



## BG-AEE

6G HDCP 2.2 Audio Extractor & Embedder



## USER MANUAL

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

## **SURGE PROTECTION DEVICE RECOMMENDED**

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

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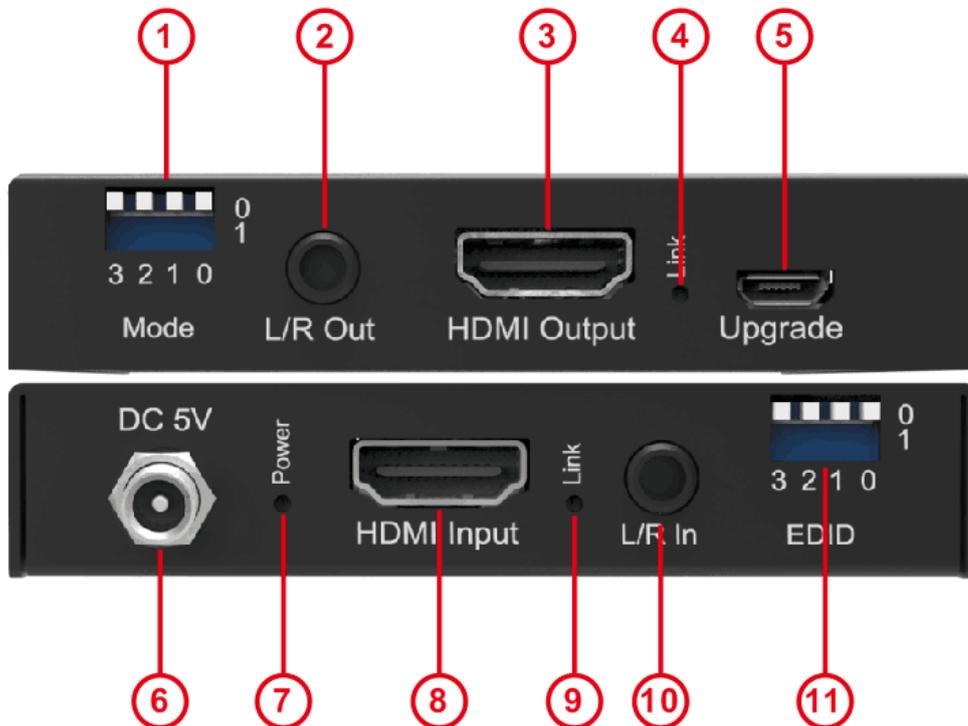
## Introduction

The BG-AEE is an HDMI 2.0 Audio Extractor and Embedder, which can work in two modes, one mode for extracting the audio via L/R output from HDMI input source, and the other mode for removing the original audio of HDMI source and embedding auxiliary audio via L/R input to the HDMI output. It also features embedded pre-set EDID's as testing device in the video signal chain.

## Features

- ◆ Supports 4K@50Hz/60Hz 4:4:4 , HDR and full 3D format
- ◆ HDCP 2.2/HDCP 1.x and DVI compliant
- ◆ Smart CSC technology supports outputting 6G or 3G (4K@60Hz 4:2:0) video depends on sink device capacity
- ◆ Audio embed to HDMI output
- ◆ Audio de-embedded from HDMI input
- ◆ Supports EDID management
- ◆ Supports HDCP management
- ◆ CEC and ARC pass through
- ◆ Supports RS-232 API control commands
- ◆ Relock and enhance output signal quality
- ◆ All PCM, Dolby and DTS audio formats pass through
- ◆ With ESD protection

## Panel Description



① Mode DIP Switch -- 4 pin (UP=0, DOWN=1). The BG-AEE can be configured to perform various tasks using the mode DIP switches. Detailed settings please see below:

A. Under control by DIP switch, the position of **DIP Switch-0** should be UP (0).

◆ **DIP Switch-3** -- Selectable to convert HDMI signal to output.

Position=0 (UP) -- Auto convert 6G (4:4:4) Format to 3G (4:2:0) when detect sink not support 6G (4:4:4).

Position=1 (DOWN) -- Always convert 6G (4:4:4) format to 3G (4:2:0).

◆ **DIP Switch-2** -- HDCP management.

Position=0 (UP) -- HDCP follow sink.

Position=1 (DOWN) -- HDCP follow source.

◆ **DIP Switch-1** -- Audio embedding and bypass.

Position=0 (UP) -- Audio bypass.

Position=1 (DOWN) -- Audio embedding (L/R input added to the HDMI Output).

B. Under control by serial USB mode, the position of DIP Switch-0 should be DOWN (1).

DIP Switch-1/2/3 -- reserved or not in use.

