



BG-EXH-4KFH

**4K 18Gbps HDMI 2.0 Fiber Extender Kit up to 10 km
with Included SFP+ Modules**

User Manual







TABLE OF CONTENTS

Statement	4
Safety Precaution	4
Introduction	5
Features	5
Packing List	6
Specifications	7
Operation Controls and Functions	9
Connection Diagram	11
Troubleshooting	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 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-EXH-4KFH is a high-performance HDMI 2.0b over fiber extender set designed to transmit uncompressed 4K Ultra HD video signals over extreme distances. Supporting video resolutions up to 4K@60Hz (4:4:4) with a full 18Gbps bandwidth, this system ensures pristine image quality with full HDR pass-through, including HDR10, HDR10+, Dolby Vision, and HLG. Built for demanding professional AV environments, it delivers reliable long-distance signal extension up to 10km over single-mode fiber using SFP+ modules, while also supporting multi-mode fiber (OM4) for distances up to 300m.

Engineered for flexibility and compatibility, the BG-EXH-4KFH supports HDCP 2.2 compliance and a wide range of video formats, including VESA resolutions and common HDTV standards. It also supports advanced multi-channel audio formats such as Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio, and DTS:X, ensuring full audio fidelity alongside video performance. With compact metal housing, low power consumption, and strong anti-interference performance, this extender is ideal for broadcast, digital signage, control rooms, and long-distance AV distribution applications.

Features

- **HDMI 2.0b Compliance:** Supports full HDMI 2.0b specification for high-bandwidth 4K video transmission up to 18Gbps.
- **4K60 4:4:4 Video Support:** Transmits up to 4K@60Hz (4096×2160 / 3840×2160) with full 4:4:4 chroma sampling for maximum image clarity.
- **Long-Distance Fiber Transmission:** Extends HDMI signals up to 10km over single-mode fiber or up to 300m over OM4 multi-mode fiber using SFP+ modules.
- **HDCP 2.2 Compliance:** Ensures compatibility with protected 4K UHD content and modern source devices.
- **HDR Pass-Through Support:** Supports HDR10, HDR10+, Dolby Vision, and HLG for enhanced dynamic range and color performance.
- **High-Quality Audio Support:** Passes advanced audio formats including Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio, and DTS:X.
- **18Gbps Video Bandwidth:** Maintains full uncompressed video bandwidth for lossless signal transmission.
- **Wide Resolution Compatibility:** Supports all standard VESA and HDTV resolutions for maximum device interoperability.
- **SFP+ Fiber Interface:** Utilizes 10G SFP+ LC fiber connection for stable and scalable long-distance transmission.
- **Compact Metal Housing:** Durable, lightweight enclosure designed for professional installation environments.
- **Low Power Consumption:** Efficient power design for reduced heat output and reliable 24/7 operation.



- **Firmware Upgrade Support:** Includes USB-C service port for firmware updates and system maintenance.
- **Strong Anti-Interference Design:** Fiber transmission eliminates EMI/RFI interference for stable signal integrity in demanding environments.

Packing List

- 1× BG-EXH-4KFH HDMI over Fiber Transmitter
- 1× BG-EXH-4KFH HDMI over Fiber Receiver
- 2× 5V/1A Power Adapters (US/EU standards)
- 1× User Manual





Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Supported Resolutions	Up to 4096×2160p60, 3840×2160p60, 3840×2160p50, 3840×2160p30, 1920×1080p60, and other VESA resolutions
Color Space	RGB, YCbCr 4:4:4 / 4:2:2, YUV 4:2:0
Color Depth	8-bit, 10-bit, 12-bit
HDR Support	HDR10, HDR10+, Dolby Vision, HLG
Audio Formats	LPCM, Dolby Digital/Plus/EX, Dolby TrueHD, Dolby Atmos, DTS, DTS-HD Master Audio, DTS:X
Fiber Interface	10G SFP+ module (LC connector)
Transmission Distance	Up to 10km (single-mode fiber), up to 300m (OM4 multi-mode fiber)
ESD Protection	IEC 61000-4-2: ±8kV (air), ±4kV (contact)
Connection	
Transmitter Input	1× HDMI Type A (19-pin female)
Transmitter Output	1× SFP+ OUT (LC fiber)
Transmitter Service	1× USB-C (firmware update port)
Receiver Input	1× SFP+ IN (LC fiber)
Receiver Output	1× HDMI Type A (19-pin female)
Receiver Service	1× USB-C (firmware update port)
Mechanical	
Housing	Metal enclosure
Color	Black
Dimensions (WxDxH)	3.2in × 1.9in × 0.98in [81mm × 49mm × 25mm]
Weight	Transmitter: 0.30lb [138g] / Receiver: 0.30lb [138g]



