

BG-PSC11X2-HDBT

11X2 4K 18Gbps UHD HDMI/IP/YPbPr/VGA/CV/Audio/HDBaseT
Input & Output Presentation Scaler/Switcher

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

- 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.
- 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 overheat.
- 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.
- 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-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 can work as an 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.

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 distances of up to 330ft /100m.
- 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.

Packing List

- 1x BG-PSC11X2-HDBT
- 1x 12V/5A power supply
- 1x Remote control
- 3x IR Emitter
- 4x IR Receiver
- 1x Rack-mounting ears
- 1x User Manual
- 1x Quick Start Guide

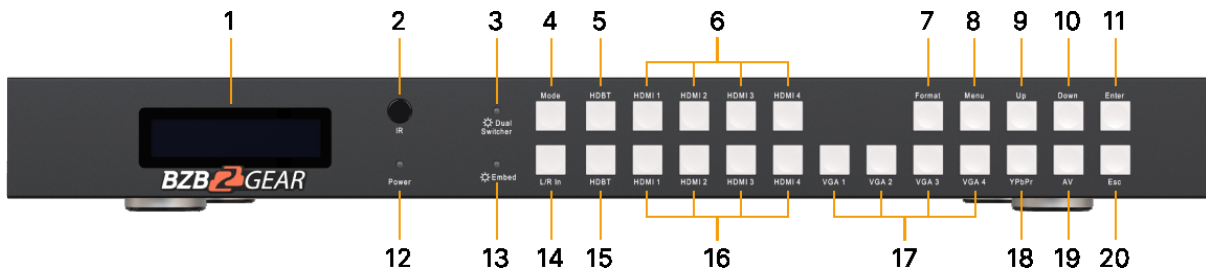


Technical Specifications

General	
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):	17.2" x 8.86" x 1.73" [438mm x 225mm x 44mm]
Shipping Weight:	2.65lbs [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

Operation Controls and Functions

Front Panel

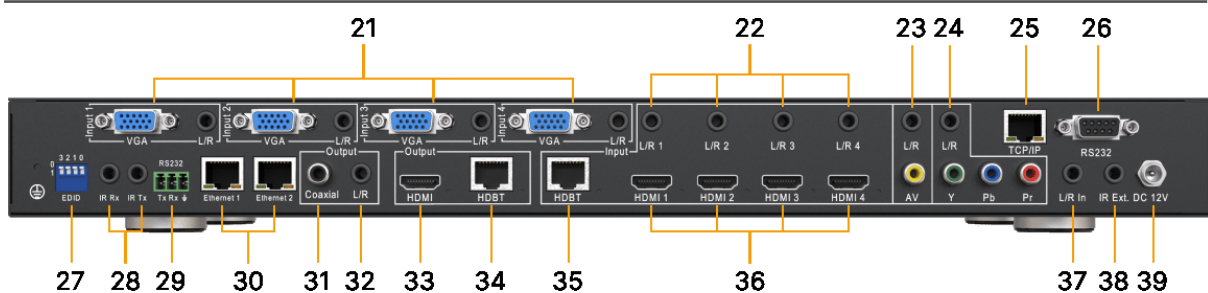


- LCD display:** It shows the status of input-to-output selection, EDID info, and the other information.
- IR receiver window:** Receive the IR from the remote control.
- Dual switcher LED indicator:** When the LED is lit, dual switcher mode is on.
- Mode button:** Press to set Dual Switcher mode ON/OFF.
- HDBT input selection button:** Press to select the output 1 from the HDBT input working as a 4k 5x1 switcher.
- HDMI input 1-4 selection buttons:** Press to select the output 1 from 1 to 4 working as a 4k 5x1 switcher.
- Format set button:** Press to set the resolution for the output.
- Menu button:** Press to enter EDID settings, volume settings, or F/W information.
- Up selection button:** Press to change the segment's value.
- Down selection button:** Press to change the segment's value.



