

# 4800 Series

## FIBER OPTIC DVI EXTENSION SYSTEM



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## **SAFETY INSTRUCTIONS AND COMPLIANCE DECLARATIONS**

PLEASE OBSERVE THE FOLLOWING SAFETY  
PRECAUTIONS AS OUR PRODUCTS CONTAIN

### **CLASS I LASER PRODUCTS**

#### **WARNING**

Do not disconnect the fiber optic connector while the unit is powered up. Exposure to laser radiation is possible when the laser fiber optic connector is disconnected while the unit is powered up.

Although the fiber optic connectors in this product emit only Class 1 energy that is below the levels considered to be hazardous, one should never stare directly into a fiber optic connector or an unconnected fiber end unless one can be certain that no exposure to laser energy could occur.



This manual is intended for use by trained service personnel. The use of controls, making adjustments, or performing operations other than those specified may result in hazardous radiation exposure.

The following label or equivalent is located on the surface of laser products. This label indicates that the product is classified as a CLASS 1 LASER PRODUCT.



#### **SURGE PROTECTION DEVICE RECOMMENDED**

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

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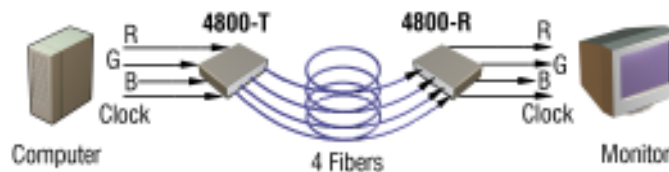
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## 1.0 PRODUCT DESCRIPTION

The 4800 Series is a high performance, yet affordable, Fiber Optic DVI Extension System that is designed to carry one (1) DVI channel, over long distances through four (4) multimode fibers.

No user adjustments are required in the 4800 system due to the use of advanced digital fiber optic transmission technology. This allows for a quick and easy setup, offering trouble-free operation for many years to come. The 4800 system transmits R, G, B, clock signals separately through one individual fiber and can support video resolution up to UXGA (1600 x 1200).

The 4800 modules transmit 4 channels (R,G,B,Clk) of graphic data over fiber. The DVI Digital Display Channel (DDC2B) interface is simulated by programming EDID (Extended Display Identification Data) parameters into a non-volatile memory device (EEPROM) located in the TX (transmitter) module of the 4800 instead of directly from the display peripheral. This saves the deployment of additional external lines. The EEPROM is factory programmed to match the peripheral's display mode. Broaddata defines it as "virtual DDC" or vDDC.



**Figure 1-1**  
**4800 Setup**

## 2.0 SETUP

### 2.1 Hardware Requirements

1. You have a graphic controller card or main board with a DVI port in your PC, SUN, or Mac system. It should support the maximum graphic resolution feature of the display to be connected.
2. No special memory size, CPU speed and chipsets is required.
3. Proper initial bring-up of the entire platform with its OS and application using a short length cooper cable is recommended prior to bring-up with the optical link.

### 2.2 Software Requirements

No special needs, if the DVI graphic controller and display peripheral are operational with the platform's OS and application.

### 2.3 AC/DC Power Adapter Technical Advisory

The transmitter (TX) module of the 4800 is designed with a power protection circuit to prevent power conflict between the external DC power adapter and the power supply pin on the DVI graphic card if both are present. The AC/DC power adapter is included in case the graphic card does not have a +5V pin.

Generally, the Receiver (RX) module will require the AC/DC power adapter, as most DVI peripherals do not provide +5V. Some projectors do have the hot pin; hence a good idea to check availability to save having to deploy it.

*BE SURE to attach the TX module upstream to the computer video card and the RX module downstream to the peripheral.*

*In general, most notebook PCs require using an AC/DC power adaptor for the TX module.*

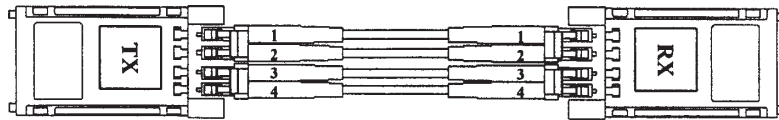
### 3.0 INSTALLATION

**Important: Please use the installation procedure below. Improper, or no operation may result if the start-up sequence is not correctly followed.**

1. Carefully unpack the contents of the shipping group.
2. With system power turned **off**, connect the upstream TX module to the DVI receptacle of the computer.
3. Connect an AC/DC power adapter to the TX module of the 4800.
4. Connect the downstream RX module into the DVI receptacle of the display.
5. Connect another AC/DC power adapter to the RX module of the 4800.

**Note:** You might not have to use the AC/DC adapters if power is supplied from the DVI pin from the graphic card or the peripherals. After successfully completing the installation instructions, unplug the adapters one at a time. If the system doesn't work properly, the AC/DC power adapter can be reconnected while the system is on and the video should be restored. You can then remove one or both power adapters if not required.

