

BG-UHD-DA2X8

**2X8 4K 18Gbps UHD HDMI Splitter/Distribution Amplifier
with Downscaling/Audio Extraction and CEC Control**

User Manual







TABLE OF CONTENTS

| | |
|----------------------------------|----|
| Statement | 4 |
| Safety Precaution | 4 |
| Introduction | 5 |
| Features | 5 |
| Packing List | 5 |
| Specifications | 6 |
| Operation Controls and Functions | 7 |
| EDID Management | 9 |
| Video Resolution Down-scaling | 10 |
| Firmware Upgrade | 11 |
| Application Example | 11 |
| Troubleshooting and Maintenance | 12 |
| Tech Support | 13 |
| Limited Product Warranty Terms | 13 |
| Mission Statement | 14 |
| Copyright | 14 |



Statement

Please read these instructions carefully before connecting, operating, or configuring this product. Please save this manual for future reference.

Safety Precautions

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent damaging this product, avoid heavy pressure, strong vibration, or immersion during transportation, storage, and installation.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Do not put any heavy items on the extension cable in case of extrusion.
- Install the device in a place with fine ventilation to avoid damage caused by overheating.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- The housing of this product is made of organic materials. Do not expose to any liquid, gas, or solids which may corrode the shell.
- Unplug this device during lightning storms.
- Do not use liquid or aerosol cleaners to clean this unit. Clean only with a soft dry microfiber cloth.
- Always unplug the power to the device before cleaning.
- If an object or liquid falls or spills on to the housing, unplug the module immediately.
- 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 manufacturer.
- Product specifications may be subject to technical upgrades without further notice.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.



Introduction

The BG-UHD-DA2X8 is an HDMI 2.0 2x8 splitter that can distribute either of the two HDMI inputs to eight outputs. The splitter supports HDMI video resolutions up to 4K@60Hz 4:4:4, 1080p 3D, and multichannel audio formats. In addition to passing EDID information from the display, there are multiple built-in EDID settings that can be selected by the 4-pin DIP switches on the rear panel.

The splitter can extract HDMI digital audio to stereo analog L/R and Toslink S/PDIF audio outputs to provide audio sources for existing audio systems. Built-in CEC technology is able to turn on/off displays and adjust volume using the control buttons on the front panel if the device is supported.

Features

- HDMI 2.0 and video resolutions up to 4K@60Hz 4:4:4.
- HDMI inputs HDCP 2.2 and outputs HDCP 1.4 compliant.
- Video resolution down-scaling: the 4K input can be automatically downscaled to 1080p to support legacy displays.
- 18Gbps high bandwidth.
- RCA (L/R) jack and Toslink connector for audio extraction.
- Advanced EDID management: multiple preset and user defined.
- Built-in equalizer for signal enhancement to avoid signal attenuation in transmission.
- CEC control to turn on/off displays and adjust volume for supported devices.
- Provides LEDs to indicate the current operating status and to assist troubleshooting and installation.
- Firmware upgradable via the Micro-USB port.

Packing List

- | | |
|----------------------------------|--------------------------------|
| • 1x HDMI 2.0 2x8 Splitter | • 1x Power Adapter (12V DC 1A) |
| • 2x Mounting Ears with 4 Screws | • 1x User Manual |
| • 4x Plastic Cushions | • 1x Quick Start Guide |



