



USB 2.0 4-Port Extender Kit

Installation Guide

500072

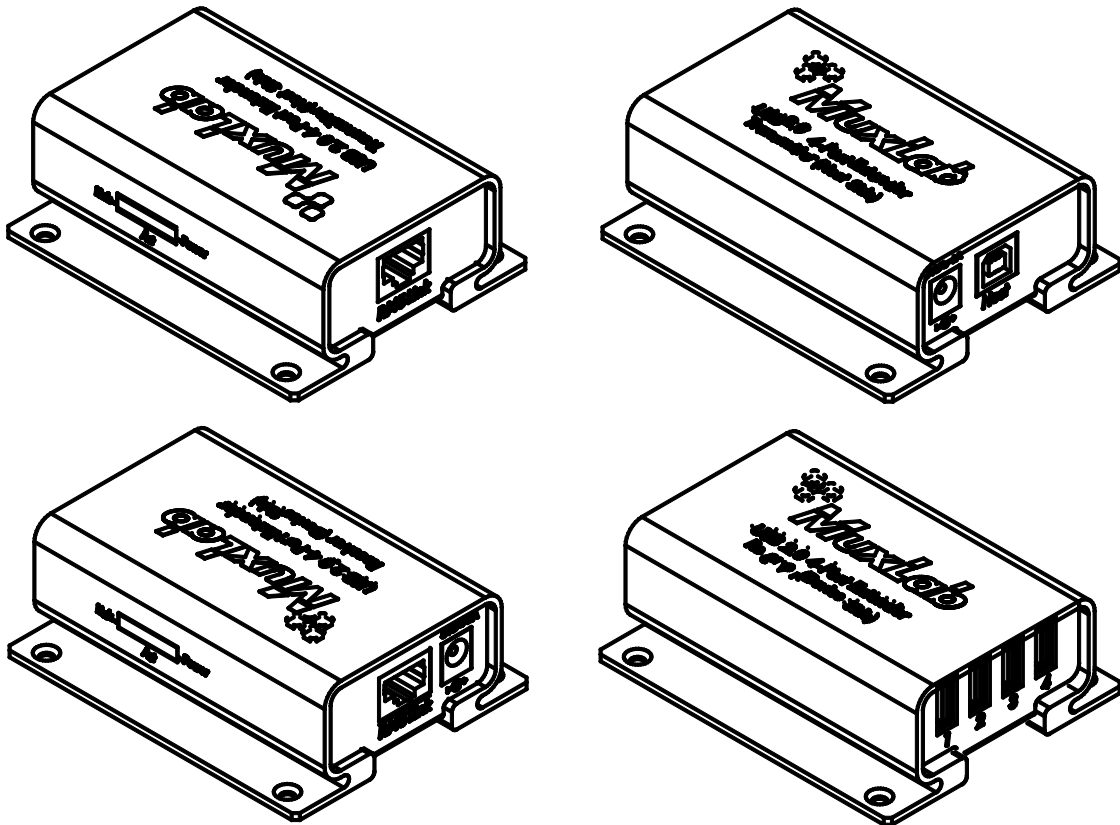


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1. Introduction

The USB 2.0 high speed extender system enables USB 2.0 connectivity over Cat5e/6 at data rates up to 480Mbps and extends true USB up to 100m (328ft) over standard Cat5 twisted pair cable.

This unit is true plug and play, requires no additional software drivers, and is compatible with all major operating systems such as Windows, Mac and Linux.

It is ideal for accessing remotely laser printers, scanners, web cameras, external hard drives, CD/DVD burners, and flash drives. It supports a wide variety of USB extension applications including security, industrial control, digital signage, scientific data acquisition and other implementations of USB standards.

