



Fiber Remote Port USB 2.0 4-Port User Guide



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FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

This product conforms to European Standard EN 55011/A1 Class A, and EN 50082-1 (IEC 801-2, IEC 801-3, IEC 801-4).

Normas Oficiales Mexicanas (NOM)
Electrical Safety Statement

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.

11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato;
o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

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1. Specifications

Range	10,000 meters (33,000 ft) on 9/125µm SMF
USB device support	High-speed devices (480 Mb/s) 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 Remote Port USB, in any order.
USB host support	EHCI (USB 2.0) only
AC Adapter(s)	Input: 110/240 V AC, 50 – 60 Hz Output: 5 V DC, 3 A
Power available to USB devices at 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 Duplex LC
Remote Unit connector (upstream)	1 x Duplex LC
Remote Unit connector (downstream)	4 x USB Type A
Local Unit dimensions	107 mm x 84 mm x 34 mm (4.25" x 3.4" x 1.4")
Local Unit weight	0.3 kg (0.6 lb)
Remote Unit dimensions	114 mm x 106 mm x 38 mm (4.5" x 4.2" x 1.5")
Remote Unit weight	0.3 kg (0.6 lb)
Total shipping weight	1.1 kg (2.4 lb)
Temperature range	4°C to 40°C
Link cable (not included)	Two strands of 9/125µm SMF cabling are required. The cabling subsystem must provide a duplex connection with crossover, and must be terminated with Duplex LC connectors at both ends.
Regulatory testing	FCC, CE Class A

2. Introduction

This manual is intended to assist IT professionals install the Fiber Remote Port USB 2.0 4-Port. 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.

2.1 Product Contents

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

- Fiber Remote Port USB 2.0 4-Port User Guide
- Local Unit
- Remote Unit
- AC power adapter (2)
- USB cable (2m long).

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

- USB 2.0 compatible computer
- USB device
- 2-strand fiber-optic cable with Duplex LC connectors (if using surface cabling),
OR,
2-strand fiber-optic cabling with two information outlets and two 2-strand fiber-optic patch cords with Duplex LC connectors (if using premise cabling).

NOTE

The maximum length of the single-mode fiber-optic (SMF) cabling, including patch cords, must not exceed 10,000 meters on 9/125 μ m SMF.

Use only the AC adapters supplied with the Fiber Remote Port USB 2.0 4-Port. Use of substitute adapters may cause permanent damage to the system and will void the warranty.

2.2 About the Remote Port USB

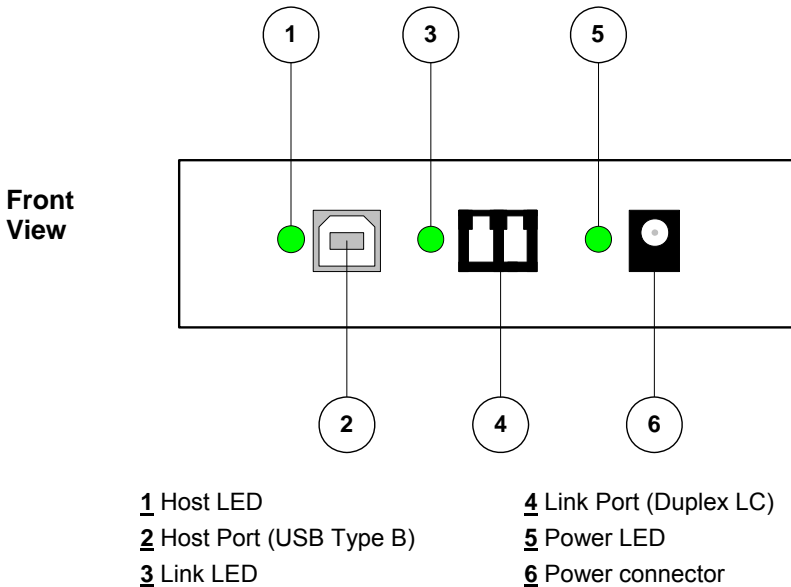
The Remote Port USB breaks the five-meter distance barrier for the connection of USB devices and allows users to enjoy the benefits of USB technology beyond the desktop. With the Remote Port USB, USB devices can be located up to 10,000 meters from the host computer.

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

2.2.1 The Local Unit

The Local Unit connects to the host computer using a conventional USB cable.

