BZBGEAR®
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BG-USX-WP100BC

Dual-Host USB 3.2 Type-A/B/C Wall Plate Switcher & HDBaseT 3.0 Extender Kit with Bi-Directional PoC/RS-232 up to 328ft

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-USX-WP100BC is a USB 3.2 Gen 1 extender system designed to transmit high-speed USB signals up to 100m (328ft) over a single CAT6A F/FTP cable. It consists of a 1-gang wall-plate transmitter and a compact receiver unit, supporting up to 5Gbps data transfer with backward compatibility to USB 2.0 and USB 1.1. The transmitter includes selectable USB-C and USB-B host inputs along with dual USB-A loop-out ports, while the receiver provides one USB-C and three USB-A device ports for connecting peripherals such as webcams, PTZ cameras, storage devices, keyboards, and other USB equipment used in professional AV and control environments.

The system supports bi-directional 24V PoC, allowing either end to power the entire link, simplifying installation and reducing cabling requirements. It includes RS-232 pass-through, FSYNC GPIO synchronization for camera or industrial applications, and API-based control for integration into managed systems. Hardware acceleration ensures stable handling of isochronous and bulk USB traffic, while LED indicators provide real-time status for power, link, and USB activity. With plug-and-play operation and firmware upgrade support via USB-C service port, the BG-USX-WP100BC is designed for reliable, long-distance USB extension in commercial and enterprise installations.

Features

- **USB 3.2 Gen 1 100m Extension:** Extends USB 3.2 Gen 1 signals up to 100m (328ft) over a single CAT6A F/FTP cable with stable high-speed performance up to 5Gbps.
- **High-Speed 5Gbps Data Transfer:** Supports full USB 3.2 Gen 1 bandwidth for fast and reliable transmission of high-throughput USB devices.
- **Dual Host Input Selection:** Transmitter includes USB-C and USB-B host inputs with selectable switching for flexible source connection.
- **Multiple USB Device Ports:** Receiver provides 1× USB-C and 3× USB-A ports to support multiple peripherals such as cameras, storage devices, and input devices.
- **USB Device Loop-Out on TX:** Transmitter includes dual USB-A ports for local device connection or signal loop-through use cases.
- **Bi-Directional 24V PoC:** Power over Cable allows either transmitter or receiver to power the entire system, reducing installation complexity.
- **RS-232 Pass-Through Control:** Enables serial command transmission between endpoints for integration with control systems.
- **FSYNC GPIO Pass-Through:** Supports synchronization signals for professional video and industrial camera applications.
- **API Control Support:** Provides command-based control for system configuration, switching, and status monitoring via RS-232 or service port.
- **Plug-and-Play Operation:** No drivers or software required, enabling quick deployment and compatibility across major operating systems.

- **Firmware Upgrade via USB-C:** Includes dedicated USB-C service port for firmware updates and long-term system maintenance.
- **LED Status Indicators:** Provides real-time monitoring of power, link status, and USB signal activity for easy diagnostics.

Packing List

- 1× USB 3.2 Gen 1 Wall-Plate Extender (Transmitter)
- 1× USB 3.2 Gen 1 Box Extender (Receiver)
- 1× 24V/3.75A Power Supply
- 1× 2-pin 3.5mm Phoenix Connector (Male)
- 2× 4-pin 3.5mm Phoenix Connector (Male)
- 2× Mounting Ears
- 4× Machine Screws (KM3×4)
- 2× Machine Screws (6#-32×3/4)
- 1× Top Panel Cover
- 1× User Manual