2. Features

- True plug and play, no driver installation required.
- Extends USB 2.0 high-speed and USB 1.1 (low-speed, full-speed) devices up to 100m (328ft) over Cat. 5e/6 cable
- Supports all USB device types: Control, Interrupt, Bulk and Isochronous at up to 480Mbps
- Ideal for a wide variety of USB devices, printers, scanners, hard drives, audio devices, touch screens, web cams, and game controllers.
- Compatible with major operating systems: Windows 2000 / XP / Vista / 7 / 8 / 8.1, Mac OS, Linux or higher
- Aluminum enclosure and wall mountable

3. Specifications

Model No.		500072	
		Transmitter	Receiver
Chip		ICRON	
Connector	Upstream / Input	USB B Female	RJ-45 Female
	Output / Downstream	RJ-45 Female	USB Type A Female x 4
Interconnection Cable		Standard Cat. 5e/6	
Max. Cable Length		100m (328ft)	
LED		3	
USB Cable Length		0.6m (USB Type A/M to Type B/M)	
Power Supply		5VDC 1A	5VDC 2A
Housing		Aluminum	
Dimension (L x W x H)		90 x 73 x 31mm	

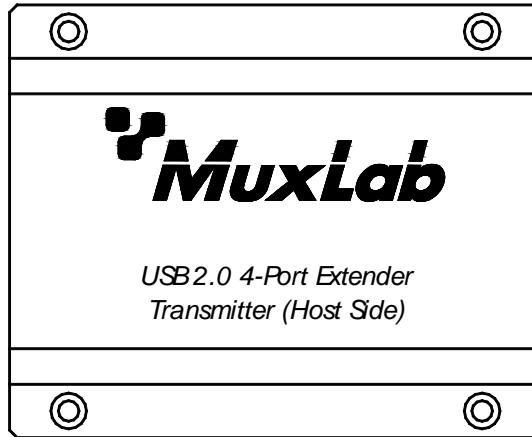
4. Package Contents

- 1 Transmitter unit
- 1 Receiver unit
- 2 5VDC Power adapters
- 1 USB 2.0 Type A/M to Type B/M Cable 0.6m

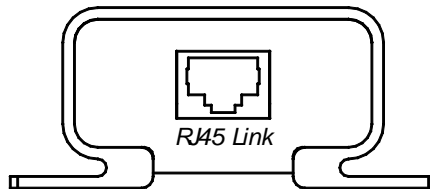
5. Physical Diagram

5.1 Transmitter (Local Unit)

Top View

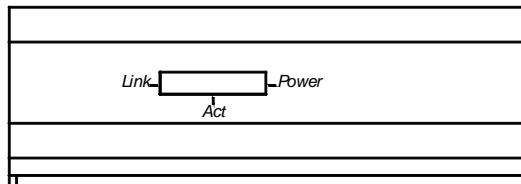


Front view



RJ45 Link port to connect to the Cat.5 cabling

Side view

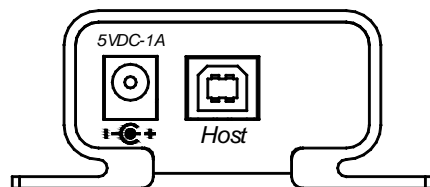


Link Led indicates a valid link between the Tx and the Rx via Cat.5 cabling

Power Led indicates that the power is connected

Act Led indicates activity when data is transmitted between the Tx and the Rx

Rear view

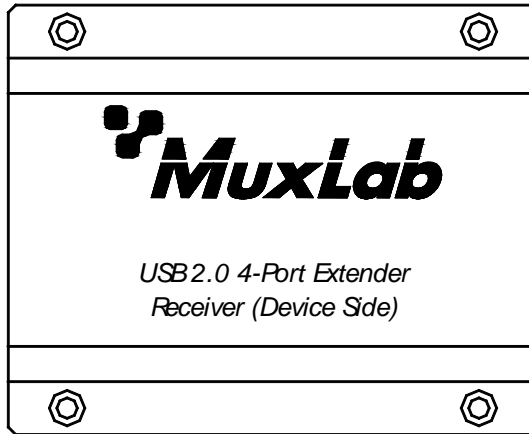


Power port connects to the 5VDC-1A power supply

Host Port is using USB Type B interface

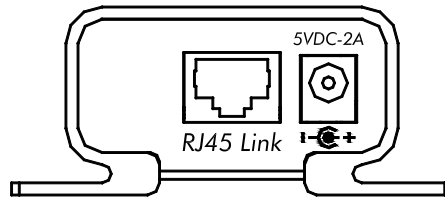
5.2 Receiver (Remote Unit)

