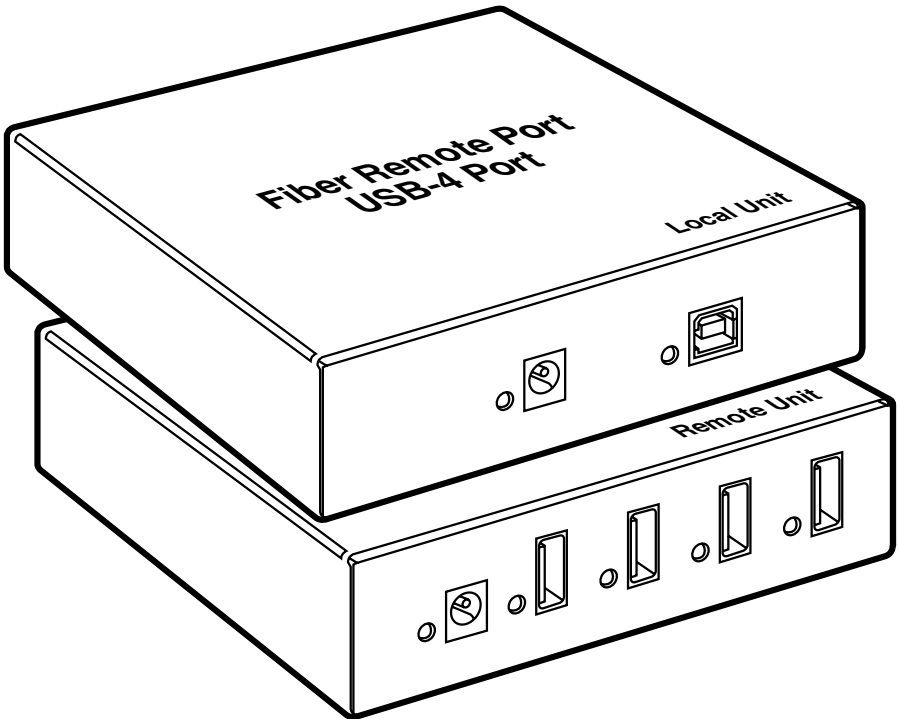




Fiber RemotePort USB 4-Port



**CUSTOMER
SUPPORT
INFORMATION**

Order toll-free in the U.S.: Call **877-877-BBOX** (outside U.S. call **724-746-5500**)
FREE technical support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mailing address: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA RADIO-FREQUENCY INTERFERENCE STATEMENTS

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 B 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. It complies with ICES-003.

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. Se conforme à ICES-003.

EUROPEAN UNION DECLARATION OF CONFORMITY

This equipment complies with the requirements of the European EMC directive 89/336/EEC by conforming to EN 55022/A1 Class A, EN 55024, EN 61000-3-2, and EN 61000-3-3.




**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

Cable Required:	<p>Between local and remote units: Duplex 62.5/125-μm multimode, 50/125-μm multimode, or 9/125-μm single-mode fiberoptic cable terminated with MT-RJ male connectors;</p> <p>Between local unit and attached USB host: USB Type A to Type B cable (a 2-m/6.5-ft. cable is included);</p> <p>Between remote unit and attached USB devices: Devices with hardwired Type A cords plug directly into the remote unit; otherwise, you'll need a USB Type A to Type B cable (not included) for each device</p>
Compliance:	<p>CE (EN 55022 Class A, EN 55024, EN 61003-2, EN 61003-3); FCC Class A, IC Class/classe A; USB-IF</p>
Transmission:	Transparent to users (automatic, no delay)
USB Data Rate:	1.5 or 12 Mbps (passed through) depending on transmission speeds of attached devices
Maximum Distance:	500 m (1640 ft.) of multimode or single-mode cable between local and remote units
Indicators:	<p>LEDs on local unit:</p> <ul style="list-style-type: none"> Front-mounted: (1) for unit power, (1) for host communication; Rear-mounted: (1) for fiber link; <p>On remote unit:</p> <ul style="list-style-type: none"> Front-mounted: (1) for unit power, (4) for device communication; Rear-mounted: (1) for fiber link
Connectors:	<p>On local unit:</p> <ul style="list-style-type: none"> Front-mounted: (1) USB Type B female, (1) 2.1-mm center-positive barrel jack for power; Rear-mounted: (1) MT-RJ female; <p>On remote unit:</p> <ul style="list-style-type: none"> Front-mounted: (4) USB Type A female, (1) 2.1-mm center-positive barrel jack for power; Rear-mounted: (1) MT-RJ female

