



**BG-PSC11X2-HDBT**  
4K 11x2 HDMI Multi-format Presentation Scaler Switcher



**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-PSC11X2-HDBT is a multi-format video presentation scaler switch with audio. It features 11 inputs of various video formats including HDMI, VGA, Component, Composite, and HDBaseT with HDMI and HDBaseT outputs. Video can be scaled to various aspect ratios and resolutions from 640x480 up to 1920x1080 @ 60Hz.

Embedded splitter and dual switcher modes, it can work as 11:1x2 multiple splitter and 5x1 & 11x1 dual switcher. It also features a switchable digital bypass output allowing any HDMI input to be directly bypassed via that HDMI output to cater for the 4K source. With advanced audio embedding and de-embedding, it can provide flexible audio signal integration. Each source can be switched to the HDMI output using the front-panel, IR remote control or RS-232 interface.

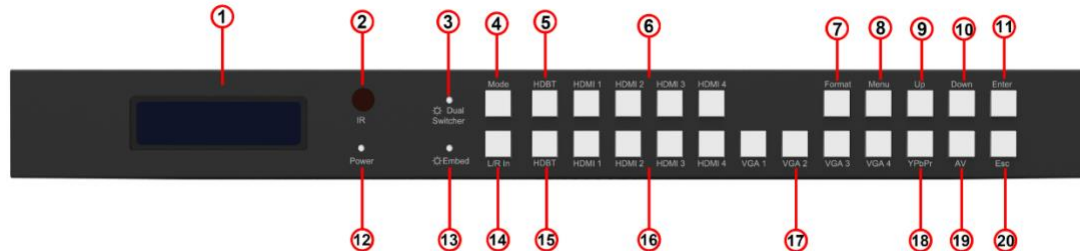
The BG-PSC11X2-HDBT integrates easily in various analog to digital applications such as when used in collaboration environments, lecture halls, conference rooms, classrooms, healthcare facilities and control centers.

## Features

- Switch & Scale 11-inputs to 2 HD/UHD displays.
- 4x HDMI, 4x VGA, 1x YPbPr, 1x Composite, 1xHDBaseT Inputs.
- 2 simultaneous outputs (1x HDMI, 1x HDBaseT), bypass and scaled formatted output selectable.
- Dual mode selectable (1x2 Splitter Mode and 5x1 & 11x1 Dual Switcher Mode).
- Scaling from 640x480 to 1920x1080 @ 60Hz.
- HDTV formats up to 4K@30Hz.
- HDBaseT POE Transmitter & Receiver supports distance up to 330ft /100m.
- With built in Ethernet Hub.
- HDCP 1.4 compliant.
- Audio embedder and audio extractor.
- OSD menu for volume control and resolution selection.
- Controllable via front panel, IR remote, TCP/IP or RS232.
- Front-panel LCD display for status feedback.
- Easy installation with rack-mounting ears.

# Panel Descriptions

## Front Panel



- ① LCD display---Show the status of input-output selection, EDID info and so on.
- ② IR receiver window----Receive the IR from the remote control of BG-PSC11X2-HDBT.
- ③ Dual switcher LED indicator---When the LED is lit, dual switcher mode is on. Output HDMI 1 is selected by HDBT/HDMI1/HDMI2/HDMI3/HDMI4 which works as 4K 5x1 switcher in by-pass mode; Output HDMI2 is selected by HDBT/HDMI1/HDMI2/HDMI3/HDMI4/VGA1 /VGA2/VGA3/VGA4/YPbPr/AV, it will always be scaled & formatted output regardless of by-pass ON/OFF, works as scaling 11x1 switcher,
- ④ Mode button---Press to set Dual Switcher mode ON/OFF.
- ⑤ HDBT input selection button---Press to select the output 1 from HDBT input working as 4k 5x1 switcher.
- ⑥ HDMI input 1 to 4 selection buttons---Press to select the output 1 from 1 to 4 working as 4k 5x1 switcher.
- ⑦ Format set button---Press to set the resolution for the output.
- ⑧ Menu button---Press to enter EDID set, volume setting or F/W information. Three EDID segments will display on the LCD panel formatted as: INPUT VIDEO AUDIO, for example: IN1 1080P 2.0CH, means to set 1080P 2.0CH EDID to INPUT1. The blinking segment is the one can be changed currently; press “Menu” button will change the segment.  
  
