



USB3-WPE3304P-K

**USB 3.2 Extender (USB-C)
- 330ft (Cat6)**

USER MANUAL

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Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating, or adjusting this product. Keep this manual for future reference.

Important Safety Note – Surge Protection Recommended

This product contains sensitive electronic components that may be damaged by electrical spikes, surges, lightning strikes, or static discharge. To protect and extend the service life of your equipment, we strongly recommend using a surge protection device.

Warranty Registration

Activate your warranty by registering your product at:

→ www.orei.com/register

Need Technical Support? We're Here to Help.

Our experienced Technical Support Team is available to answer your questions, offer expert advice, and help troubleshoot any issues to keep your project on track—on time and on budget.

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Introduction

USB3-WPE3304P-K is a professional-grade solution for long-distance USB signal transmission, ideal for commercial, educational, and industrial environments. Designed in a US 1-Gang standard decora wall plate format, this system extends USB 3.2 Gen 1 signals up to 100m (328ft) over a single Cat6/7 cable, providing seamless connectivity for USB devices across large spaces.

The transmitter offers one USB-C and one USB-B selectable input, along with two USB-A loop-out ports for convenient local device connection. The receiver provides two USB-C and two USB-A output ports, delivering both high-speed data and power to connected devices. Bi-directional 24V PoC (Power over Cable) simplifies installation by requiring power at only one end of the system. This extender is ideal for applications requiring reliable, long-distance USB transmission, including webcams, PTZ cameras, keyboard, mouse, USB microphones, printers, scanners, touch panels, and more.



1. **US 1-Gang Standard Decora Wall Plate Design** – Provides a sleek, professional finish ideal for permanent installations.
2. **USB 3.2 Gen 1 Extension up to 100m/328ft** – Extends USB signals over a single Cat6a cable for reliable, high-speed transmission.
3. **5Gbps Data Transfer Rate** – Ensures fast, stable performance for a wide range of USB devices.
4. **Backwards Compatible with USB 2.0 and 1.1** – Supports legacy USB devices for maximum system flexibility.
5. **Hardware Acceleration for Isochronous and Bulk Transfer** – Optimizes performance for audio, video, and high-speed data applications.
6. **Selectable Input Ports on Transmitter** – Offers one USB-B and one USB-C input with both auto-switching and manual selection modes.
7. **RS-232 Pass-through and Command Control** – Enables system integration and external control for advanced installations.
8. **Firmware Upgrade via USB-C Service Port** – Provides convenient system updates for long-term functionality.
9. **FSYNC GPIO Pass-through for Industrial Cameras** – Supports synchronization of specialized camera systems.
10. **Receiver with Multiple Device Ports** – Includes two USB-C and two USB-A output ports (two 5V@1A, one 5V@1.5A) for flexible device connectivity and power supply.
11. **Bi-directional 24V PoC (Power over Cable)** – Allows the system to operate with power supplied from either the transmitter or receiver, eliminating the need for additional power adapters.
12. **Plug-and-Play Operation** – Requires no drivers or software for quick and easy setup.

Package Contents

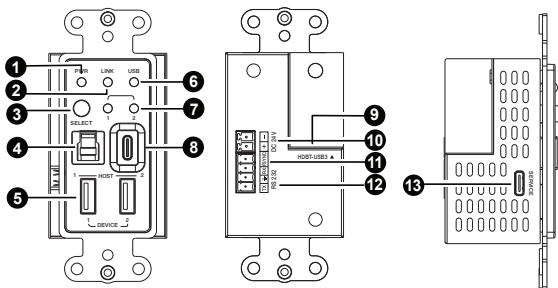
1.	USB3-WPE3304P-K Transmitter	1pcs
2.	USB3-WPE3304P-K Receiver	1pcs
3.	2pin-3.5mm Phoenix Connector (Male)	1pcs
4.	4pin-3.5mm Phoenix Connector (Male)	2pcs
5.	Mounting Ear	2pcs
6.	Machine Screw (KM3*4)	4pcs
7.	Power Adapter	1pcs
8.	User Manual	1pcs