FIBER REMOTEPORT USB 4-PORT

Temperature

Tolerance: 39.2 to 104°F (4 to 40°C)

Humidity

Tolerance: 10 to 90% noncondensing

Enclosure: Steel

Power:

For each unit: From utility-power (mains) outlet through detachable input cord and IEC 320 inlet to external transformer:

Input to transformer: 100 to 240 VAC, 47 to 63 Hz, autosensing;

Output from transformer: 15 VDC at up to 1 amp;

Output on USB ports (remote unit only): 5 VDC at 500 mA;

Typical consumption:

Local unit: Up to 2 watts;

Remote unit: Up to 12 watts depending on power drawn by attached USB devices

Size:

Each unit: 1.5"H x 4.5"W x 4.2"D (3.8 x 11.4 x 10.7 cm)

Weight:

0.6 lb. (0.3 kg) for each unit

2. Introduction

2.1 Overview

The Fiber RemotePort USB 4-Port overcomes the standard 5-meter (16.4-ft.) distance limitation for connecting USB peripherals by transmitting USB signals across fiberoptic cabling. It gives you access to USB devices that don't have to be at the same desk you are, or even in the same room or building.

The RemotePort consists of a local unit and a remote unit. The local unit, shown at top in Figure 2-1, can be connected to a host computer with a standard Type A to Type B USB cable, a 2-m (6.5-ft.) length of which is included. The remote unit, shown at bottom in Figure 2-1, can be connected to as many as four USB peripherals using additional standard Type A to Type B USB cables (not included). Both units are powered by identical external AC power supplies. You can run up to 500 m (1640 ft.) of duplex fiberoptic cabling between the units, as shown in Figure 2-2. This cabling must be terminated with MT-RJ connectors at both ends.

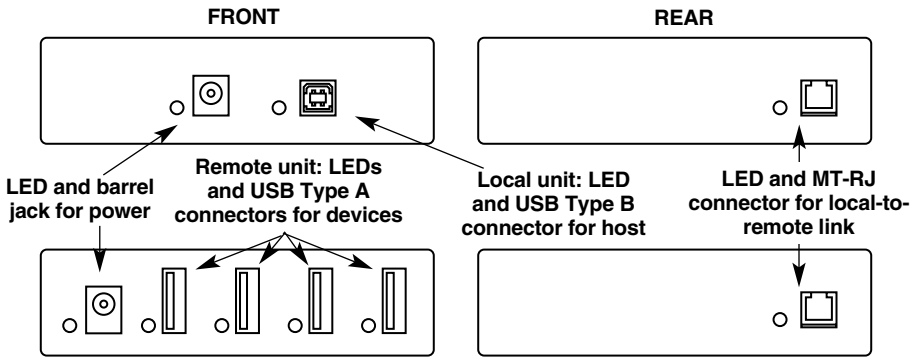


Figure 2-1. The local unit (top) and remote unit (bottom).

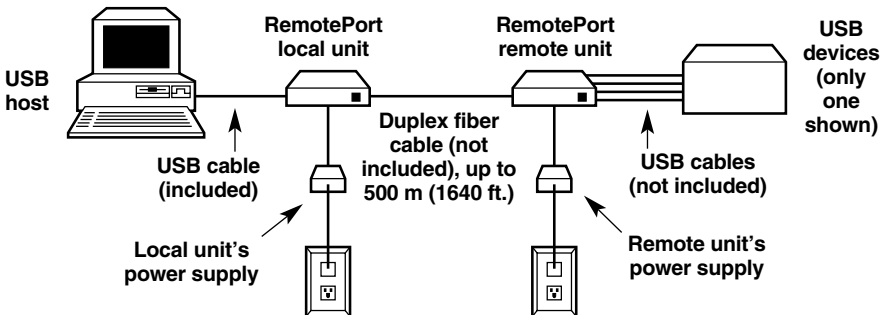


Figure 2-2. An installed system.

2.2 USB Connectors

Figure 2-3 shows the two distinct types of connectors used on standard USB cables and devices. The Type A connector is used for USB ports on host computers and hubs, and on the “host end” of USB cables. The Type B connector is used on USB peripheral devices and on the “device end” of USB cables.

