



## **Installation/Operation Instructions**

### **PT/PR-146 Series Fiber Optic Video Transmission System**

#### **Part Number:**

**PT-146R-x; PT-146M-x**  
***(Single channel Video Transmitter)***

**PR-146R-x**  
***(Single channel Video Receiver)***



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## 1.0 Product Description

The PT/PR-146R series fiber optic product is a single-channel video fiber optic FM video transmission system capable of transmitting one (1) composite video signal over one multimode or single-mode optical fiber using FM transmission technologies. The PT-146R & PR-146R series are compatible with NTSC, PAL and SECAM video signals.

The transmitter unit (PT) is available in either a standard 1-wide rack unit (PT-146R) or as a small shelf mount module (PT-146M). The receiver unit (PR) is available in only a standard 1-wide plug-in rack unit and is compatible with the following Meridian chassis: SR-500/S, SR-1002/S, SR-1600/S, and SR-2001 & SR-2000 series 19" equipment chassis.

The PT/PR-146R is compatible with the series 195 triple transmitter and receiver cards for high-density applications.

## 2.0 Installation

Series PT-146R & PR-146R series products are one-slot wide cards and, as such, occupy only one slot in Meridian's standard chassis. To install in the chassis, orient the card with the Meridian logo at the top of the module and slide onto the top and bottom card guides in the chassis. Press securely on the top and bottom of the module to ensure that it is fully seated in the chassis so that the electrical connector mates with the chassis-mounted motherboard. Once installed, manually tighten the two thumbscrews located at the top and bottom of the card. Do not use tools to secure these and do not over tighten.

The PR-146M transmitter is a shelf mount module and can be mounted in either a horizontal or vertical configuration. A 2-pin plug-in connector is located on the side of the PT-146M modules for power. A standard 24VAC wall transformer is required to operate the PT-146M series products. Meridian recommends the WP-24A transformer for proper operation of this module.

**Note:** A fully loaded subrack should have forced-air cooling to avoid excessive heat generation inside the chassis. A fan assembly tray (P/N FA-2000) with three (3) fans is available and should be installed under the 19" SR-2000/2001 chassis whenever possible.

## 3.0 Product Specifications

The tables below identify the key specifications for the video signals that these modems transmit/receive.

| Video Specifications |                             |
|----------------------|-----------------------------|
| Format               | NTSC, PAL, SECAM            |
| Voltage/Impedance    | 1Vp-p, 75 Ohm, 1.5Vp-p max. |
| Differential Gain    | <2% typical                 |
| Frequency Response   | 5Hz to 30Mhz                |
| Differential Phase   | <1.5° typical               |
| SNR                  | >64dB weighted              |
| Return Loss          | >30dB                       |
| Field Tilt           | <0.5% max.                  |
| Carrier Frequency    | 150 MHz                     |

| Connectors              |                                               |
|-------------------------|-----------------------------------------------|
| Video                   | 75Ohm BNC w/gold center pin                   |
| Optical                 | Single-mode – ST or FC<br>Multimode – ST      |
| Power<br>(PT-146M only) | 2-pin screw terminal connector (non IDC type) |

