18Gbps DP over HDBaseT Extender 150 meters with KVM

VLEX-HT2150DPK-TR

User Manual

VER 1.0

Thank you for purchasing this product

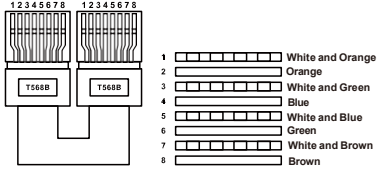
For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Caution

The product requires the use of UTP connectors. Please connect in direct interconnection method and do not cross connect.



Direct Interconnection Method

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1. Introduction

This 4K60 DP Extender can extend DP signal, bi-directional IR control signal, bi-directional RS-232 signal and USB KVM signal to a distance up to 328ft/100m for 4K60 signal or 492ft/150m for 1080P signal via a single CAT6 cable. It converts DP signal to standard HDBaseT signal and transmits it through LAN cable. It can easily control signal source device or display device from the remote end through bi-directional IR signal pass-through function. Video resolution is up to 4K2K@60Hz YUV 4:4:4. It also supports bi-directional POC function.

Supporting DisplayPort 1.2 allows for the transmission of visually lossless, highly detailed 4K Ultra HD resolutions, perfect for eye catching digital signage or detailed content in medical setups. This extender also supports lossless audio formats including Dolby TrueHD and DTS-HD, to add powerful multi-channel sound to video content, providing an enhanced experience and sense of realism for the viewer. USB KVM connectivity allows for full control of a DisplayPort PC from a local console, which can be stored in a secure or controlled temperature environment, while seamlessly providing consistent video content to the display.

2. Features

- ☆ DP 1.2a and HDCP 2.2 compliant
- ☆ Support 21.6Gbps video bandwidth
- ☆ Support video resolution up to 4K2K@60Hz YUV 4:4:4
- ☆ Signal transmission distance can be extended up to 328ft/100m for 4K60 signal or 492ft/150m for 1080P signal via a single CAT6 cable
- ☆ Support LPCM2.0 (96KHz), Dolby Digital Plus 5.1CH and DTS-HD Master 7.1CH
- ☆ With smart methods of compression for visually lossless transmission
- ☆ Control a single DisplayPort PC, keyboard and mouse via KVM function

☆ Bi-directional IR, RS-232 and USB KVM signal pass-through are supported
☆ Support bi-directional POC (Power over Cable) function
☆ Advanced EDID management
☆ Compact design for easy and flexible installation

3. Package Contents

① 1 × 4K60 DP Extender Extender (Transmitter)
② 1 × 4K60 DP Extender Extender (Receiver)
③ 1 × IR Blaster Cable (1.5m)
④ 1 × IR Wideband Receiver Cable (1.5m)
⑤ 2 × 3pin-3.81mm Phoenix Connector
⑥ 1 × USB2.0 Cable (USB-A to USB-B, 1.5m)
⑦ 4 × Mounting Ear
⑧ 8 × Machine Screw (KM3*4)
⑨ 1 × 24V/1A Locking Power Supply
⑩ 1 × User Manual

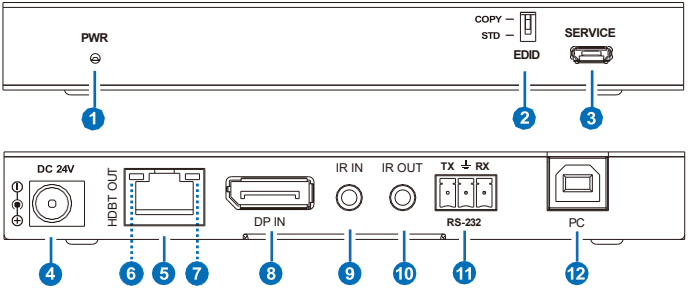
4. Specifications

Technical	
DP Compliance	DP 1.2a
HDCP Compliance	HDCP 2.2
Video Bandwidth	21.6Gbps
Video Resolution	Up to 4K@60Hz YUV 4:4:4
USB Compliance	USB 1.1
IR Level	5Vp-p
IR Frequency	Wideband 20K-60KHz
Transmission Distance	1080P@60--492ft/150m, 4K60--328ft/100m
Color Space	RGB, YCbCr_4:4:4, YCbCr_4:2:2, YCbCr_4:2:0
Color Depth	8/10/12bit

HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
Audio Format	LPCM2.0 (96KHz), Dolby Digital Plus 5.1CH and DTS-HD Master 7.1CH
ESD Protection	Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Connection	
Transmitter	Input: 1 × DP IN [20-pin female] Output: 1 × HDBT OUT [RJ45, 8-pin female] Control: 1 × IR IN [3.5mm Stereo Mini-jack] 1 × IR OUT [3.5mm Stereo Mini-jack] 1 × RS-232 [3pin-3.81mm Phoenix Connector] 1 × PC [USB-B, 4-pin female] 1 × SERVICE [Micro USB]
Receiver	Input: 1 × HDBT IN [RJ45, 8-pin female] Output: 1 × DP OUT [20-pin female] Control: 1 × IR IN [3.5mm Stereo Mini-jack] 1 × IR OUT [3.5mm Stereo Mini-jack] 1 × RS-232 [3pin-3.81mm Phoenix Connector] 2 × USB 1.1 [USB-A, 4-pin female] 1 × SERVICE [Micro USB]
EDID Setting	EDID DIP switch is used for EDID setting. (Dial to COPY by default) **COPY:** Copy the EDID of the DP OUT port of Receiver **STD:** Default 1080P 2CH
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	Transmitter/Receiver: 140mm (W) × 65mm (D) × 18mm (H)
Weight	Transmitter: 241g, Receiver: 253g
Power Supply	DC 24V/1A; Support bi-directional POC function
Power Consumption	13.2W (Max.)
Operating Temperature	0°C ~ 40°C / 32°F ~ 104°F
Storage Temperature	-20°C ~ 60°C / -4°F ~ 140°F
Relative Humidity	20~90% RH (non-condensing)

