**Fiber Optic RGB Component Video System
Models B780G and B7780G**

# installation instructions

## GENERAL

This manual is a guide to the installation and operation of the B780G and B7780G series fiber optic RGB component video transmission systems. Please read the entire manual before installing the equipment.

**NOTE:** The series numbers B780G, B780GT and B780GR will be used to describe all models of transmitters and receivers unless noted otherwise.

The Series B780G video transmission system offers transmission of one-way RGB component video. The B780G system operates over three multimode fibers, the B7780G system operates over three single-mode fibers.

A complete system consists of a transmitter, B780GT, and a receiver, B780GR. Units are designed for installation in an EIA-standard 19-inch (483-mm) rack.

### Unpacking the Unit

In the event that anything is missing from the following list, contact your authorized Fiber Options dealer or representative.
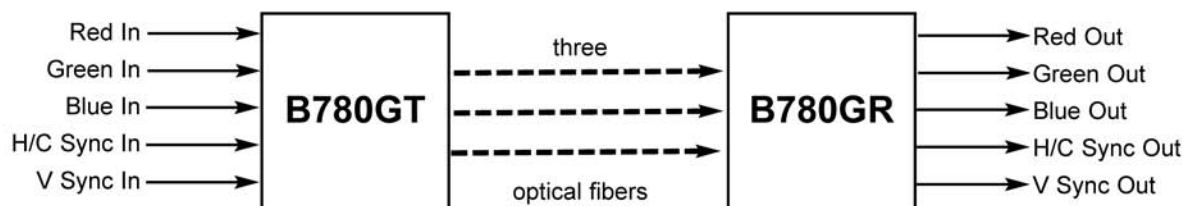  B780GT Transmitter or B780GR Receiver
  (B7780GT Transmitter or B7780GR Receiver)
  Power cord
  Instruction manual
Save the original packing materials in case it becomes necessary to return the unit.

## BASIC SYSTEM DIAGRAM



## INSTALLATION

### Installation Considerations

Units should be installed in dry locations protected from extremes of temperature and humidity. The type of screws used for mounting must be suitable for the surface where the unit will be mounted.

### Rack Installation

1. Determine where the module is to be installed in the instrument rack and ensure that there is adequate space at the rear for making the various cable connections.

**CAUTION:** Do not connect the unit to a power source until all other connections are complete.

2. Attach the unit to the rack with four screws that are compatible with the rack.

### Optional Mounting

The B780GT transmitter and B780GR receiver can be mounted vertically or horizontally on a suitable mounting surface. To mount the unit:

1. Determine where the unit will be installed and ensure there is adequate room for making the various cable connections and for viewing the LEDs on the front panel.

2. Remove the two screws securing the rack-mounting brackets to the chassis and remove the brackets. See Figure 1.

**CAUTION:** Ensure the mounting surface and hardware can support the unit.

3. Install the mounting brackets to the left and right sides of the chassis using the hardware removed in step 2.

4. Mount the unit to a suitable surface. The type of hardware used must be suitable for the surface where the unit is mounted.

## CONNECTIONS

All fiber-optic links convert electrical signals into a light source at the transmitter and convert the light back to electrical signals for output at the receiver.

### Fiber Optic Cable Connections

Most cable manufacturers identify the individual fibers in the cable. Select appropriately terminated fiber and mark both ends with unique identification label (e.g. for cable no. 03, fiber no. 08) to ensure that the fiber connected to the near end is the same one that is connected to the far end.

The B780G requires three equal length optical fibers between the transmitter and the receiver. The optical connectors are labeled R, G, and B. The proper optical connection will link the transmitter's R port to the receiver's R port and so on. See Figures 2 and 3.

1. Wipe the inside of the port's sleeve with a lint-free pipe cleaner moistened with reagent-grade isopropyl alcohol. Blow dry with dry air.

2. Clean the connector using a lint-free cloth dampened with alcohol to thoroughly wipe the side and end of the ferrule.

Blow the ferrule dry with dry air. Visually inspect the ferrule for lint.

3. Fasten the fiber optic cable to the port.

### Video Cable Connection

**CAUTION:** Make sure all peripheral equipment that will be connected to the fiber unit is turned OFF during installation.

Fiber Options recommends using Belden number 9259 or equivalent RG59/U coaxial cable between the video equipment and the fiber units. Do not exceed the maximum distance recommended by the manufacturer of the video equipment.