Power Supply	DC 5V/1A (AC 100–240V, 50/60Hz)
Power Consumption	TX: 3.05W (Max) / RX: 2.25W (Max)
Operating Temperature	32°F to 104°F / 0°C to 40°C
Storage Temperature	-4°F to 140°F / -20°C to 60°C
Operating Humidity	20%–80% RH (non-condensing)
Storage Humidity	10%–90% RH (non-condensing)

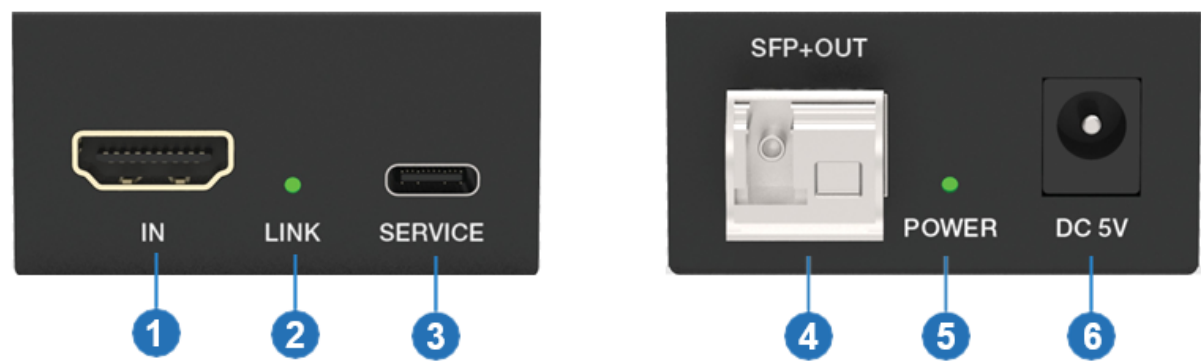




Operation Controls and Functions

Front and Rear Panel

Transmitter Panel

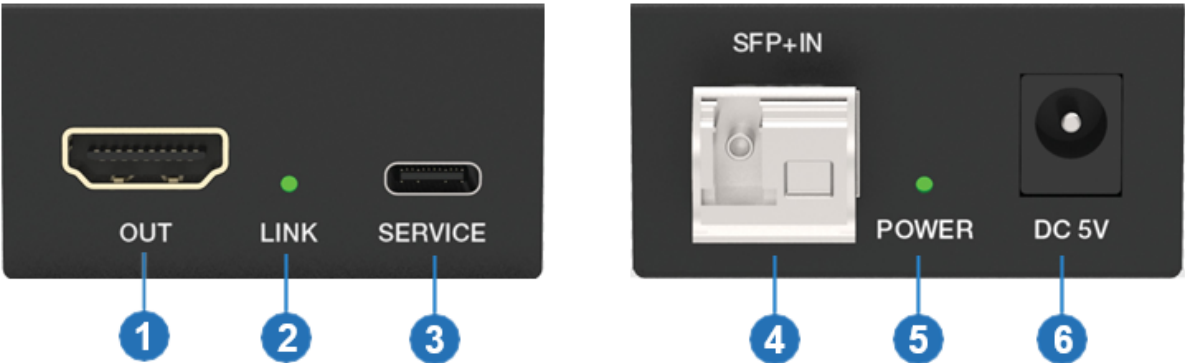


No.	Name	Function Description
1	IN	HDMI input port. Connects to an HDMI source device such as a Blu-ray player, media player, or PC.
2	LINK Indicator	Green LED indicator. Lights solid when a stable fiber link is established between transmitter and receiver.
3	SERVICE Port	USB-C port used for firmware updates and service maintenance.
4	SFP+ OUT	LC fiber output port. Connects to the receiver’s SFP+ IN port via single-mode or multi-mode fiber cable.
5	POWER Indicator	Green LED indicator. Illuminates when the transmitter is powered on.
6	DC 5V	5V DC power input port (5V/1A power adapter required).





