



# 4K60 HDMI KVM Extender

HDMI 2.0b, 2-Way IR, USB 2.0, PoC, 100m



## DSG-KEX-150U2

User Manual

VER 1.1



## Thank You For Purchasing This Product

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

## Surge Protection Device Recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shocks, lighting strikes, and similar events. The use of surge protection systems is highly recommended to safeguard and extend the lifespan of your equipment.

## Table of Contents

1.	Introduction.....	3
2.	Features.....	3
3.	Package Contents .....	4
4.	Specifications .....	5
5.	Operation Controls and Functions.....	7
5.1	Transmitter Panel.....	7
5.2	Receiver Panel .....	8
5.3	IR Pin Definition .....	10
6.	Application Example .....	11



## 1. Introduction

This 18Gbps HDBaseT Extender can extend HDMI signals, bi-directional IR control signals, and USB KVM signals up to a distance of 150m / 492ft (Long Reach Mode) via a single CAT6 cable. This product converts HDMI signals to standard HDBaseT signals and transmits them through a LAN cable. It allows easy control of the signal source device or display device from the remote end through the bi-directional IR signal pass-through function. Video resolution is up to 4K@60Hz YUV 4:4:4. It also supports the PoC function. The Extender can be widely used in various fields such as video conference systems, multimedia signal broadcasting, HDMI signal extension, etc.

## 2. Features

- ☆ HDMI 2.0b and HDCP 2.2 compliant
- ☆ Supports 18Gbps video bandwidth
- ☆ Supports video resolutions up to 4K@60Hz YUV 4:4:4
- ☆ Includes Mode DIP switch to select HDBaseT Mode or Long Reach Mode

### **HDBaseT Mode:**

USB supports USB 2.0 transmission (supports connecting with USB camera, USB flash drive, and other devices); the audio & video signal transmission distance can be extended up to 100m / 328ft for 4K60.

### **Long Reach Mode:**

USB only supports HID (Human Interface Device) devices; the audio & video signal transmission distance can be extended up to 150m / 492ft for 1080P or 120m / 394ft for 4K60.



- ☆ Supports bi-directional IR signal and USB KVM signal pass-through
- ☆ Supports bi-directional PoC (Power over Cable) functionality
- ☆ Advanced EDID management
- ☆ Compact design for easy and flexible installation

### 3. Package Contents

- ① 1 x 18Gbps HDBaseT Extender (Transmitter)
- ② 1 x 18Gbps HDBaseT Extender (Receiver)
- ③ 1 x IR Blaster cable (1.5 meters)
- ④ 1 x IR Wideband Receiver cable (1.5 meters)
- ⑤ 4 x Mounting Ears
- ⑥ 8 x Machine Screws (KM3\*4)
- ⑦ 1 x 24V/1A Locking Power Adapter
- ⑧ 1 x User Manual

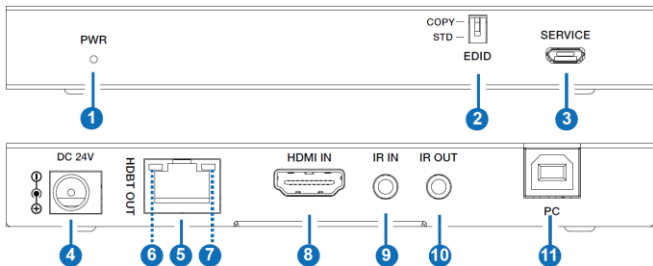
## 4. Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
Video Bandwidth	18Gbps
Video Resolution	Up to 4K@60Hz YUV 4:4:4
USB Compliance	USB 2.0
IR Level	5Vp-p
IR Frequency	Wideband 20K - 60KHz
Transmission Distance	<b>HDBaseT Mode:</b> 4K60 – 100m / 328ft <b>Long Reach Mode:</b> 1080P – 150m / 492ft; 4K60 – 120m / 394ft
Colour Space	RGB 4:4:4, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
Colour Depth	8-bit, 10-bit, 12-bit (1080P) 8-bit, 10-bit, 12-bit (4K30) 8-bit (4K60)
HDR	HDR, HDR10, HDR10+, Dolby Vision, HLG
Audio Formats	LPCM 7.1 CH, Dolby True HD, DTS-HD Master
ESD Protection	Human body model — ±8kV (air-gap discharge) & ±4kV (contact discharge)
Connections	
Transmitter	Input: 1 × HDMI IN [Type A, 19-pin female] 1 × IR IN [3.5mm Stereo Mini-jack] 1 × USB [USB-B, 4-pin female] 1 × SERVICE [Micro-USB jack]  Output: 1 × HDBT OUT [RJ-45] 1 × IR OUT [3.5mm Stereo Mini-jack]
Receiver	Input: 1 × HDBT IN [RJ-45] 1 × IR IN [3.5mm Stereo Mini-jack] 1 × SERVICE [Micro-USB jack]