Top View



Front view

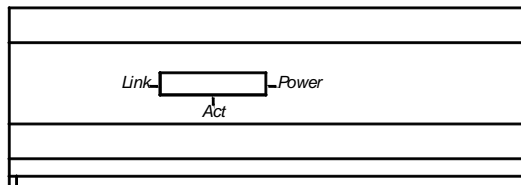
RJ45 Link port to connect to the Cat.5 cabling



Power port connects to the 5VDC-2A power supply

Side view

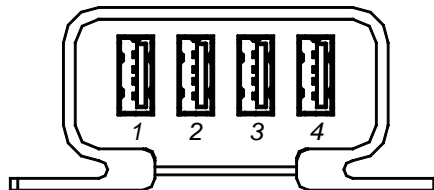
Link Led indicates a valid link between the Tx and the Rx via Cat.5 cabling



Power Led indicates that the power is connected

Act Led indicates activity when data is transmitted between the Tx and the Rx

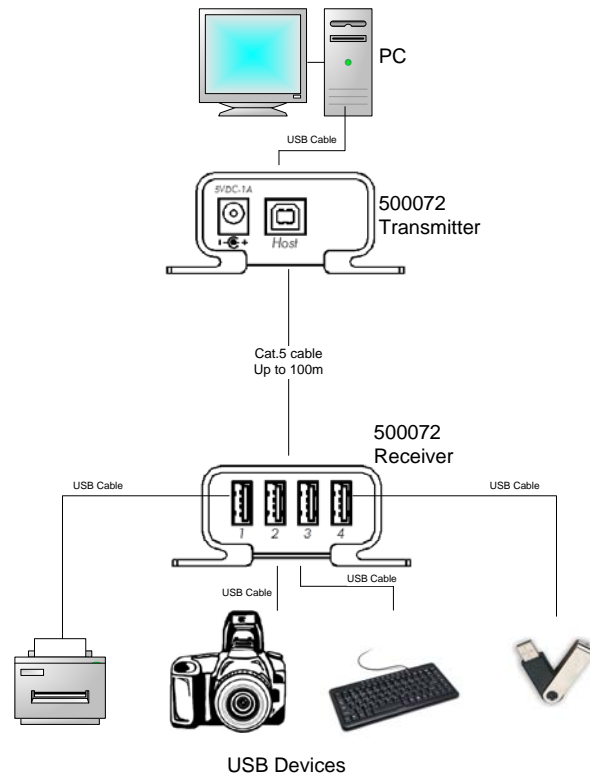
Rear view



Ports 1 to 4 are USB Device Ports using USB Type A interface.

6. Installation

6.1 Typical Application



6.2 Installing the Transmitter and the Receiver

6.2.1. Preparing for Installation

Follow these steps to prepare your installation:

1. Determine where the host computer will be located and set up the computer.
2. Determine where you want to locate the remote USB device(s).
3. The extender supports a maximum distance or 328 ft (100m). Make sure that Cat5 cabling is installed, with Cat. 5 outlets located near both computer and USB devices. The total length of this cable, including patch cords, must not be longer than 328 ft (100m).

6.2.2. Installing the Transmitter (Local Unit)

1. Plug the supplied USB cable into the transmitter and connect to an available USB port of computer.
2. Plug the 5VDC, 1A power adapter into the transmitter, and AC plug into the power outlet.
3. The Red Power LED indicator lights on.
4. Plug one end of the Cat. 5 cable into the Link port (RJ-45) on the transmitter. (Please see Category cable wiring).

6.2.3. Installing the Receiver (Remote Unit)

1. Plug the other end of the Cat. 5 cable into the Link port (RJ-45) on the receiver.
2. Plug the 5VDC, 2A power adapter into the receiver, and AC plug into the power receptacle.
Note: Make sure to plug the 5VDC 2A power adapter on the receiver side.
3. The Red Power LED indicator lights on.
4. Connect the USB devices through USB cables into the Receiver’s USB ports labeled 1 to 4 on receiver.

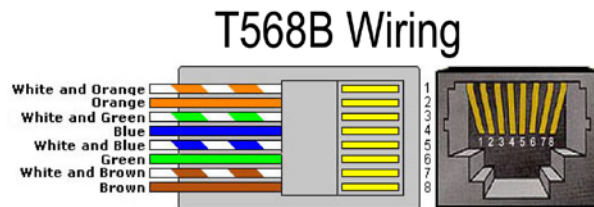
LED		Status
Definition	Color	
Power	Red	Indicates that the 5VDC power adapter is plugged in.
Activity	Green	Indicates that both the transmitter and the receiver are powered on and the Cat5 cable is connected properly.
Link	Orange	Indicates that the USB ports are plugged in.