② L/R Out -- Extract the audio from the HDMI input

③ HDMI Output -- Connect to HDMI sink device

④ LED Link for HDMI output -- Lit when detecting HDMI signal

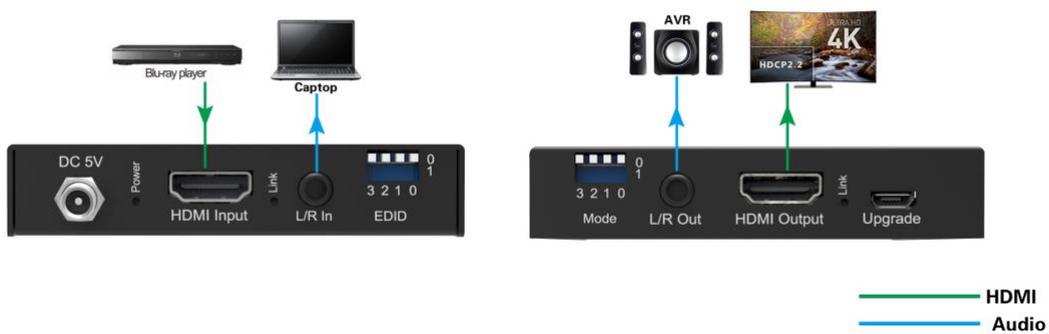
- ⑤ Upgrade -- Micro USB port for F/M upgrade and terminal API control
- ⑥ DC Power Input -- Screw locking connector, use the included 5V/1A DC adapter to power the unit
- ⑦ LED Indicator for Power -- Lit blue light when getting power
- ⑧ HDMI Input -- Connect to HDMI source device
- ⑨ LED Indicator for HDMI Input -- Lit when detecting HDMI signal
- ⑩ L/R In -- Embed the audio to HDMI output
- ⑪ DIP Switcher -- EDID management

3	2	1	0	EDID type
Combination of DIP positions				
0	0	0	0	Copy EDID from output
0	0	0	1	1080P 2.0CH
0	0	1	0	1080P 5.1CH
0	0	1	1	1080P 7.1CH
0	1	0	0	1080i 2.0CH
0	1	0	1	1080i 5.1CH
0	1	1	0	1080i 7.1CH
0	1	1	1	4K60Hz 4:2:0 2.0CH
1	0	0	0	4K60Hz 4:4:4 2.0CH,
1	0	0	1	4K60Hz 4:4:4 7.1CH
1	0	1	0	4K30Hz 4:4:4 2.0CH
1	0	1	1	4K30Hz 4:4:4 5.1CH
1	1	0	0	4K30Hz 4:4:4 7.1CH
1	1	0	1	DVI 1280x1024
1	1	1	0	DVI 1920x1080
1	1	1	1	DVI 1920x1200

## RS232 API Commands

Command	Action
?	Print Help Information
HELP	Print Help Information
STATUS	Print System Status And Port Status
AUD EXT/INS	Set Audio Extract Or Insert
OUT ON/OFF	Set OUTPUT On Or Off
OUT CSC xx	Set OUTPUT Color Space Convert Mode xx=OFF: Disable Convert Function xx=OFF: Disable Convert Function xx=420: Always Convert 6G 444 Format To 3G 420 xx=AUTO: Auto Convert 6G 444 Format To 3G 420 When Detect Sink Not Support 6G 444
FHPD ON/OFF	Set Force HPD On Or Off
RESET	Reset System To Default Setting (Should Type "Yes" To Confirm, "No" To Discard)

## Application Diagram



## Specifications

Bandwidth	18Gbps
Video Input Connectors	1x HDMI Type A, 19-pin, female
Audio Input Connectors	1x 3.5mm stereo earphone jack (L/R)
Video Output Connectors	1x HDMI Type A, 19-pin, female
Audio Output Connectors	1x 3.5mm stereo earphone jack (L/R)
EDID	4-pin DIP Switcher
Mode	4-pin DIP Switcher
Dimensions(W x D x H)	83mm x 83mm x 17mm, without feet
Shipping Weight	0.3KG
Operating Temperature	32°F to 104°F (0°C to 40°C)
Storage Temperature	- 4°F to 140°F (- 20°C to 60°C)
Power Supply	5V/1A DC

## Package Contents

- 1) 1x BG-AEE
- 2) 1x 5V/1A Power Supply
- 3) 1x Pair of Rack-mount Ears

## **Maintenance**

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzene to clean this unit.

## **Warranty Policy**

BZBGear products are warranted against defects in material and workmanship for one year from the date of shipment. During the warranty period, BZBGear will, at its option, repair or replace products that prove to be defective. Repairs are warranted for the remainder of the original warranty.

For equipment under warranty, the owner is responsible for freight to BZBGear and all related customs, taxes, tariffs, insurance, etc. BZBGear is responsible for the freight charges only for return of the equipment from the factory to the owner. BZBGear will return the equipment by the same method (i.e., Air, Express, Surface) as the equipment was sent to BZBGear.

All equipment returned for warranty repair must have a valid RMA number issued prior to return and be marked clearly on the return packaging. BZBGear strongly recommends all equipment be returned in its original packaging.

BZBGear's obligations under this warranty are limited to repair or replacement of failed parts, and the return shipment to the buyer of the repaired or replaced parts.

