



# USB 3.2 Gen1 4-Port Extender Kit, 100m

## User Manual

### 500530



## Table of Contents

1. Safety Precautions.....	3
2. Introduction.....	4
3. Features.....	4
4. Package Contents.....	4
5. Specifications.....	5
6. Operation Controls and Functions.....	6
6.1 Transmitter Panel.....	6
6.2 Receiver Panel.....	7
7. Application Example.....	8

## 1 Safety Precautions

To ensure the best performance from the product, please read all instructions carefully before using the device. Save this manual for future reference.

- Follow basic safety precautions to reduce the risk of fire, electrical shock, and injury.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burns.
- Do not open or remove the housing of the device as you may be exposed to dangerous voltage or other hazards.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture and do not install this product near water. Keep the product away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on the housing, unplug the module immediately.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Using supplies or parts not meeting the product specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- Install the device in a place with adequate ventilation to avoid damage caused by overheat.
- Unplug the power when left unused for a long period of time.
- Information on disposal of devices: do not burn or mix with general household waste, please treat them as normal electrical waste.

### Copyright Notice

All contents in this manual are copyrighted, and cannot be cloned, copied, or translated without the express permission of MuxLab Inc. Product specifications and information in this document are for reference only, and the content may be updated from time to time without prior notice.

## 2 Introduction

The USB 3.2 Gen1 4-Port Extender Kit, 100m (model: 500530) enables USB 3.2 Gen1 connectivity at data rates up to 5Gbps & extends true USB up to 100m (328ft) over standard Cat6a UTP. Transmitter features with one USB 3.2 Gen1 Type B input, one FSYSNC GPIO input and one RS-232 pass-through. Receiver features with four USB 3.2 Gen1 Type A outputs, one FSYSNC GPIO output and one RS-232 pass-through. The device also supports 24V Bi-directional PoC.

The USB 3.2 Gen1 4-Port Extender Kit, 100m is true plug and play, requires no additional software drivers, and is compatible with all major operating systems. The unit supports a wide variety of USB extension applications including security, industrial control, digital signage, scientific data acquisition and other implementations of USB standards.

## 3 Features

- Extension of USB 3.0 up to 100m/328 ft over CAT6a cable
- USB 3.2 Gen1 connectivity with data transfer rate up to 5Gbps
- Backwards compatible with USB 2.0 and USB 1.1
- Hardware acceleration for isochronous and bulk transfer
- USB-A port 1 and 2 support 5VDC/1.5A, port 3 and 4 support 5VDC/1A on the Receiver
- Support RS-232 pass-through and FSYNC GPIO pass-through (for industry camera use)
- Support bi-directional 24VDC PoC
- Simple plug and play, no driver and setting installation required.

## 4 Package Contents

- One (1) USB 3.0 Extender (Transmitter)
- One (1) USB 3.0 Extender (Receiver)
- One (1) 24VDC/2A Locking Power Supply
- Two (2) 4pin-3.5mm Phoenix Connector (Male)
- Four (4) Mounting Ear
- Eight (8) Screw (KM3\*4)
- One (1) User manual (available via download)

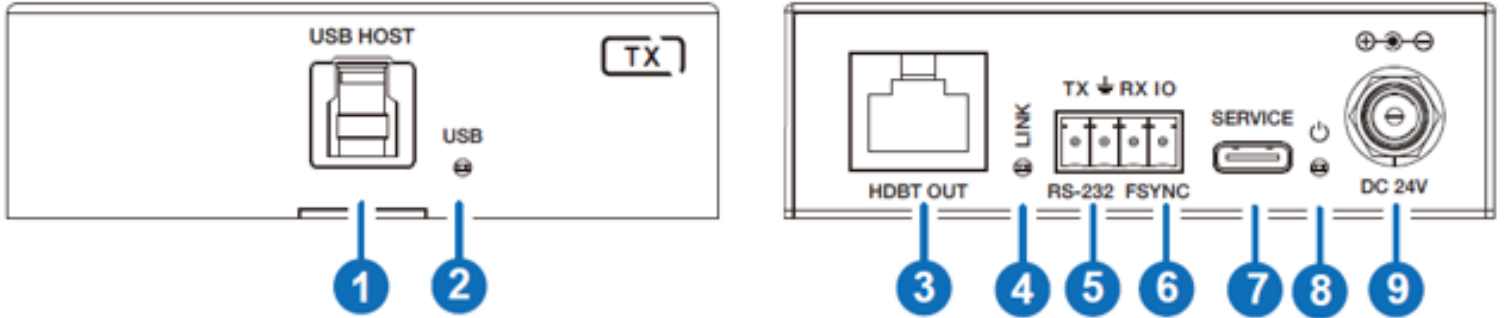
**Notes:** Confirm that the product and accessories are all included. If not, please contact the supplier from which you purchased the unit.

