Gefen

USB 2.0 LR Extender

EXT-USB2.0-LR

User Manual

www.gefen.com

ASKING FOR ASSISTANCE

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Congratulations on your purchase of the USB 2.0 LR Extender. Your complete satisfaction is very important to us.

Gefen

Gefen delivers innovative, progressive computer and electronics add-on solutions that harness integration, extension, distribution and conversion technologies. Gefen's reliable, plug-and-play products supplement cross-platform computer systems, professional audio/video environments and HDTV systems of all sizes with hard-working solutions that are easy to implement and simple to operate.

The Gefen USB 2.0 LR Extender

Gefen's USB 2.0 LR extends high-speed USB devices simply and reliably.

The compact USB 2.0 LR Sender/Receiver units install in minutes and fully support all USB versions (V1.1 and V2.0), at speeds of up to 480 mbps -- essential for high-performance applications such as digital imaging and interactive gaming.

The two-port USB 2.0 LR hub is ideal for remotely accessing laser printers, scanners, web cameras, external hard drives, CD/DVD burners, and flash drives. Additional applications include security, industrial control, digital signage, scientific data acquisition and much more due to the universal implementation of USB standards.

How It Works

Gefen's USB 2.0 LR supports all major operating systems -- Windows, MacOS and Linux. No software drivers are required.

When using in-wall building wiring, stranded patch cables may be used to connect the Sender and Receiver to CAT5 wall plates. The combined length of all patch cables must not exceed 33 feet (10m) and must be included as part of the total extension.

A powered USB hub may be connected to the USB 2.0 Extender LR Receiver to allow more USB devices to be extended. A maximum of 14 USB devices (including hubs) may be connected to the USB 2.0 LR Receiver.

READ THESE NOTES BEFORE INSTALLING OR
OPERATING THE USB 2.0 LR EXTENDER

- Use industry standard CAT-5, CAT-5e or CAT-6. Gefen recommends using solid core cabling for maximum performance.

- The USB 2.0 LR Extender is USB 2.0/1.1 compliant

- The USB 2.0 LR Extender can extend USB a maximum of 330 ft (100m)

- Use only the AC adapter supplied with the USB 2.0 LR Extender. Use of substitute adapters may cause permanent damage to the system and will void the warranty.

Features

- Operate USB 2.0 peripherals up to 330ft (100m) from a computer

- Supports low and high-speed USB

- Uses industry-standard CAT5, CAT5e, or CAT6 cable

- Supports all major operating systems -- Windows, MacOS and Linux.

- True plug-and-play, 100% hardware solution with no drivers required

- Operates at full 480 Mbps speed when running in USB 2.0 mode

- Receiver supports up to 2 USB powered connections at 500 mA each
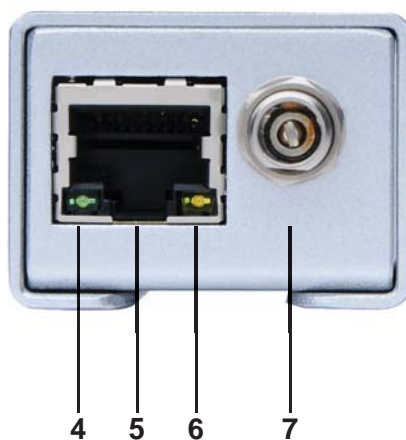
- Specifications:

Package Includes

(1) Gefen USB 2.0 Extender over CAT5 LR Sender
(1) Gefen USB 2.0 Extender over CAT5 LR Receiver
(1) 5V DC Power Supply
(1) 6 ft. USB Cable
(1) User's Manual
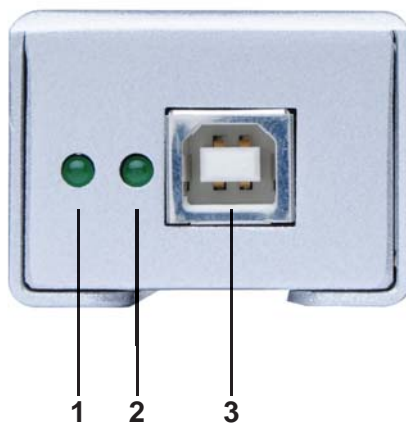
Front Panel

1   **2**   **3**

Back Panel

4   **5**   **6**   **7**

1   **Host Connection LED Indicator**
This LED will become active once a valid connection is made by the host source and the USB 2.0 LR Extender.