Segment content items as below:

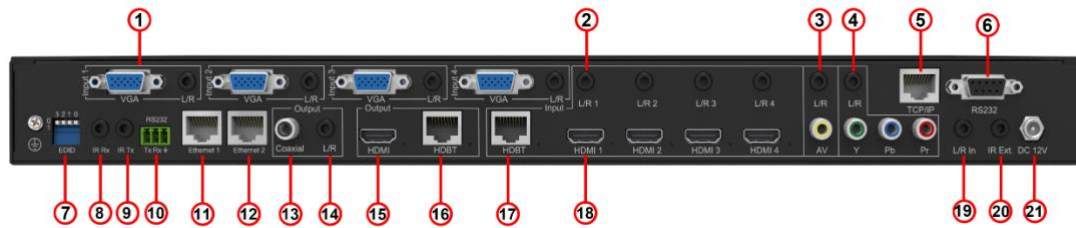
INPUT	VIDEO	AUDIO	Note
IN1	1080I	2.0CH.	
IN2	1080P	5.1CH	

IN3	3D	7.1CH	
IN4	4K2K	NONE	
IN5	D1024		D1024=DVI 1024 x 768
IN6	D1080		D1080=DVI 1920 x 1080
IN7	D1200		D1200=DVI 1920 x 1200
IN8	OUT1		OUT1=Copy OUTPUT1 EDID to INPUTx
IN9	OUT2		OUT2=Copy OUTPUT2 EDID to INPUTx
IN10			
IN11			
ALL			ALL=Set EDID to ALL INPUTs

**Note:** Volume can be changed by UP and Down button. During F/W mode, press Enter button will show the current F/W information.

- ⑨ Up selection button--- Press to change segment's value.
- ⑩ Down selection button---Press to change segment's value.
- ⑪ Enter button--- Press to confirm the settings.
- ⑫ Power LED indicator---Indicate the status of power.
- ⑬ Embed LED indicator ---When the LED is lit, embed mode is on. When embed in on, the L/R in will be embedded in to the HDMI outputs (The two outputs will be embedded with the L/R in audio and the volume is adjustable)
- ⑭ L/R in selection button---Press to embed L/R audio to the HDMI output.
- ⑮ HDBT input selection button ---Press to select HDBT input.
- ⑯ HDMI input selection button 1 to 4---Press to select the input from 1 to 4.
- ⑰ VGA input selection button---Press to select VGA input.
- ⑱ YPbPr input selection button---Press to select YPbPr input.
- ⑲ AV input selection button---Press to select AV input.
- ⑳ ESC---Press to quit EDID set mode.