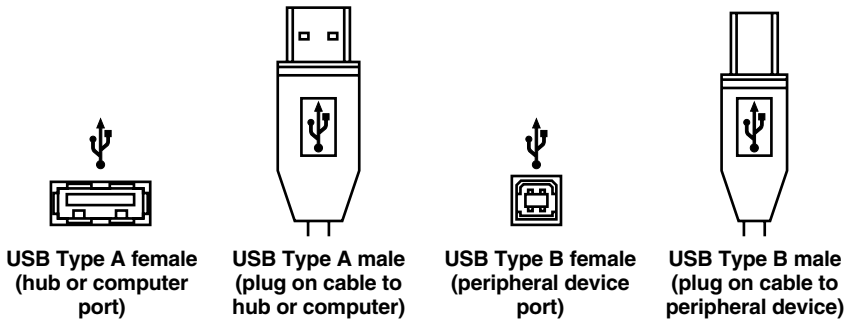


Figure 2-3. USB connectors.

2.3 Applications

The Fiber RemotePort USB 4-Port can be used for many different applications, including extending the distance to one device, extending the distance to multiple devices at the same location, and extending the distance to devices at multiple locations. When daisy chaining USB hubs, the RemotePort USB acts as a single hub and can occupy any of the (up to) five positions in the USB chain.

NOTE

Each USB chain must not contain more than four standard USB hubs and one RemotePort USB unit.

Many system configurations are possible when the RemotePort USB is used in conjunction with conventional USB hubs and devices. However, the three configurations shown in Figures 2-4 through 2-6 are most common.

2.3.1 CONNECTING A SINGLE DEVICE

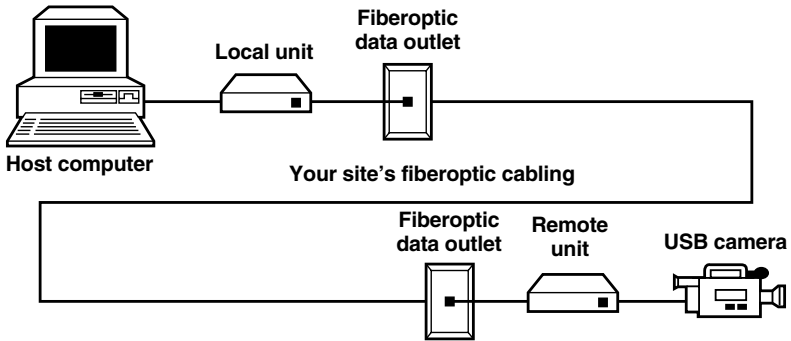


Figure 2-4. A dedicated extension connecting a USB surveillance camera.

2.3.2 CONNECTING MULTIPLE COLOCATED DEVICES

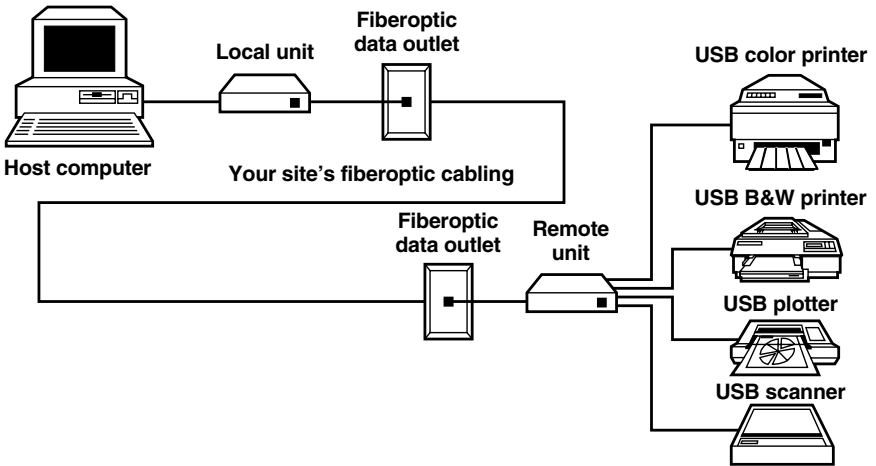


Figure 2-5. An extension connecting the devices of a USB publishing station, all at the same location.

