



## **Fiber Optic Video/Data Transmission System**

### ***Installation Instructions***

**Part Number:**

**FT/FR-4W-x (ST/FC)**

***4-Channel Video Tx/Rx***

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## 1.0 Product Description

Meridian's FT/FR-4W-x products are fiber optic modems that transmit four channels of Uni-directional Video over one optical fiber.

This product series uses Meridian's standard 1-slot wide chassis mount card assembly and plugs into the following Meridian chassis: SR-500/S, SR-1000/S, SR-1001/S, SR-1002/S, SR-1200/S, SR-1500/S, SR-1600/S and SR-2001 & SR-2000 series equipment chassis.

An ST optical connector is available for multimode and single-mode applications. The FC optical connector is used only for single-mode signals.

Conformal coating provides an additional level of protection from environments with high humidity.

## 2.0 Installation

Series FT/FR-4W-x products are one-slot wide cards and, as such, occupy one slot in Meridian's standard chassis. To install in these 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.

**Note:** A fully loaded 19" sub-rack 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-2000/1 whenever possible.

### 3.0 Product Signal Format & Specifications

The FT/FR-4W-x series products transmit and receive the following signals:

| Signal Type          | Channels | Transmit | Receive |
|----------------------|----------|----------|---------|
| NTSC/PAL/SECAM video | 4        | FT-4W-x  | FR-4W-x |

These are the specifications:

| VIDEO              |                              |
|--------------------|------------------------------|
| Format             | NTSC, PAL, SECAM             |
| Voltage/Impedance  | 1Vp-p, 75 Ohm, 1.5Vp-p (max) |
| Bandwidth          | 5 Hz to 7 MHz @ -3 dB        |
| Differential Gain  | <0.6%                        |
| Differential Phase | <0.3°                        |
| SNR                | >67dB (weighted)             |
| Return Loss        | >30dB                        |
| Field Tilt         | <0.5%                        |

| CONNECTORS |                                          |
|------------|------------------------------------------|
| Video      | 75 Ohm BNC w/gold center pin             |
| Optical    | Single-mode – ST or FC<br>Multimode - ST |

#### 3.1 Optical Specifications

The table below lists the optical specifications for both single-mode and multimode fiber applications.

| Optical Specifications |                                    |                      |                            |                     |                 |                   |                            |                   |
|------------------------|------------------------------------|----------------------|----------------------------|---------------------|-----------------|-------------------|----------------------------|-------------------|
| Meridian Optical Code  | Fiber Type/Size (um)               | Optical Output (dBm) | Receiver Sensitivity (dBm) | Optical Budget (dB) | Wavelength (nm) | Optical Connector | Optical Dynamic Range (dB) | Max Distance (Km) |
| 0                      | Multimode (Laser)<br>62.5 / 125    | -5                   | -25                        | 20                  | 850             | ST                | 25                         | 1                 |
| 1                      | Multimode (Laser)<br>62.5 / 125    | -5                   | -25                        | 20                  | 1300            | ST                | 25                         | 2                 |
| 3                      | Single-mode (FP Laser)<br>9 / 125  | -5                   | -25                        | 20                  | 1310            | ST, FC            | 25                         | 50                |
| 4                      | Single-mode (FP Laser)<br>9 / 125  | -5                   | -25                        | 20                  | 1550            | ST, FC            | 25                         | 70                |
| 7, 9, CWDM             | Single-mode (DFB Laser)<br>9 / 125 | +1                   | -25                        | 26                  | CWDM            | ST, FC            | 25                         | 90                |

# 4.0 Pin-out diagrams

## FT-4W-x PINOUT DIAGRAM

### STATUS INDICATORS

PWR -POWER (GREEN)  
 DIAG - CARD DIAGNOSTIC\*  
 (GREEN-OK, RED-ALARM)  
 TX C/L -TX CARRIER (GREEN)  
 /OVERLOAD (RED)

### STATUS INDICATORS CH.1

SYN -SYNC PRESENT (GREEN)  
 / LOAD ABSENT (RED)  
 VIDEO -VIDEO PRESENT (GREEN)  
 /OVERLOAD (RED)

### STATUS INDICATORS CH.2

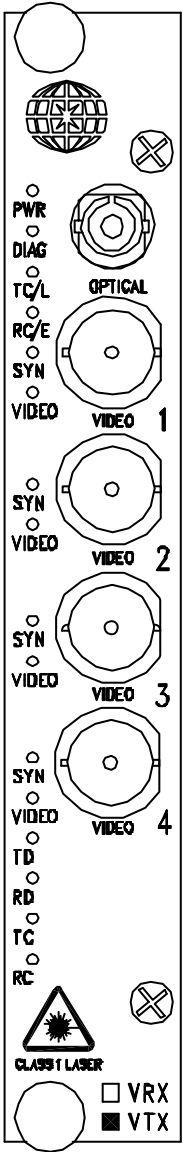
SYN -SYNC PRESENT (GREEN)  
 / LOAD ABSENT (RED)  
 VIDEO -VIDEO PRESENT (GREEN)  
 /OVERLOAD (RED)

### STATUS INDICATORS CH.3

SYN -SYNC PRESENT (GREEN)  
 / LOAD ABSENT (RED)  
 VIDEO -VIDEO PRESENT (GREEN)  
 /OVERLOAD (RED)