	Output: 1 × HDMI OUT [Type A, 19-pin female] 1 × IR OUT [3.5mm Stereo Mini-jack] 2 × USB [USB-A, 4-pin female]
<b>Mechanical &amp; Environmental</b>	
Housing	Metal Enclosure
Color	Black
Dimensions	Transmitter / Receiver: 140mm (W) × 65mm (D) × 18mm (H)
Weight	Transmitter: 245g, Receiver: 249g
Power Supply	DC 24V/1A Supports bi-directional PoC functionality
Power Consumption	13.2 W (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

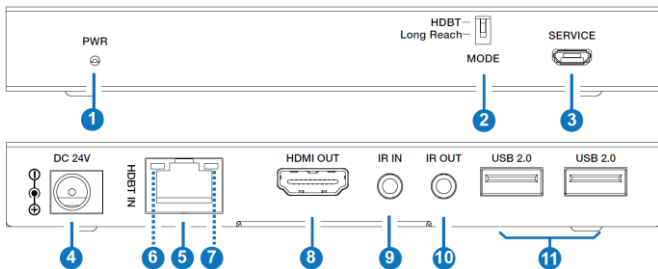
### 5.1 Transmitter Panel



No	Label	Function Description
1	PWR LED	The Red LED is on when the Transmitter is powered on.
2	EDID DIP Switch	Basic EDID Management (set to COPY by default). <b>COPY:</b> Copy the EDID of the HDMI OUT port of Receiver. <b>STD:</b> Default 1080P 2CH
3	SERVICE	Firmware Update port.
4	DC 24V	DC 24V/1A power input port. <i>Note that the extender supports PoC functionality. Either the Transmitter or Receiver needs to connect to the 24V/1A power supply, the other does not need power supply.</i>
5	HDBT OUT	HDBT Out port to connect to the HDBT IN port of the Receiver using CAT6 cable.
6	Link Signal Indicator (Green)	<b>Illuminating:</b> Transmitter and Receiver are in good connection status. <b>Flashing:</b> Transmitter and Receiver are in poor connection status. <b>Dark:</b> Transmitter and Receiver are not connected.

7	Data Signal Indicator (Yellow)	<b>Illuminating:</b> HDMI signal with HDCP. <b>Flashing:</b> HDMI signal without HDCP. <b>Dark:</b> No HDMI signal.
8	HDMI IN	HDMI signal input port to connect to the HDMI source device.
9	IR IN	Connects to IR Receiver cable, the IR received signal will emit to the IR OUT port of the Receiver.
10	IR OUT	Connects to IR Blaster cable, the IR emit signal is from the IR IN port of the Receiver.
11	PC	USB-B port to connect to PC.

## 5.2 Receiver Panel



No	Label	Function Description
1	PWR LED	The Power LED is on when the Receiver is powered on.
2	MODE DIP Switch	Used for Mode Switching (set to HDBT by default). <b>HDBT:</b> Set to HDBaseT Mode <b>Long Reach:</b> Set to Long Reach Mode
3	SERVICE	Firmware Update port.