Specifications

Technical	
USB Protocol	USB 3.2 Gen1
Transmission Rate	Up to 5Gbps
Transmission Distance	100m/328ft over CAT6a (F/FTP) cable 1.5m/4.9ft over USB cable
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge) , ±4kV (Contact discharge)
Connections	
Transmitter	Input: 1× HOST 1 [USB-C, 24-pin female] 1× HOST 2 [USB-B, 9-pin female] Output: 2× DEVICE [USB-A, 9-pin female] 1× LAN [RJ45] Control: 1× RS-232 [3pin-3.5mm phoenix connector] 1× FSYNC [1pin-3.5mm phoenix connector] 1× SERVICE [USB-C, firmware update port]
Receiver	Input: 1× LAN [RJ45] Output: 2× Device [USB-A, 9pin female] 2× Device [USB-C, 24pin female] Control: 1× SERVICE [USB-C, update port]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	TX: L: 103.5mm / 4.07in; W: 45mm / 1.77in; H: 42mm / 1.65in RX: L: 160mm / 6.29in; W: 95mm / 3.74in; H: 23mm / 0.90in
Weight	TX: 115g / 4.05oz, RX: 384g / 13.54oz
Power Supply	Input: AC 100-240V 50/60Hz Output: DC 24V/3.75A (US/EU standards, CE/FCC/UL certified)
Power Consumption	62W (Max)
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Operating Humidity	20%-80% relative humidity, non-condensing
Storage Humidity	10%-90% relative humidity, non-condensing

Operation Controls and Functions

Transmitter Panel

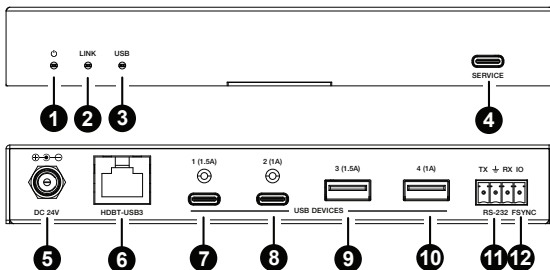


No.	Name	Function Description
1.	POWER LED	The LED will light up when the Transmitter is powered on.
2.	LINK LED	The green LED will light up when the Transmitter and Receiver are connected successfully.
3.	SELECT button	Press the button to switch between USB Host 1 and 2.
4.	HOST 1	Connect to a USB port on a computer or laptop.
5.	DEVICE 1/2	Connect a USB peripheral such as keyboard, mouse, USB drive, webcam, etc.
6.	USB LED	USB signal pass-through indicator. ▪ On: USB 3.0 signal is detected. ▪ Blinking: USB 2.0 signal is detected. ▪ Off: USB signal is not detected.
7.	HOST LED 1/2	The LED will light up when the corresponding Host is selected.

Operation Controls and Functions

No.	Name	Function Description
8.	HOST 2	Connect to a USB-C port on a computer or laptop.
9.	HDBT-USB3	Connect a CAT 6/7 cable. The other end connects to the Receiver.
10.	DC 24V	Connect power through mains. Supports DC 24V/3.75A.
11.	FSYNC	Pass-through sync port (0-5V) that lets you send a trigger or sync signal from the Transmitter to the Receiver. Use it to connect external devices (e.g., cameras, controllers, lighting) that need to stay synchronized on both ends..
12.	RS-232	Connect to a Laptop or PC to send RS-232 commands.
13.	SERVICE	USB-C port, used for firmware update.

Receiver Panel



Operation Controls and Functions

No.	Name	Function Description
1.	POWER LED	The LED will light up when the Receiver is powered on.
2.	LINK LED	Connection signal indicator. ▪ On: Transmitter and Receiver are connected and linked. ▪ Off: Transmitter and Receiver are not connected.
3.	USB LED	USB signal indicator. ▪ On: USB 3.0 signal is detected. ▪ Blinking: USB 2.0 signal is detected. ▪ Off: USB signal is not detected.
4.	SERVICE	Firmware update port, supporting RS-232 commands.
5.	DC 24V	Connect the included power adapter. Do not connect the power adapter if the Transmitter is already powered.
6.	HDBT-USB3	Connect a CAT 6/7 cable. The other end connects to the Transmitter.
7.	USB DEVICES 1	Connect a USB peripheral such as keyboard, mouse, USB drive, webcam, etc. (5V/1.5A)
8.	USB DEVICES 2	Connect a USB peripheral such as keyboard, mouse, USB drive, webcam, etc. (5V/1A)
9.	USB DEVICES 3	Connect a USB peripheral such as keyboard, mouse, USB drive, webcam, etc. (5V/1.5A)
10.	USB DEVICES 4	Connect a USB peripheral such as keyboard, mouse, USB drive, webcam, etc. (5V/1A)
11.	RS-232	Connect to a Laptop or PC to send RS-232 commands.
12.	FSYNC	Pass-through sync port (0-5V) that lets you send a trigger or sync signal from the Transmitter to the Receiver. Use it to connect external devices (e.g., cameras, controllers, lighting) that need to stay synchronized on both ends.

