

# BG-EXH-100C5

18Gbps HDMI over HDBaseT Extender with Bi-directional IR (100M)

## User Manual







## TABLE OF CONTENTS

Statement	4
Safety Precaution	4
Introduction	5
Features	5
Packing List	5
Specifications	6
Operation Controls and Functions	8
Transmitter Panel	8
Receiver Panel	9
Audio Signal Output Switching	10
IR and Blaster Pin Definition	11
IR System Diagram Regarding IR Cable use Method	12
Application Example	13
Tech Support	14
Warranty	14
Mission Statement	15
Copyright	16



## Statement

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

## Safety Precaution

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- 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.
- 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.



## Introduction

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The BG-EXH-100C5 is an 18Gbps HDMI HDBaseT extender that extends high-definition audio / video, RS-232, bi-directional IR, and internet signals to a distance of up to 328ft / 100 meters between the transmitter and receiver using a single CAT6/6a cable. Featuring video resolution up to 4K@60Hz 4:4:4 and Power over Cable. The integrated bi-directional IR pass-through allows for source and display control. The transmitter supports ARC and local audio extraction.

The BZBGEAR BG-EXH-100C5 extender is a convenient solution for applications requiring long distance HDMI extension over CAT cables.

## Features

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- HDCP 2.2 / 1.x
- 18Gbps video bandwidth
- Video resolution up to 4k@60Hz YUV 4:4:4
- High bit rate audio transmission via HDMI
- Transmission distance is up to 328ft / 100 meters over a single CAT6/6a cable
- PoC (Power over Cable)
- ARC (Audio Return Channel)
- Bi-directional IR, RS-232, and LAN signal pass-through transmission
- Supports HDR, HDR10+, Dolby Vision, and HLG
- Compact design for easy and flexible installation

## Packing List

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- 1 x 18Gbps HDMI over HDBaseT Transmitter
- 1 x 18Gbps HDMI over HDBaseT Receiver
- 1 x IR Blaster cable (1.5m)
- 1 x 20~60KHz IR Receiver cable (1.5m)
- 4 x Mounting Ears
- 2 x 3-pin Phoenix connector
- 1 x 24V/1A Locking Power adapter
- 8 x Machine screw - KM3\*4mm
- 1 x User Manual



## Specifications

Technical	
HDCP Compliance	HDCP 2.2 / 1.x
Video Bandwidth	18Gbps
Video Resolution	4K 50/60Hz 4:4:4 4K 50/60Hz 4:2:2 4K 50/60Hz 4:2:0 4K2K 30Hz 4:4:4 1080p, 1080i, 720p, 720i, 480p, 480i All PC resolutions including 1920 x 1200
Color Space	RGB / YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
Color Depth	8/10/12-bit (1080P60Hz, 4K30Hz, 4K60Hz YCbCr 4:2:2/4:2:0) 8-bit (4K60Hz 4:4:4)
HDMI Audio Formats	LPCM 2.0/2.1/5.1/6.1/7.1, Dolby Digital, Dolby TrueHD, Dolby Digital Plus(DD+), DTS-ES, DTS HD Master, DTS HD-HRA, DTS-X
L/R Audio Formats	PCM 2.0
SPDIF Audio Formats	LPCM 2.0, Dolby Digital, Dolby Digital Plus, DTS
ESD Protection	Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Connection	
Transmitter	Input: 1x HDMI Type A [19-pin female] Output: 1x HDBT OUT [RJ45, 8-pin female] 1x SPDIF OUT [S/PDIF] 1xL/R OUT [3.5mm Stereo Mini-jack] 1xLAN [RJ45] Control: 1x IR IN [3.5mm Stereo Mini-jack] 1x IR OUT [3.5mm Stereo Mini-jack] 1x RS-232 [Phoenix jack] 1x SERVICE [Mini-USB, Update port]
Receiver	Input: 1x HDBT IN [RJ45, 8-pin female] / 1x SPDIF IN [S/PDIF] Output: 1x HDMI Type A [19-pin female] / 1x LAN [RJ45] Control: 1x IR IN [3.5mm Stereo Mini-jack] 1x IR OUT [3.5mm Stereo Mini-jack] 1x RS-232 [Phoenix jack] 1x SERVICE [Mini-USB, Update port]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	Transmitter / Receiver: 163mm [W] x 90mm [D] x 16mm [H]
Weight	Transmitter: 170g, Receiver: 165g
Power Supply	Input: AC 100 - 240V 50/60Hz Output: DC 24V/1A (Locking connector)
Power Consumption	13 W
Operating Temperature	32 - 104°F / 0 - 40°C