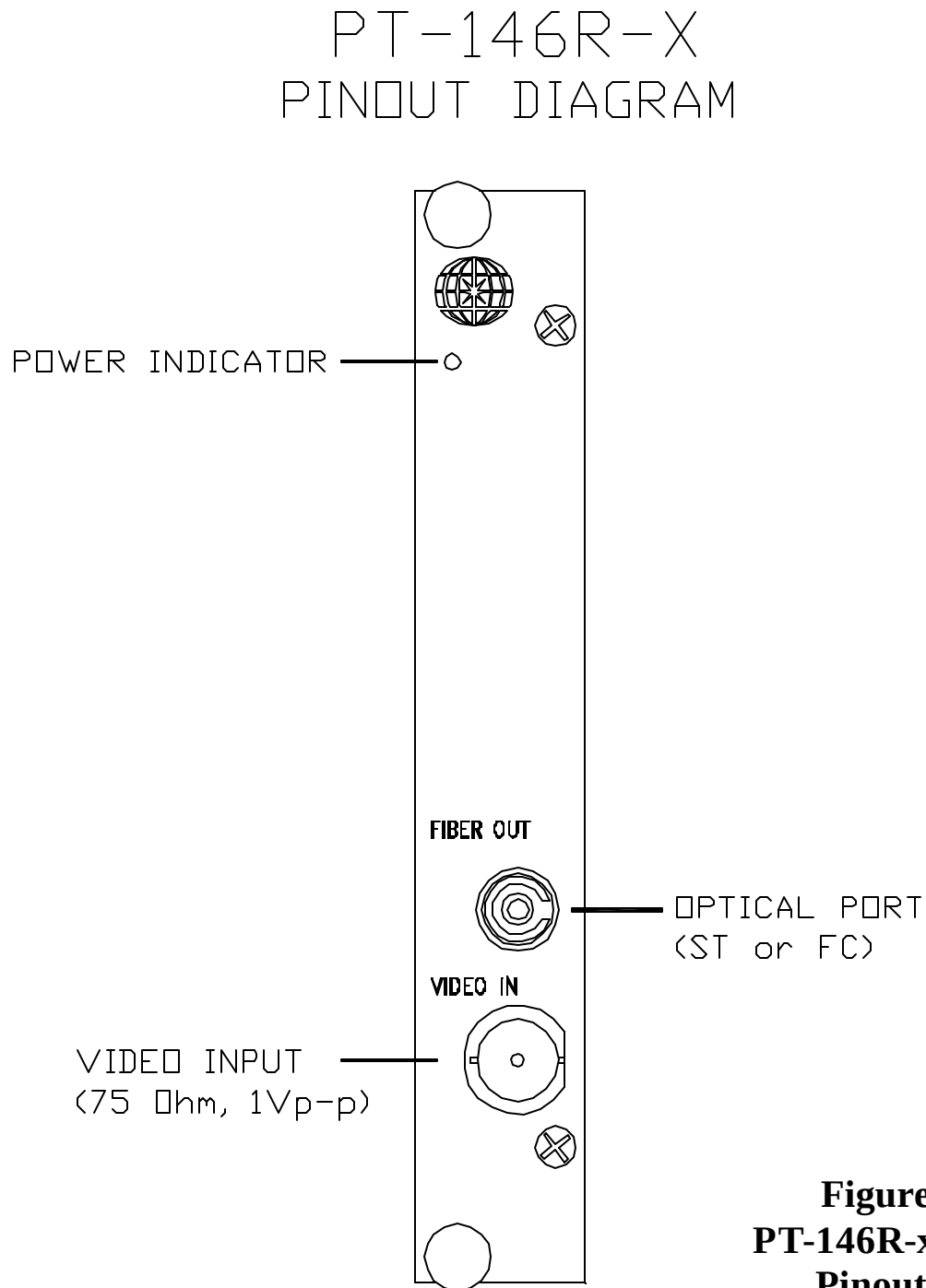
| Optical Specifications       |                            |                            |                           |                    |                      |                                  |
|------------------------------|----------------------------|----------------------------|---------------------------|--------------------|----------------------|----------------------------------|
| Fiber Type/Size<br>(um)      | Optical<br>Output<br>(dBm) | Rx<br>Sensitivity<br>(dBm) | Optical<br>Budget<br>(dB) | Wavelength<br>(nm) | Optical<br>connector | Optical<br>Dynamic<br>Range (dB) |
| Multimode (SLED)<br>62.5/125 | -13                        | -33                        | 20                        | 850                | ST                   | 39                               |
| Multimode (SLED)<br>62.5/125 | -16                        | -33                        | 17                        | 1300               | ST                   | 39                               |
| Single-mode (Laser)<br>9/125 | -7                         | -35                        | 28                        | 1310               | ST, FC               | 41                               |
| Single-mode (Laser)<br>9/125 | -10                        | -35                        | 25                        | 1550               | ST, FC               | 41                               |



Compliant with Class 1 Laser Safety Rating.

