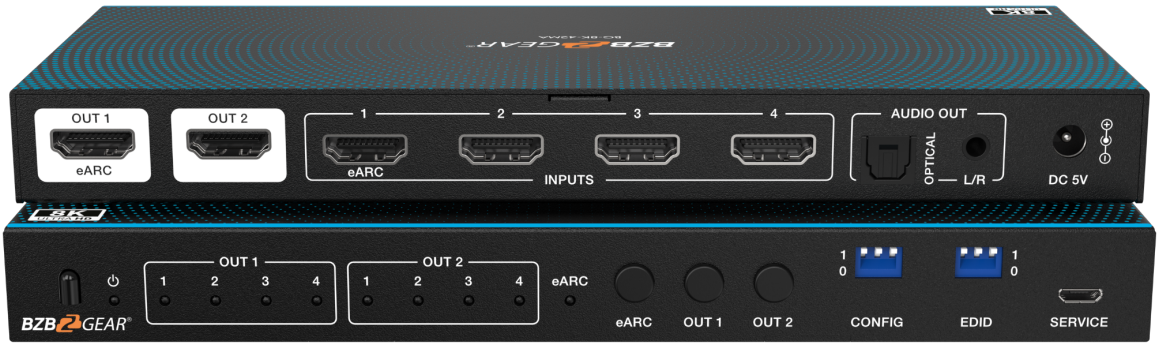
BZB GEAR®
Solutions to Amplify Your World™

# BG-8K-42MA

## 8K HDMI 4x2 Matrix

# 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-42MA is an 8K HDMI 4x2 matrix that can switch any of the four HDMI input signals to either output and it can also distribute a single signal to two displays simultaneously. With video resolutions up to 8K@60Hz 4:2:0 it also supports eARC functionality (only for INPUT 1 port and OUTPUT 1).

Built-in EDID DIP switches support advanced EDID management. The BG-8K-42MA also supports audio de-embedding. This multi-functional product can be used for demonstrations, video conferencing, multimedia teaching, and other instances that require switching multiple sources to two displays.

## Features

- HDMI 2.1 and HDCP 2.3 compliant.
- Supports 40Gbps of video bandwidth.
- Video resolution up to 8K@60Hz 4:2:0 10bit, 8K@30Hz 4:4:4 10bit, 4K@120Hz 4:4:4 10bit.
- VRR, FVA, ALLM
- HDR, HDR10, HDR10+, Dolby Vision, HLG pass-through
- HDMI audio formats: LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD.
- INPUT 1 and OUTPUT 1 ports support ARC\eARC.
- Allows HD audio up to Dolby Atmos, DTS:X over TrueHD from ANY external HDMI source to a supported eARC/ARC sound system.
- Audio de-embedding (output through the optical and analog port).
- Built-in EDID DIP switches support advanced EDID management.
- 8K->4K, 8K/4K->2K downscaling.
- IR remote control and front panel button switching.
- Built-in Equalizer, Retiming, and Driver.
- Compact design for easy and flexible installations.

## Packing List

- 1 × 8K HDMI 4x2 Matrix
- 1 × IR Remote
- 1 × 5V/2A Multinational Power Supply
- 1 × User Manual

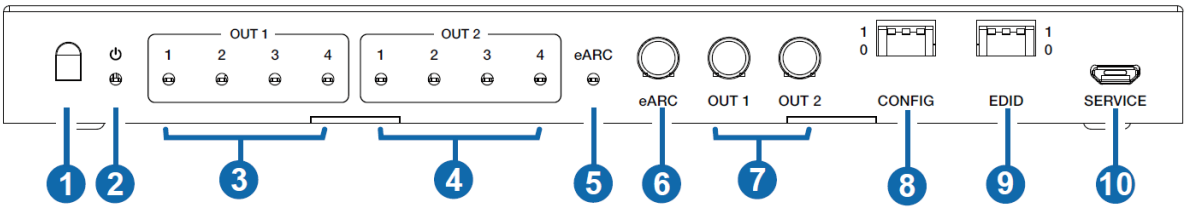
# Specifications

| **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 |
| Color Depth | 8/10/12-bit |
| Color Space | RGB_4:4:4, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0 |
| Audio Formats | HDMI input/output:<br>LPCM, Dolby Digital/Plus/EX, Dolby True HD, Dolby Atmos, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-HD Master Audio, DSD Audio de-embedding output:<br>Optical: Up to LPCM/Dolby/DTS 5.1 CH<br>Analog: LPCM 2.0 CH |
| ESD Protection | Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge) |
| **Connection** | |
| Input | 4 × HDMI IN [Type A, 19-pin female] |
| Output | 2 × HDMI OUT [Type A, 19-pin female] 1 × OPTICAL [S/PDIF]<br>1 × L/R [3.5mm Stereo Mini-jack] |
| Control | 1 × SERVICE [Micro USB, Update port] |
| **Mechanical** | |
| Housing | Metal Enclosure |
| Silk Screen Color | Black |
| Dimensions | 200mm (W) × 85mm (D) × 21mm (H) |
| Weight | 411 g |
| Power Supply | Input: AC100 - 240V 50/60Hz, Output: DC 5V/2A (US/EU standards, CE/FCC/UL certified) |
| Power Consumption | 2.05 W (Max) |
| Operation 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) |

| **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” cables is highly recommended. | | | | |

