- HDMI 2.1 and HDCP 2.3 compliant
- 40Gbps video bandwidth
- Video resolutions up to 8K@60Hz 4:2:0 10bit, 8K@30Hz 4:4:4 10bit, 4K@120Hz 4:4:4 10bit, 1080p240Hz
- VRR, FVA, ALLM
- HDR, HDR10, HDR10+, Dolby Vision, HLG pass through
- HDMI audio formats: LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD
- Built-in Equalizer, Retiming, and Driver
- Advanced EDID management
- Audio de-embedding functionality (output through the optical and analog ports)
- IR remote control and front panel button switching
- Compact design for easy and flexible installation

Packing List

- 1x 8K HDMI 2x2 Matrix Switcher
- 1x 5V/2A Multinational Power Supply
- 1x IR Remote
- 1x User Manual



Specifications

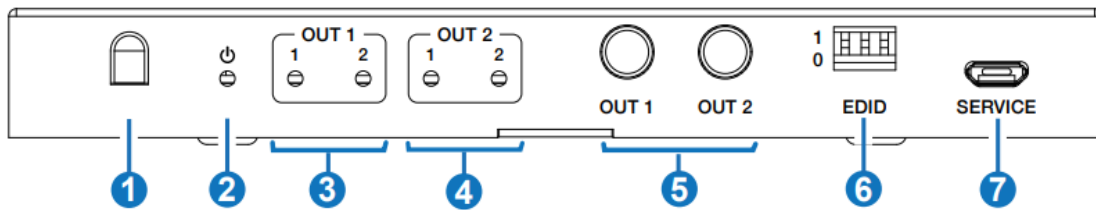
| Technical | |
|-----------------------|---|
| HDMI Compliance | HDMI 2.1 |
| HDCP Compliance | HDCP 2.3 |
| Video Bandwidth | 40Gbps |
| Video Resolution | Up to 8K@60Hz 4:2:0 10bit, 8K@30Hz 4:4:4 10bit, 4K@120Hz 4:4:4 10bit, 1080p240Hz |
| Color Depth | 8/10/12-bit |
| Color Space | RGB, YCbCr 4:4:4 / 4:2:2. YUV 4:2:0 |
| Audio Formats | HDMI input/output: LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD Audio de-embedding outputs: Optical: LPCM 2/5.1 CH, Dolby Digital 2/5.1 CH, DTS 2/5.1 CH Analog: PCM 2.0 |
| ESD Protection | Human body model – ±8kV (Air-gap discharge) & ±4kV (Contact discharge) |
| Connection | |
| Input | 2 × HDMI IN [Type A, 19-pin female] |
| Output | 2 × HDMI OUT [Type A, 19-pin female] 1 × OPTICAL [S/PDIF] 1 × L/R [3.5mm Stereo Mini-jack] |
| Control | 1 × SERVICE [Micro USB, Update port] |
| Mechanical | |
| Housing | Metal Enclosure |
| Silkscreen Color | Black |
| Dimensions | 5.7"(W) x 2.7"(D) x 0.67"(H) [145mm(W) x 68mm(D) x 17mm(H)] |
| Weight | 0.59 lbs [268g] |
| Power Supply | Input: AC100 - 240V 50/60Hz, Output: DC 5V/2A (US/EU standards, CE/FCC/UL certified) |
| Power Consumption | 6.2 W (Max) |
| Operation Temperature | 32°F ~ 104°F / 0°C ~ 40°C |
| Storage Temperature | -4°F ~ 140°F / -20°C ~ 60°C |
| Relative Humidity | 20~90% RH (non-condensing) |

| Recommended HDMI Cable | | | | |
|---|----------------|----------|----------|----------|
| Video Resolution | 8K | 4K60 | 4K24 | 1080P |
| HDMI Cable Type | Ultra HDMI 2.1 | HDMI 2.0 | HDMI 1.4 | HDMI 1.4 |
| HDMI Cable Length (HDMI IN/OUT) | 3m/10ft | 8m/26ft | 12m/39ft | 15m/49ft |
| The use of "Premium High Speed HDMI" cable is highly recommended. | | | | |

