



**USB Extender**  
Model: UEF500M/4



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**Thank you for purchasing the Ulinx Extender. Please read this guide thoroughly before installation.**

This document applies to Part Numbers: UEF500M/4, UEF500M/4-EU and UEF500M/4-UK.

### **FCC Radio Frequency Interference Statement Warning**

The Ulinx Extender has been tested and found compliant with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when installed and operated in a commercial environment. The Ulinx Extender generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user guide, may cause harmful interference to radio communications. Operation of the Ulinx Extender in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### **CE Statement**

Conforms with European Standard EN 55022/A1 Class A, and EN 50082-1 (IEC 801-2, IEC 801-3, IEC 801-4)

### **IC Statement**

This Class A digital apparatus complies with Canadian ICES-003.

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## Introduction

This manual is intended to assist IT professionals install the Ulinx Extender UEF500M/4. The instructions in this guide assume a general knowledge of computer installation procedures, familiarity with cabling requirements, and some understanding of USB devices.

 **NOTE:** Notes give additional information that could make installation easier.


## Ulinx Extender Product Contents

When you open your Ulinx Extender for the first time you should find the following items:

- Ulinx Extender User Guide
- Local Unit
- Remote Unit
- AC power adapter (2 units)
- USB cable (2m long)

To complete the installation, you will also require the following items that are not included with the product:

- USB compatible computer
- USB device
- 2-strand fiber-optic cable with MT-RJ connectors (if using surface cabling),  
OR,  
2-strand fiber-optic cabling with two information outlets and two 2-strand fiber-optic patch cords with MT-RJ connectors (if using premise cabling)

 **NOTE:** The maximum length of the fiber-optic cable, including patch cords, must not exceed 500m.

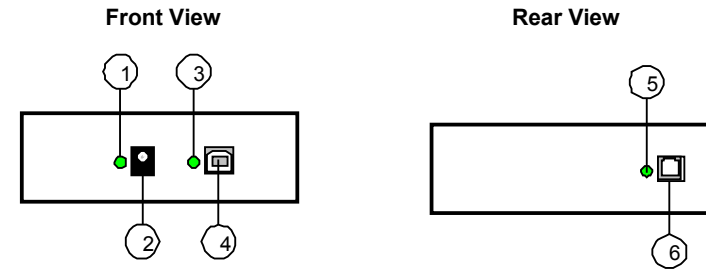
## About the Ulinx Extender

The Ulinx Extender breaks the five-meter distance barrier for the connection of USB peripheral devices and allows users to enjoy the benefits of USB technology beyond the desktop. With the Ulinx Extender UEF500M/4, USB devices can be located up to 500 meters from the host computer.

The Ulinx Extender is composed of two individual units, the Local Unit and the Remote Unit.

## The Local Unit

The Local Unit connects to the host computer using a conventional USB cable. It is powered by an external AC adapter.

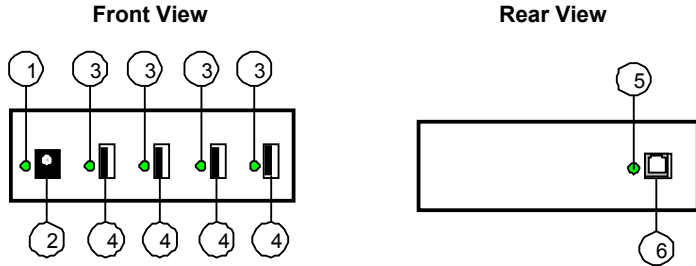


- 1** Power LED
- 2** Power Connector
- 3** Host LED
- 4** Host Port (USB Type B)

- 5** Link LED
- 6** Link Port (MT-RJ)

## The Remote Unit

The Remote Unit connects to a USB device using a conventional USB cable. The Remote Unit allows you to connect up to four USB devices. It is powered by an external AC adapter.

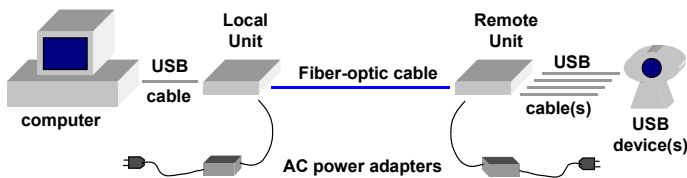


- 1** Power LED
- 2** Power connector
- 3** Device LEDs
- 4** Device Ports (USB Type A)

- 5** Link LED
- 6** Link Port (MT-RJ)

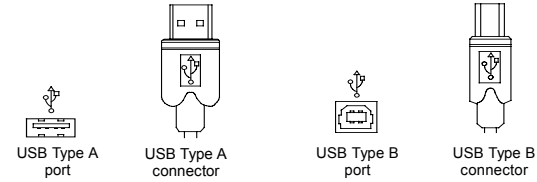
## Network Cabling

The Local Unit and the Remote Unit are interconnected by up to 500 meters of fiber-optic cabling. Two strands of 62.5/125 multimode or 50/125 multimode fiber-optic cabling are required. The cabling subsystem must provide a duplex connection with crossover, and must be terminated with MT-RJ connectors at both ends.