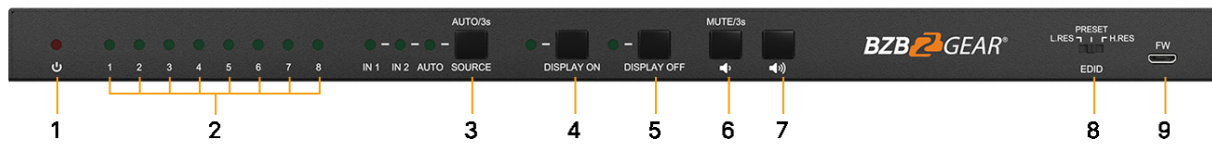
Specifications

| | |
|--------------------------------|--|
| Video Input | |
| Input | (2) HDMI |
| Input Connector | (2) Female type-A HDMI |
| HDMI Input Resolution | Up to 4Kx2K@60Hz 4:4:4 8bit |
| HDMI Standard | 2.0 |
| HDCP Version | 2.2 |
| CEC | Supported |
| Video Output | |
| Output | (8) HDMI |
| Output Connector | (8) Female type-A HDMI |
| HDMI Output Resolution | Up to 4Kx2K@60Hz 4:4:4 8bit |
| HDMI Standard | 2.0 |
| CEC | Supported |
| Audio | |
| De-embedded Output | (1) AUDIO OUT; (1) SPDIF OUT |
| Output Connector | (1) RCA (L/R) jack; (1) Toslink connector |
| HDMI Audio Format | LPCM 7.1 audio, Dolby Atmos®, Dolby® TrueHD, Dolby Digital® Plus, DTS:X, and DTS-HD® Master Audio pass-through |
| Stereo Analog L/R Audio Format | PCM |
| Toslink Digital Audio Format | PCM, Dolby Digital, DTS, DTS-HD |
| Frequency Response | 20Hz - 20KHz, ± 3 dB |
| Max Output Level | 2.0Vrms ± 0.5 dB. 2V = 16dB headroom above -10dBV (316mV) nominal consumer line level signal |
| THD+N | <0.05% (-80 dB), 20Hz - 20KHz bandwidth, 1KHz sine at 0dBFS level (or max level) |
| SNR | >80dB, 20Hz ~ 20KHz bandwidth |
| Crosstalk Isolation | >70dB, 10KHz sine at 0dBFS level (or max level before clipping) |
| L-R Level Deviation | < 0.3dB, 1KHz sine at 0dBFS level (or max level before clipping) |
| Frequency Response Deviation | $\leq \pm 0.5$ dB 20Hz ~ 20KHz |
| Output Load Capability | 1k ohm and higher (supports 10x paralleled 10k ohm loads) |
| Stereo Channel Separation | >70dB@1kHz |
| Control | |
| Control Part | (5) Control buttons, (1) EDID 3-pin DIP switch, (1) EDID 4-pin DIP switch, (1) Micro-USB port |
| General | |
| Bandwidth | 18Gbps |
| Operation Temperature | 14°F ~ 131°F / -10°C ~ +55°C |
| Storage Temperature | -13°F ~ 158°F / -25°C ~ +70°C |
| Relative Humidity | 10%-90% |
| Power Supply | Input: 100V~240V AC; Output: 12V DC 1A |
| Power Consumption | 12W(Max) |
| Dimension (W*H*D) | 12.6" x 0.8" x 3.9" [324mm x 20mm x 100mm] |
| Net Weight | About 2lbs [900g] |



Operation Controls and Functions

Front Panel

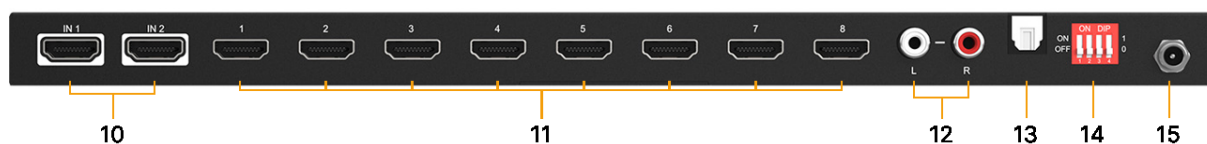


1. **POWER LED:** The LED illuminates red when power is connected.
2. **OUTPUT LEDs:** The LED illuminates green when there is an HDMI output on the corresponding channel.
3. **SOURCE Button and LEDs:**
 - Press the button to switch to the next source device and then the corresponding input LED will illuminate green.
 - Press and hold the button for at least three seconds to enable automatic switching mode. The splitter will automatically select the first available active source device starting at HDMI input 1.
 - Upon detecting that a new source device is connected, the splitter will automatically select the new one. When an active source device is removed, the splitter will switch to the next one.
 - Once restarted, the splitter will resume the last switching mode.
 - Press and hold the button for at least three seconds again to exit the automatic switching mode, and the current selected channel will not change.
4. **DISPLAY ON Button and LED:** Press the button to turn on compatible displays. The LED blinks green when pressed.
5. **DISPLAY OFF Button and LED:** Press the button to turn off compatible displays. The LED blinks green when pressed.
6. **VOLUME DOWN/MUTE Button:** Press the button to decrease the volume of compatible displays. Press and hold this button for at least three seconds to mute the displays.
7. **VOLUME UP Button:** Press the button to increase the volume of compatible displays or exit mute mode if the displays are already muted.
8. **EDID:** 3-pin DIP Switch for the Extended Display Identification Data (EDID) value setting. Please refer to the EDID Management section for more details.
9. **FW:** Micro-USB port for firmware upgrades.