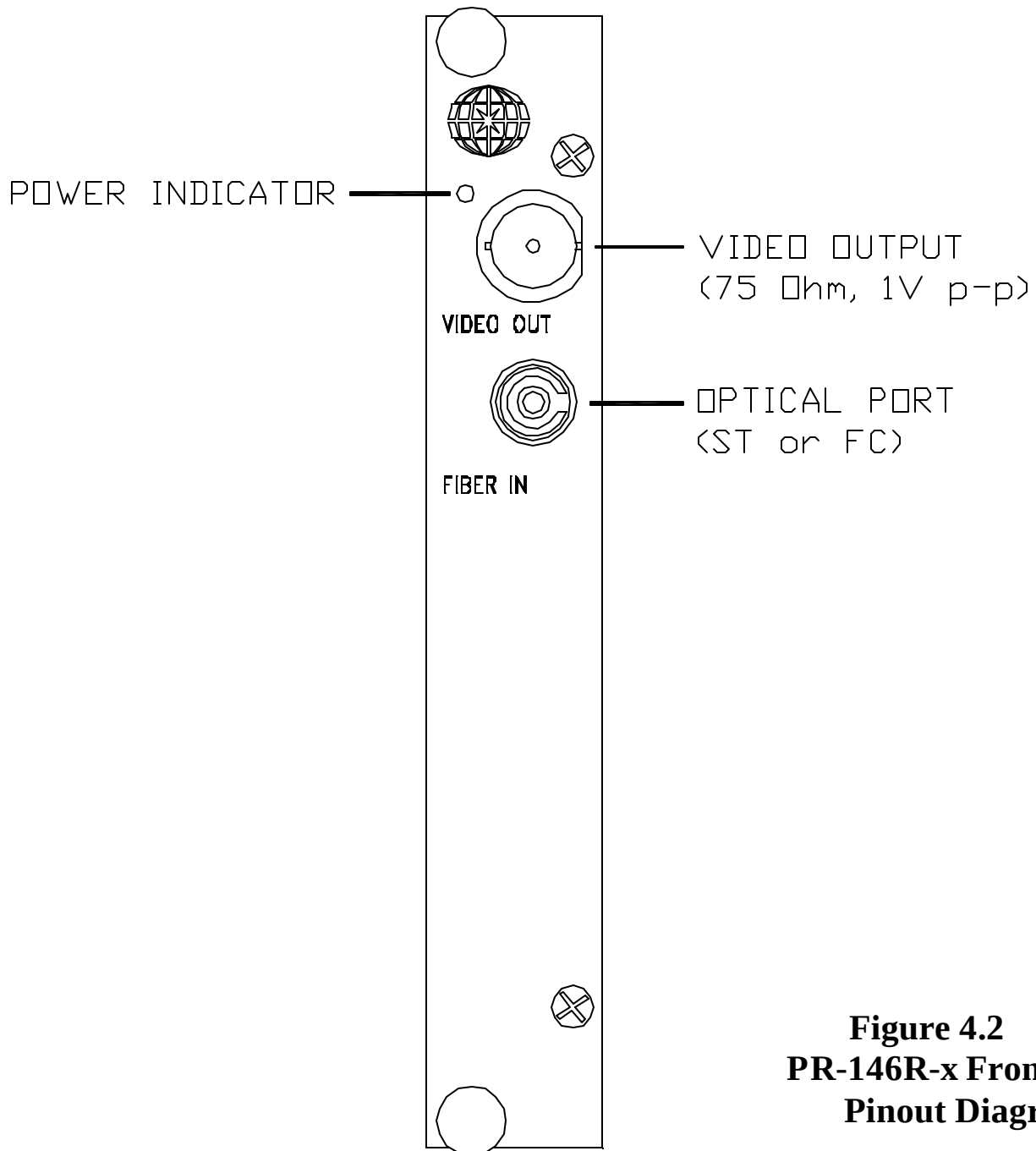
## 4.0 Front Panel Layout

The figures below show the video input/output connector and Power LED indicator locations for the PT-140/145M & PR-140/145R modules.