Receiver Panel

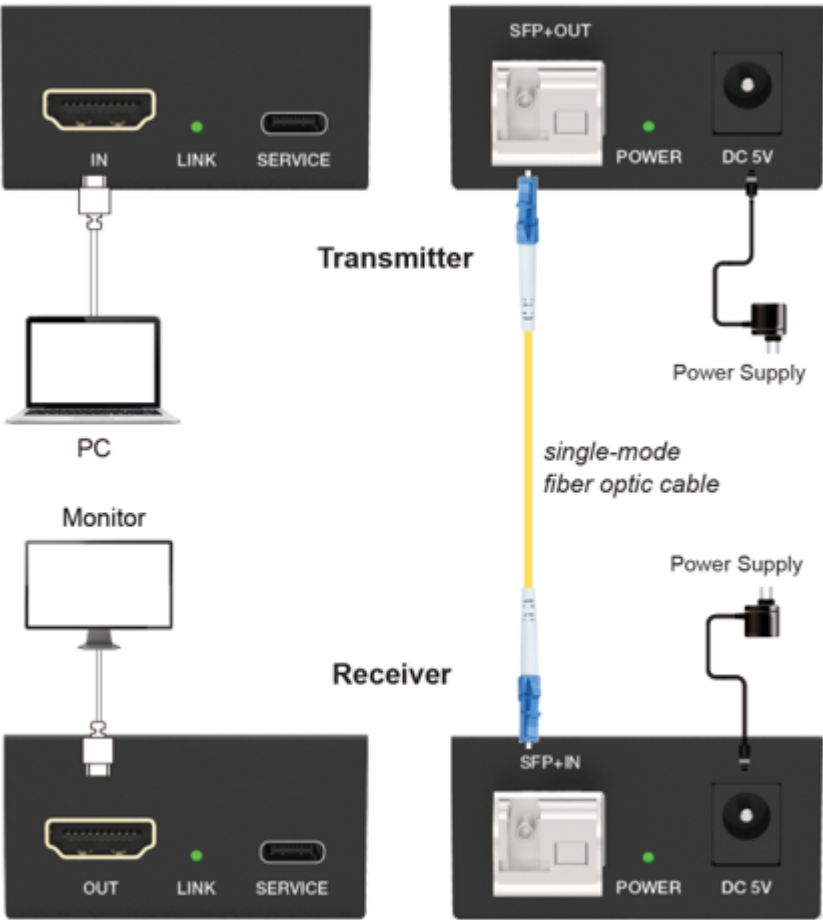


No.	Name	Function Description
1	OUT	HDMI output port. Connects to a display device such as a TV, monitor, or projector.
2	LINK Indicator	Green LED indicator. Lights solid when a stable fiber link is established between transmitter and receiver.
3	SERVICE Port	USB-C port used for firmware updates and service maintenance.
4	SFP+ IN	LC fiber input port. Connects to the transmitter’s SFP+ OUT port via fiber cable.
5	POWER Indicator	Green LED indicator. Illuminates when the receiver is powered on.
6	DC 5V	5V DC power input port (5V/1A power adapter required).





Connection Diagram





Troubleshooting

Problems	Causes	Solutions
No Power / All LED off	Power supply not connected, connected fully, or wrong power supply.	Check if the power supply is connected correctly and the output voltage value is within recommended specifications.
No sound or sound issues	The HDMI connection is faulty, the audio format is not supported by the displays, or the source player is set to another port for audio output	Check if the HDMI cables are connected correctly. Check if the audio format is supported by the display and that a user has not changed the supported audio format on the player's audio output. Ensure output settings from the HDMI source device as set correctly.
No picture or picture flickers	The HDMI cable may be faulty or the category cable quality is faulty.	Check if the HDMI and category cable connections are correct and undamaged. Change to another good working HDMI cable or category cable (CAT6 or better cable is recommended).



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.

Copyright

All the contents in this manual and its copyright are owned by BZBGear. No one is allowed to imitate, copy, or translate this manual without BZBGear's permission. This manual contains no guarantee, standpoint expression or other implies in any form. Product specification and information in this manual is for reference only and subject to change without notice.

All rights reserved. No reproducing is allowed without acknowledgement.