Note: Only displays which support CEC can be controlled by DISPLAY ON, DISPLAY OFF, VOLUME UP and VOLUME DOWN buttons. CEC displays may not be fully compatible.



Rear Panel



10. INPUTS: Two type-A female HDMI input ports to connect HDMI sources.

11. OUTPUTS: Eight type-A female HDMI output ports to connect HDMI displays.

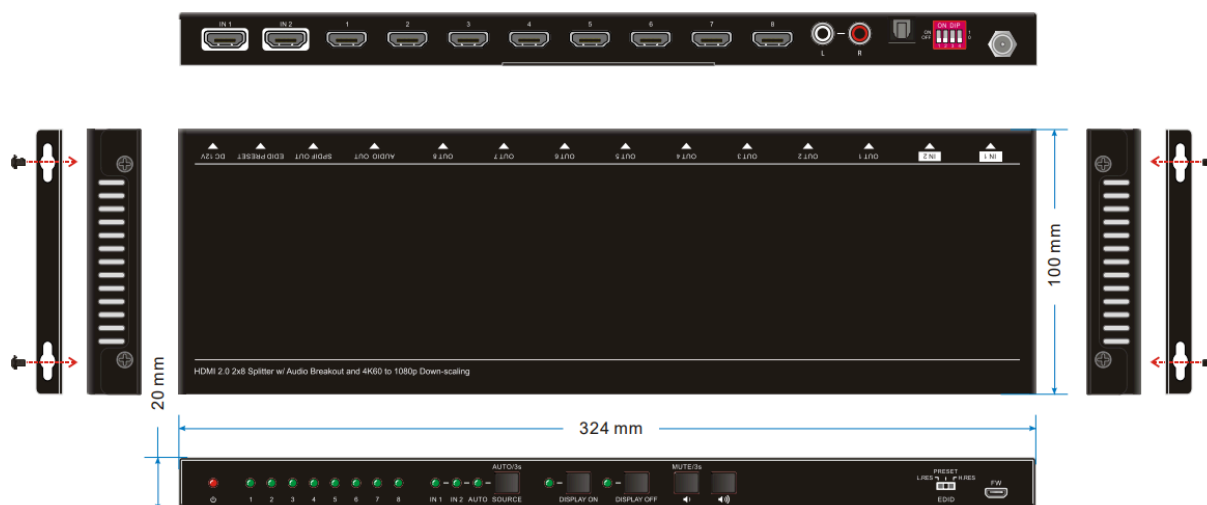
12. AUDIO OUT: RCA jack for stereo analog audio output.

13. SPDIF OUT: Toslink connector for digital audio output.

14. EDID: 4-pin DIP switch for EDID setting. Please refer to the EDID Management for more details.

15. DC 12V: DC barrel port to connect an AC power adapter.

Panel Drawing





EDID Management

The Extended Display Identification Data (EDID) is used by the source device to match its video resolution with the connected display. By default, the source device obtains its EDID from the first connected display. Since displays with different capabilities can be connected to the splitter, the 3-pin DIP switch on the front panel and the 4-pin DIP switch on the rear panel can be used in combination to set the EDID to a fixed value to ensure compatibility of video resolutions.



| Switch Status | Description |
|---------------|--|
| L.RES | The splitter reads all EDID information from all connected displays, and choose the one with lowest resolution passing to the source. |
| PRESET | In this mode, the 4-pin DIP switch on the rear panel can be used to select predefined EDID and customize a specific EDID as needed. |
| H.RES | The splitter reads all EDID information from all connected displays and chooses the one with the highest resolution passing to the source. |

• Predefined EDID setting

When the 3-pin DIP switch on the front panel is in **PRESET** mode, the 4-pin DIP switch on the rear panel can be used to set the EDID to a built-in fixed value. Use the following table to determine the settings for the 4-pin DIP switch for specific video resolution and audio capabilities.

