BZBGEAR®

Amplify Your World™

BG-Air4Kast-Pro

4K60 HDR Wireless HDMI Extender with 16ms Ultra-Low Latency, Dolby Atmos, and USB KVM

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-Air4Kast-Pro 4K60 Wireless HDMI Transmitter and Receiver system leverages advanced codec DSP processing and a proprietary ultra-low latency wireless protocol to deliver a high-performance AV transport platform that closely matches the stability and visual integrity of traditional wired HDMI connections. Engineered for demanding professional environments, it supports true 4K60 resolution with HDR10bit, ensuring exceptional color accuracy, dynamic contrast, and crystal-clear image quality. The system utilizes a real-time encode/decode pipeline optimized for speed and reliability, achieving end-to-end latency as low as 16ms while maintaining visually lossless performance.

Built on a professional-grade wireless architecture, the BG-Air4Kast-Pro intelligently manages bandwidth, interference, and channel selection to ensure stable transmission even in congested RF environments. Its proprietary data security algorithms safeguard content, while support for multichannel 7.1 audio and Dolby Atmos/DTS passthrough ensures uncompromised audio fidelity. With additional capabilities including IR extension, USB KVM functionality, and automatic pairing, the BG-Air4Kast-Pro provides a robust, secure, and highly efficient wireless HDMI solution ideal for enterprise AV, healthcare visualization, gaming applications, and mission-critical presentation environments where performance and reliability are essential.

Features

- **UltraHD 4K60 Resolution:** Delivers crisp 4K60p image quality for immersive, high-detail visual performance.
- **HDR10bit Support:** Preserves enhanced contrast, color depth, and dynamic range for superior image fidelity.
- **Real-Time Codec Engine:** Advanced encode/decode pipeline optimized for ultra-low latency and high reliability.
- **Near-Zero Latency:** Achieves end-to-end latency as low as 16ms, with typical performance between 16–48ms depending on environment.
- **Visually Lossless Transmission:** Maintains image quality indistinguishable from wired HDMI connections.
- **7.1-Channel Audio Support:** Supports high-definition multichannel audio for cinematic sound reproduction.
- **Dolby Atmos/DTS Passthrough:** Enables wireless delivery of Dolby Atmos and DTS formats directly to supported playback devices.
- **Auto Pairing & Smart Channel Selection:** Automatically connects and selects the optimal Wi-Fi channel for stable performance.
- **IR Extension Support:** Supports IR pass-through at 38–56 kHz for extended remote-control functionality.

- **USB KVM Functionality:** Provides professional-grade wireless keyboard, mouse, and control capability.
- **Professional 802.11ac MIMO Wi-Fi:** Built-in 2T2R MIMO wireless platform ensures strong signal throughput and coverage.
- **Enhanced Wireless Stability:** Proprietary wireless protocol ensures consistent, interference-resistant streaming in congested environments.
- **High-Level Content Security:** Custom encryption and transmission algorithms safeguard data integrity and privacy.

Packing List

- Transmitter x 1
- Receiver x 1
- 12V1.5A Power adapter x 2
- Type C cable for KVM x 1
- IR transmitt cable x 1
- IR receive cable x 1
- HDMI cable x 2

Specifications

Transmitter Specifications

Parameter	Specification
HDMI Input Version	HDMI 2.0
HDCP Version	HDCP 2.2
Supported Input Resolutions	2160p60, 2160p30, 2160×1200/90fps, 2880×1600/90fps, 1080p120, 1080p60, 1080p30, 1080p24, 1080i50/60, 720p30/60, 480p60
HDMI Loop-Out	Up to 4K60
Wireless Transmission Resolution	Up to 4K60
HDR Support	HDR10 (10-bit)
Audio Support	Up to 7.1-channel audio
Dolby Atmos / DTS Passthrough	Supports wireless passthrough to compatible TVs/receivers for decoding and playback
Latency	As low as 16ms at 60fps (typical 16–48ms depending on content complexity and Wi-Fi conditions)
Security	WPA2-AES128 encryption + proprietary coding and transmission algorithms
IR Extension	Supports 38 kHz – 56 kHz
USB KVM	Supports wireless keyboard/mouse control
Wireless Standard	IEEE 802.11a/b/g/n/ac, 5.8 GHz
Wi-Fi Frequency Range	5.150 GHz – 5.825 GHz
Supported Frequency Bands	5150–5350 MHz, 5470–5725 MHz, 5725–5850 MHz, 5850–5925 MHz (usage subject to regional regulation)
Wi-Fi Bandwidth	866 Mbps (5 GHz)
Video Bitrate	Up to 270 Mbps

