



# USB 3.2 Gen 1 Extender Over CATx 100m

[ USB 3.0, 5Gbps, RS-232, FSYNC, PoC ]



## DSG-USB-EU300

**User Manual**

VER 1.0



## Thank You For Purchasing This Product

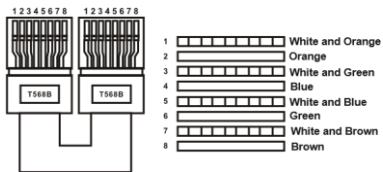
For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

## 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 to protect and extend the life of your equipment.

## Caution

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



**Direct Interconnection Method**



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## 1. Introduction

The USB 3.0 Extender can extend USB signals up to a distance of 100m (328 feet) via a single CAT6A cable. The Transmitter features one USB 3.0 Type B input, one FSYNC GPIO input and one RS-232 pass-through. The Receiver features four USB 3.0 Type A outputs, one FSYNC GPIO output and one RS-232 pass-through. Bi-directional 24V PoC is also supported. This product can be widely used for long-distance signal transmission between a PC and USB devices.

## 2. Features

- Extension of USB 3.0 up to 100m/328ft over CAT6A cable
- USB 3.0 connectivity with a data transfer rate up to 5Gbps
- Backward compatible with USB 2.0 and 1.1
- Hardware acceleration for isochronous and bulk transfers
- USB-A Port 1 and 2 support 5V/1.5A, Port 3 and 4 support 5V/1A on the Receiver
- Supports RS-232 pass-through and FSYNC GPIO pass-through (for industrial camera use)
- Supports bi-directional 24V PoC
- Simple plug and play, no driver and configuration required

### 3. Package Contents

- ① 1 × USB 3.0 Extender (Transmitter)
- ② 1 × USB 3.0 Extender (Receiver)
- ③ 1 × 24V/2A Locking Power Supply
- ④ 2 × 4 pin - 3.5mm Phoenix Connector (Male)
- ⑤ 4 × Mounting Ear
- ⑥ 8 × Machine Screws (KM3\*4)
- ⑦ 1 × User Manual

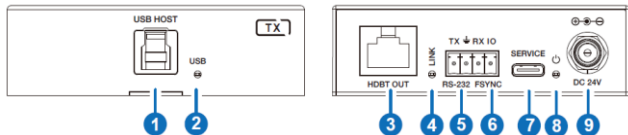
### 4. Specifications

Technical	
USB Protocol	USB 3.0
Transmission Rate	Up to 5Gbps
Network Bandwidth	10G
Transmission Distance	100m/328ft over CAT6A (F/FTP) cable
ESD Protection	IEC 61000-4-2: ±8kV (air-gap discharge), ±4kV (contact discharge)

<b>Connections</b>	
Transmitter	Input: 1 × USB HOST [USB-B, 9-pin Female] Control: 1 × RS-232 [3-pin – 3.5mm Phoenix Connector] 1 × FSYNC [1-pin – 3.5mm Phoenix Connector] 1 × SERVICE [USB-C, Update Port] Network: 1 × HDBT OUT [RJ-45, Female]
Receiver	Output: 4 × USB Devices [USB-A, 9-pin Female] Control: 1 × RS-232 [3-pin – 3.5mm Phoenix Connector] 1 × FSYNC [1-pin – 3.5mm Phoenix Connector] 1 × SERVICE [USB-C, Update Port] Network: 1 × HDBT IN [RJ-45, Female]
<b>Mechanical and Environmental</b>	
Housing	Metal Enclosure
Color	Black
Dimensions	Transmitter / Receiver: 85mm (W) × 100mm (D) × 25.5mm (H)
Weight	Transmitter: 253g, Receiver: 260g
Power Supply	Input: AC 100 ~ 240V, 50/60Hz Output: DC 24V/2A
Power Consumption	40W (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)