RS-232 Commands

Connect the RS-232 port of the product to a PC. Then, open a Serial Command tool on PC to send ASCII commands to control the product. The command list is shown below.

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>" Note: Service port supports command line operations				
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 Description	Example	Feedback	Default
System Setting				
?	Get the list of all commands	?		
help	Get the list of all commands	help		
get fw version	Get firmware version	get fw version	TX FW 1.0.0 RX FW 1.0.0	
set reboot	Reboot the device	set reboot	Reboot... System Initializing... Initialization Finished! TX 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.	

RS-232 Commands

Command	Function Description	Example	Feedback	Default
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	
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 auto-switch x	Set auto-switching on/off (USB 5V detection) x=On, Off	set auto-switch on	Set autoswitch on	on
get auto-switch	Get auto-switching status	get auto-switch	Autoswitch on	

RS-232 Commands

Command	Function Description	Example	Feedback	Default
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 (USBC) 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
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 (USBC) 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	
set hdbt update	Set service port to HDBT UART for FW update	set hdbt update	Hdbt update	

RS-232 Commands

Note: The feedback of the command of "get status" is as follow.

Status Info 2-Port USB 3.2 Gen 1 Extender

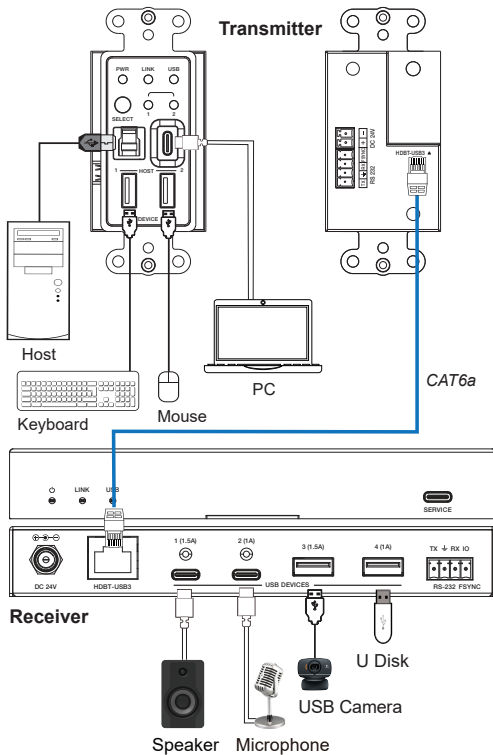
TX FW 1.0.0 RX FW 1.0.0

Source	Key	Baud	AutoSwitch
01	On	115200	On

In/Out	Host_1	Host_2	Device_Out1	Device_Out2
Cable	Disconnected	Connected	Connected	Connected

Output	USB_Power
TX_01	Follow_Input
TX_02	Follow_Input
RX_01	Follow_Input
RX_02	Follow_Input
RX_03	Follow_Input
RX_04	Follow_Input

Application Example



FAQs & Troubleshooting

1. Does this extender support USB 2.0 and USB 1.1 devices?

Yes, it is backward compatible with USB 2.0 and USB 1.1 devices, but at their respective speeds.

2. Can I charge devices using the USB ports on the receiver?

The ports provide up to 1.5A or 1A power depending on the port, so small devices can be charged, but the extender is primarily intended for data transmission, not fast charging.

3. Do I need external power for the receiver?

This model supports Power over Cable, so only the Transmitter or the Receiver needs power. The other one will get power over the ethernet connection.

4. What operating systems are supported?

The extender is plug-and-play and supports Windows, macOS, and Linux without additional drivers.

Still have some questions?

Please feel free to contact us at: info@orei.com. OR Fill out the form on the 'Contact Us' page on the website.

Our team will be more than happy to help you.

OREI Live Technical Support Hours

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