



Installation/Operation Instructions
Fiber Optic Video Transmission System

Part Number:

DT-4V-x
(4-channel Video Transmitter)

DR-4V-x
(4-channel Video Receiver)

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1. Product Description

The DT/DR-4V(W)-x series is a multi-channel video fiber optic digital video transmission system that converts four (4) composite video signals to modulated light for transmitting over one optical fiber using digital transmission technologies. The DT/DR-4V(W) series is compatible with NTSC, PAL and SECAM video signals.

This product series uses Meridian's standard 2-slot wide chassis mount card assembly and plugs into the following Meridian chassis: SR-1000, SR-1000/S, SR-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis.

Below is a listing of the various models available:

Video Tx/Rx Module Variations					
Tx Model	Rx Model	# Video Channels	Digital resolution	Fiber interface	Optical Connector
DT-4V-1	DR-4V-1	4	8-bit	Multimode	ST
DT-4V-3	DR-4V-3	4	8-bit	Singlemod	FC
DT-4V-3/ST	DR-4V-3/ST	4	8-bit	Singlemod	ST
DT-4W-1	DR-4W-1	4	10-bit	Multimode	ST
DT-4W-3	DR-4W-3	4	10-bit	Singlemod	FC
DT-4W-3/ST	DR-4W-3/ST	4	10-bit	Singlemod	ST

The digital modules consist of various plug-in personality function cards or SIMs. In addition to the optical SIM located at the top of the modules, the DT/DR-4V(W) series utilizes two, 2-channel video SIM cards. The optical output (Tx) connector is located on the left side of the transmitter module while the optical input (Rx) connector is located on the right side of the receiver module. The second and third SIMs contains the video coaxial interface. These video modules can also be made in other video multiplexer configurations including 2, 6 and 8-channel one-way transmission and other combinations of bi-directional video transmission systems.

2. Product Specifications

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

Video		
	10-bit Video	8-bit Video
Format	NTSC, PAL, SECAM	NTSC, PAL, SECAM
Voltage/Impedance	1Vp-p, 75 Ohm, 1 .5Vp-p (max)	1Vp-p, 75 Ohm, 1 .5Vp-p (max)
Differential Gain	<1%	<1%
Differential Phase	<0.7°	<0.7°
SNR	>60dB (weighted)	>67dB (weighted)
Return Loss	>30dB	>30dB
Field Tilt	<0.5%	<0.5%

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

Fiber Type/Size (um)	Optical Output (dBm)	Rx Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical connector	Optical Dynamic Range (dB)
Multimode (FP Laser) 62.5/125	-3	-22	19	850	ST	22
Multimode (FP Laser) 62.5/125	-3	22	19	1300	ST	22
Singlemode 9/125	-3	22	19	1310	ST, FC	22
Singlemode 9/125	+2	-22	24	1310DFB	ST, FC	22
Singlemode 9/125	+3	-22	25	1550DFB	ST, FC	22

3. Installation

Series DV-4V(W) series products are two-slot wide cards and, as such, occupy two slots in Meridian’s standard chassis (SR-1000, 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.

4. Front Panel Layouts

The figures below show the connector and LED indicator locations for the transmitter and receiver modules, respectively. There are a number of diagnostic indicators on the front panel of each module. In addition, each of the video input/output channels has indicators associated with them to provide quick visual indications of the channel activity. These indicators are listed below:

Transmitter (DT-4V) Indicators		
Indicator	Location	Function
Tx carrier	Under optical output connector	Optical output (Green – OK, Red – error)
Power	Left side of module	Green – ON
Video #1 (each input)	Under video input connectors	Green – Sync received
Video #2 (each input)	Under video input connectors	Video signal – Green OK, Red – video overload

Receiver (DR-4V) Indicators		
Indicator	Location	Function
Rx Optical signal	Under optical output connector	Optical input (Green – OK, Red – error)
Rx Carrier	Under optical output connector	Optical Carrier input (Green – OK, Red – error)
Power	Left side of module	Green – ON
Video #1 (each input)	Under video input connectors	Green – Sync received
Video #2 (each input)	Under video input connectors	Video signal – Green OK, Red – video overload

OPTICAL PORT

STATUS INDICATORS

1. POWER (GREEN)
2. NA

STATUS INDICATORS

1. TX CARRIER (GREEN)
- / ERROR (RED)

VIDEO INPUT (CH.1)