## Rear Panel

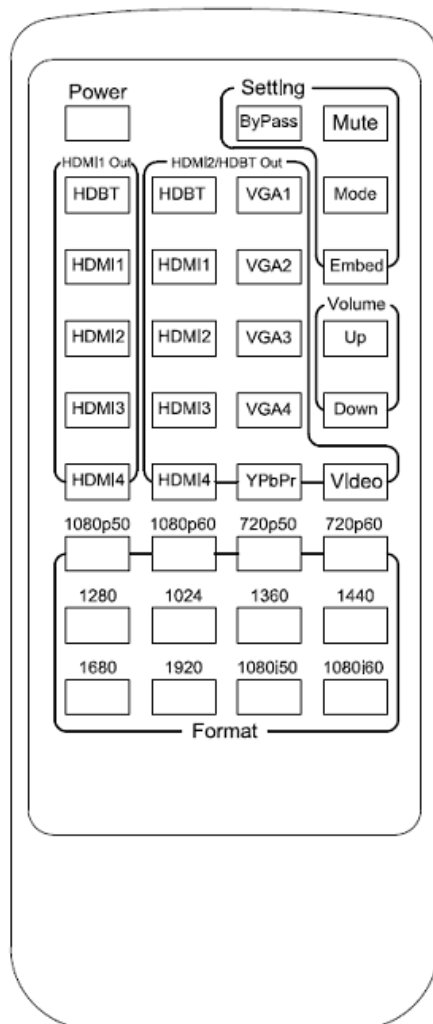


- ① VGA input 1 to 4--- VGA input 1 to 4 with L/R audio input.
- ② L/R In 1 to 4--- Connect to addition audio input to embed to HDMI output 1 to 4.
- ③ AV input--- AV input with L/R audio input.
- ④ YPbPr input--- YPbPr input with L/R audio input.
- ⑤ TCP/IP---Connect to Ethernet for control.
- ⑥ RS232 port--- DB9 connector for local control only.
- ⑦ DIP switch---EDID settings.
  - [DIP]=0000: HDMI 1080p@60Hz, Audio 2CH PCM
  - [DIP]=1111: Copy EDID from HDMI output, i.e., EDID pass through
  - [DIP]=0001: HDMI 1080p@60Hz, Audio 5.1CH PCM/DTS/DOLBY
  - [DIP]=0010: HDMI 1080p@60Hz, Audio 7.1CH PCM/DTS/DOLBY/HD
  - [DIP]=0011: HDMI 1080i@60Hz, Audio 2CH PCM
  - [DIP]=0100: HDMI 1080i@60Hz, Audio 5.1CH PCM/DTS/DOLBY
  - [DIP]=0101: HDMI 1080i@60Hz, Audio 7.1CH PCM/DTS/DOLBY/HD
  - [DIP]=0110: HDMI 1080p@60Hz/3D, Audio 2CH PCM
  - [DIP]=0111: HDMI 1080p@60Hz/3D, Audio 5.1CH PCM/DTS/DOLBY
  - [DIP]=1000: HDMI 1080p@60Hz/3D, Audio 7.1CH PCM/DTS/DOLBY/HD
  - [DIP]=1001: HDMI 4K2K, Audio 2CH PCM
  - [DIP]=1010: HDMI 4K2K, Audio 5.1CH PCM/DTS/DOLBY
  - [DIP]=1011: HDMI 4K2K, Audio 7.1CH PCM/DTS/DOLBY/HD
  - [DIP]=1100: DVI 1280x1024@60Hz, Audio None
  - [DIP]=1101: DVI 1920x1080@60Hz, Audio None
  - [DIP]=1110: DVI 1920x1200@60Hz, Audio None
- ⑧ IR RX---Connect to IR receiver cable.
- ⑨ IR TX--- Connect to IR emitter cable.
- ⑩ Phoenix terminal---Work with HDBT Transmitter / Receiver for RS232 pass through.
- ⑪ Ethernet port---Connect to Ethernet. (Embedded Ethernet hub)
- ⑫ Ethernet port--- Connect to Ethernet port. (Embedded Ethernet hub)

- ⑬ Coaxial audio output --- It will always follow HDMI output 2.
- ⑭ L/R audio output--- It will always follow HDMI output 2.
- ⑮ HDMI output--- Connect to HDTV.
- ⑯ HDBT output---Connect to HDBT class A receiver
- ⑰ HDBT input--- Connect to HDBT class A transmitter.
- ⑱ HDMI input 1 to 4 ---Connect to HDMI sources
- ⑲ L/R In --- Connect to Global Audio Input to embed to both HDMI outputs.
- ⑳ IR Ext. --- Connect to IR receiver cable.
- ㉑ DC 12V---Connect to 12V/5A power supply.



## Remote Control Description



**HDMI1 Out:** Source selection for HDMI output 1 when in Matrix Switcher mode.

**HDMI2/HDBT Out:** Source selection for HDMI output 2 when in Matrix Switcher mode or when in Splitter mode

**Format:** Video output resolution selection. The BG-PSC11X2-HDBT includes in-built video scaler. Press the required resolution button on remote control to change the HDMI output video resolution.

### Setting:

- Bypass: Audio on HDMI outputs is from HDMI input selected.
- Mute: Mutes the audio on all outputs (HDMI, Coaxial digital and Analogue audio)
- Mode: Switches between Matrix Switcher mode and Splitter mode
- Embed: Audio on HDMI outputs is from L/R Analogue audio input (3.5mm Jack)

**Volume:** Adjust the audio Volume on all outputs (HDMI, Coaxial digital and Analogue audio)

## Application Diagram



## Specifications

Bandwidth:	10.2Gbps
Video Input Connectors:	4x HDMI Type A, 4x VGA, 1x RJ45, 1xYPbPr, 1x AV
Video Output Connectors:	1x HDMI Type A, 1x RJ45
Audio Input Connectors:	11x 3.5mm stereo jack
Audio Output Connectors:	1x 3.5mm stereo jack, 1x RCA (SPDIF)
RS-232 serial port:	1x DB 9 connector, 1x 3 phoenix terminal
TCP/IP	1x RJ45
IR Input ports:	2x 3.5mm stereo jack
IR Output ports:	1x 3.5mm mono jack
Dimensions (W x H x D):	438mm x 225mm x 44mm , without feet
Shipping Weight:	1.2Kg
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:	DC 12V/5A

## RS-232 Pin Assignment

BG-PSC11X2-HDBT		Remote Control Console	
PIN	Assignment	PIN	Assignment
1	NC	1	NC
2	<b>Tx</b>	2	<b>Rx</b>
3	<b>Rx</b>	3	<b>Tx</b>
4	NC	4	NC
5	<b>GND</b>	5	<b>GND</b>
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC
9	NC	9	NC

Baud Rate: 57600 bps

Data Bit: 8-bit

Parity: None

Stop Bit: 1-bit

Flow Control: None

## RS232 and Telnet Commands

No.	Command	Action
1	?	Print Help Information
2	HELP	Print Help Information
3	STATUS	Print System Status And Port Status
4	PON	Power On, System Run On Normal State
5	POFF	Power Off, System Run On Power Save State
6	IR ON/OFF	Set System IR Control On Or Off
7	KEY ON/OFF	Set System KEY Control On Or Off
8	DBG ON/OFF	Set Debug Mode On Or Off
9	BEEP ON/OFF	Set Onboard Beep On Or Off
10	LCD ON/OFF	Set LCD Always On Or Auto Turn Off In Power On State