5. Operation Controls and Functions

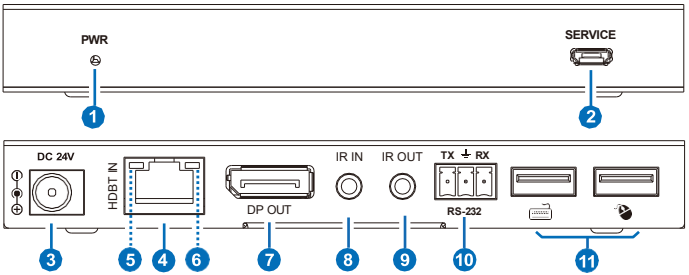
5.1 Transmitter Panel



No.	Name	Function Description
1	PWR LED	The red LED is on when the Transmitter is powered on.
2	EDID DIP switch	Used for EDID setting (dial to COPY by default). **COPY:** Copy the EDID of the DP OUT port of Receiver. **STD:** Default 1080P 2CH
3	SERVICE	Micro USB port, used to update MCU firmware.
4	DC 24V	DC 24V/1A power input port. *Note that the extender supports POC function, it means that either Transmitter or Receiver is connected to 24V/1A power supply, the other doesn't need power supply.*
5	HDBT OUT	HDBT output port, connected to the HDBT IN port of the Receiver with CAT6 cable.
6	Link Signal Indicator (Green)	▪ Illuminating: Transmitter and Receiver are in good connection status. ▪ Flashing: Transmitter and Receiver are in poor connection status. ▪ Dark: Transmitter and Receiver are not connected.
7	Data Signal Indicator (Yellow)	▪ Illuminating: DP signal with HDCP. ▪ Flashing: DP signal without HDCP. ▪ Dark: No DP signal.
8	DP IN	DP signal input port, connected to DP source device such as computer host.

No.	Name	Function Description
9	IR IN	Connected to IR receiver cable. The IR receive signal will emit to the IR OUT port of the Receiver.
10	IR OUT	Connected to IR blaster cable. The IR emit signal is from the IR IN port of the Receiver.
11	RS-232	3-pin phoenix connector, connected to a PC or control system for RS-232 command transmission.
12	PC	USB-B port, connected to PC.

5.2 Receiver Panel

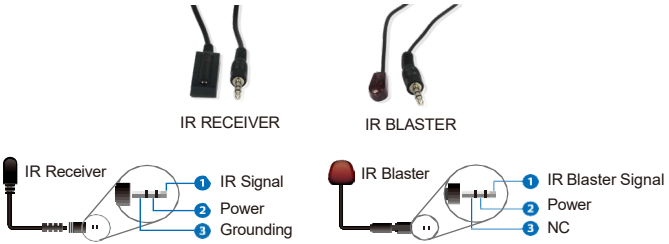


No.	Name	Function Description
1	PWR LED	The power LED is on when the Receiver is powered on.
2	SERVICE	Micro USB port, used to update MCU firmware.
3	DC 24V	DC 24V/1A power input port. *Note that the extender supports POC function, it means that either Transmitter or Receiver is connected to 24V/1A power supply, the other doesn't need power supply.*
4	HDBT IN	HDBT input port, connected to the HDBT OUT port of the Transmitter with CAT6 cable.
5	Link Signal Indicator (Green)	▪ Illuminating: Transmitter and Receiver are in good connection status. ▪ Flashing: Transmitter and Receiver are in poor connection status. ▪ Dark: Transmitter and Receiver are not connected.

No.	Name	Function Description
6	Data Signal Indicator (Yellow)	▪ Illuminating: DP signal with HDCP. ▪ Flashing: DP signal without HDCP. ▪ Dark: No DP signal.
7	DP OUT	DP signal output port, connected to DP display device such as TV or monitor.
8	IR IN	Connected to the IR receiver cable. The IR receive signal will emit to the IR OUT port of the Receiver.
9	IR OUT	Connected to the IR blaster cable. The IR emit signal is from the IR IN port of the Receiver.
10	RS-232	3-pin phoenix connector, connected to a PC or control system for RS-232 command transmission.
11	USB-A	Two USB-A ports, connected to a keyboard or mouse.

5.3 IR Pin Definition

IR Receiver and Blaster pin's definition is as below:



Note:

When the angle between the IR receiver and the remote control is ±45 °, the transmission distance is 0-5 meters;

When the angle between the IR receiver and the remote control is ±90 °, the transmission distance is 0-8 meters.

6. Application Example