Channel Width Support	20 MHz / 40 MHz / 80 MHz
RF Power Output	Up to 20 dBm
Antennas	2 × 5 dBi high-sensitivity antennas
Transmission Distance	Up to 100 meters (clear line-of-sight)
I/O Ports	HDMI In (2.0) ×1, HDMI Out (2.0) ×1, USB Type-C ×1, IR In ×1, IR Out ×1, DC Power ×1
Controls	Power Button
Indicators	2 × Status LEDs
Power Supply	12V / 1.5A
Power Consumption	10W

Receiver Specifications

Parameter	Specification
HDMI Output Version	HDMI 2.0
HDCP Version	HDCP 2.2
HDMI Output Resolution	Up to 4K60
Wireless Transmission Resolution	Up to 4K60
HDR Support	HDR10 (10-bit)
Audio Support	Up to 7.1-channel audio
Dolby Atmos / DTS Passthrough	Supports wireless passthrough to compatible TVs/receivers for decoding and playback
Latency	As low as 16ms at 60fps (typical 16–48ms depending on content complexity and Wi-Fi conditions)
Security	WPA2-AES128 encryption + proprietary coding and transmission algorithms
IR Extension	Supports 38 kHz – 56 kHz

USB KVM	Supports wireless keyboard/mouse back-control
Wireless Standard	IEEE 802.11a/b/g/n/ac, 5.8 GHz
Wi-Fi Frequency Range	5.150 GHz – 5.825 GHz
Supported Frequency Bands	5150–5350 MHz, 5470–5725 MHz, 5725–5850 MHz, 5850–5925 MHz (usage subject to regional regulation)
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Transmission Distance	Up to 100 meters (clear line-of-sight)
I/O Ports	HDMI Out (2.0) ×1, USB ×2, IR In ×1, IR Out ×1, Audio Out ×1, DC Power ×1
Controls	Power Button
Indicators	2 × Status LEDs
Power Supply	12V / 1.5A
Power Consumption	10W

Operation Controls and Functions

Rear Panel - Transmitter

1. **DC 12V/1.5A Power Input:** Connect to the included power adapter to supply power to the transmitter.
2. **IR In Port:** Connect an IR receiver cable to enable remote control signal capture from the viewing location.
3. **USB Type-C Port:** Connect to the USB port of the video source device to enable USB KVM keyboard and mouse control.
4. **HDMI Input (HDMI In):** Connect to the HDMI output of the source device.
5. **HDMI Loop-Out (HDMI Out):** Connect to a local display for direct pass-through monitoring.
6. **Power Switch:** Turns the transmitter on or off.

Rear Panel - Receiver

1. **DC 12V/1.5A Power Input:** Connect to the included power adapter to supply power to the receiver.
2. **USB Ports (×2):** Connect a keyboard and mouse for USB KVM functionality, or connect the USB port of a touch panel for touch-back control.
3. **IR In Port:** Connect an IR receiver cable to enable remote control signal capture from the display location.
4. **HDMI Output (HDMI Out):** Connect to a display or projector for wireless video and audio output.
5. **Power Switch:** Turns the receiver on or off.

Quick Start Installation

Connect the Transmitter

1. Place the transmitter near your HDMI source (set-top box, Blu-ray, PC, etc.).
2. Connect the source to **HDMI IN** on the transmitter.
3. *(Optional)* Connect a local TV to **HDMI OUT** for pass-through viewing.
4. Connect the **12V 1.5A power adapter** and power on.

Connect the Receiver

1. Place the receiver near the display or projector.
2. Connect the display to **HDMI OUT** on the receiver.
3. Connect the **12V 1.5A power adapter** and power on.
4. The system will automatically pair and begin transmission in about **50 seconds**.

IR Remote Control (Optional)

- Connect **IR OUT** to the transmitter and position the emitter over the source's IR sensor.
- Connect **IR IN** to the receiver and aim your remote at the IR receiver.

USB KVM Control (Optional)

- Connect your PC to the transmitter via **USB Type-C**.
- Connect a keyboard/mouse or touch panel to the receiver USB ports.

BG-Air4Kast-Pro Troubleshooting Quick Guide

No or poor image/sound

- Ensure transmitter and receiver are powered on.
- Check HDMI connections and replace cables if necessary.
- Confirm the correct HDMI input is selected on your display.
- Verify the HDMI source resolution is compatible.
- Power cycle both transmitter and receiver.

No or unstable wireless connection

- Move units away from Wi-Fi routers, other HDMI sources, or electronics.
- Adjust placement for better line-of-sight.
- Reduce distance or remove obstacles between transmitter and receiver.
- Power cycle both units.

IR control not working

- Use the original remote control for your HDMI source.
- Align the IR emitter with the source device's IR sensor.
- Point the remote at the receiver's IR probe within 5 meters.
- Note: The IR extender supports 20–60 kHz protocols; some older or non-standard remotes may not work.

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.

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FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.