11	RESET	Reset System To Default Setting (Should Type "Yes" To Confirm, "No" To Discard)
12	IR232 vv	Set IR And RS232 Connect To Remote Valens RX/TX vv=OFF: Disconnect With Valens vv=RRX: Remote Valens RX vv=RTX: Remote Valens TX vv=BOTH: Remote Valens RX and TX
13	OUT xx FR yy	Set OUTPUT:xx From INPUT:yy xx=00: Select All OUTPUT Port xx=[01...02]: Select One OUTPUT Port yy=[01...04]: HDMI Input 01 ~ 04 yy=HDBT: HDBT/Valens Input yy=AV: AV Input( Output 02 Only ) yy=YPBPR: Component Input( Output 02 Only ) yy=VGA1...VGA4: VGA Input( Output 02 Only )
14	OUT BYP ON/OFF	Set HDMI Input Signal Through Scaler or Bypass
15	OUT SP/MX	Set OUTPUT To Splitter or Matrix Mode
16	OUT RES rr	Set Scaler Output Resolution (Change Output Resolution Will Effect EDID Setting) rr=01: 1080P@50Hz rr=02: 1080P@60Hz rr=03: 720P@50Hz rr=04: 720P@60Hz rr=05: 1280x1024@60Hz rr=06: 1024x768@60Hz rr=07: 1360x768@60Hz rr=08: 1440x900@60Hz rr=09: 1680x1050@60Hz
17	OUT FREQ mm	Set Output Frequency Mode (When Output Resolution is 1080P or 720P) mm=AUTO: Set Output Freq Auto Change To Input Freq mm=FORCE: Set Output Freq By CMD:OUT RES rr Select
18	AUD SCA ORG	Scaler Audio Input Follow Port Selection
19	AUD SCA ANA	Scaler Audio Input From Analog L/R Signal
20	AUD HDMI yy ORG	HDMI Input:yy Use Original HDMI/DVI Signal Signal yy=[01...04]: HDMI Input 01 ~ 04
21	AUD HDMI yy ANA	HDMI Input:yy Embeded Analog L/R Signal yy=[01...04]: HDMI Input 01 ~ 04
22	AUD HDMI yy AUTO	HDMI Input:yy Embeded Analog L/R When Input is DVI signal Signal yy=[01...04]: HDMI Input 01 ~ 04

23	VOL xx	Set Scaler Audio Volume xx=[00...30]: Volume Value xx=+: Volume Increase xx=-: Volume Decrease
24	EDID xx CP yy	Set Input:xx EDID Copy From Output:yy xx=00: Select All INPUT Port xx=01: Select HDBT INPUT Port xx=[02...05]: Select HDMI INPUT:01~04 Port yy=[01...02]: Select One OUTPUT Port
25	EDID xx DF zz	Set Input:xx EDID To Default EDID:zz (cmd: OUT RES rr Will Effect EDID Setting) xx=00: Select All INPUT Port xx=01: Select HDBT INPUT Port xx=[02...05]: Select HDMI INPUT:01~04 Port zz=00: PC 1080p, HDMI 1080p, 2CH PCM zz=01: PC 1080p, HDMI 1080p, 5.1CH PCM/DTS/DB zz=02: PC 1080p, HDMI 1080p, 7.1CH PCM/DTS/DB/HD zz=03: PC 1080i, HDMI 1080i, 2CH PCM zz=04: PC 1080i, HDMI 1080i, 5.1CH PCM/DTS/DB zz=05: PC 1080i, HDMI 1080i, 7.1CH PCM/DTS/DB/HD zz=06: PC 1080p, HDMI 3D, 2CH PCM zz=07: PC 1080p, HDMI 3D, 5.1CH PCM/DTS/DB zz=08: PC 1080p, HDMI 3D, 7.1CH PCM/DTS/DB/HD zz=09: PC 4K2K, HDMI 4K2K, 2CH PCM zz=10: PC 4K2K, HDMI 4K2K, 5.1CH PCM/DTS/DB zz=11: PC 4K2K, HDMI 4K2K, 7.1CH PCM/DTS/DB/HD zz=12: DVI 1280x1024@60Hz, Audio None zz=13: DVI 1920x1080@60Hz, Audio None zz=14: DVI 1920x1200@60Hz, Audio None

## Package Contents

- 1x BG-PSC11X2-HDBT.
- 1x 12V/5A power supply.
- 1x Remote control.
- 3x IR Emitter
- 4x IR Receiver.
- 1x Rack-mounting 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.