### STATUS INDICATORS CH.4

SYN -SYNC PRESENT (GREEN)  
 / LOAD ABSENT (RED)  
 VIDEO -VIDEO PRESENT (GREEN)  
 /OVERLOAD (RED)



OPTICAL PORT IN/OUT  
 (ST, FC)

VIDEO INPUT (CH.1)

VIDEO INPUT (CH.2)

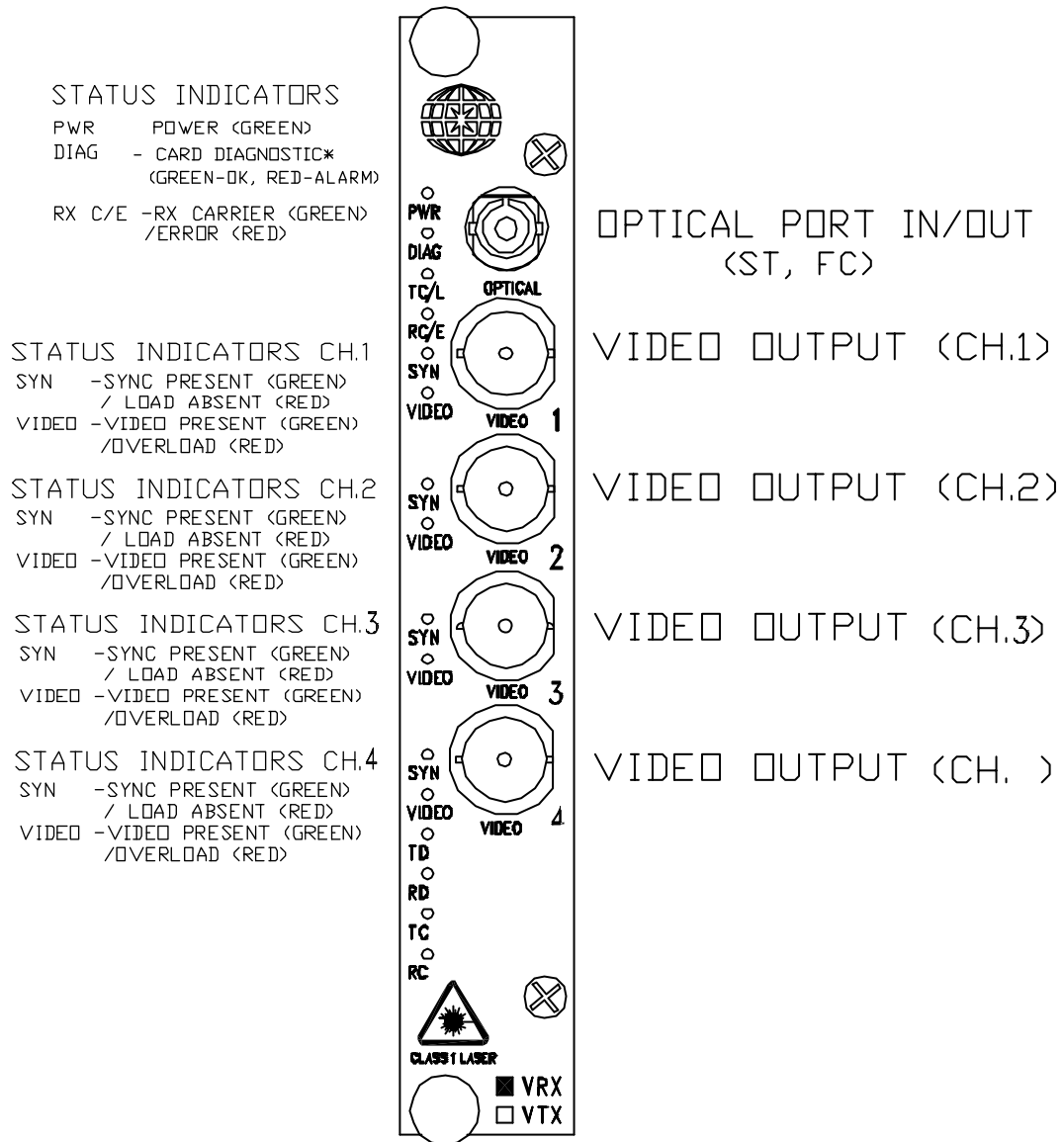
VIDEO INPUT (CH.3)

VIDEO INPUT (CH.4)

FT-4W-x Front Panel Layout Diagram

# FR-4W-x

## PINOUT DIAGRAM



FR-4W-x Front Panel Layout Diagram

## 5. 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 output*

**Action:** Check the SpectraView display on the monitor for an indication of what the problem may be. Also, check to ensure that the video channel-specific LEDs are on (Green). Also, check to ensure that the optical LEDs are ON. 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.

**Problem:** *Video image is dark*

**Action:** Check the iris control on the camera to ensure that it is open to the proper amount for the conditions.

**Problem:** *Video image is too bright and appears overexposed*

**Action:** Check the Video overload indicator on the Rx module. If it is Red, the video signal level is too high and the CCTV iris should be checked to ensure that it is open properly for the conditions.

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



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