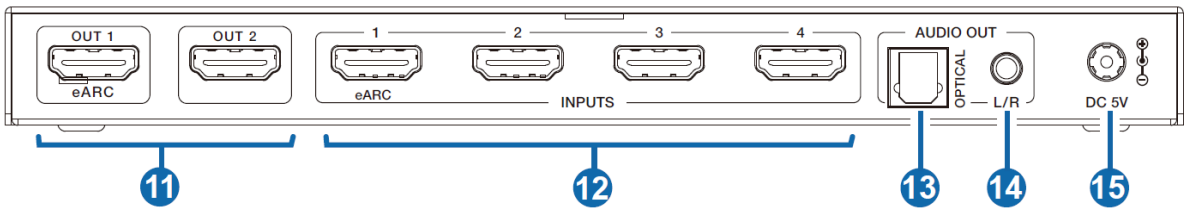
# Operation Controls and Functions

## Front Panel



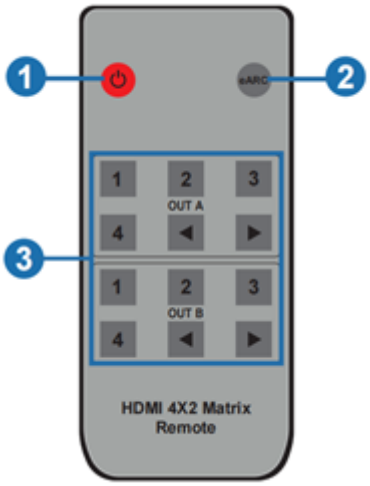

| No. | Name | Function Description |
|---|---|---|
| 1 | **IR Window** | IR input signal receiving window. |
| 2 | **POWER LED** | The power LED lights in green when the device is working, and red when the device is in standby. |
| 3 | **OUT 1 LED (1~4)** | When one of the INPUTS 1/2/3/4 is selected as the signal source for the OUT 1 port, the corresponding green LED 1/2/3/4 will be illuminated. |
| 4 | **OUT 2 LED (1~4)** | When one of the INPUTS 1/2/3/4 is selected as the signal source for the OUT 2 port, the corresponding green LED 1/2/3/4 will be illuminated. |
| 5 | **eARC LED** | The eARC LED will be illuminated when the eARC function is enabled. |
| 6 | **eARC button** | Press the button to turn on/off eARC. |
| 7 | **OUT 1~2 button** | Used to select signal source for OUT 1/2 ports. Pressing the button OUT 1/2 will allow the device to switch any of the four HDMI input signals and distribute it to the corresponding output port. |
| 8 | **CONFIG DIP switch** | Use the DIP switch to set the working mode. (x means 1 or 0.)<br>1xx- Matrix mode<br>0xx- Splitter mode<br>x11- OUT 2 pass-through mode<br>x10- OUT 2 scaler mode 8K-4K<br>x01- OUT 2 scaler mode 8K/4K-1080P<br>x00- OUT 2 pass-through mode |
| 9 | **EDID DIP switch** | Use the DIP switch to set EDID.<br>111- Copy OUT 1 port sink EDID (as factory default)<br>110- HDMI 1080p@60Hz, Audio 2ch PCM<br>101- HDMI 4K@60Hz 4:4:4, Audio 2ch PCM<br>100- HDMI 4K@60Hz 4:4:4, Audio 5.1ch PCM/DTS/DOLBY<br>011- HDMI 4K@60Hz 4:4:4, Audio 7.1ch PCM/DTS/DOLBY/HD<br>010- HDMI 8K@60Hz 4:2:0+8K@30Hz 4:4:4, Audio 2ch PCM<br>001- HDMI 8K@60Hz 4:2:0+8K@30Hz 4:4:4, Audio 5.1ch PCM/ DTS/DOLBY<br>000- HDMI 8K@60Hz 4:2:0+8K@30Hz 4:4:4, Audio 7.1ch PCM/ DTS/DOLBY/HD |
| 10 | **SERVICE** | Firmware update and debug port. |

## Rear Panel




| No. | Name | Function Description |
|---|---|---|
| 11 | **OUT (1~2) port** | HDMI signal output ports, connect to an HDMI display device such as a TV or Monitor with an HDMI cable.<br>Note: When the eARC function is turned off, connect the “OUT 1 (eARC)” port to HDMI display device to work as an output port; When the eARC function is turned on, you can connect the “OUT 1 (eARC)” port to an HDMI TV with eARC function. |
| 12 | **INPUTS (1~4) port** | HDMI signal input ports, connect to an HDMI source device such as Blu-ray or PS5 with an HDMI cable.<br>Note: When the eARC function is turned off, connect the “INPUTS 1 (eARC)” port to HDMI source device to work as an input port; When the eARC function is turned on, connect the “INPUTS 1 (eARC)” port to soundbar to output the audio signal from port “OUT 1 (eARC)” port. |
| 13 | **OPTICAL** | Optical fiber audio output port.<br>**Note:** When the eARC function is turned on, the port is muted. |
| 14 | **L/R** | Analog audio output port.<br>**Note:** When the eARC function is turned on, the port is muted. |
| 15 | **DC 5V** | DC 5V/2A Power input port. |

## IR Remote




① ⏻: Power on the device or set it to standby mode.