### Transmitter Video Connections

There are ten BNC connectors on the rear panel of the transmitter. They are arranged in pairs identified as R, G, B, H/C and V.

  R = Red video component
  G = Green video component
  B = Blue video component
  H/C = Horizontal/composite sync
  V = Vertical sync

One of each pair is used to input signal to the unit, and the second of each pair may be used to loop the signal out to another RGB device. The two BNCs in each pair are electrically identical, so incoming and looping cables may be connected to either one.

**NOTE:** The TERMINATED/LOOPTHRU switch, located to the right of the BNCs on the rear panel, must be set according to whether the input signals are looped out or not.

To loop the signals, set the TERMINATED/LOOPTHRU switch to the DOWN (LOOPTHRU) position for high-impedance termination at the B780G. The system must be terminated with 75 ohms at the last video device in the loop.

To terminate the signals (no looping), set the TERMINATED/LOOPTHRU switch to the UP (TERMINATED) position for 75-ohm termination.

Connect the R, G, B, H, and V video source cables to the corresponding BNCs on the B780GT transmitter. If the signal is also going to be looped to another device, connect appropriate cabling and set the terminating switch to the down position. See Figure 2.

### Receiver Video Connections

Connect monitor equipment or other RGB devices to the output BNC jacks on the B780GR receiver. See Figure 3.

### UXGA Connector

Attach a prefabricated 15-pin male D-sub connector to the UXGA connector on the transmitter. Connect the other end of the cable to the UXGA connector on the receiver.

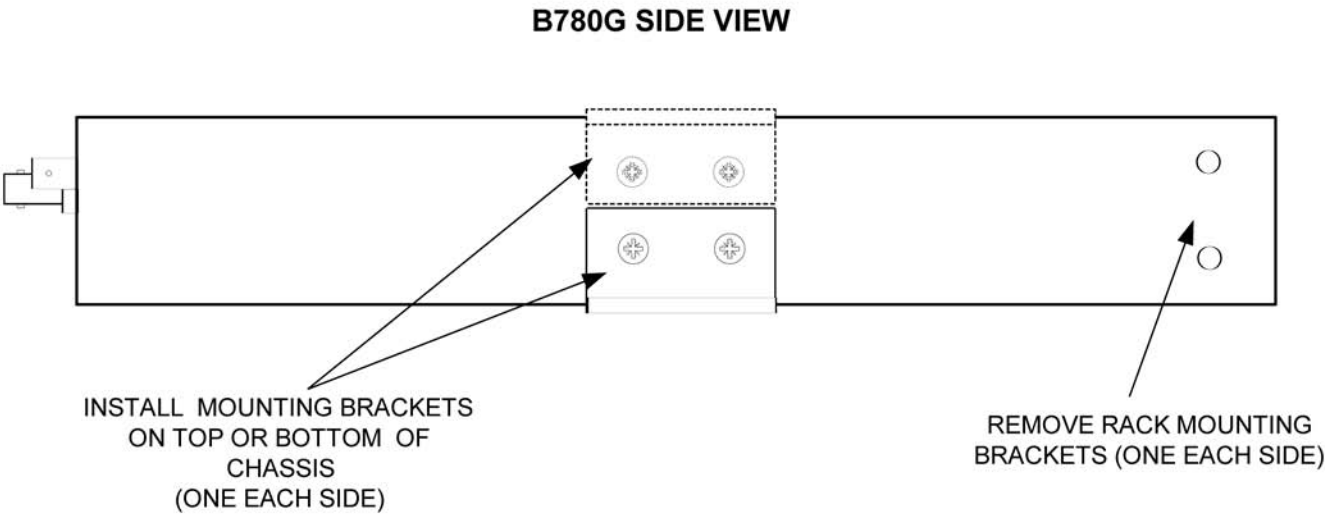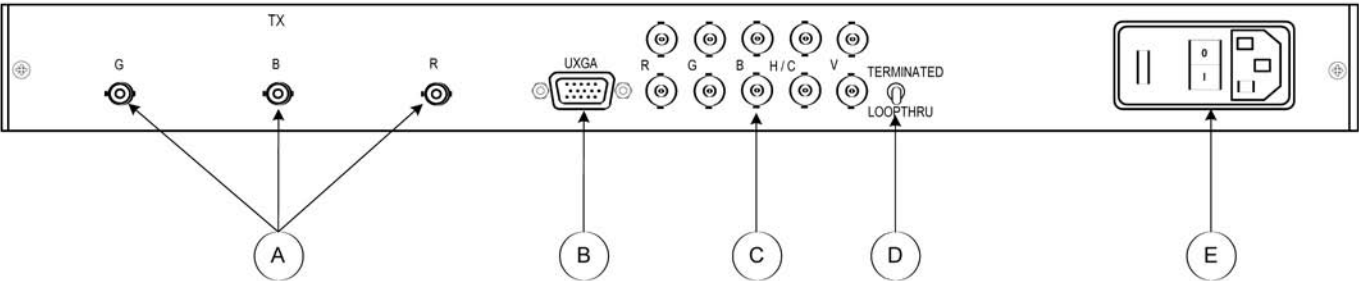**FIGURE 1: OPTIONAL MOUNTING BRACKET INSTALLATION**