When in the lower position, the switch represents “0”, while in the up position, it represents “1”.



| Switch Status | Video Resolution | Audio Format |
|---------------|--|--------------|
| 0000 | Obtains EDID from the display connected to the HDMI output port 1. | |
| 0001 | Obtains EDID from the display connected to the HDMI output port 2. | |
| 0010 | Obtains EDID from the display connected to the HDMI output port 3. | |
| 0011 | Obtains EDID from the display connected to the HDMI output port 4. | |
| 0100 | Obtains EDID from the display connected to the HDMI output port 5. | |
| 0101 | Obtains EDID from the display connected to the HDMI output port 6. | |
| 0110 | Obtains EDID from the display connected to the HDMI output port 7. | |
| 0111 | Obtains EDID from the display connected to the HDMI output port 8. | |
| 1000 | 720P | LPCM |
| 1001 | 1080P | LPCM |
| 1010 | 1080P | DTS/Dolby |
| 1011 | 3840x2160@30Hz | LPCM |
| 1100 | 3840x2160@30Hz | DTS/Dolby |
| 1101 | 3840x2160@60Hz | LPCM |
| 1110 | 3840x2160@60Hz | DTS/Dolby |



• User defined EDID setting

If not using the built-in EDID, specific EDID settings can be customized by following the operation process below.

1. Rename the user defined EDID according to the following format.

EC_xx_xxxx_xxx.bin

- **EC**: Represents EDID.
- **xx**: Represents EDID ID. It is "15".
- **xxxx**: Represents the video parameter.
- **xxx**: Represents the audio format.

Example: EC_11_720P_LPCM.bin

2. Power on the splitter and connect it to the PC with a USB cable. The PC will automatically detect a U-disk named "BOOTDISK".
3. Double-click to open the U-disk, a file named of "READY.TXT" will be showed.
4. Copy the user defined EDID (ex EC_11_720P_LPCM.bin) to the "BOOTDISK" U-disk.
5. Reopen the U-disk to check the filename "READY.TXT" whether automatically becomes "SUCCESS.TXT", if yes, the user defined EDID was imported into the splitter and saved as its corresponding EDID ID successfully.
6. Remove the USB cable, and then reboot the splitter.
7. The new EDID now can be invoked via the 4-pin DIP switch directly. The EDID ID and its corresponding switch status is shown in the below list.

Video Resolution Downscaling

The BG-UHD-DA2X8 supports video resolution downscaling. This means a 4K input can be automatically degraded to 1080P output for compatibility with 1080P displays. Compatibility is shown in the chart below:

| # | Input | | | Output | |
|---|------------|---------|-------------|-----------|------------------|
| | Resolution | Refresh | Color Space | Downscale | 1080P Specs |
| 1 | 3840x2160 | 60 | 4:4:4 | Support | 1080P@60Hz 4:4:4 |
| 2 | 3840x2160 | 30 | 4:4:4 | Support | 1080P@30Hz 4:4:4 |
| 3 | 3840x2160 | 24 | 4:0:4:0 | Support | 1080P@24Hz 4:4:4 |
| 4 | 3840x2160 | 60 | 4:0:2:0 | Support | 1080P@60Hz 4:2:0 |
| 5 | 3840x2160 | 30 | 4:0:2:0 | Support | 1080P@30Hz 4:2:0 |
| 6 | 3840x2160 | 24 | 4:0:2:0 | Support | 1080P@24Hz 4:2:0 |
| 7 | 3840x2160 | 60 | 4:0:2:2 | Support | 1080P@60Hz 4:4:4 |
| 8 | 3840x2160 | 30 | 4:0:2:2 | Support | 1080P@30Hz 4:4:4 |
| 9 | 3840x2160 | 24 | 4:0:2:2 | Support | 1080P@24Hz 4:4:4 |