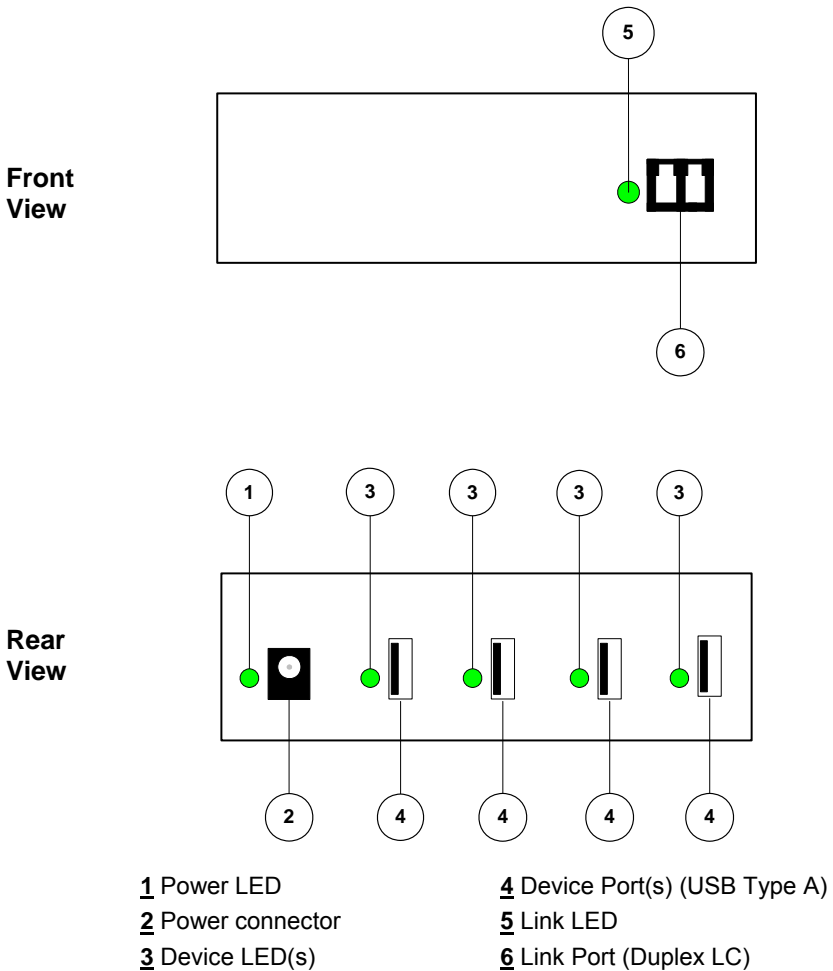
The Local Unit is powered by an external AC adapter.



2.2.2 The Remote Unit

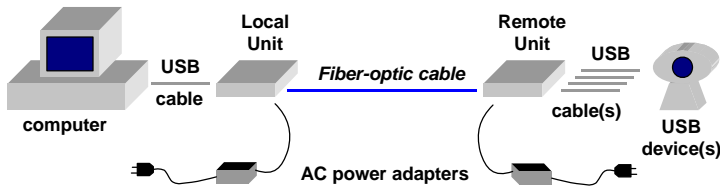
The Remote Unit connects to a USB device using a conventional USB cable. The Remote Unit allows you to connect up to 4 USB devices directly. Additional devices may be connected by attaching a conventional USB hub to the Remote Unit.

The Remote Unit is powered by an external AC adapter.



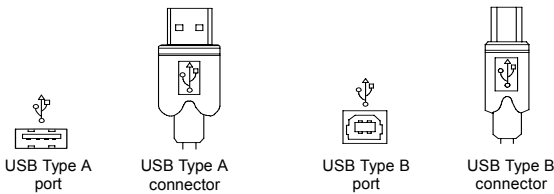
2.2.3 Network Cabling

The Local Unit and Remote Unit are interconnected by up to 10,000 meters of fiber-optic cabling. Two strands of 9/125µm SMF cabling are required. The cabling subsystem must provide a duplex connection with crossover, and must be terminated with Duplex LC connectors at both ends.



2.2.4 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.



2.2.5 Compatibility

The Remote Port USB complies with USB 2.0 specifications governing the design of USB devices. However, Black Box does not guarantee that all USB devices are compatible with the Remote Port USB.

3. Installation

3.1 Before You Begin

Before you can install the Remote Port USB, 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.
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.

3.2 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 the USB port on the computer.

NOTE

The host computer must be equipped with an EHCI (USB2.0) host controller and associated drivers. Support for OHCI/UHCI (USB 1.1) host controllers is not provided.

Use only the AC adapters supplied with the Fiber Remote Port USB 2.0 4-Port. Use of substitute adapters may cause permanent damage to the system and will void the warranty.

3.3 Installing the Remote Unit

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

NOTE

Use only the AC adapters supplied with the Fiber Remote Port USB 2.0 4-Port. Use of substitute adapters may cause permanent damage to the system and will void the warranty.

3.4 Connecting the Local Unit to the Remote Unit

3.4.1 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.

3.4.2 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 cabling, including patch cords, must not exceed 10,000 meters.

The cabling must provide a duplex connection with crossover, and must be terminated with Duplex LC connectors at both ends.

3.5 Checking the Installation

1. Check that the Power LEDs on both the Local Unit and the Remote Unit are on.
2. Check that the Link LEDs on both the Local Unit and the Remote Unit are 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 Remote Port USB has been installed correctly you should find it listed as a Generic USB Hub.

3.6 Connecting a USB Device

1. Install any software required to operate the USB device. Refer to the documentation for this device, 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.

4. Troubleshooting

4.1 Problems, Causes and Solutions

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.

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

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

4.2 Calling Black Box

If you determine that your Remote Port USB is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem,
- when the problem occurs,
- the components involved in the problem,
- any particular application that, when used, appears to create the problem or make it worse.

4.2.1 Shipping and Packaging

If you need to transport or ship your Remote Port USB:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the Remote Port USB for repair, make sure you include everything that came in the original package. Before you ship, contact Black Box to get a Return Authorization (RA) number.



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