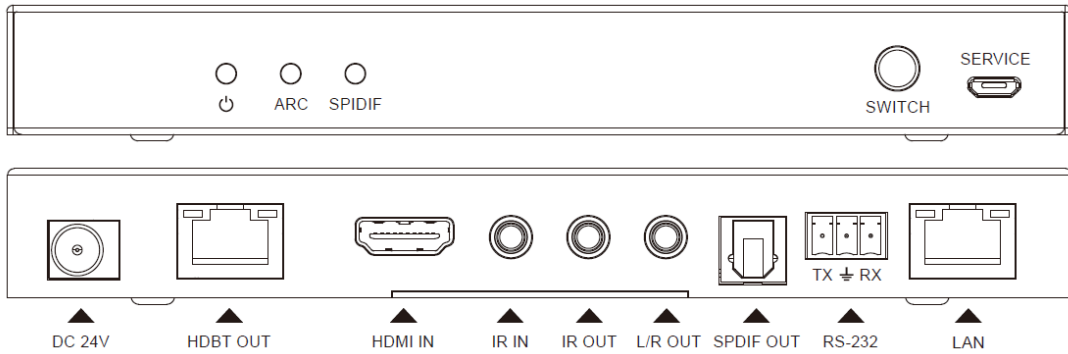


Technical			
HDCP Compliance	HDCP 2.2 / 1.x		
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Storage Temperature	-4 - 140°F / -20 - 60°C		
Relative Humidity	20 - 90% RH (no condensation)		
Resolution	Distance		
4K2K	296ft /90M		
1080P	328ft /100M		
Resolution/Cable Length	4K60 - Feet / Meters	4K30 - Feet / Meters	1080P60 - Feet / Meters
HDMI IN / OUT	16ft / 5M	32ft / 10M	50ft / 15M
<b>Note:</b> The use of "Premium High-Speed HDMI" cable is highly recommended.			



## Operation Controls and Functions

### Transmitter Panel

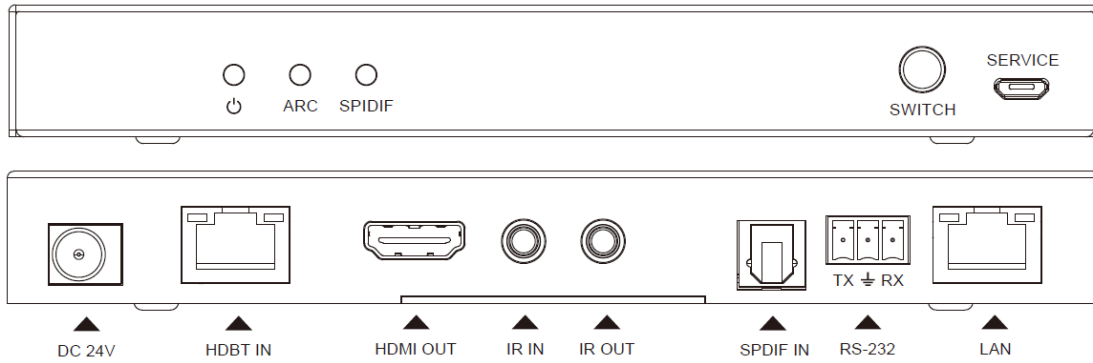


Name	Function Description
Power LED	The red LED will illuminate when the transmitter is on. The LED will be off when the transmitter is on standby.
ARC LED	The green LED will illuminate when the ARC function is turned on.
SPDIF LED	The green LED will illuminate when the SPDIF OUT port outputs the audio signal that is returned from SPDIF IN of the receiver.
SWITCH	Press the button to switch the output audio signal source for the SPDIF OUT and L/R OUT port.
SERVICE port	Firmware update port.
DC 24V	DC 24V input for 24V 1A power adapter. <b>Note:</b> The extender supports PoC functionality. Either the transmitter or receiver must be connected to a 24V/1A power supply. The other does not require a power supply.
HDBT OUT	RJ45 port to connect to the HDBT IN port of the receiver using a CAT 6/6a cable.
Connection Signal Indicator lamp	Solid: The transmitter and receiver have a good connection status. Flashing: The transmitter and receiver have a poor connection status. Dark: The transmitter and receiver are not connected.
Data Signal Indicator lamp	Solid: HDMI signal with HDCP. Flash: HDMI signal without HDCP. Dark: No HDMI signal.
HDMI IN	HDMI source input.
IR IN	IR input port to receive the IR remote's signal.
IR OUT	IR output port for source device control. This IR output signal is from the IR IN port of the receiver.
L/R OUT	3.5mm stereo connector for analog audio output.
SPDIF OUT	SPDIF connector for optical audio output.
RS-232	3-pin Phoenix connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver or receiver to transmitter.
LAN	RJ45 connector for connecting Hub or router.