## USB Cables

USB cables have two distinct connectors. The Type A connector is used to connect the cable from a USB device to the Type A port on a computer or hub. The Type B connector is used to attach the USB cable to a USB device.



## Compatibility

The Ulinx Extender complies with USB 1.1 specifications governing the design of full speed USB devices. However, B&B Electronics does not guarantee that all full speed USB devices are compatible with the Ulinx Extender.

## **Before You Begin**

Before you can install the Ulinx Extender, you need to prepare your site.

1. Determine where the host computer is to be located and set up the computer.
2. Determine where you want to locate the USB device(s).
3. If you are using surface cabling, ensure you have enough fiber-optic cabling to connect the two locations.

OR

If you are using premise cabling, ensure fiber-optic cabling is installed between the two locations, with fiber-optic information outlets located near both the computer and the USB device.

## **Installing the Local Unit**

1. Place the Local Unit near the host computer.
2. Plug the power adapter into a suitable AC outlet.
3. Connect the power adapter to the Local Unit.
4. Plug the Type B connector on the USB cable (included) into the Host port on the Local Unit.
5. Plug the Type A connector on the USB cable into a USB port on the host computer.

## **Installing the Remote Unit**

1. Place the Remote Unit near the USB device(s).
2. Plug the power adapter into a suitable AC outlet.
3. Connect the power adapter to the Remote Unit.


## **Connecting the Local Unit to the Remote Unit**


### **With Surface Cabling**

1. Plug one end of the fiber-optic cabling (not included) into the Link port on the Local Unit.
2. Plug the other end of the fiber-optic cabling into the Link port on the Remote Unit.

### **With Premise Cabling**

1. Plug one end of a fiber-optic patch cord (not included) into the Link port on the Local Unit.
2. Plug the other end of the patch cord into the fiber-optic information outlet near the host computer.
3. Plug one end of the second fiber-optic patch cord (not included) into the Link port on the Remote Unit.
4. Plug the other end of the second patch cord into the fiber-optic information outlet near the USB device.

 **NOTE:** The maximum length of the fiber-optic cable, including patch cords, must not exceed 500 meters.

 **NOTE:** The cabling must provide a duplex connection with crossover, and must be terminated with MT-RJ connectors at both ends.

### **Checking the Installation**

1. Check that the Power LEDs on the Local Unit and the Remote Unit are both on.
2. Check that the Link LEDs on the Local Unit and the Remote Unit are both on.
3. Check that the Host LED on the Local Unit is on.
4. On the host PC, open the Device Manager applet. Expand the entry for Universal Serial Bus controllers by clicking the + sign. If the Ulinx Extender has been installed correctly you should find it listed as a Generic USB Hub.

### **Connecting a USB Device**

1. Install any software required to operate the USB device(s). Refer to the documentation for the device(s), as required.
2. Connect the USB device to the Device port on the Remote Unit.
3. Check that the Device LED on the Remote Unit is on.

## Troubleshooting

The following table provides troubleshooting help. The topics are arranged in the order in which they should be executed in most situations. If you are unable to resolve the problem after following these instructions, please contact technical support for further assistance (see page 10).