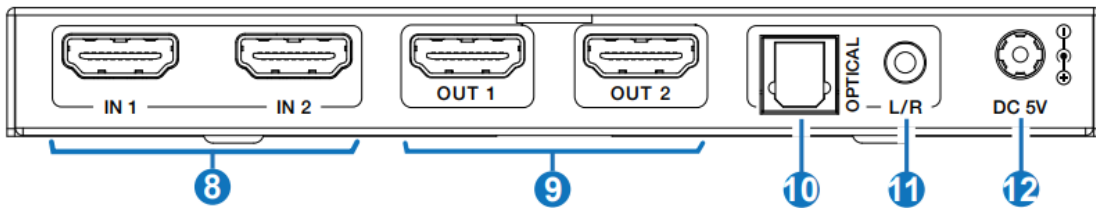


Operation Controls and Functions

Front Panel



Rear Panel




| No. | Name | Function Description |
|-----|------------------------|---|
| 1 | IR Window | IR input signal receiving window. |
| 2 | POWER LED | The power LED light is illuminated green when the device is working, and red when the device is in standby. |
| 3 | OUT 1 LED (1~2) | When the IN 1 or 2 port is selected as the signal source for the OUT 1 port, the corresponding green LED 1/2 will be illuminated. |
| 4 | OUT 2 LED (1~2) | When the IN 1 or 2 port is selected as the signal source for the OUT 2 port, the corresponding green LED 1/2 will be illuminated. |
| 5 | OUT 1~2 button | Used to select the signal source for OUT 1/2 ports. Pressing the OUT 1/2 buttons will allow the device to switch to either of the two connected HDMI input signals and distribute it to the corresponding output port. |
| 6 | EDID DIP switch | Use the DIP switch to set EDID. 111 - Copy OUT1 port sink EDID (factory default) 110 - HDMI 1080p@60Hz, Audio 2ch PCM 101 - HDMI 4K@60Hz 4:4:4, Audio 2ch PCM, HDR 100 - HDMI 4K@60Hz 4:4:4, Audio 5.1ch PCM/DTS/DOLBY, HDR 011 - HDMI 4K@60Hz 4:4:4, Audio 7.1ch PCM/DTS/DOLBY/HD, HDR 010 - HDMI 8K@60Hz 4:2:0+8K@30Hz 4:4:4, 4K@120Hz 4:4:4, Audio 2ch PCM, HDR 001 - HDMI 8K@60Hz 4:2:0+8K@30Hz 4:4:4, 4K@120Hz 4:4:4, Audio 5.1ch PCM/DTS/DOLBY, HDR 000 - HDMI 8K@60Hz 4:2:0+8K@30Hz 4:4:4, 4K@120Hz 4:4:4, Audio 7.1ch PCM/DTS/DOLBY/HD, HDR |
| 7 | SERVICE | Firmware update and debug port. |
| 8 | IN (1~2) port | Connecting to an HDMI source device such as Blu-ray player or PS5 with an HDMI cable. |
| 9 | OUT (1~2) port | Connecting to HDMI display devices such as TVs or Monitors with HDMI cables. |
| 10 | OPTICAL | Optical fiber audio output port. |
| 11 | L/R | Analog audio output port. |
| 12 | DC 5V | DC 5V/2A Power input port. |




IR Remote

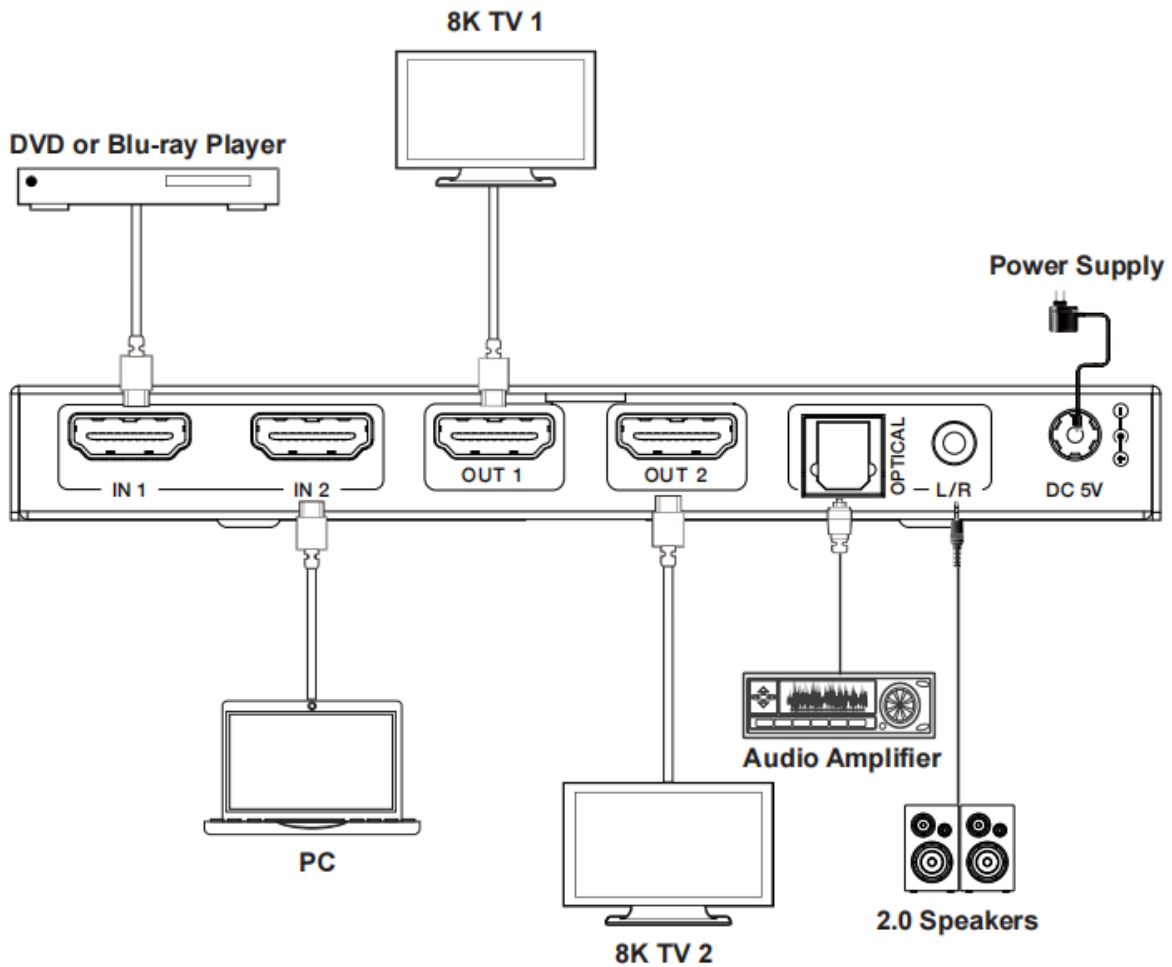


 : Power on the product or set it to standby mode.

1 / 2 : Press 1 or 2 buttons to select an HDMI signal source to the corresponding OUTPUT port.

 : Press this button to cyclically switch HDMI signal sources on the corresponding OUTPUT port.

Application Diagram





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

1.888.499.9906

Email

support@bzbgear.com

Live Chat

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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