

USB 2.0 (4-Port) Hub

April 2002
IC147A
IC147AE

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**

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an experienced radio/TV technician for help.

Caution:

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

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device.

This digital apparatus does not exceed the Class B 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 classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

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 fisica 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 lineas de energia.

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.

Trademarks

Mac is a registered trademark of Apple Computer, Inc.

PS/2 is a registered trademark of International Business Machines Corporation.

Windows is a registered trademark of Microsoft Corporation.

Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

Specifications

Compliance: FCC Class B, Part 15

Ports: Root (Upstream): 1; Downstream: 4

Indicators: (5) LEDs: (1) Power, (4) Ports

Output Voltage (per port): +5 VDC

Output Current (per port): 500 mA (maximum)

Temperature Tolerance: Operating: 41 to 104°F (5 to 40°C);

Storage: -4 to +140°F (-20 to +60°C)

Humidity Tolerance: Up to 80%, noncondensing

Housing: Plastic

Power: External power supply; IC147A: Input: 100–120 VAC, 0.4 amps, 47–63 Hz; Output: 5 VDC, 2.6 amps; IC147AE: Input: 100–240 VAC, 1 amp, 47–63 Hz; Output: 5 VDC

Size: 0.9"H x 2.5"W x 3.7"D (2.3 x 6.4 x 9.4 cm)

Weight: 0.17 lb. (80 g)

Introduction

Overview

Universal Serial Bus (USB) port technology has emerged in response to the increasing number of external peripheral devices (printers, scanners, modems, digital cameras, removable drives, etc.) that are increasingly being connected to the latest generation of computers. The USB behaves in a similar fashion to conventional bus ports (that is, serial, parallel, PS/2®); however, since it does not require any IRQs, more devices can be attached to the system and the problem of IRQ conflict is eliminated.

Since many older computers don't have USB connectors onboard and most newer computers come with only one or two USB ports, USB hubs are used to connect all the USB peripherals that you may want to use.

The USB 2.0 (4-Port) Hub complies with the USB 2.0 standard. This represents the second USB generation and provides transfer rates of up to 480 Mbps. It is faster, more efficient, and more capable than its predecessor, USB 1.1; luckily, it is fully backward compatible, so your prior investment in USB 1.1 peripherals is not lost.

The USB 2.0 (4-Port) Hub provides one upstream port and four downstream ports. LED indicators display information about the power status of each port. The hub supports high-speed (480-Mbps), full-speed (12-Mbps), and low-speed (1.5-Mbps) devices, and it can be daisy-chained to provide as many ports as you require.

When you purchased the USB 2.0 (4-Port) Hub, you should have received:

- The USB 2.0 (4-Port) Hub,
- (1) 3-ft. (0.9-m) USB 2.0 cable,
- A power adapter, and
- This user's manual.

Features

- Fully compliant with the USB 2.0 specification.
- Backward compatible with USB 1.1.
- Supports transfer rates of 1.5, 12, and 480 Mbps.
- Four independent, fully functional, 480-Mbps downstream ports.
- Per-port overcurrent protection.
- Per-port bus status LED indicators.

System Requirements

- One of the following operating systems: Windows XP; Windows® 2000; Windows Me; Win98 SE; Mac® OS 8.6 or higher.
- USB 2.0 Host Controller, installed on the computer.

NOTE

Only systems with a USB 2.0 driver installed can support data transfer speeds of up to 480 Mbps.

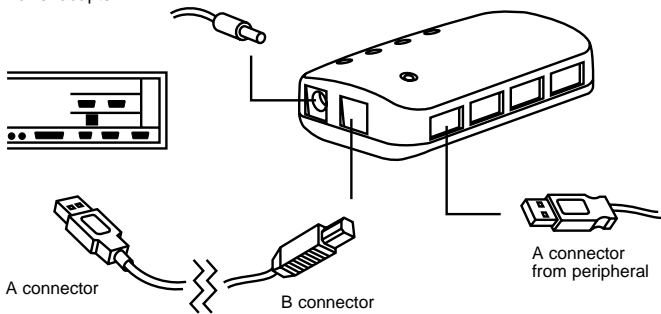
NOTE

The USB 2.0 (4-Port) Hub can be connected to a USB 1.1 Host Controller; however, it will only support USB 1.1 speeds (1.5 or 12 Mbps).

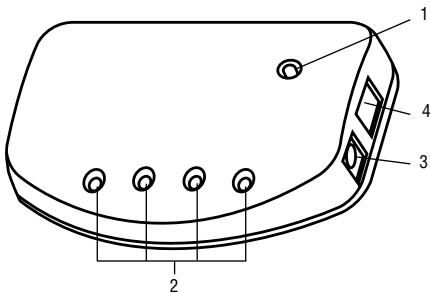
Installation

1. Plug the supplied power adapter into an AC source. Plug the power adapter cable into the hub's power jack.
2. Plug the USB cable's B connector end into the root (upstream) port located on the hub's side panel. (See the illustration.)
3. Plug the USB cable's A connector end into your computer system's USB host controller port.
4. To connect up to four peripherals, use additional USB cables. Plug each cable's A connector end into the downstream ports on the hub. Plug the cables' B connectors into the peripherals.

Power adapter



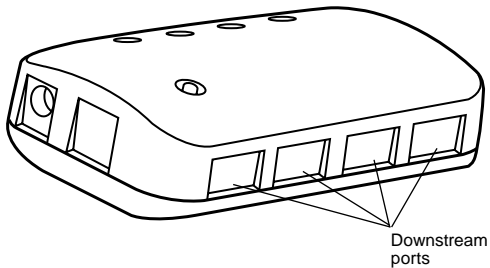
Operation



Numbers 1 through 4 below and on the next page correspond to the numbers on the diagram above.

1. Power LED: Lights when the unit is receiving power from the power source at the correct current level.
2. Port LEDs:
 - A Port LED lights (green) when the downstream peripheral device connected to the corresponding port is receiving power at the correct current level.

- If an overcurrent condition between the hub and the downstream device occurs, the LED turns amber.
3. Power Jack: The power adapter cable plugs in here.
 4. Root (Upstream) Port: The cable that connects the hub to the computer's USB controller plugs in here.



Downstream ports (1–4): Cables from USB peripherals can plug into any available downstream port.

Troubleshooting

If the hub operates erratically, the problem may be caused by static electricity. Reset the unit by unplugging the upstream cable from the computer's USB port and then reinserting it. If you have daisy-chained hubs, do this on the hub that connects directly to the computer.

Calling Black Box

If you determine that your USB 2.0 (4-Port) Hub is malfunctioning, do not attempt to alter or repair it. Contact Black Box at 724-746-5500. The problem might be solvable over the phone.

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.

Shipping and Packaging

If you need to transport or ship your USB 2.0 (4-Port) Hub:

- Package it carefully. We recommend that you use the original container.
- If you are shipping the USB 2.0 (4-Port) Hub 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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