2   **Power LED Indicator**
This LED will become active once a valid connection is made between the included 5V DC power supply and an open wall power socket.

3   **USB "B" Input**
Connect the USB source to this input.

4   **Link LED Indicator**
This LED will become active once a valid connection is between the sender and receiver units.

5   **CAT-5 Connection Port**
Connect a CAT-5, CAT-5e or CAT-6 cable between this port and the CAT-5 connection port on the receiving unit.
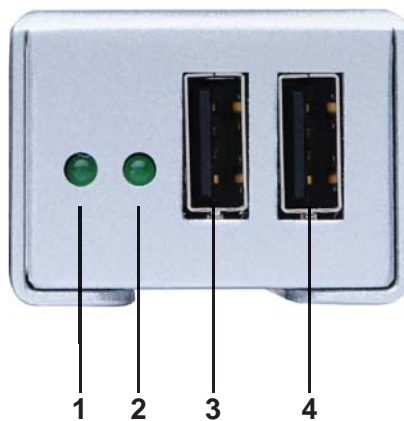
6   **Activity LED Indicator**
This LED will be active when traffic is passing between the sending and receiving units.

7   **5V DC Locking Power Receptacle**
Connect the included locking 5V DC power supply between this port and an open wall power socket.

Front Panel

Back Panel
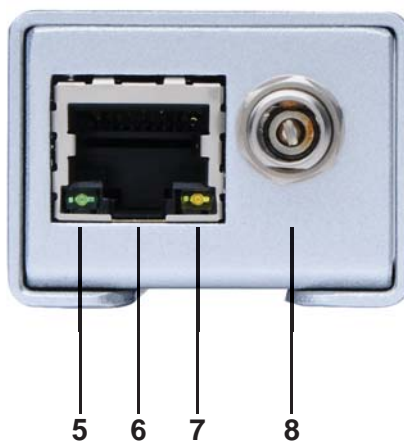
1   Host Connection LED Indicator
This LED will become active once a valid connection is made by the host source and the USB 2.0 LR Extender.

2   Power LED Indicator
This LED will become active once a valid connection is made between the included 5V DC power supply and an open wall power socket.

3   USB "A" Input 1
Connect the USB device to this input.

4   USB "A" Input 2
Connect the USB device to this input.

5   Link LED Indicator
This LED will become active once a valid connection is between the sender and receiver units.

6   CAT-5 Connection Port
Connect a CAT-5, CAT-5e or CAT-6 cable between this port and the CAT-5 connection port on the sending unit.

7   Activity LED Indicator
This LED will be active when traffic is passing between the sending and receiving units.

8   5V DC Locking Power Receptacle
Connect the included locking 5V DC power supply between this port and an open wall power socket.

How to Connect the USB 2.0 LR Extender

1. Connect the USB source to the USB 2.0 LR Extender sender unit using the supplied USB A to B cable.

2. Connect up to two USB peripherals to the USB 2.0 LR Extender receiver using user supplied USB cables.

NOTE: Powered USB hubs may be connected to these ports up to a maximum connection of 14 USB peripherals (including hubs).

3. Connect the USB 2.0 LR Extender sender and receiver units together with a user supplied CAT-5, CAT-5e or CAT-6 cable.

NOTE: If field terminating CAT-5 cables, please adhere to the TIA/EIA-568-B specification. Please see the NETWORK CABLE WIRING DIAGRAM on page 10 for more details.

