KA268 USB 3.2 GEN1 EXTENDER 100M

Introduction

This USB Extender can extend USB 3.2 Gen 1 signal to a distance up to 100m/328ft via a single CAT6a cable. The transmitter features one USB-C host port, one USB-C and two USB-A device ports. The receiver features two USB-C and two USB-A device ports. Bi-directional 24V PoC (Power over Cable) function allows user to only supply power to either the transmitter or the receiver.

It can be widely used for long distance USB signal transmission between USB sources and devices like webcams, PTZ cameras, keyboards, mouse devices, USB microphones, flash sticks, printers, scanners, touch panel displays and other USB devices.

Features

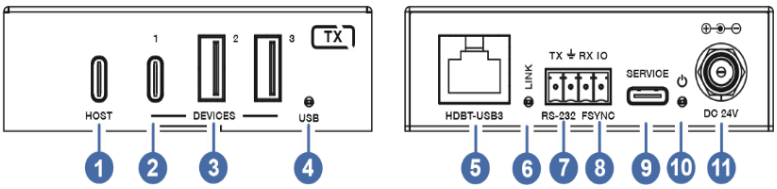
- Extension of USB 3.2 Gen 1 up to 100m/328ft via CAT6a cable
- USB 3.2 Gen 1 connectivity with data transfer rate up to 5Gbps
- Backwards compatible with USB 2.0 and 1.1
- Hardware acceleration for isochronous and bulk transfer
- TX features 1x USB-C host port, 1x USB-C and 2x USB-A device ports
- RX features 2x USB-C (1x 5V@1A and 1x 5V@1.5A) and 2x USB-A device ports (1x 5V@1A and 1x 5V@1.5A)
- Support firmware upgrade via USB-C service port
- Support FSYNC GPIO pass-through for industry camera use
- Support bi-directional 24V PoC (Power over Cable), when TX or RX gets power, the other end does not need an external power supply
- Plug-and-play with no drivers, downloads, or software required

Specifications

Technical	
USB Protocol	USB 3.2 Gen 1
Transmission Rate	Up to 5Gbps
Transmission Distance	100m/328ft via CAT6a (F/FTP) cable 1.5m/4.9ft via USB cable
ESD Protection	IEC 61000-4-2: ±8kV (Air-gap discharge), ±4kV (Contact discharge)
Connections	
Transmitter	Input: 1× HOST [USB Type C, 24-pin female] Output: 1× USB-C DEVICE [USB Type C, 24-pin female] 2× USB-A DEVICE [USB Type A, 9-pin female] 1× HDBT-USB3 [RJ45 connector, 24V PoC] Control: 1× RS-232 [3pin-3.5mm phoenix connector] 1× FSYNC [1pin-3.5mm phoenix connector] 1× SERVICE [USB Type C, firmware update port]
Receiver	Input: 1× HDBT-USB3 [RJ45 connector, 24V PoC] Output: 2× USB-A DEVICE [USB Type A, 9-pin female] 2× USB-C DEVICE [USB Type C, 24-pin female] Control: 1× RS-232 [3pin-3.5mm phoenix connector] 1× FSYNC [1pin-3.5mm phoenix connector] 1× SERVICE [USB Type C, firmware update port]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	TX / RX: 100mm [W] × 85mm [D] × 25.5mm [H]
Weight	TX: 265g; RX: 275g
Power Supply	Input: AC 100~240V 50/60Hz Output: DC 24V/3.75A
Power Consumption	TX: 23W (Max); RX: 35W (Max); TX+RX: 68W (Max, including line loss)
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

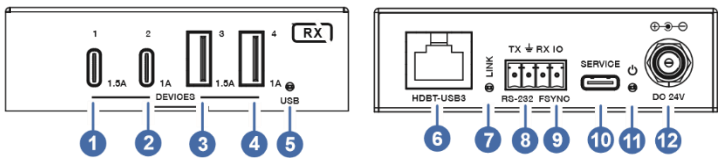
Operation Controls and Functions

Transmitter Panel



No.	Name	Function Description
1	HOST	Uplink USB-C port, connected to PC or host. It can be used for HUB firmware update.
2	USB DEVICES (1)	Downlink USB-C port, connected to USB devices such as U disk or hard disk. Its output power is up to 5V/1A.
3	USB DEVICES (2~3)	Downlink USB-A port, connected to USB devices such as U disk or hard disk. Its output power is up to 5V/1A.
4	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.
5	HDBT-USB3	Connects to the HDBT-USB3 port on Receiver with CAT6a cable. It can also be used for 24V PoC power supply.
6	LINK LED	Connection signal indicator. ▪ On: Transmitter and Receiver are connected and linked. ▪ Off: Transmitter and Receiver are not connected.
7	RS-232	3pin phoenix connector, connected to a PC or control system for RS-232 command pass-through.
8	FSYNC	FSYNC port, the level pass through from Transmitter to Receiver, to synchronize the external devices. Default level range is 0~5V.
9	SERVICE	USB-C port for firmware update, supporting USB 2.0.
10	Power LED	The LED will be on when the transmitter is powered on.
11	DC 24V	DC 24V/3.75A power input port.

Receiver Panel



No.	Name	Function Description
1	USB DEVICES 1	Downlink USB-C port, connected to USB devices such as U disk or hard disk. Its output power is up to 5V/1.5A.
2	USB DEVICES 2	Downlink USB-C port, connected to USB devices such as U disk or hard disk. Its output power is up to 5V/1A.
3	USB DEVICES 3	Downlink USB-A port, connected to USB devices such as U disk or hard disk. Its output power is up to 5V/1.5A.
4	USB DEVICES 4	Downlink USB-A port, connected to USB devices such as U disk or hard disk. Its output power is up to 5V/1A.
5	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.
6	HDBT-USB3	Connects to the HDBT-USB3 port on Transmitter with CAT6a cable. It can also be used for 24V PoC power supply.
7	LINK LED	Connection signal indicator. ▪ On: Transmitter and Receiver are connected and linked. ▪ Off: Transmitter and Receiver are not connected.
8	RS-232	3pin phoenix connector, connected to a PC or control system for RS-232 command pass-through.
9	FSYNC	FSYNC port, the level pass through from Transmitter to Receiver, to synchronize the external devices. Default level range is 0~5V.
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11	Power LED	The LED will be on when the receiver is powered on.
12	DC 24V	DC 24V/3.75A power input port.

Application Example