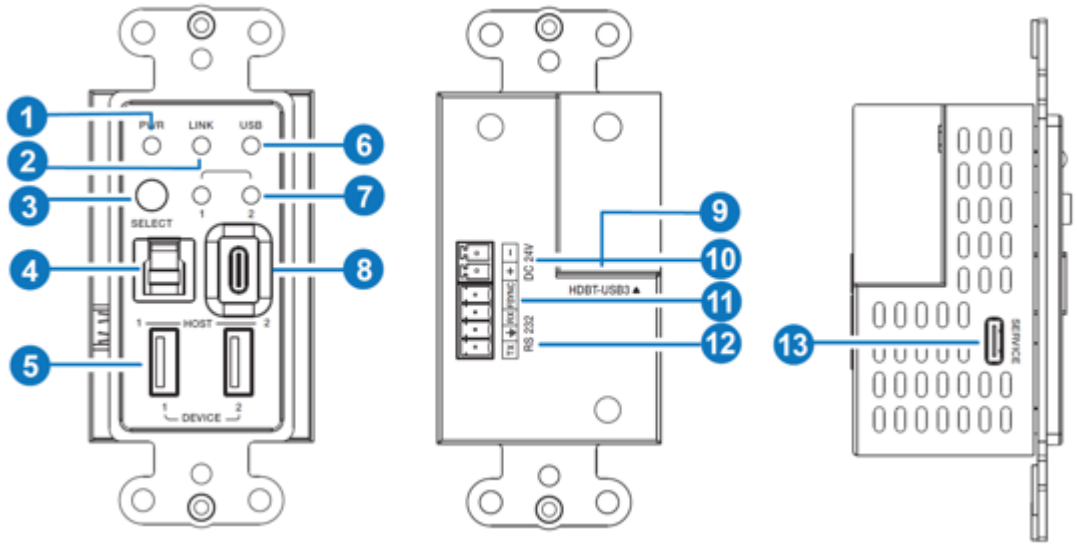
Specifications

Technical	
USB Protocol	USB 3.2 Gen 1
Data Rate	Up to 5Gbps
Transmission Distance	Up to 100m (328ft) via CAT6a (F/FTP); up to 1.5m (4.9ft) via USB cable
ESD Protection	IEC 61000-4-2: ±8kV (air discharge), ±4kV (contact discharge)
Power Supply	DC 24V / 3.75A (AC 100–240V, 50/60Hz adapter)
Max Power Consumption	62W
Transmitter Connections	
USB HOST Inputs	1× USB-C (24-pin female), 1× USB-B (9-pin female)
USB DEVICE Outputs	2× USB-A (5V/1A)
Link Interface	1× RJ45 (HDBT-USB3, PoC)
Control Ports	1× RS-232 (3-pin Phoenix), 1× FSYNC (1-pin Phoenix), 1× USB-C SERVICE (firmware update)
Receiver Connections	
Link Input	1× RJ45 (HDBT-USB3, PoC)
USB Outputs	1× USB-C DEVICE, 3× USB-A DEVICE (5V/1A & 5V/1.5A)
Control Ports	1× RS-232 (3-pin Phoenix), 1× FSYNC (1-pin Phoenix), 1× USB-C SERVICE (firmware update)
Mechanical	
Housing	TX: Plastic front panel + metal enclosure; RX: Metal enclosure
Color	TX: White + Black; RX: Black
Dimensions	TX: 45 × 42 × 103.5 mm; RX: 140 × 75 × 23 mm
Weight	TX: 115g; RX: 318g
Environmental	
Operating Temperature	32°F ~ 104°F / 0°C ~ 40°C
Storage Temperature	-4°F ~ 140°F / -20°C ~ 60°C
Operating Humidity	20% ~ 80% RH (non-condensing)
Storage Humidity	10% ~ 90% RH (non-condensing)

Operation Controls and Functions

Transmitter Panel

Front and Rear Panel



Transmitter (Wall Plate) Front Panel

No.	Name	Function Description
1	PWR LED	Indicates power status. Green LED is ON when the unit is powered.
2	LINK LED	Indicates link status. ON when TX and RX are successfully connected.
3	SELECT Button	Cycles between USB HOST 1 and HOST 2 input selection.
4	HOST 1 (USB-B)	USB host input port for connection to a PC or host device.
5	USB-A DEVICE 1/2	USB device ports for peripherals (e.g., flash drives, storage devices). Supports up to 5V/1A power output.
6	USB Status LED	USB signal indicator: ON = USB 3.0, Blinking = USB 2.0, OFF = no USB signal detected.
7	HOST LEDs 1/2	Indicates active USB host selection (HOST 1 or HOST 2).

Transmitter (Wall Plate) Rear/Side Panel

No.	Name	Function Description
8	HOST 2 (USB-C)	Alternative USB host input for connection to a PC or host device.
9	HDBT-USB3 (RJ45)	Single CAT6a link connection to Receiver; supports USB extension and PoC.
10	DC 24V	24V power input port (required if powering TX side).
11	FSYNC	GPIO-style signal pass-through for external device synchronization (0–5V level).
12	RS-232	3-pin Phoenix connector for serial command pass-through/control system integration.
13	SERVICE (USB-C)	Firmware update port and service interface connection.