<i>Symptoms/Cause</i>	<i>Remedy</i>
All LEDs on Local Unit are off. <b>Cause:</b> The Local Unit is not receiving power from the adapter	<ol style="list-style-type: none"> <li>1. Ensure that a power adapter is connected to the Local Unit.</li> <li>2. Check that the adapter is connected to a live source of electrical power.</li> </ol>
All LEDs on Remote Unit are off. <b>Cause:</b> The Remote Unit is not receiving power from the adapter	<ol style="list-style-type: none"> <li>1. Ensure that a power adapter is connected to the Remote Unit.</li> <li>2. Check that the adapter is connected to a live source of electrical power.</li> </ol>
Link LEDs on Local Unit and Remote Unit are off. <b>Cause:</b> There is no connection between the Local Unit and the Remote Unit.	<ol style="list-style-type: none"> <li>3. Ensure that a fiber-optic cable with crossover is connected between the Local Unit and the Remote Unit.</li> <li>4. Connect a short fiber-optic crossover patch cord between the Local Unit and the Remote Unit. Recheck the operation of the system.</li> </ol>
Link LED on Local Unit is on; Host LED on Local Unit is off. <b>Cause:</b> a) The computer is not functioning. b) The Local Unit is not connected to the computer. c) The computer does not support USB hubs. d) The Ulinx Extender is malfunctioning.	<ol style="list-style-type: none"> <li>1. Disconnect all USB devices from the Remote Unit.</li> <li>2. Disconnect the Local Unit from the computer.</li> <li>3. Disconnect and then reconnect the power adapter to the Ulinx Extender.</li> <li>4. Reconnect the Local Unit to the computer.</li> <li>5. In the Universal Serial Bus controllers section of Device Manager, check that the Ulinx Extender is recognised as a "Generic USB Hub".</li> <li>6. If the Ulinx Extender is not recognised, contact technical support for assistance.</li> </ol>

<i>Symptoms/Cause</i>	<i>Remedy</i>
A device is connected to the Remote Unit and the corresponding Device LED is off <b>Cause:</b> a) The USB device is malfunctioning. b) The computer does not recognise the USB device. c) The application software for the device is not operating. d) The Ulinx Extender is malfunctioning.	<ol style="list-style-type: none"> <li>1. Disconnect the Ulinx Extender from the computer.</li> <li>2. Connect the USB device directly to the USB port on the computer.</li> <li>3. If the device does not operate properly, consult the user documentation for the device.</li> <li>4. If the device operates properly when directly connected to the computer, connect another device (of a different type) to the Ulinx Extender. Connect Ulinx Extender to the computer.</li> <li>5. If the second device does not operate, the Ulinx Extender may be malfunctioning. Contact technical support for assistance.</li> <li>6. If the second device does operate properly, the first device may not be compatible with the Ulinx Extender. Contact technical support for assistance.</li> </ol>
All LEDs on both the Local Unit and Remote Unit are on but the device does not operate correctly <b>Cause:</b> a) The USB device is malfunctioning. b) The computer does not recognise the USB device. c) The application software for the device is not operating. d) The Ulinx Extender is malfunctioning.	<ol style="list-style-type: none"> <li>1. Disconnect the Ulinx Extender from the computer.</li> <li>2. Connect the USB device directly to the USB port on the computer.</li> <li>3. If the device does not operate properly, consult the user documentation for the device.</li> <li>4. If the device operates properly when directly connected to the computer, connect another device (of a different type) to the Ulinx Extender. Connect the Ulinx Extender to the computer.</li> <li>5. If the second device does not operate, the Ulinx Extender may be malfunctioning. Contact technical support for assistance.</li> <li>6. If the second device does operate properly, the first device may not be compatible with the Ulinx Extender. Contact technical support for assistance.</li> </ol>

## Specifications

Range (over 62.5/125 fiber-optic cable)	500 meters (1650 ft)
USB device support	Full speed devices (12 Mb/s) Low speed devices (1.5 Mb/s)
USB hub support	Any single chain can include four USB hubs and one Ulinx Extender, in any order.
Power available to USB device at the Remote Unit	4 x 500 mA
USB cable	2 meters (6.6 ft)
Local Unit connector (upstream)	1 x USB Type B
Local Unit connector (downstream)	1 x MT-RJ
Remote Unit connector (upstream)	1 x MT-RJ
Remote Unit connector (downstream)	4 x USB Type A
Local Unit dimensions	11.4 x 10.6 x 3.8 cm 4.5 x 4.2 x 1.5 in
Local Unit weight	0.3 kg (0.6 lb)
Remote Unit dimensions	11.4 x 10.6 x 3.8 cm 4.5 x 4.2 x 1.5 in
Remote Unit weight	0.3 kg (0.6 lb)
Total system shipping weight	1.1 kg (2.4 lb)
Temperature range	4°C to 40°C
Link cable (not included)	Two strands of 62.5/125 multimode or 50/125 multimode fiber-optic cabling are required. The cabling subsystem must provide a duplex connection with crossover, and must be terminated with MT-RJ connectors at both ends.
Regulatory testing	FCC, CE Class A

## Contacting Technical Support

If you require technical assistance, send an e-mail message to:  
support@bb-elec.com

To help us serve you better, please include the following information with your technical support request:

- Description of the problem
- Host computer make and model
- Type of operating system installed (e.g. Win98, Mac OS X, etc.)
- Part number and serial number of the Local Unit and the Remote Unit
- Make and model of any USB device attached to the Ulinx Extender
- Description of the installation