4	DC 24V	DC 24V/1A power input port. <i>Note that the extender supports PoC functionality. Either the Transmitter or Receiver needs to connect to the 24V/1A power supply, the other does not need power supply.</i>
5	HDBT IN	HDBT IN port to connect to the HDBT OUT port of the Transmitter using CAT6 cable.
6	Link Signal Indicator (Green)	<b>Illuminating:</b> Transmitter and Receiver are in good connection status. <b>Flashing:</b> Transmitter and Receiver are in poor connection status. <b>Dark:</b> Transmitter and Receiver are not connected.
7	Data Signal Indicator (Yellow)	<b>Illuminating:</b> HDMI signal with HDCP. <b>Flashing:</b> HDMI signal without HDCP. <b>Dark:</b> No HDMI signal.
8	HDMI OUT	HDMI signal output port to connect to the HDMI display device.
9	IR IN	Connects to the IR Receiver cable. The IR signal will send to the IR OUT port of the Transmitter.
10	IR OUT	Connects to the IR Blaster cable, the IR signal is from IR IN port of the Transmitter.
11	USB 2.0 Ports	Two USB-A ports to connect to USB 2.0 devices. <b>Note:</b> <i>The maximum output current of a single USB 2.0 port is 500mA, Peripherals that require higher power requirement will not work.</i>

### 5.3 IR Pin Definition

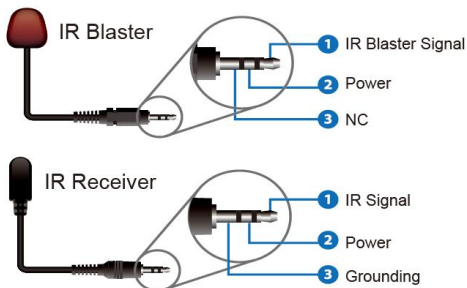
IR Receiver and Blaster pin's definition is as below:



IR RECEIVER



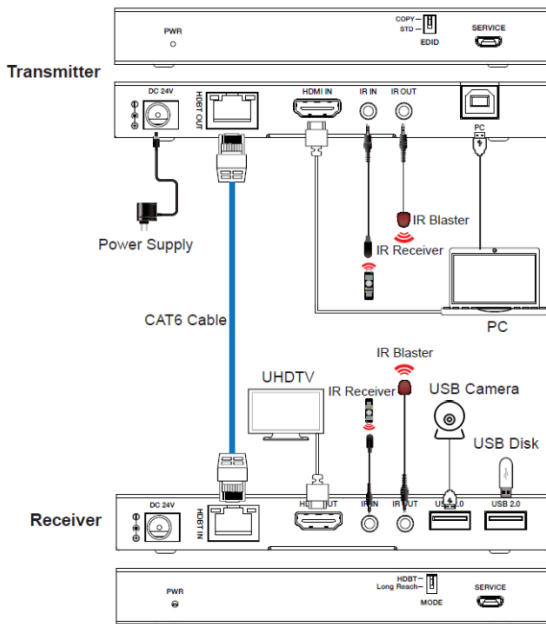
IR BLASTER



**Note:**

- When the angle between the IR Receiver and the Remote Control is  $\pm 45^\circ$ , the transmission distance is 0 - 5 meters.
- When the angle between the IR Receiver and the Remote Control is  $\pm 90^\circ$ , the transmission distance is 0 - 8 meters.

## 6. Application Example



**HDMI™**  
HIGH-DEFINITION MULTIMEDIA INTERFACE

The terms HDMI and HDMI High-Definition Multimedia interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.



### **Limited Warranty**

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY FOR DIRECT OR INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS, LOSS OF BUSINESS, OR FINANCIAL LOSS CAUSED BY THE USE OF THE PRODUCT EXCEED THE PRICE PAID FOR THE PRODUCT.

The direct vendor makes no warranty or representation, expressed or implied, with respect to the contents or use of this documentation, and expressly disclaims its quality, performance, merchantability, or fitness for any particular purpose.

The direct vendor also reserves the right to revise or update the product or documentation without obligation to notify any user of such revisions or updates. For further information, please contact your direct vendor.

All brand names and registered trademarks are the property of their respective owners.