## B780G SIDE VIEW

INSTALL MOUNTING BRACKETS
ON TOP OR BOTTOM OF
CHASSIS
(ONE EACH SIDE)

REMOVE RACK MOUNTING
BRACKETS (ONE EACH SIDE)

**FIGURE 2: B780GT/B7780G TRANSMITTER REAR PANEL**

| Item | Description |
|------|-------------|
| A | Optical (Fiber) Connectors (3) |
| B | UXGA Connector |
| C | Video BNC Connectors (10) |
| D | TERMINATED/LOOPTHRU Switch |
| E | Power Module |

**FIGURE 3: B780GR RECEIVER REAR PANEL**
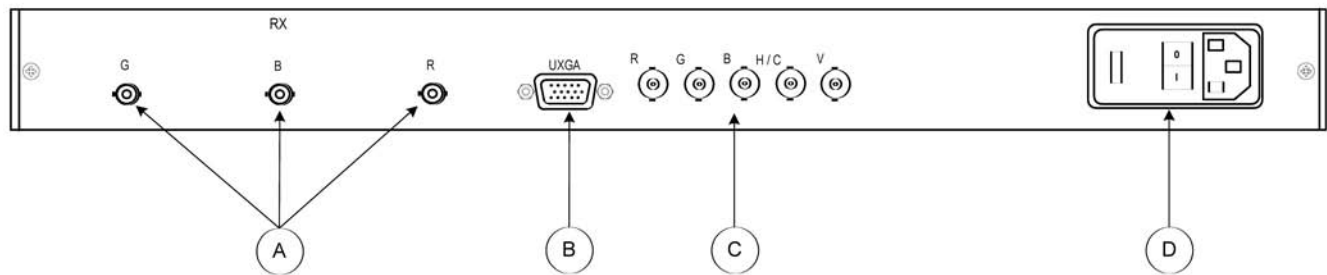


| Item | Description |
|------|-------------|
| A | Optical (Fiber) Connectors (3) |
| B | UXGA Connector |
| C | Video BNC Connectors (5) |
| D | Power Module |

Be sure to secure the connector with its attached screws. See Figures 2 and 3.

**Power Connections**

**CAUTION:** Turn the power switch on the rear of the unit to the OFF position before installing the power cable.

The B780GT transmitter and B780GR receiver are supplied with an IEC320 detachable power cable. Plug the female connector to the unit and connect the other end to a power source.

**OPERATION**

To power up the unit, set the rocker switch on the rear panel to the I (on) position. Once the unit is powered up, no further operator involvement is necessary.

The unit is supplied with a variety of diagnostic LEDs to display the status of various functional circuits. Refer to Tables 1 and 2 for description of these diagnostic LED indicators. See Figures 4, 5 and 6.

**MAINTENANCE**

There is no operator maintenance other than keeping the units clean and, if necessary, replacing the fuse.

**Fuse Replacement**

The fuse is located in a power module located on the rear panel. The fuse is a 5 X 20 mm, 1 A, 250 V. See Figure 7.

**WARNING:** Disconnect the AC line cord from the power supply and from the AC outlet before attempting to remove or replace the fuse.

**NOTE:** Carefully note the position of the fuse in the fuse carrier before removing to avoid installing or replacing the fuse incorrectly.

1. Remove the fuse carrier by locating the small slot at the top of the power entry module and gently prying the cover open using a small flat screwdriver. When the cover is open, pry the fuse carrier out of the module, remove and examine the fuse.

2. If necessary, replace with a fuse of the same type and rating and return the fuse carrier to the power entry module. Close the cover until it snaps into place.