2.3.3 CONNECTING DEVICES AT MULTIPLE LOCATIONS

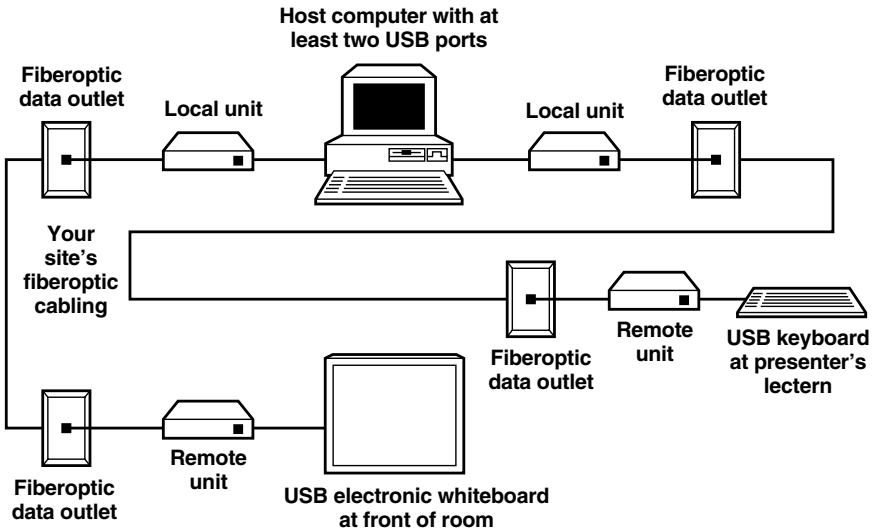


Figure 2-6. A pair of dedicated extensions connecting devices at different locations in a USB electronic conference room.

3. Installation

3.1 The Complete Package

Your Fiber RemotePort USB 4-Port package should contain these items:

- (1) Local unit.
- (1) Remote unit.
- (2) Identical AC power supplies, (1) for each unit.
- (2) Identical AC input cords, (1) for each power supply.
- (1) Standard 6.6-ft. (2-m) Type A to Type B USB cable.
- This users' manual.

If anything is missing or damaged, call Black Box Technical Support at 724-746-5500.

3.2 Site Preparation

Before you install the RemotePort, you'll need to prepare your site:

1. Determine where the host computer will be located, and set up the computer.
 2. Determine where you will operate the USB device(s).
- 3A. *If you'll be using surface (exposed) cabling*, make sure you have enough standard duplex fiberoptic cabling to connect the two locations, that the total length of the run doesn't exceed 500 m (1640 ft.), and that the cables that will be connected directly to the RemotePort units have MT-RJ connectors. Refer to the **Cable Required** specification in **Chapter 1**.
- 3B. *If you'll be using premise cabling*, make sure that standard duplex fiberoptic cabling is installed between the two locations you want to connect, that there are fiberoptic data outlets near your desired locations, that the total length of the run through the walls doesn't exceed 500 m (1640 ft.), and that the cables that will be connected directly to the RemotePort units have MT-RJ connectors. Refer to the **Cable Required** specification in **Chapter 1**.
4. Install any software required to operate the USB devices. Refer to the documentation for these devices as required.

3.3 Install the Local Unit

1. Place the local unit near the host computer you want to connect.
2. Plug the Type B connector on the included USB cable into the USB (host) port on the local unit.
3. Plug the power supply's input cord into a suitable working AC outlet.
4. Plug the power supply's output cord into the local unit's power jack.
5. Plug the Type A connector on the included USB cable into one of the USB ports on the host computer.

3.4 Install the Remote Unit

1. Place the remote unit near the USB peripheral device(s) you want to connect.
2. Connect each USB device to one of the USB (device) ports on the remote unit. (Cables for this are not included.)
3. Plug the power supply's input cord into a suitable working AC outlet.
4. Plug the power supply's output cord into the remote unit's power jack.

3.5 Interconnect the Two Units

NOTE

For proper operation, use only 62.5/125- μ m or 50/125- μ m multimode or 9/125- μ m single-mode fiberoptic cable to interconnect the local and remote units. The cabling must be duplex (have two fiber strands per connection), must be terminated with MT-RJ connectors at both ends, and must not be longer than 500 m (1640 ft.). For more information, see the Cable Required specification in Chapter 1.

3.5.1 WITH SURFACE (EXPOSED) CABLING

1. Plug one end of the fiberoptic cabling (not included) into the MT-RJ connector on the local unit.
2. Plug the other end of the fiberoptic cabling into the MT-RJ connector on the remote unit.

3.5.2 WITH PREMISE CABLING

1. Plug one end of a fiberoptic patch cord (not included) into the MT-RJ connector on the local unit.
2. Plug the other end of the patch cord into a fiberoptic data outlet (also called an “information outlet” or “data port”) near the host computer and local unit.
3. Plug one end of a second fiberoptic patch cord (also not included) into the MT-RJ connector on the remote unit.
4. Plug the other end of the second patch cord into a fiberoptic data outlet near the USB peripheral device(s) and remote unit.
5. If necessary, consult with your site’s cabling maintainers to make sure that the two locations are patched together properly.

