Installation/Operation Instructions

Fiber Optic Video & Data Transmission System

Part Numbers:

ST/SR-2V(W)-x Series
ST/SR-4V-x Series

(2 & 4-Channel Video Multiplexer/Demultiplexer)

ST/SR-2V(W)-x

ST/SR-4V-x

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1.0 Product Description

Meridian's product series ST-2V(W)-x, ST-4V-x and SR-2V(W)-x, SR-4V-x are fiber optic modems that transmit either two or four channels of uni-directional digitized video over one optical fiber using digital transmission technologies. 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-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis.

The 2-channel version is available in both 8 & 10-bit configuration while the 4-ch card is available in an 8-bit configuration.

2.0 Installation

Series ST-2V(W)-x, ST-4V-x and SR-2V(W)-x, SR-4V-x products are one-slot wide cards and, as such, occupy one slot in Meridian's standard chassis (SR-500/S, SR-1000/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment 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.

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-2000/1 whenever possible.

3.0 Product Signal Format & Specifications

The ST & SR-2(4)V(W) series products transmit and receive the following signals:

Signal Type	Channels	Transmit (8-bit)	Receive (8-bit)	Transmit (10-bit)	Receive (10-bit)
NTSC/PAL video	2	ST-2V-x	SR-2V-x	ST-2W-x	SR-2W-x
NTSC/PAL video	4	ST-4V-x	SR-4V-x	-NA-	-NA-

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

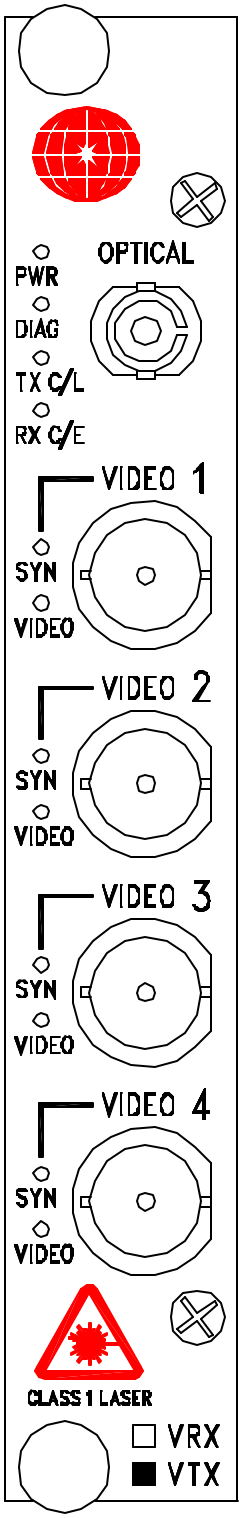
Video	
Format	NTSC, PAL, SECAM
Voltage/Impedance	1Vp-p, 75 Ohm, 1.5Vp-p (max)
Differential Gain	<0.6%
Differential Phase	$<0.3^{o}$
SNR	>60dB (8-bit); >67dB (10-bit) (weighted)
Bandwidth	5Hz – 6.8MHz, -3dB
Return Loss	>30dB
Field Tilt	<0.5%

Connectors	
Video	75 Ohm BNC w/gold center pin
Optical	Singlemode – ST or FC Multimode – ST

Optical Specifications								
Fiber Type/Size (um)	Optical Output (dBm)	Rx Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical connector	Optical Dynamic Range (dB)	Approx. Maximum Distance (km) (2-ch)	(4-ch)
Multimode (FP Laser) 62.5/125	-3	-24	21	1300	ST	24	4 (8-bit) 2 (10-bit)	2
Singlemode (FP Laser) 9/125	-3	-24	21	1310	ST, FC	24	50	50

4.0 Front Panel Pinout Assignment Diagram

Figures 4.1 and 4.2 below show the front panel layout, connector location and pinout assignment for both the ST & SR cards in a 4-ch configuration.