Receiver Panel

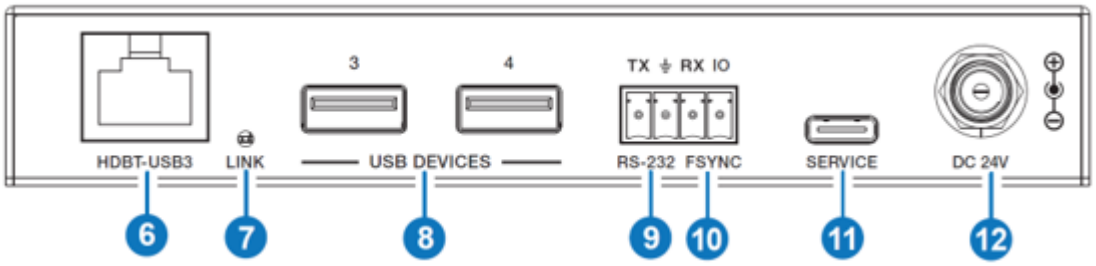
Receiver Front Panel

Front Panel

No.	Name	Function Description
1	Power LED	Indicates power status. ON when receiver is powered.
2	LINK LED	Indicates connection status between TX and RX. ON = linked, OFF = no link.
3	USB LED	USB activity indicator: ON = USB 3.0, Blinking = USB 2.0, OFF = no USB signal.
4	USB-C DEVICE	USB device port for peripherals (e.g., storage, cameras, controllers).

5	USB-A DEVICE 2	USB device port for peripherals. Supports up to 5V/1A.
6	USB-A DEVICE 3/4	High-power USB device ports for peripherals. Supports up to 5V/1.5A.

Receiver Rear Panel



Rear Panel

No.	Name	Function Description
7	HDBT-USB3 (RJ45)	CAT6a link input from transmitter; carries USB data and PoC power.
8	LINK LED	Secondary link status indicator confirming TX/RX connection.
9	RS-232	3-pin Phoenix connector for serial control pass-through.
10	FSYNC	GPIO signal pass-through for external synchronization (0–5V).
11	SERVICE (USB-C)	Firmware upgrade and service port.
12	DC 24V	24V power input (optional if powering from TX via PoC).

API Command Information

The BG-USX-WP100BC supports API control via **RS-232** and **USB-C Service Port (virtual COM)**. Commands are used for device control, status monitoring, and configuration.

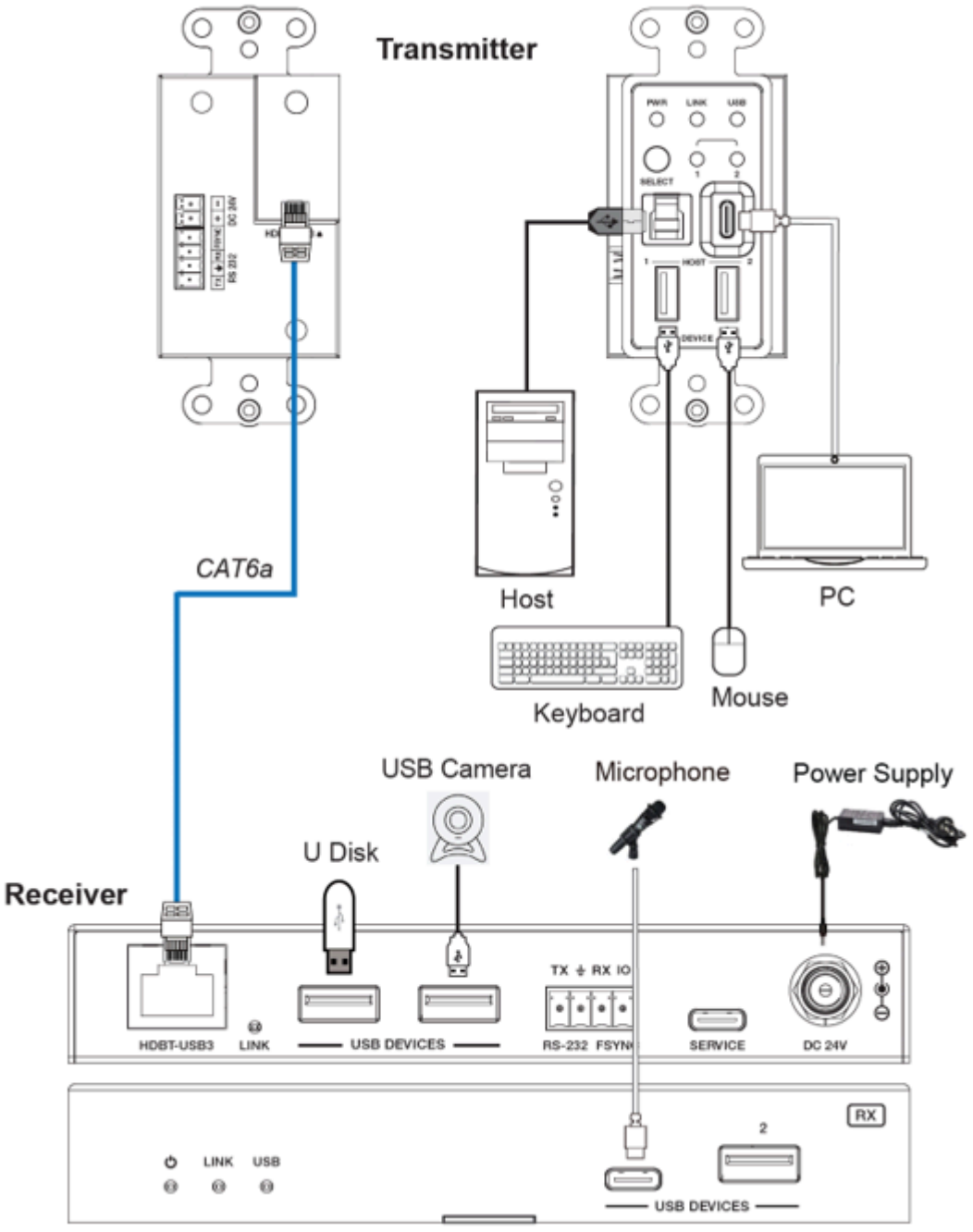
ASCII Commands				
1. Service port (USB-C virtual RS-232) communication protocol (Internal debug) Baud rate: 115200 (fixed), Data bit: 8, Stop bit: 1, Parity bit: none The end mark of command is “<CR><LF>” 2. Phoenix RS-232 port communication protocol (Connect to control system) Baud rate: 4800~115200 (configurable), Data bit: 8, Stop bit: 1, Parity bit: none The end mark of command is “<CR><LF>”				
Command	Function	Example	Feedback	Default
?	Get the list of all commands	?		
help	Get the list of all commands	help		
get fw version	Get firmware version	get fw version	1.0.0	
set reboot	Reboot the device	set reboot	Reboot… System Initializing... Initialization Finished! FW: 1.0.0	
set reset	Reset to factory defaults	set reset	Sure to RESET to default settings? Type "Yes" after next prompt to confirm…	
get status	Get system status	get status	Please refer to the note at the end of the list.	
set key on/off	Set front panel key on/off	set key on set key off	Set key on Set key off	on
get key	Get front panel key on/off status	get key	Key on	
set baud x	Set RS-232 baud rate to x bps x=1: 4800 x=2: 9600 x=3: 19200 x=4: 38400 x=5: 57600 x=6: 115200	set baud 6	Set baud rate 115200	115200
get baud	Get RS-232 baud rate	get baud	Baud rate 115200	