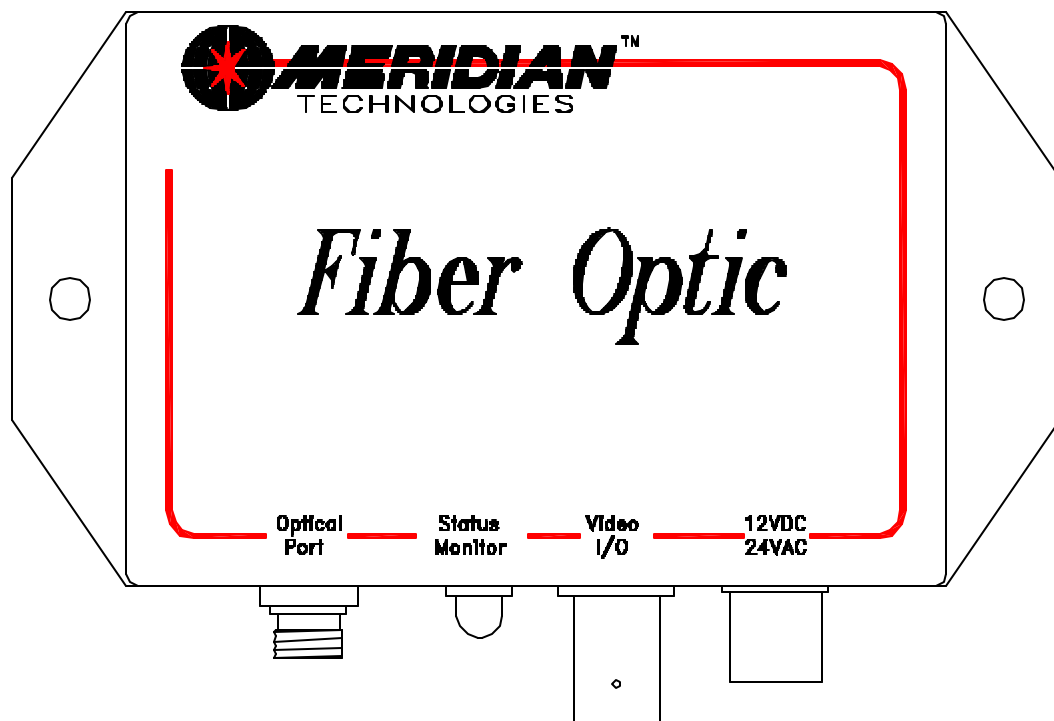


**Figure 4.1**  
**PT-146R-x Front Panel**  
**Pinout Diagram**

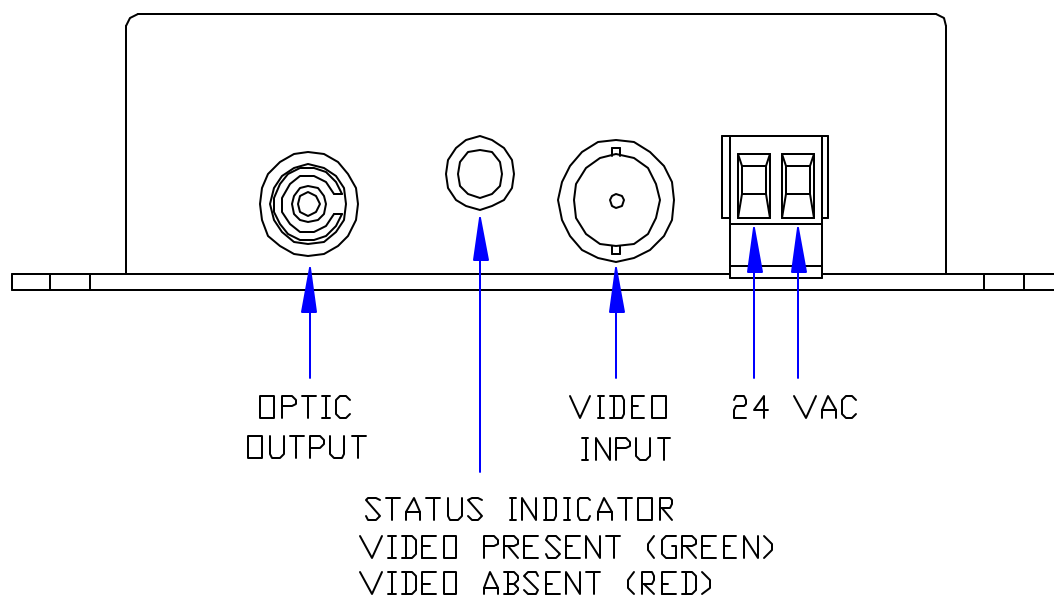
# PR-146R-X PINOUT DIAGRAM



**Figure 4.2**  
**PR-146R-x Front Panel**  
**Pinout Diagram**



PT146M-X  
PINOUT DIAGRAM



**Figure 4.3**  
**PT-146M-x Front Panel Pinout Diagram**

## 6.0 Product Part Number Variations

The table below lists the various part numbers associated with different module types:

| Product Part Numbers |                                                        |           |
|----------------------|--------------------------------------------------------|-----------|
| Transmitter          | Description                                            | Receiver  |
| PT-146M-0            | FM video Transmitter, 850nm, multimode, shelf mount    | PR-146R-0 |
| PT-146R-0            | FM video Transmitter, 850nm, multimode, rack mount     |           |
| PT-146M-1            | FM video Transmitter, 1300nm, multimode, shelf mount   | PR-146R-1 |
| PT-146R-1            | FM video Transmitter, 1300nm, multimode, rack mount    |           |
| PT-146M-2            | FM video Transmitter, 1310nm, single-mode, shelf mount | PR-146R-2 |
| PT-146R-2            | FM video Transmitter, 1310nm, single-mode, rack mount  |           |

## 5.0 Troubleshooting

Below is a listing of several problems that may arise during the installation & operation of the modules. If you are having difficulty installing or operating the modules please refer to this list below.

**Problem:** *Module does not fit in chassis slots*

**Action:** Check module orientation. Meridian “Globe” must be oriented on the top left hand side of the module  
Make sure the card guides in the chassis are aligned with the extrusion on the module

**Problem:** *Card power LED does not light when power to the module/subrack is applied or power indicator turns on and off*

**Action:** Check power supply to ensure that it is plugged in and turned on. If flashing continues, move module to another chassis or location in the same chassis, if available.

**Problem:** *No video at output of module*

**Action:** Check to ensure that the video coax cables are attached to the appropriate channels on both the transmitter and receiver modules. If no video is still present, check to ensure that the monitor is ON and the video cable is connected to the correct video port on the Rx module.

If the problem still exists after reviewing the above items, please contact Meridian technical support (+1-516-285-1000).

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