11. **Enter button:** Press to confirm the settings.
12. **Power LED indicator:** Indicates power status.
13. **Embed LED indicator:** When the LED is lit, embed mode is on. When the embed mode is on, the L/R In will be embedded into the HDMI outputs.
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 1-4:** 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



21. **VGA input 1 to 4:** VGA input 1 to 4 with L/R audio input.
22. **L/R In 1 to 4:** Connect to additional audio input to embed to HDMI output 1 to 4.
23. **AV input:** AV input with L/R audio input.
24. **YPbPr input:** YPbPr input with L/R audio input.
25. **TCP/IP:** Connect to Ethernet for control.
26. **RS232 port:** DB9 connector for local control only.
27. **DIP switcher:** 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



- 28. IR RX and IR TX:** **IR RX:** Connect to the IR receiver cable.
IR TX: Connect to IR emitter cable.
- 29. Phoenix terminal:** Work with HDBT Transmitter / Receiver for RS232 pass through.
- 30. Ethernet ports:** Connect to Ethernet. (Embedded Ethernet hub).
- 31. Coaxial audio output:** It will always follow HDMI output 2.
- 32. L/R audio output:** It will always follow HDMI output 2.
- 33. HDMI output:** Connect to HDTV.
- 34. HDBT output:** Connect to HDBT class A receiver.
- 35. HDBT input:** Connect to HDBT class A transmitter.
- 36. HDMI input 1-4:** Connect to HDMI sources.
- 37. L/R In:** Connect to Global Audio Input to embed to both HDMI outputs.
- 38. IR Ext.:** Connect to the IR receiver cable.
- 39. DC 12V:** Connect to 12V/5A power supply.

Menu Introduction

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 that can be changed currently, pressing the “**Menu**” button will change the segment.

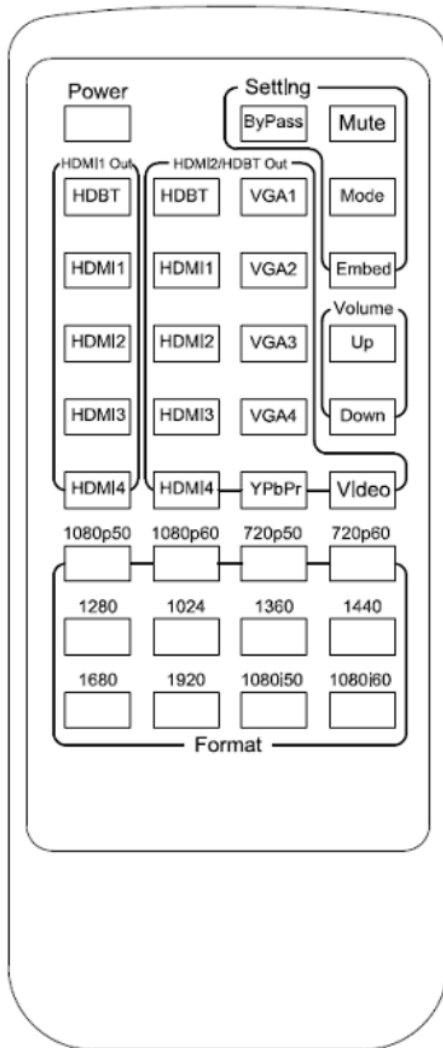
Segment content items as below:

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 pressing the **UP** and **Down** buttons. During F/W mode, press **Enter** button will show the current F/W information.



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 a built-in video scaler. Press the required resolution button on the remote control to change the HDMI output video resolution.

Setting:

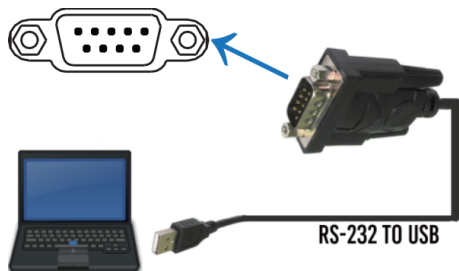
- **Bypass:** Audio on HDMI outputs is from HDMI input selected.
- **Mute:** Mutes the audio on all outputs (HDMI, Coaxial digital and Analogue audio)
- **Mode:** Switches between Matrix Switcher mode and Splitter mode
- **Embed:** Audio on HDMI outputs is from L/R Analogue audio input (3.5mm Jack)

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

RS-232 Pin Assignment

Baud Rate: 57600 bps, **Data Bit:** 8-bit, **Parity:** None, **Stop Bit:** 1-bit, **Flow Control:** None

The connection method is as follows:



BG-PSC7X2		Remote Control Console	
PIN	Assignment	PIN	Assignment
1	NC	1	NC
2	Tx	2	Rx
3	Rx	3	Tx
4	NC	4	NC
5	GND	5	GND
6	NC	6	NC
7	NC	7	NC
8	NC	8	NC
9	NC	9	NC