ST-4V-X

PINOUT DIAGRAM

OPTICAL PORT
STATUS INDICATORS

PWR -POWER (GREEN)
DIAG -NA
TX C/L -TX CARRIER (GREEN)/OVERLOAD (RED)
RX C/E -NA

VIDEO INPUT (CH.1)
STATUS INDICATORS

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

VIDEO INPUT (CH.2)
STATUS INDICATORS

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

VIDEO INPUT (CH.3)
STATUS INDICATORS

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

VIDEO INPUT (CH.4)
STATUS INDICATORS

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

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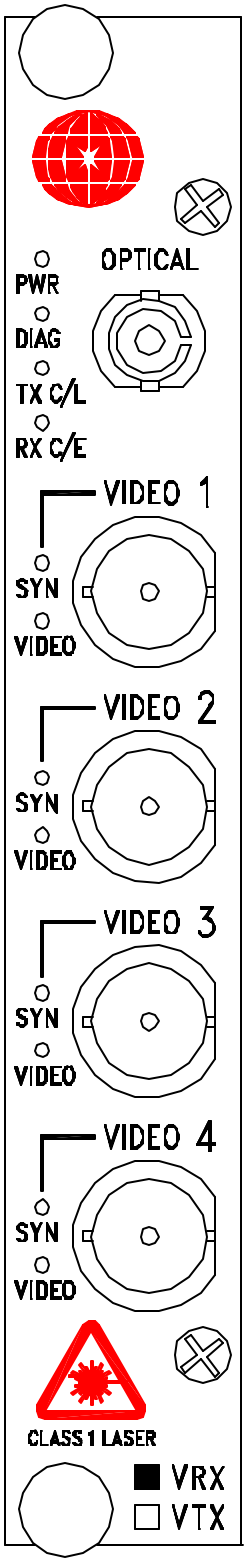
Figure 4.1
ST-4V-x Front Panel Layout Diagram



SR-4V-X

PINOUT DIAGRAM

OPTICAL PORT

STATUS INDICATORS

PWR -POWER (GREEN)
DIAG -CARD DIAGNOSTIC
(GREEN-OK, ERROR-RED)
TX C/L - NA
RX C/E - RX CARRIER (GREEN)/ERROR (RED)

VIDEO OUTPUT (CH.1)
STATUS INDICATORS

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

VIDEO OUTPUT (CH.2)
STATUS INDICATORS

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

VIDEO OUTPUT (CH.3)
STATUS INDICATORS

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

VIDEO OUTPUT (CH.4)
STATUS INDICATORS

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

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Figure 4.2
SR-4V-x Front Panel Layout Diagram

5.0 Front Panel LED Indicators

Both the Transmitter (ST) and Receiver (SR) cards have front panel mounted indicators to provide visual indication of the operational status of the card and each of the channels. The above front panel layout diagrams also list and describe the function of the various card and channel LED indicators.

When an active video source is connected to any one of the input channels, both the *Sync* and *Video* lights will turn on Green. When the receiver is connected to the transmitter via fiber, the corresponding channel *Sync* and *Video* LEDs will illuminate Green.

6.0 Product Part Number Variations

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

Basic module description:

Video: 2 or 4-channel, one way (8 or 10-bit digital encoding), specified by part #.

Transmitter	Receiver	# of Channels	Video Resolution	# Fibers & Type	Wavelength
ST-2V-1	SR-2V-1	2	8-bit	1 (MM)	1300nm
ST-2V-3	SR-2V-3	2	8-bit	1 (SM)	1300nm
ST-2W-1	SR-2W-1	2	10-bit	1 (MM)	1300nm
ST-2W-3	SR-2W-3	2	10-bit	1 (SM)	1300nm
ST-4V-1	SR-4V-1	4	8-bit	1 (MM)	1310nm
ST-4V-3	SR-4V-3	4	8-bit	1 (SM)	1310nm

For proper operation, it is necessary to match the transmitter (ST) with the associated receiver module (SR).

7.0 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 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).