4. Plug the included 5V DC power supply into the USB 2.0 LR Extender sender unit. Operational power for the receiver is transmitted along the CAT-5e cable.

Checking the Installation

On the sending and receiving units, check that the Power, Host and Link LEDs are on and that the Activity LED is blinking. If the Link LED and Activity LED are permanently off then the cabling between the sending and receiving units are not installed properly or is defective.

For Windows users (2000, XP, or Vista) open Device Manager to confirm that the USB 2.0 LR Extender has installed correctly. Expand the entry for Universal Serial Bus controllers by clicking the + sign. If the USB 2.0 LR Extender has been installed correctly you should find it listed as a Generic USB Hub.

For Mac OS X users open the System Profiler to confirm that the USB 2.0 LR Extender has installed correctly. In the left hand column under Hardware, select "USB" and inspect the right hand panel. If the USB 2.0 LR Extender has been installed correctly you should find it listed as a Hub under the USB High-Speed Bus/ USB Bus.

TROUBLESHOOTING

Using the Led Indicators to Troubleshot Issues

Power LED
The power LED indicators should be active once the included 5V DC power supply has been properly connected between the sending/receiving unit and an open wall power socket. A non-active LED can indicate a power problem. Please check that the power cable is properly connected and locked to the sender/receiver unit.

Host LED
The host LED indicators should be active once a valid USB source/output device has been properly connected to the sending/receiving unit. On the sender, the LED indicator will only be active once the source device is on. A non-active LED may indicate that the source device is not on or properly connected. On the receiver, the LED indicator will only be active when a USB devices is properly connected and is recognized by the source. A non-active LED may indicate that a USB device is not properly connected or recognized by the source. Please check all USB cables and install the proper drivers for the connected USB device.

Link LED
The link LED indicators should be active once a valid connection has been made between the sending and receiving units. A non-active LED may indicate a problem with the CAT-5 cabling. Please check terminations, patch panels, and cables. Use other CAT-5 cables and test the units without using any patch panels.

NETWORK CABLE WIRING DIAGRAM
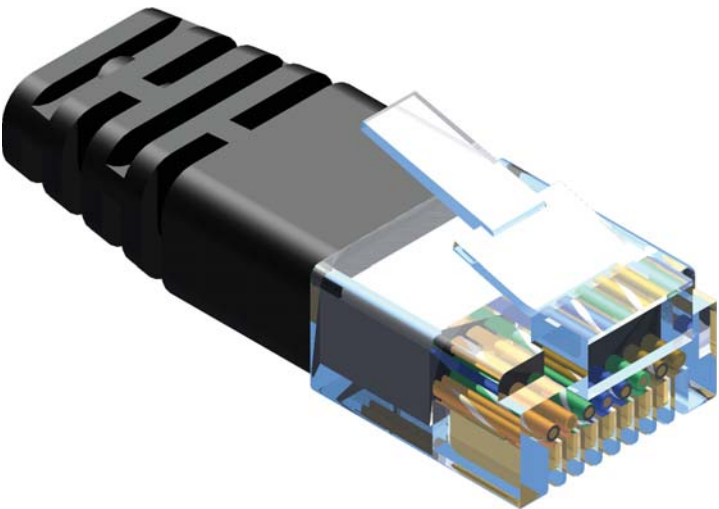
Gefen has specifically engineered their products to work with the TIA/EIA-568-B specification. Please adhere to the table below when field terminating cable for use with Gefen products. Failure to do so may produce unexpected results and reduced performance.

Pin	Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown

1 2 3 4 5 6 7 8
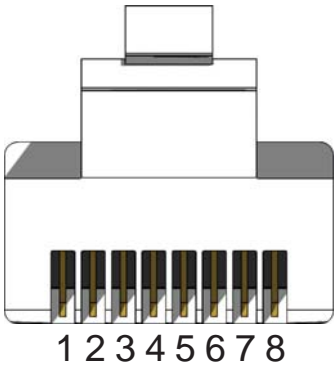
CAT-5, CAT-5e, and CAT-6 cabling comes in stranded and solid core types. Gefen recommends using solid core cabling. CAT-6 cable is also recommended for best results.