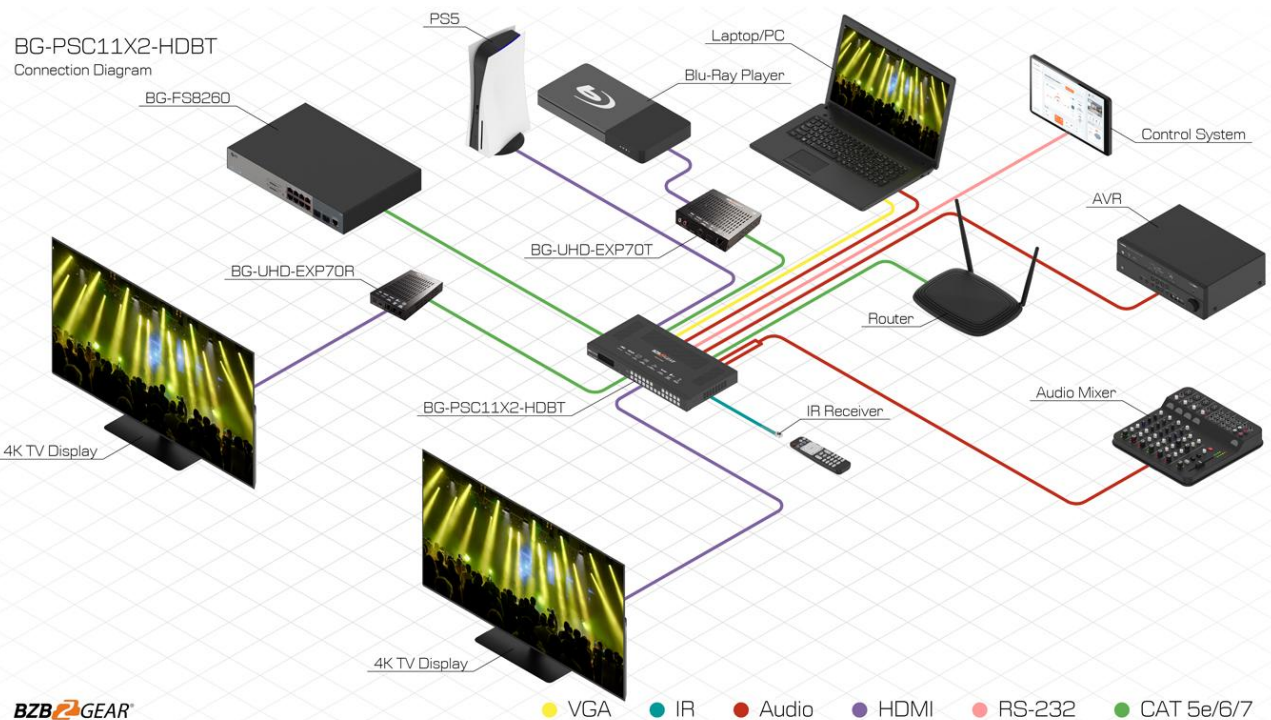
RS232 and Telnet Commands

Command	Action
?	Print Help Information
HELP	Print Help Information
STATUS	Print System Status And Port Status
PON	Power On, System Run On Normal State
POFF	Power Off, System Run On Power Save State
IR ON/OFF	Set System IR Control On Or Off
KEY ON/OFF	Set System KEY Control On Or Off
DBG ON/OFF	Set Debug Mode On Or Off
BEEP ON/OFF	Set Onboard Beep On Or Off
LCD ON/OFF	Set LCD Always On Or Auto Turn Off In Power On State
RESET	Reset System To Default Setting (Should Type "Yes" To Confirm, "No" To Discard)
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
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=YBPBR: Component Input(Output 02 Only) yy=VGA1...VGA4: VGA Input(Output 02 Only)
OUT BYP ON/OFF	Set HDMI Input Signal Through Scaler or Bypass
OUT SP/MX	Set OUTPUT To Splitter or Matrix Mode
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
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
AUD SCA ORG	Scaler Audio Input Follow Port Selection
AUD SCA ANA	Scaler Audio Input From Analog L/R Signal
AUD HDMI yy ORG	HDMI Input:yy Use Original HDMI/DVI Signal Signal yy=[01...04]: HDMI Input 01 ~ 04
AUD HDMI yy ANA	HDMI Input:yy Embedded Analog L/R Signal Signal yy=[01...04]: HDMI Input 01 ~ 04
AUD HDMI yy AUTO	HDMI Input:yy Embedded Analog L/R When Input is DVI signal Signal yy=[01...04]: HDMI Input 01 ~ 04
VOL xx	Set Scaler Audio Volume xx=[00...30]: Volume Value xx=+: Volume Increase



Command	Action
	xx=-: Volume Decrease
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
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

Application Example





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

Warranty

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.

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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