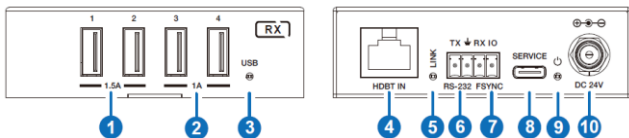
## 5. Operation Controls and Functions

### 5.1 Transmitter Panel



No	Name	Function Description
1	USB HOST	Host Port supports USB 3.0 for connection to a PC or Host device.
2	USB LED	USB signal indicator. <ul style="list-style-type: none"> <li>▪ <b>On:</b> USB signal is detected</li> <li>▪ <b>Off:</b> USB signal is not detected</li> </ul>
3	HDBT OUT	Connects to the HDBT IN port on the Receiver with CAT6A cable.
4	LINK LED	Connection signal indicator. <ul style="list-style-type: none"> <li>▪ <b>On:</b> Transmitter and Receiver are connected and linked.</li> <li>▪ <b>Flashing:</b> Transmitter and Receiver link is off due to USB low power mode</li> <li>▪ <b>Off:</b> Transmitter and Receiver are not connected</li> </ul>
5	RS-232	3-pin Phoenix Connector for connecting to a PC or control system to enable RS-232 command pass-through.
6	FSYNC	FSYNC port is used for level pass-through to the Receiver, and for synchronizing external devices. The default voltage level is 3.3V.
7	SERVICE	Firmware update port.
8	POWER LED	The LED will be on when the Transmitter is powered on.
9	DC 24V	DC 24V/2A power input port.

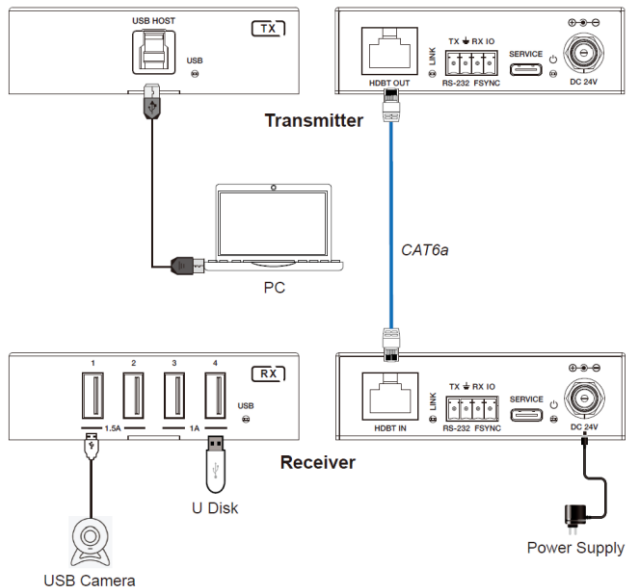
## 5.2 Receiver Panel



No	Name	Function Description
1	USB 1/2	Connect to USB devices, and max output power is up to 5V/1.5A.
2	USB 3/4	Connect to USB devices, and max output power is up to 5V/1A.
3	USB LED	USB signal indicator. <ul style="list-style-type: none"> <li>▪ <b>On:</b> USB signal is detected.</li> <li>▪ <b>Off:</b> USB signal is not detected.</li> </ul>
4	HDBT IN	Connects to the HDBT OUT port on the Transmitter with CAT6A cable.
5	LINK LED	Connection signal indicator. <ul style="list-style-type: none"> <li>▪ <b>On:</b> Transmitter and Receiver are connected and linked.</li> <li>▪ <b>Flashing:</b> Transmitter and Receiver link is off due to USB lowpower mode.</li> <li>▪ <b>Off:</b> Transmitter and Receiver are not connected.</li> </ul>
6	RS-232	3-pin Phoenix Connector for connecting to a PC or control system to enable RS-232 command pass-through.
7	FSYNC	FSYNC port for receiving level pass-through from the Transmitter, and for synchronizing external devices. The default voltage level is 3.3V.
8	SERVICE	Firmware update port.
9	POWER LED	The LED will be on when the Receiver is powered on.
10	DC 24V	DC 24V/2A power input port.



## 6. Application Example





### **Limited Warranty**

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