## Receiver Panel



Name	Function Description
Power LED	The red LED will illuminate when the receiver is on. The LED will be off when the receiver is on standby.
ARC LED	The green LED will illuminate when the ARC function is turned on.
SPIDIF LED	The green LED will illuminate when the SPDIF OUT port outputs the audio signal that is returned from SPDIF IN of the receiver.
SWITCH	Press the button to switch the output audio signal source for the SPDIF OUT and L/R OUT port.
SERVICE port	Firmware update port.
DC 24V	DC 24V input for 24V 1A power adapter. <b>Note:</b> The extender supports PoC functionality. Either the transmitter or receiver must be connected to a 24V/1A power supply. The other does not require a power supply.
HDBT IN	RJ45 port to connect to the HDBT OUT port of the transmitter using a CAT 6/6a cable.
HDMI OUT	HDMI output for a display.
IR IN	IR input port to receive the IR remote's signal.
IR OUT	IR output port for display device control. This IR output signal is from the IR IN port of the transmitter.
SPDIF IN	SPDIF connector for optical audio input.
RS-232	3-pin Phoenix connector for RS-232 command transmission. The RS-232 command will pass-through from transmitter to receiver or receiver to transmitter.
LAN	Connect to an internet access device such as a computer..



## Audio Signal Output Switching

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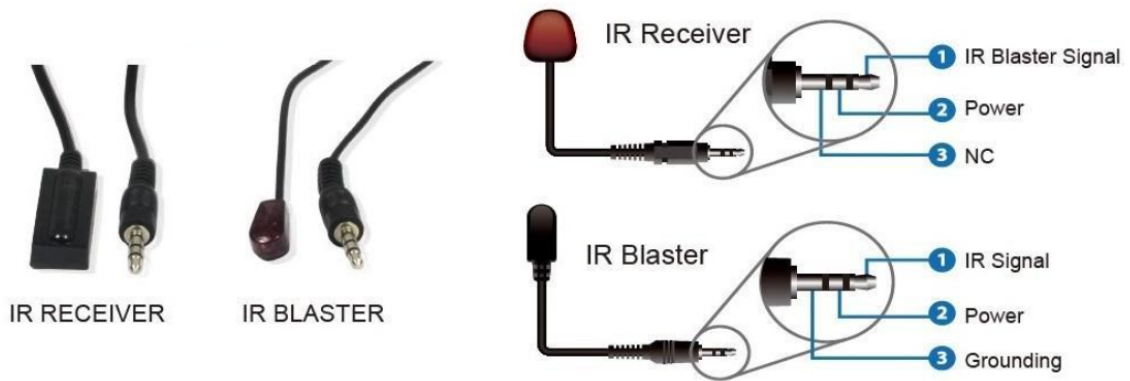
Switch the output audio signal source for SPDIF OUT and L/R OUT port via the “SWITCH” button on the panel. The corresponding LED will illuminate.

The ARC and SPDIF LED lights indicate the specific output audio signal source as shown in the table below:

ARC LED State	SPDIF LED State	Output Audio Signal Source for SPDIF OUT port and L/R OUT port
On	Off	The audio signal returned from HDMI IN port on the receiver
Off	On	The audio signal returned from SPDIF IN port on the receiver
Off	Off	The audio signal extracted from the transmitter