## 5 Specifications

Technical	
USB Protocol	USB 3.2 Gen1
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)
Connection	
Transmitter	Input: 1 × USB HOST [USB-B, 9pin Female] Output: 1 × HDBT OUT [RJ45, Female] Control: 1 × RS-232 [3pin-3.5mm Phoenix Connector] 1 × FSYNC [1pin-3.5mm Phoenix Connector] 1 × SERVICE [USB-C, Update Port]
Receiver	Input: 1 × HDBT IN [RJ45, Female] Output: 4 × USB Devices [USB-A, 9pin Female] Control: 1 × RS-232 [3pin-3.5mm Phoenix Connector] 1 × FSYNC [1pin-3.5mm Phoenix Connector] 1 × SERVICE [USB-C, Update Port]
Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	Transmitter / Receiver: 85mm [W] × 100mm [D] × 25.5mm [H]
Weight	Transmitter: 253g, Receiver: 260g
Power Supply	Input: 100~240VAC 50/60Hz Output: 24VDC/2A
Power Consumption	PoC Power Supply: 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)
Generic Specification	
Warranty	2 years
Order Information	500530 USB 3.2 Gen1 4-Port Extender Kit, 100m (UPC: 627699005309)

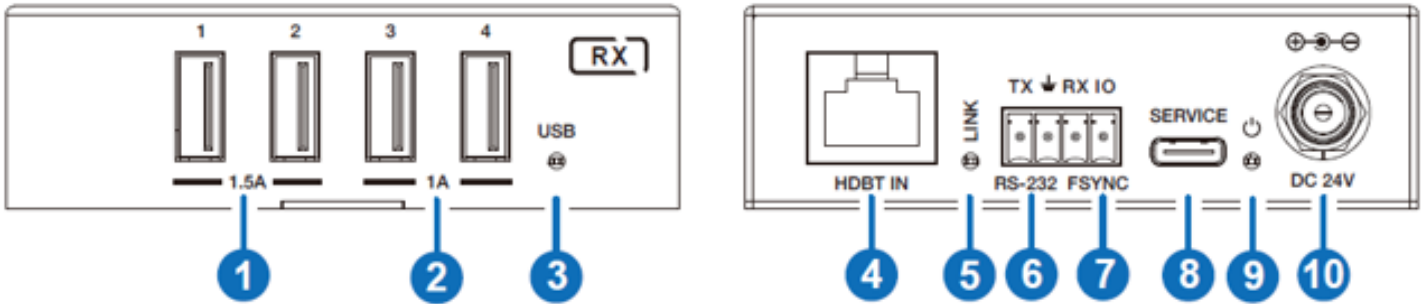
## 6 Operation Controls and Functions

### 6.1 Transmitter Panel



No	Name	Function Description
1	USB HOST	Host port, supporting USB 3.0. Connects to a PC or host.
2	USB LED	USB signal indicator. <ul style="list-style-type: none"> <li>On: USB signal is detected.</li> <li>Off: USB signal is not detected.</li> </ul>
3	HDBT OUT	Connects to the HDBT IN port on Receiver with CAT cable.
4	LINK LED	<ul style="list-style-type: none"> <li>Connection signal indicator.</li> <li>On: Transmitter and Receiver are connected and linked.</li> <li>Flashing: Transmitter and Receiver link is off due to USB low power mode.</li> <li>Off: Transmitter and Receiver are not connected.</li> </ul>
5	RS-232	3pin phoenix connector, connected to a PC or control system for RS-232 command pass-through.
6	FSYNC	FSYNC port, used for level pass-through to the Receiver, and synchronizing the external devices. The default level is 3.3VDC.
7	Service	Firmware update port.
8	Power LED	The LED will be on when the Transmitter is powered on.
9	24VDC	24VDC/2A power input port.

## 6.2 Receiver Panel



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

## 7 Application Example