6.3 Checking the Installation

1. Check the Activity (Green) and Link (Orange) LED indicators light on both the transmitter and the receiver.
2. For Windows users (2000, XP, Vista, 7, 8, and 8.1), open Device Manager to confirm the extender has been installed correctly. Expand the Entry and check the USB controllers. If the extender is installed correctly, it should be listed as a “Generic USB Hub.”
3. For Mac OS X users, open the System Profiler to confirm that the extender has been installed correctly. In the left column under Hardware, select “USB” and check the right panel. If the extender has been installed correctly, you should find it listed as a “Hub” under the USB High-Speed Bus/USB Bus.
4. If the extender is not detected correctly or fails to detect, go to the Troubleshooting section of this manual.

7. Category cable wiring

Take precaution selecting the Cat. 5 wires before connecting; use a cable tester to check the wires are correctly terminated. (Incorrect Termination may cause damage to the receiver unit). Recommend to use T568B wiring as shown.



8. Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in respect to the installation of the USB 2.0 4-Port Extender kit.

Table -1 Troubleshooting tips

Problem	Cause	Solution
The USB device is attached but not functioning.	<ul style="list-style-type: none"> • The USB device requires drivers that were not installed. • The USB device does not support USB hubs. • The USB device might be failed. 	<ol style="list-style-type: none"> 1. Install the required USB device driver on the computer operating system before plug in the USB device to the receiver. Access your USB device's manufacturer's Web site for detail info. 2. In the Universal Serial Bus (USB) controllers section of Device Manager, check if the USB device is listed.
The USB device is attached but not functioning.	<ul style="list-style-type: none"> • An over current condition has occurred because the USB device is drawing more than 500mA (USB spec.). The operating systems may pop up to indicate an issue. 	<ol style="list-style-type: none"> 1. Unplug the power adapter from the receiver, wait approximately 30 seconds; plug the power adapter into receiver again. 2. If over current keeps occurring, either the USB device may use more power than the USB specification, or the USB device may be damaged. 3. Consult your USB device documentation and plug into your USB device with the required power adapter.
Activity LED on transmitter or receiver blinks intermittently.	<ul style="list-style-type: none"> • The Cat. 5 cable connecting the transmitter and receiver is faulty. 	<ol style="list-style-type: none"> 1. Make sure the Cat.5 cable is good. 2. Try to use a different Cat.5 cable to connect transmitter and receiver.
Activity LED on transmitter or receiver is off.	<ul style="list-style-type: none"> • The receiver is not powered. • The transmitter is not powered. • The link cable failed or is damaged. • The extender is not working. 	<ol style="list-style-type: none"> 1. Confirm that the host PC is on and providing power to the transmitter. 2. Make sure the supplied AC power adapters are properly connected to the transmitter or receiver. 3. Make sure the Cat5 cabling between transmitter and receiver is properly installed or replace the link cable. 4. Check that the power adapter is connected and working.

If you still cannot diagnose the problem, please call MuxLab Customer Technical Support at 877-689-5228 (toll-free in North America) or (+1) 514-905-0588 (International).

Regulatory Compliance

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CE/FCC & Recycling Information

CE Certification

This equipment complies with the requirements relating to Electromagnetic Compatibility Standards EN55022/EN55024 and the further Standards cited therein. It must be used with shielded cables only. It has been manufactured under the scope of RoHS compliance.

FCC Certification

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. You are cautioned that changes or modification not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation



WEEE (Waste of Electrical and Electronic Equipment), Recycling of Electronic Products

In 2006 the European Union introduced regulations (WEEE) for the collection and recycling of all waste electrical and electronic equipment. It is no longer allowable to simply throw away electrical and electronic equipment. Instead, these products must enter the recycling process.

Each individual EU member state has implemented the WEEE regulations into national law in slightly different ways. Please follow your national law when you want to dispose of any electrical or electronic products. More details can be obtained from your national WEEE recycling agency.



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