3.6 Check the Installation

To verify that you’ve installed your Fiber RemotePort USB 4-Port correctly, make sure that all of LEDs on the local and remote units are lit except for the device LEDs on the remote unit that correspond to USB device ports that aren’t being used. Once these LEDs light, the RemotePort is operating normally (and should do so continuously without anyone needing to do anything further); the connected peripheral device(s) are ready to use.

4. Troubleshooting

4.1 Problems, Causes, and Solutions

Problem: All of the LEDs on the local or remote unit are not lit.

Probable cause: The unit is not receiving power.

Possible solution: Make sure the power supply is securely connected to both the unit and a working AC outlet.

Problem: The Link LEDs on the local and remote units are not lit.

Probable cause: The connection between the local and remote units is not correct.

Possible solution: Make sure that a standard duplex 50/125- μm or 62.5/125- μm multimode or 9/125- μm single-mode fiberoptic cable is securely connected to both the local and remote units, and make sure that each strand of the cable runs from TX on one end to RX on the other end.

Problem: The host LED on the local unit and the device LEDs on the remote unit are not lit.

Probable causes: Either the USB link between the local unit and the host computer is not correct, the computer isn't functioning, or the computer doesn't recognize the RemotePort.

Possible solutions:

1. Make sure that the USB cable between the host computer and local unit is securely connected.
2. Unplug the local unit's power supply and then plug it back in.
3. Reset or reboot the computer.
4. If the computer consistently fails to recognize the RemotePort as a "Generic USB Hub," call Black Box Technical Support as directed in **Section 4.2**.

Problem: The host LED on the local unit is lit, but one or more device LEDs on the remote unit are not lit.

Probable causes: Either the connection between the remote unit and any USB device whose LED isn't lit is not correct, the device or the RemotePort is malfunctioning, or the USB device is incompatible with the RemotePort.

Possible solutions: Make sure that the USB device is securely connected to the USB port on the remote unit. If the device LED on the remote unit is still not lit, disconnect the RemotePort from the computer and connect the USB device directly to the USB port on the computer.

- If the device *doesn't work* when connected directly to the computer, consult the user documentation for the device.
- If the device *does work properly* when connected directly to the computer, disconnect it from the computer and reconnect the RemotePort as before. Attach a second USB device of a different type to the remote unit. If the second device works but the first still doesn't, the first device might be incompatible. If neither device works, the RemotePort might be malfunctioning. In either case, call Black Box Technical Support as directed in **Section 4.2**.

Problem: The LEDs on the local and remote units are lit, but a USB device does not work.

Probable causes: Either the USB device or the RemotePort is malfunctioning, or the USB device is incompatible with the RemotePort.

Possible solutions: Disconnect the RemotePort from the computer and connect the USB device directly to the USB port on the computer.

- If the device *doesn't work* when connected directly to the computer, consult the user documentation for the device.
- If the device *does work properly* when connected directly to the computer, disconnect it from the computer and reconnect the RemotePort as before. Attach a second USB device of a different type to the remote unit. If the second device works but the first still doesn't, the first device might be incompatible. If neither device works, the RemotePort might be malfunctioning. In either case, call Black Box Technical Support as directed in **Section 4.2**.

4.2 Calling Black Box

If you determine that your Fiber RemotePort USB 4-Port is malfunctioning, *do not attempt to alter or repair it*. 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; and
- the results of any testing you've already done.

4.3 Shipping and Packaging

If you need to transport or ship your Fiber RemotePort USB 4-Port:

- Package it carefully. We recommend that you use the original container.
- If you are returning the RemotePort or shipping it 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.

DISCLAIMERS AND NOTICES

The Fiber RemotePort USB 4-Port complies with all USB 1.1 specifications. However, the manufacturer does not guarantee that it will work with all USB devices.

The manufacturer expressly disclaims all other merchantability and fitness for a particular purpose and non-infringement of third-party rights with respect to the hardware. Under no circumstances will the manufacturer or any of its authorized agents, suppliers, or licensors be liable for any costs of procurement or substitute products or services, lost profits, loss of information or data, or any other special, indirect, consequential, or incidental damages arising in any way out of the sale of, use of, or inability to use this product, even if the manufacturer or its authorized agents, suppliers, or licensors have been advised of the possibility of such damages. In no case shall the liability of the manufacturer or its authorized agents, suppliers, or licensors exceed the actual purchase price of the product. Because some jurisdictions don't allow the exclusion of implied warranties of liability for incidental, consequential, special, or indirect damages, the above limitation might not always apply. The above limitations will not apply in case of personal injury where and to the extent that applicable law requires such liability.

NOTES



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