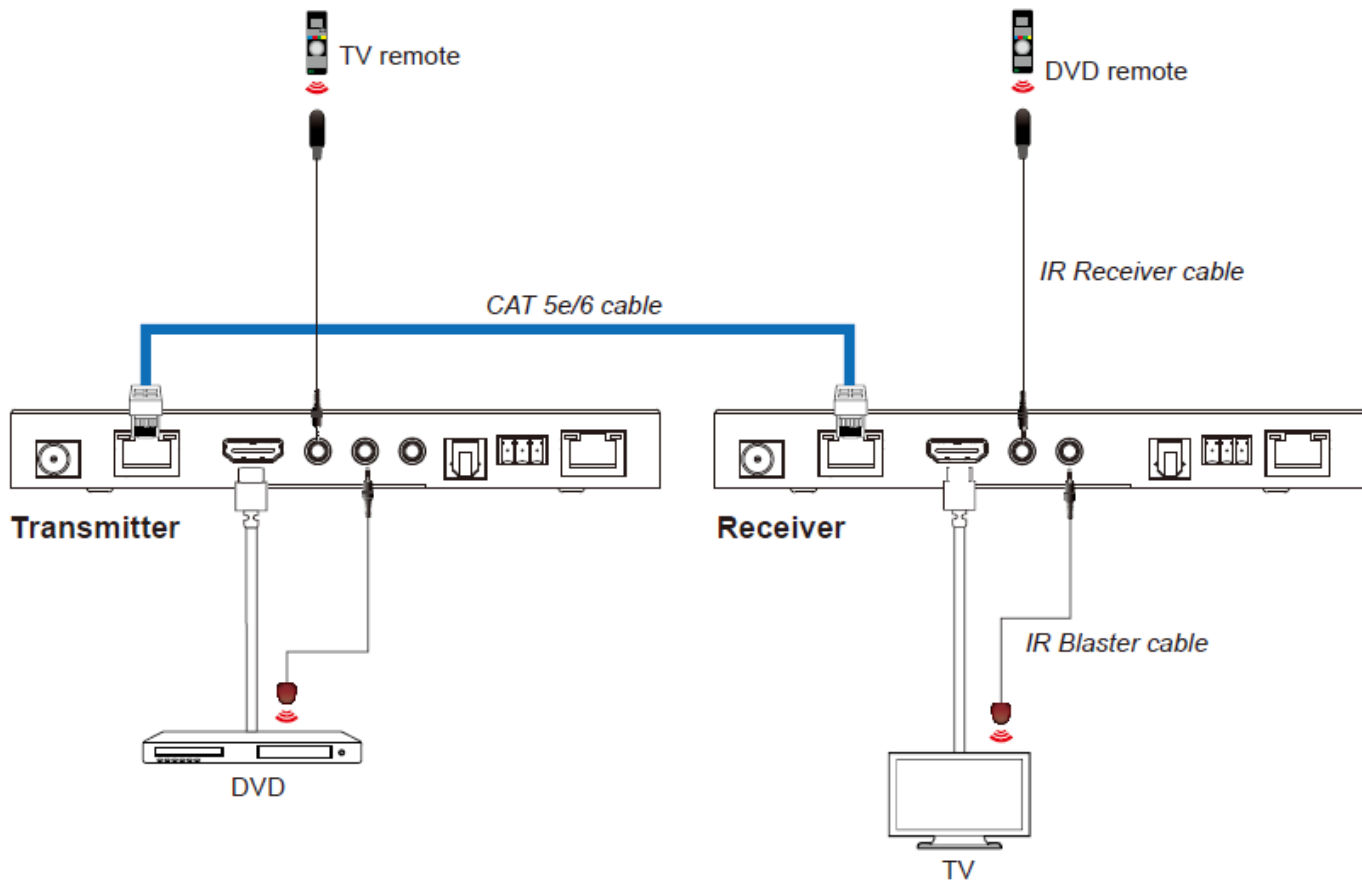
## IR and Blaster Pin Definition



**Note:** IR remote sends signal at a distance of 0~5 meters / 0~8 meters with an angle of  $\pm 45^\circ$  in vertical direction.



