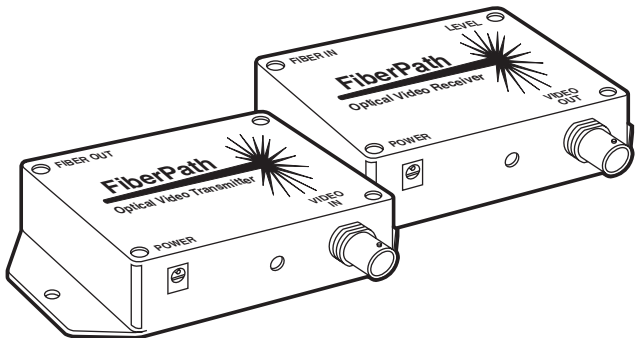




JUNE 2000
AC444A
AC444AE
AC445A-TX
AC446A-RX

FiberPath



CUSTOMER SUPPORT INFORMATION

Order **toll-free** in the U.S. 24 hours, 7 A.M. Monday to midnight Friday: **877-877-BBOX**
FREE technical support, 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mail order: **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 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 classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industry 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 líneas 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

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

CONTENTS

1. Specifications	6
2. Introduction.	8
2.1 General.	8
2.2 What the Package Includes.	8
3. Installation	10
4. Troubleshooting	13

1. Specifications

Certification — For FiberPath: FCC Class A, Subpart B of Part 155 compliance; For the power supply: UL[®], CSA listed

Input/Output Voltage — 1 volt pp (user-adjustable at receiver)

Input/Output Impedance — 75 ohms

Signal/Noise Ratio (per RS-250) — 52 dB minimum

Differential Gain (per RS-250) — 2% typical

Differential Phase (per RS-250) — 1% typical

Optical Wavelength — 850 nanometers

Optical Cable and Connectors — 62.5-micron multimode fiber with industry-standard ST connectors

Optical Loss Budget — 12 dB minimum

Transmission Distance — 0 to 1.5 mile minimum

Operating Power (per unit) — All units except AC444AE: 12V \pm 10% D @ 100 ma max.; FiberPath comes with two 115-VAC-to-12-VDC plug-in wall adapters which can be used to supply all operating power; AC444AE: (2) power supplies (receiver and transmitter) that are 220 to 230 volts with special international plugs, 50 Hz, 9 VDC @ 500 mA

Operating Temperature — -31 to +167°F
(-35 to +75°C)

Relative Humidity Tolerance — Up to 95%,
noncondensing

Size — 1"H x 2.375"W x 3.25"D (2.5 x 6 x 8.3 cm)

Weight — 0.5 lb. (0.2 kg);
Shipping weight: 1 lb. (0.45 kg)

2. Introduction

2.1 General

The FiberPath is a high-quality, cost-effective fiberoptic video transmission system designed to transmit color and black-and-white signals over distances of more than a mile. The system is easy to install and is designed for long, trouble-free operation in most indoor or outdoor protected environments. The FiberPath is compatible with all standard analog video formats, including NTSC, PAL, and SECAM, and will operate with all standard 62.5 micron fiberoptic cables and industry-standard ST type connectors.

2.2 What the Package Includes

You can order the Transmitter and Receiver together or separately. You need one Transmitter and one Receiver to operate the system.

For the AC444A, your package includes:

- (1) FiberPath Transmitter
- (1) FiberPath Receiver

- (2) 12-VDC Power Supplies
- This User Manual

For the AC444AE, your package includes:

- (1) FiberPath Transmitter
- (1) FiberPath Receiver
- (2) 220-to-230-Volt, 9-VDC Power Supplies
- This User Manual

For the AC445A-TX, your package includes:

- (1) FiberPath Transmitter
- This User Manual

For the AC446A-RX, your package includes:

- (1) FiberPath Receiver
- This User Manual

3. Installation

Figure 3-1 on **page 12** may provide assistance during installation. Follow these steps:

1. Mount the FiberPath Transmitter at the camera or source of video to be transmitted. Use the mounting tabs on the housing or the enclosed self-adhesive mounting pad.
2. Connect one of the plug-in power supplies to the input connector on the FiberPath Transmitter. If you plan to use an external power source, make sure that it provides regulated 12-VDC $\pm 10\%$. Current from this source will not exceed 250 ma. When power is applied, the red PWR LED indicator will glow.

NOTE

The negative (-) side of the power input is connected to the enclosure.

3. Connect the video signal to be transmitted to the BNC connector on the FiberPath Transmitter, and the ST fiberoptic cable plug to the transmitter's optical connector.

4. Mount the FiberPath Receiver at the monitor or device where the video will be received. Use the mounting tabs on the housing or the enclosed self-adhesive mounting pad.
5. Connect the remaining plug-in power supply to the FiberPath Receiver's input connector. If you plan to use an external power source, make sure it provides regulated 12-VDC $\pm 10\%$. Current from this source will not exceed 250 ma. When power is applied, the red PWR LED indicator will glow.

NOTE

The negative (-) side of the power input is connected to the enclosure.

6. Connect the video monitor or other video receiving device to the BNC connector on the FiberPath Receiver and the fiberoptic cable plug to the optical connector on the Receiver.
7. For a pleasing picture, slowly adjust the LEVEL control on the FiberPath Receiver. If you require high accuracy, set this level to 1 volt pp with a 75-ohm load.
8. Your FiberPath video transmission system is now installed.

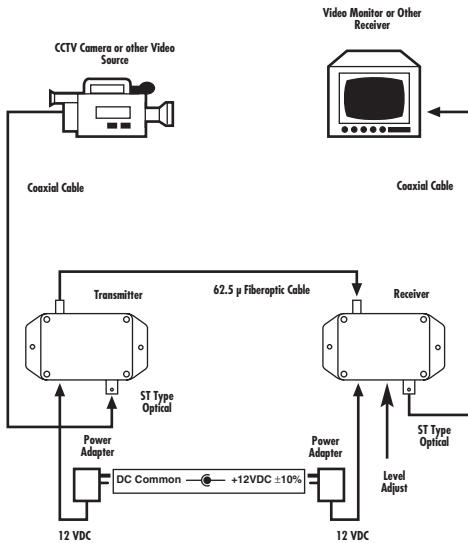


Figure 3-1. Installation of the FiberPath Fiberoptic Transmission System.

4. Troubleshooting

If your FiberPath transmission system does not immediately operate, follow this checklist:

1. Is the correct operating power present and connected to the proper pins on the power connector? If so, the red PWR LED should glow.
2. If you're using an external power source, does it matter that the signal and power ground are connected to the enclosure?
3. Is a video signal present at the FiberPath Transmitter input?
4. Are you using the proper 62.5 micron fiberoptic cable?
5. Is the fiberoptic cable more than 1.5 miles (2.4 km) long? If so, a weak, snowy picture may result.
6. Are the fiberoptic connector ends free of any minute dust or dirt particles? If not, use a lint-free cloth moistened with a drop of alcohol to gently clean the optical surface.

If all of the troubleshooting items on the checklist are correct and the system still will not operate correctly, call Black Box Technical Support at 724-746-5500.



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