## **Limitations of Warranty**

The warranty does not apply to any part of a product that has been installed, altered, repaired, or misused in any way that, in the opinion of BZBGear, would affect the reliability or detracts from the performance of any part of the product, or is damaged as the result of use in a way or with equipment that had not been previously approved by BZBGear.

The warranty does not apply to any product or parts thereof where the serial number or the serial number of any of its parts has been altered, defaced, or removed.

The warranty does not cover damage or loss incurred in transportation of the product.

The warranty does not cover replacement or repair necessitated by loss or damage from any cause beyond the control of BZBGear, such as lightning or other natural and weather-related events or wartime environments.

The warranty does not cover any labor involved in the removal and or reinstallation of warranted equipment or parts on site, or any labor required to diagnose the necessity for repair or replacement.

The warranty excludes any responsibility by BZBGear for incidental or consequential damages arising from the use of the equipment or products, or for any inability to use them either separate from or in combination with any other equipment or products.

A fixed charge established for each product will be imposed for all equipment returned for warranty repair where BZBGear cannot identify the cause of the reported failure.

## **Exclusive Remedies**

BZBGear's warranty, as stated is in lieu of all other warranties, expressed, implied, or statutory, including those of merchantability and fitness for a particular purpose. The buyer shall pass on to any purchaser, lessee, or other user of BZBGear's products, the aforementioned warranty, and shall indemnify and hold harmless BZBGear from any claims or liability of such purchaser, lessee, or user based upon allegations that the buyer, its agents, or employees have made additional warranties or representations as to product preference or use.

The remedies provided herein are the buyer's sole and exclusive remedies. BZBGear shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

## **RMA Policy**

When returning product to BZBGear for any reason, the customer should fill out the official RMA form to obtain an RMA number. Without the permission or approval, BZBGear will not be responsible for any return. This can be initiated by emailing or calling your related sales. All requests are processed within 48 hours.

## **Standard Replacement**

For customers that agree to return defective product to BZBGear first, a Standard Replacement option is available.

An RMA number must first be issued by sales. This RMA number will need to be referenced on the outside of the return shipment.

Upon receipt of the defective product, BZBGear will, at its discretion, either repair or replace the product and ship it out in the most expeditious manner possible. Subject to availability, the replacement product will be shipped on the business day following receipt of the defective product.

In the event the product returned to BZBGear has been discontinued (i.e. the product is no longer being manufactured by BZBGear but is still under warranty), BZBGear will, at its discretion, either repair or replace with recertified product.

### **Once you have obtained an RMA number**

After obtaining an RMA number from BZBGear, you must send the product - freight prepaid - to BZBGear. The BZBGear RMA number must be prominently displayed on the outside of your package. If you send your product to BZBGear without the RMA number prominently displayed on the outside of the package, it will be returned to you unopened.

Please use a shipping company that can demonstrate proof of delivery. BZBGear does not accept responsibility for any lost shipments unless proof of delivery to BZBGear is provided.

### **Please note:**

Product shipped to BZBGear must be properly packaged to prevent loss or damage in transit.

Shipping your RMA to BZBGear using regular mailing envelopes is not acceptable, as they do not protect the product from damage during shipping.

BZBGear will not repair or replace a module that is shipped in such a way that the product is not properly protected.

BZBGear will not accept any product that has been damaged as a result of accident, abuse, misuse, natural or personal disaster, or any unauthorized disassemble, repair or modification.

## Warranty Information (Second Year Assurance)

BZBGear wants to assure you peace of mind. We're so confident in the quality of our products that along with the manufacturer's one-year limited warranty, we are offering free second-year warranty coverage upon registration\*!

Taking advantage of this program is simple, just follow the steps below:

1. Register your product within 90 days of purchase by visiting [BZBGear.com/warranty](https://www.bzbgear.com/warranty).
2. Complete the registration form. Provide all necessary proof of purchase details, including serial number and a copy of your sales receipt.

For questions, please call 1.888.660.2962 or email [support@bzbgear.com](mailto:support@bzbgear.com).

For complete warranty information, please visit [BZBGear.com/warranty](https://www.bzbgear.com/warranty) or scan the QR code below.



\*Terms and conditions apply. Registration is required.

## **Mission Statement**

BZBGear manifests from the competitive nature of the audiovisual industry to innovate while keeping the customer in mind. AV solutions can cost a pretty penny, and new technology only adds to it. We believe everyone deserves to see, hear, and feel the advancements made in today's AV world without having to break the bank. BZBGear is the solution for small to medium-sized applications requiring the latest professional products in AV.

We live in a DIY era where resources are abundant on the internet. With that in mind, our team offers system design consultation and expert tech support seven days a week for the products in our BZBGear catalog. You'll notice comparably lower prices with BZBGear solutions, but the quality of the products is on par with the top brands in the industry. The unparalleled support from our team is our way of showing we care for every one of our customers. Whether you're an integrator, home theater enthusiast, or a do-it-yourselfer, BZBGear offers the solutions to allow you to focus on your project and not your budget.