## IR System Diagram Regarding IR Cable use Method

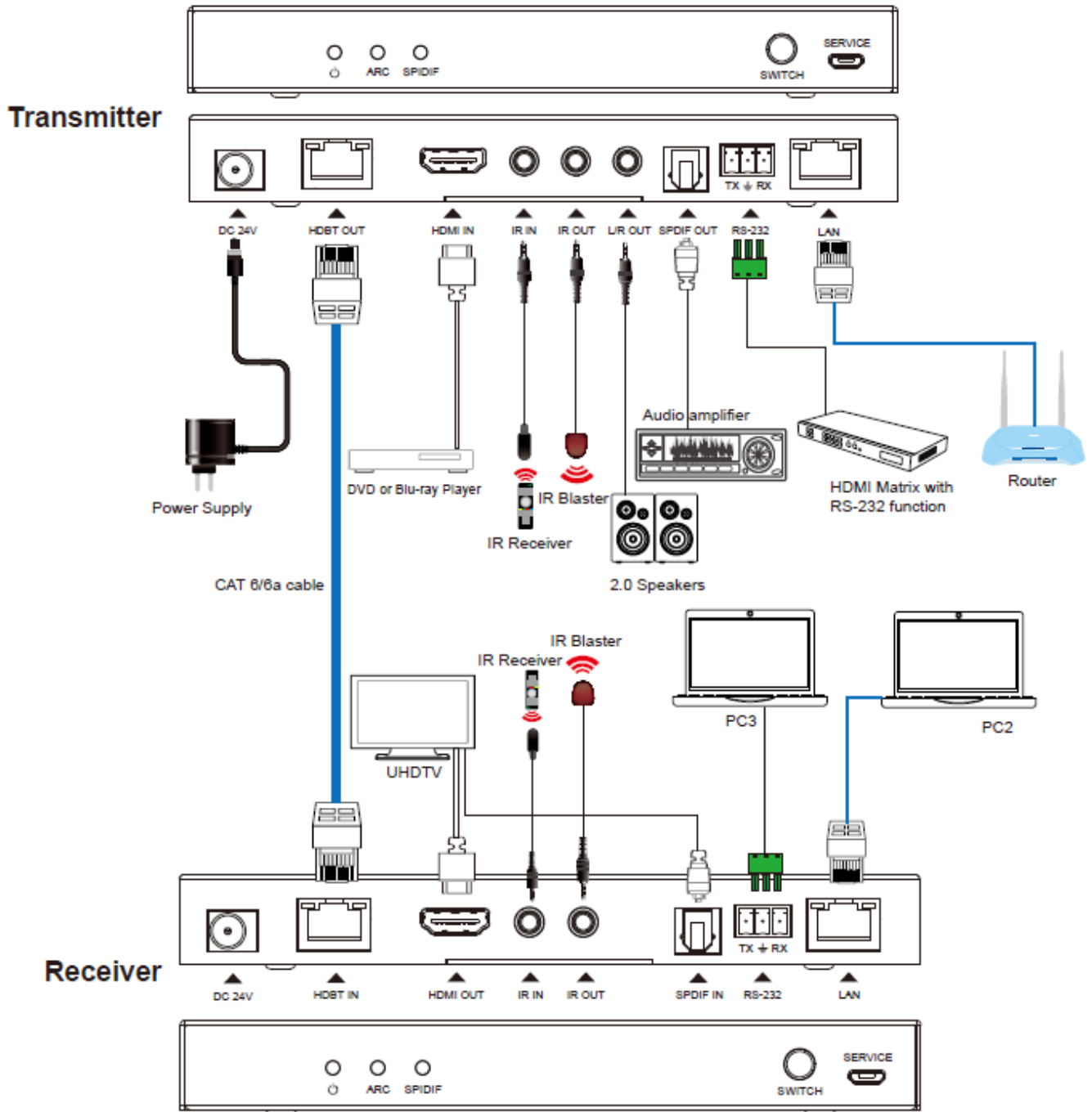


**Note:** When the angle between the IR receiver and the remote control is  $\pm 45^\circ$ , the transmission distance is 0-5 meters.

When the angle between the IR receiver and the remote control is  $\pm 90^\circ$ , the transmission distance is 0-8 meters.



## Application Example





## Tech Support

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Have technical questions? We may have answered them already!

Please visit BZBGear's support page ([bzbgear.com/support](http://bzbgear.com/support)) for helpful information and tips regarding our products. Here you will find our Knowledge Base ([bzbgear.com/knowledge-base](http://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](http://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**

1.888.499.9906

**Email**

support@bzbgear.com

**Live Chat**

bzbgear.com

## Warranty

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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](http://bzbgear.com/warranty).

For questions, please call 1.888.499.9906 or email support@bzbgear.com.



## Mission Statement

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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

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