Command	Function	Example	Feedback	Default
set input x	Set USB host input port (x=1~2) x=1: USB host 1 (USBB) x=2: USB host 2 (USBC)	set input 1	Set input USB host 1	1
get input	Get USB host input port	get input	Input USB host 1	
get usb5v x	Get USB host input port 5V (x=0~2) x=0: all USB host inputs x=1: USB host 1 (USBB) x=2: USB host 2 (USBC)	get usb5v 0	USB host 1: 5V USB host 2: none	

set autoswitch x	Set auto-switching on/off (USB 5V detection) x=On, Off	set autoswitch on	Set autoswitch on	on
get autoswitch	Get auto-switching status	get autoswitch	Autoswitch on	
set tx usbd x power y	Set TX USB device ports (x=0~2) power to (y=0~2) x=0: TX all USB device ports x=1: TX USB device 1 (USBA) x=2: TX USB device 2 (USBA) y=0: Force power off y=1: Follow USB host power y=2: Force power on	set tx usbd 0 power 1	Set TX all USB device ports power follow USB host power	1
get tx usbd x power	Get TX USB device ports (x=0~2) power status x=0: TX all USB device ports x=1: TX USB device 1 (USBA) x=2: TX USB device 2 (USBA)	get tx usbd 0 power	TX all USB device ports power follow USB host power	
set rx usbd x power y	Set RX USB device ports (x=0~4) power to (y=0~2) x=0: RX all USB device ports x=1: RX USB device 1 (USBA) x=2: RX USB device 2 (USBC) x=3: RX USB device 3 (USBA) x=4: RX USB device 4 (USBA) y=0: Force power off y=1: Follow USB host power y=2: Force power on	set rx usbd 0 power 1	Set RX all USB device ports power follow USB host power	1
set hdbt update	Set service port to HDBT UART for FW update	set hdbt update	HDBT update	

Command	Function	Example	Feedback	Default
get rx usbd x power	Get RX USB device ports (x=0~4) power status x=0: RX all USB device ports x=1: RX USB device 1 (USBA) x=2: RX USB device 2 (USBC) x=3: RX USB device 3 (USBA) x=4: RX USB device 4 (USBA)	get rx usbd 0 power	RX all USB device ports power follow USB host power	

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.

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