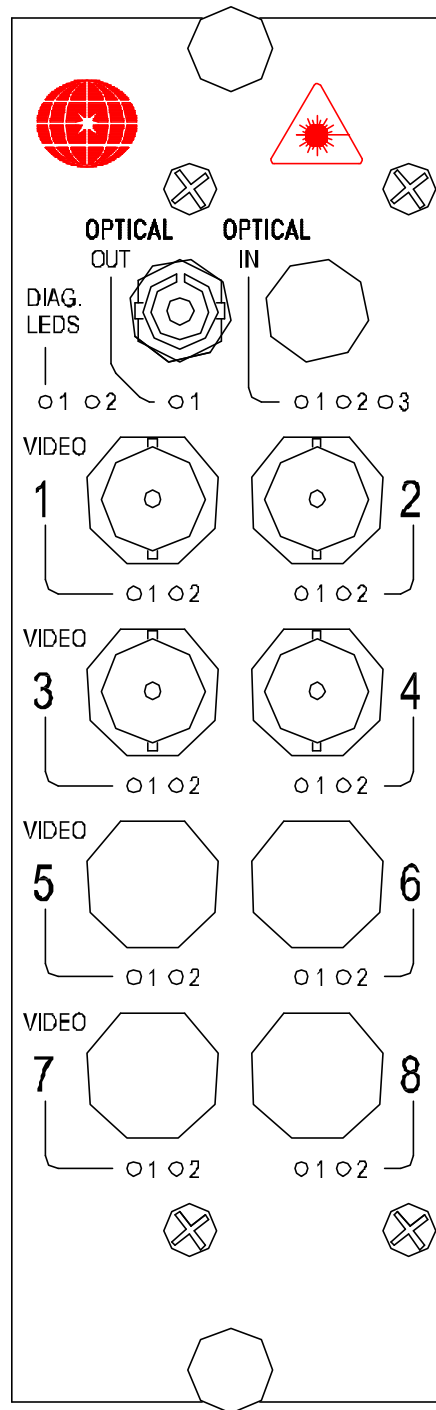
STATUS INDICATORS

1. SYNC PRESENT (GREEN)
2. VIDEO PRESENT (GREEN)
- / OVERLOAD (RED)

VIDEO INPUT (CH.3)

STATUS INDICATORS

1. SYNC PRESENT (GREEN)
2. VIDEO PRESENT (GREEN)
- / OVERLOAD (RED)



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PINOUT DIAGRAM

VIDEO INPUT (CH.2)

STATUS INDICATORS

1. SYNC PRESENT (GREEN)
2. VIDEO PRESENT (GREEN)
- / OVERLOAD (RED)

VIDEO INPUT (CH.4)

STATUS INDICATORS

1. SYNC PRESENT (GREEN)
2. VIDEO PRESENT (GREEN)
- / OVERLOAD (RED)

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Figure 4.1
DT-4V-x Front Panel Layout/Pinout Diagram

DR-4V-X

PINOUT DIAGRAM

STATUS INDICATORS

1. POWER (GREEN)
2. NA

STATUS INDICATORS

1. NA

VIDEO OUTPUT (CH.1)

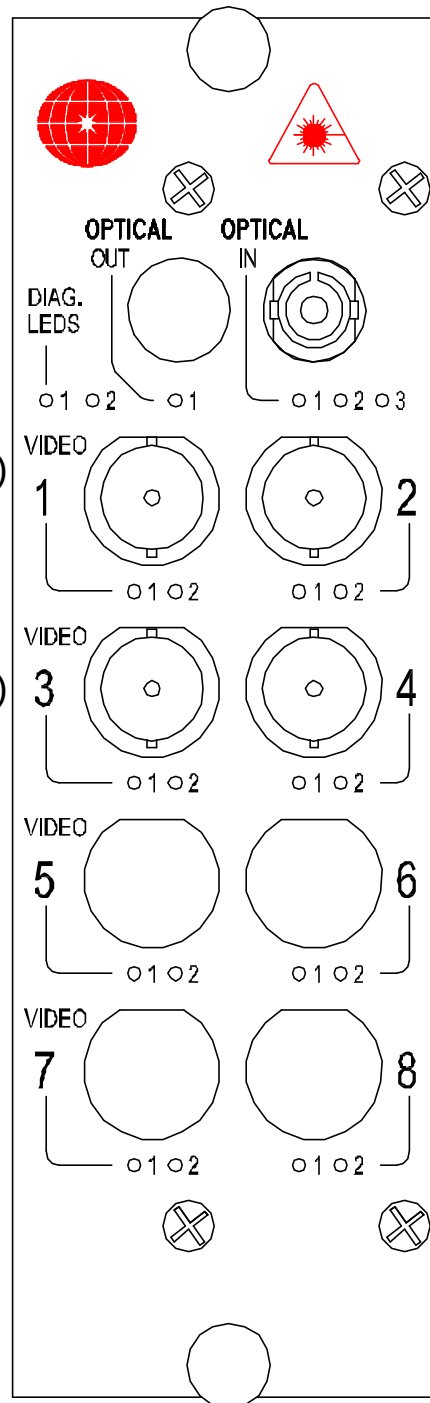
STATUS INDICATORS

1. SYNC PRESENT (GREEN)
2. VIDEO PRESENT (GREEN)
/ OVERLOAD (RED)

VIDEO OUTPUT (CH.3)

STATUS INDICATORS

1. SYNC PRESENT (GREEN)
2. VIDEO PRESENT (GREEN)
/ OVERLOAD (RED)



OPTICAL PORT

STATUS INDICATORS

1. RX OPTICAL SIGNAL (GREEN)
2. NA / ABSENT (RED)
3. RX CARRIER (GREEN)/ERROR (RED)

VIDEO OUTPUT (CH.2)

STATUS INDICATORS

1. SYNC PRESENT (GREEN)
2. VIDEO PRESENT (GREEN)
/ OVERLOAD (RED)

VIDEO OUTPUT (CH.4)

STATUS INDICATORS

1. SYNC PRESENT (GREEN)
2. VIDEO PRESENT (GREEN)
/ OVERLOAD (RED)

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Figure 4.2
DR-4V-x Front Panel Layout/Pinout 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 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 exists after reviewing the above items, please contact Meridian technical support (516-285-1000).