3. Connect the AC line cord to the power supply and to the AC outlet.

4. Set the power switch on the rear of the unit to the ON position.

**FIGURE 4: B780GT TRANSMITTER FRONT PANEL**



**FIGURE 5: B7780GT TRANSMITTER FRONT PANEL**
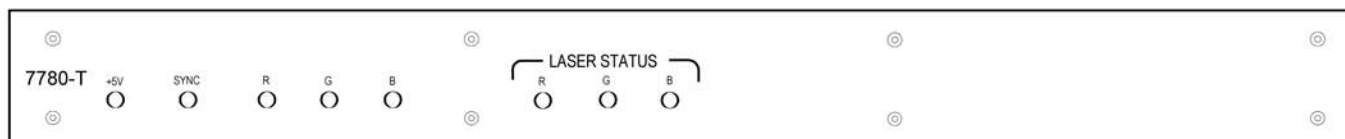


**FIGURE 6: B780GR/B7780GR RECEIVER FRONT PANEL**
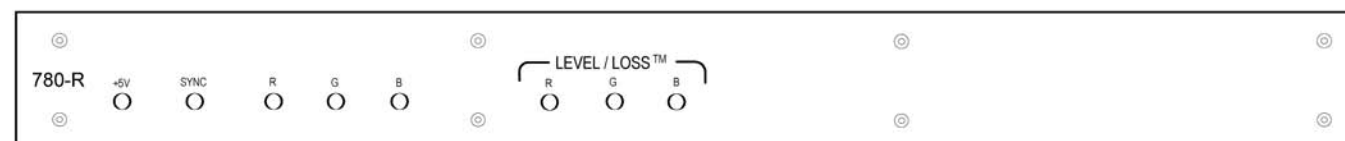


**TABLE 1: TRANSMITTER DIAGNOSTIC LEDS**

| LED Name | Color | Indication |
|---|---|---|
| +5V | Green | Regulated power supply is operating. |
| | Off | No input power; check power cord, outlet, and fuse. |
| SYNC | Green | H and V sync are being input to the transmitter. |
| | Off | No sync is input to the transmitter. |
| R, G, B | Green | Signal is being input to the transmitter. |
| | Off | Signal is not being input to the transmitter. |
| LASER STATUS Single-Mode units only | Green | Laser is operating properly. |
| | Red | Laser is malfunctioning.  Contact Customer Support. |

**TABLE 2: RECEIVER DIAGNOSTIC LEDS**

| LED Name | Color | Indicates |
|---|---|---|
| +5V | Green | Regulated power supply is operating. |
| | Off | No input power; check power cord, outlet, and fuse. |
| SYNC | Green | H and V sync are present in the incoming optical signal. |
| | Off | No sync is present in the incoming optical signal. |
| R, G, B | Green | Signal is being received by the receiver. |
| | Off | Signal is not being received by the receiver. |
| LEVEL/ LOSS | Green | Adequate optical signal is being received. |
| | Red | Inadequate optical signal is being received. |

**FIGURE 7: POWER ENTRY MODULE - FUSE LOCATION AND REPLACEMENT**
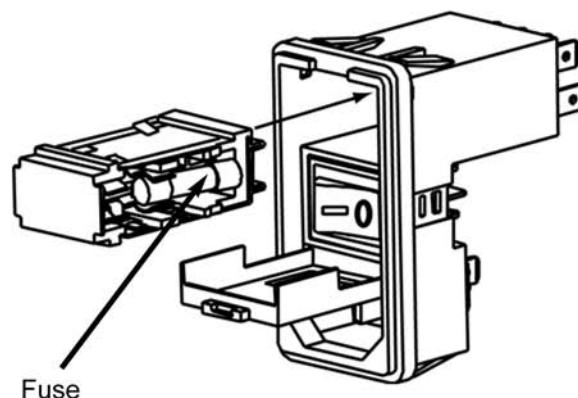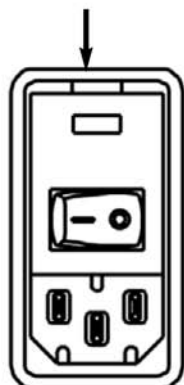


## Customer Support

For assistance in installing, operating, maintaining, and troubleshooting this product, refer to this document and any other documentation provided. If you still have questions, please contact technical support during normal business hours (Monday through Friday, excluding holidays, between 6 a.m. and 5 p.m. Pacific Time).

### GE Security

Call: 888 437-3287 (US, including Alaska and Hawaii; Puerto Rico; Canada)
Outside the toll-free area: 503 885-5700
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