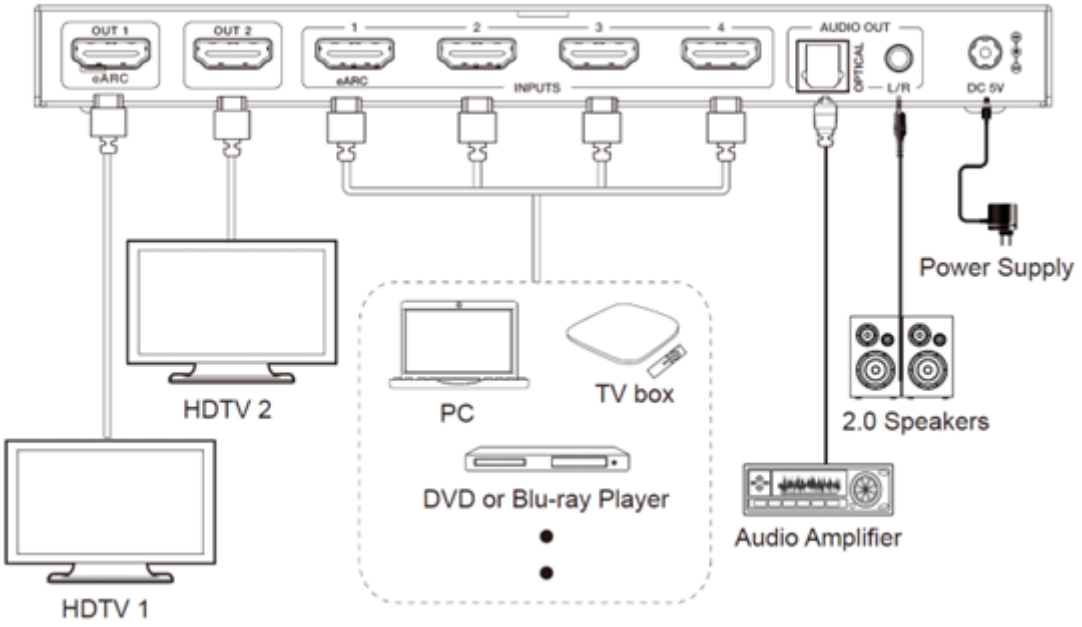
② **eARC:** Press this button to turn on/off eARC function. When the eARC function is turned on, the eARC LED on the front panel will be on.

③ **OUT A/OUT B:** Press **1/2/3/4** directly to select the relevant input source 1/2/3/4 to OUT 1/2 display.
Or press ◀/▶ to select the last or next signal input source.

## Application Example

**Situation 1**

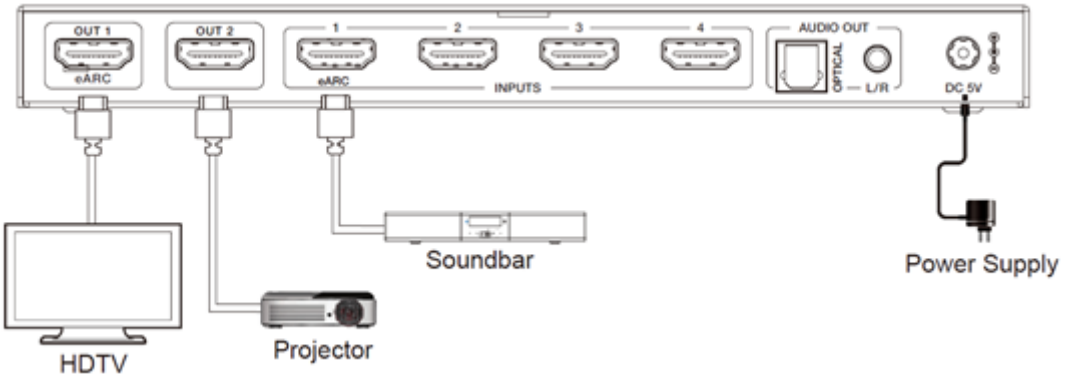
When the eARC function is turned off connected devices will function as normal.




**Situation 2**

When the eARC function is turned on, connect the “INPUTS 1 (eARC)” port to a Soundbar to output the audio signal returned from the “OUT 1 (eARC)” port, the INPUTS 1 LED for OUT 1 will illuminate.

**Note:** If the display supports eARC/ARC but the soundbar only supports standard ARC, turn off the eARC function on the display.



## 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 |

## 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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