6. Remove the module dust covers and connect each duplex LC fiber cable one by one as shown in Figure 2-1. Plug 1 to 1, 2 to 2, 3 to 3 and 4 to 4. Carefully recheck polarities and ensure the duplex connectors are fully engaged.



**Figure 2-1**  
**Connection of 2 duplex LC fiber cables.**

7. Power on the computer, display and AC/DC adapters.
8. It is assumed at this point that the start-up resolution of the display initiated by the vDDC feature matches the desired resolution previously set up in the computer Operating System.

*Avoid “hot plugging” the TX or RX modules as this is not recommended practice with live digital voltages.*

*It is prudent to initially ensure the computer and display platform are functioning in close proximity to each other as required using a standard copper DVI cable. It is then much easier to deploy the optical extension technology.*

## 4.0 MAINTENANCE AND TROUBLESHOOTING

### 4.1 Maintenance

No special maintenance is required for the optical DVI cables and power supplies. Ensure that the cables and power modules are stored or used in a benign environment free from liquid or dirt contamination.

### 4.2 Troubleshooting

#### **The display displays only black screen.**

- a. Check that all AC and DC plugs and jacks used by external power supplies (both BCI and others) are firmly connected.
- b. Ensure that power bars are live.
- c. Ensure that the TX and RX modules plug correctly to the computer and display, respectively.
- d. Check if the computer and display are powered on and properly booted.
- e. Re-boot up the system after reconnecting the optical DVI cable system.

#### **Screen is distorted or displays noises.**

- a. Check if the graphic resolution is properly set. Go to the display properties of Windows and tap the settings. Ensure that the resolution sets less than SXGA (1,248x1,024) at 75Hz refresh ratio.
- b. Reset the system.
- c. Power down, disconnect and reconnect the optical DVI cables or DC power adapters, and power up.



## 5.0 SPECIFICATIONS

### Electrical

Signal Format	DVI
Graphic Resolution	UXGA (1600 x 1200) SXGA (1280 x 1024)
Data Rate	up to 1.65 Gbps (per link)
Connector	DVI 24-pin plug

### Physical

Dimension (H x W x D)	
Standalone	0.74' x 1.5" x 2.83"
Card-cage plug-in card	5.24" x 0.94" x 11.6"
Supply Current	TX = 320 (max=360) MA RX = 280 (max=320) MA
Operating Temperature	0 to +50°C
Humidity	0 to 95% RH, non-condensing

### Optical

Fiber Type	Multimode
Number of Fibers	4
Wavelength	850 nm
Fiber Optic Connector	2 Duplex LC
Recommended Fiber	50/125um Multimode Glass Fiber

## 6.0 SERVICE PROCEDURE

### 6.1 Replacement Policy

Standard products found defective on arrival (DOA) will be replaced, based on availability, within 24 to 48 hours anywhere in the U.S. Please call Customer Service at **800-214-0222** for information.

### 6.2 Return/Repair Service

The BCI 4800 System contains no user serviceable components. If you have a problem with your unit, please contact the Customer Service Department. To facilitate our return/repair processing please contact Broadata Communications, Inc. to obtain a Return Material Authorization (RMA). Please include the following information:

- Product model number
- Serial Number
- Complete description of problem
- Hardware installation description

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Website: [www.broadatacom.com](http://www.broadatacom.com)

## **7.0 LIMITED WARRANTY**

Broadata Communications, Inc. (BCI) warrants, for a period of one year from date of shipment, each product sold shall be free from defects in material and workmanship. BCI will correct, either by repair, or at BCI's election, by replacement, any said products that in our sole discretion prove to be defective and are returned to the manufacturing location within 30 days after such defect is ascertained. All warranties are limited to defects arising under normal use and do not include malfunctions or failure resulting from misuse, abuse, neglect, alterations, electrical power problems, usage not in accordance with product instructions, improper installation, or damage determined by BCI to have been caused by the Buyer or repair made by a third party. Limited warranties granted on products are to the initial customer end-user and are not transferable. OUR LIABILITY UNDER THIS WARRANTY SHALL IN ANY CASE BE LIMITED TO THE INVOICE VALUE OF THE PRODUCT SOLD AND BCI SHALL NOT BE LIABLE TO ANYONE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING FROM THE USE OF ITS PRODUCTS OR THE SALE THEREOF. We make NO WARRANTY AS TO THE MERCHANTABILITY OF ANY GOODS, OR THAT THEY ARE FIT FOR ANY PARTICULAR PURPOSE OR END APPLICATION NOR DO WE MAKE ANY WARRANTY, EXPRESSED OR IMPLIED OTHER THAN AS STATED ABOVE.















## Notes

## Notes

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