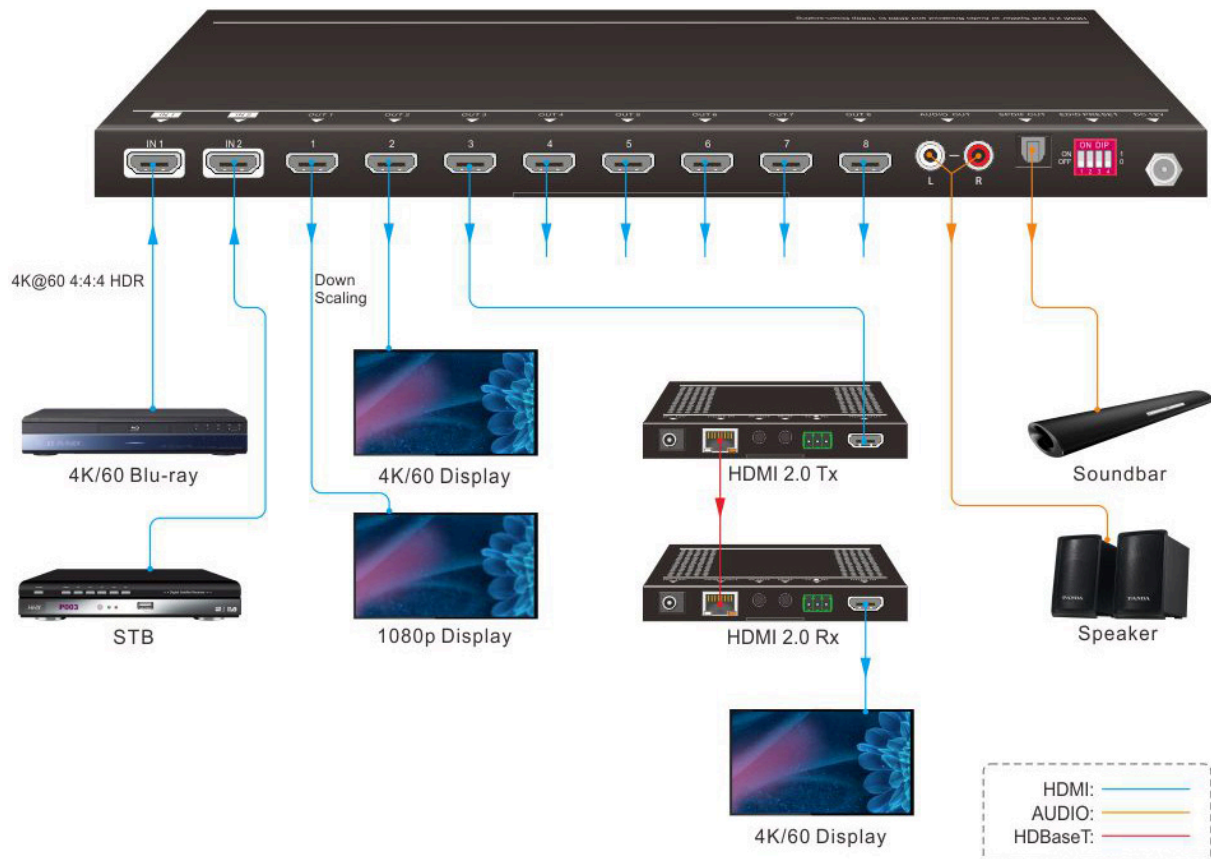


Firmware Upgrade

Please follow the steps below to upgrade the firmware via the Micro-USB port:

1. Connect the splitter to the PC with a USB cable.
2. Power on the splitter, and then the PC will automatically detect a U-disk named "BOOTDISK".
3. Double-click to open the U-disk, a file named of "READY.TXT" will be showed.
4. Directly copy the latest upgrade file (.bin) to the "BOOTDISK" U-disk.
5. Reopen the U-disk to check the filename "READY.TXT" whether automatically becomes "SUCCESS.TXT", if yes, the firmware was upgraded successfully, otherwise, the firmware upgrade is fail, the name of upgrade file (.bin) should be confirm again, and then follow the above steps to upgrade again.
6. Remove the USB cable after firmware upgrade.

Application Example





Troubleshooting and Maintenance

| Problem | Potential Causes | Solutions |
|--|---|---|
| Color loss or no video signal output in HDMI display. | The connecting cables may not be connected correctly or may be broken. | Check whether the cables are connected correctly and in working condition. |
| No Signal | The display is not compatible with the present output resolution. | Make sure the resolution of the display(s) is compatible with the present resolution. |
| No HDMI signal output in the splitter while local HDMI input is in normal working state. | The connecting cables may not be connected correctly or it may be broken. | Check whether the cables are connected correctly and in working condition. |
| Splash screen in output devices. | Poor quality of the connecting cable. | Change for another cable of good quality. |
| Static becomes stronger when connecting the video connectors. | Bad grounding. | Check the grounding and make sure it is connected well. |

Note: If your problem still remains after following the above troubleshooting steps, please contact your local dealer or distributor for further assistance.



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:

| <u>Phone</u> | <u>Email</u> | <u>Live Chat</u> |
|---------------------|--|---|
| 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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