Each cable run must be one continuous run from one end to the other. No splices or use of punch down blocks.
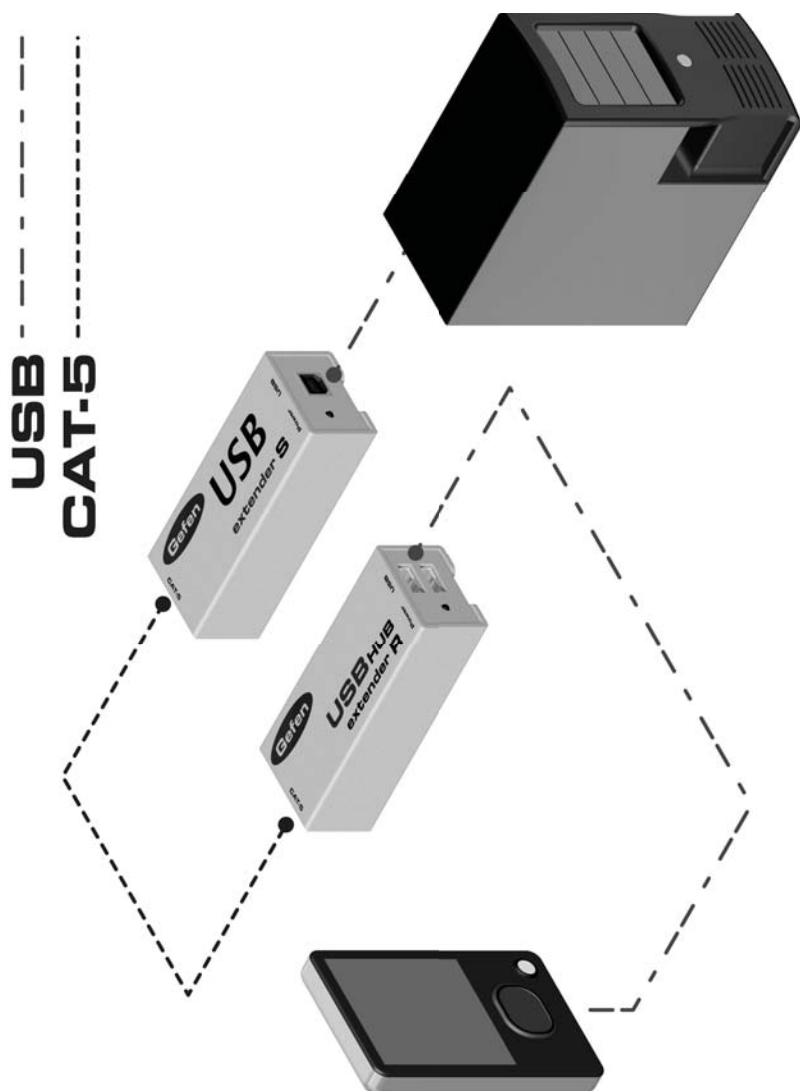
SPECIFICATIONS

USB 2.0 Speed .... 480 Mbps

Link Connectors .... RJ-45 Shielded

USB Connectors Transmitter: .... (1) USB type B

USB Connectors Receiver: .... (2) USB type A

Dimensions Transmitter: .... 1.7" W x 1.0" H x 3.4" D

Dimensions Receiver: .... 4.3" W x 1.1" H x 2.7" D

USB .... Two 500 mA DC powered USB ports at Receiver

Power Supply .... External 5V DC

Operating Temperature .... 0-70 C

Unit Weight .... Transmitter: 0.16 lbs.

Unit Weight .... Receiver: 0.44 lbs.

Shipping Weight .... 4 lbs.