PT/PR-300R-x/x Series

Fiber Optic Video & Data/Audio Transmission System

Installation Instructions

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www.Meridian-tech.com

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1.0 Product Description

Meridian's product series PT-300R-x/x and PR-300R-x/x series products are fiber optic modems that transmit one channel of uni-directional composite video and one, bi-directional data channel of either RS-232, RS-422 or RS-485 (2 or 4-wire) or audio signal over two optical fibers using FM 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-1200/S, SR-1500/S, and SR-2001 & SR-2000 series 19" equipment chassis.

2.0 Installation

Series PT-300R and PR-300R products are one-slot wide cards and, as such, occupy only 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.

Front Panel Indicators – There is a front panel power indicator on the PT/PR-300 series modems. In addition, the modems with audio have additional audio level indications next to the audio input/output potentiometers.

3.0 Product Signal Format & Specifications

The PT & PR-300R series products transmit and receive the following signals:

Signal Type	Channels	Transmit	Receive
NTSC/PAL video	1	Yes	Yes
RS-232 (Tx & Rx data)	1	PT-300R-V3/3	PR-300R-V3/3
RS-422 (Tx & Rx data)	1	PT-300R-V4/4	PR-300R-V4/4
RS-485 (2 wire) (Tx & Rx data)	1	PT-300R-V8/8	PR-300R-V8/8
RS-485 (4 wire) (Tx & Rx data)	1	PT-301R-V8/8	PR-301R-V8/8
600 ohm Balanced Audio	1	PT-300R-V5A/5A	PR-300R-V5A/5A

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

Video	
Format	NTSC, PAL, SECAM
Voltage/Impedance	1Vp-p, 75Ω, 1.5Vp-p (max)
Differential Gain	<1%
Differential Phase	$<0.7^{o}$
SNR	>67dB (weighted)
Return Loss	>30dB
Field Tilt	<0.5%

Data	
Formats	RS-232, RS-422, RS-485, bi-phase, Manchester
Date Rate (RS-232)	DC to 125Kb/s
Data Rate (RS-422 & RS-485)	DC to 300Kb/s
Bit Error Rate (BER)	Better than 10^{-9}

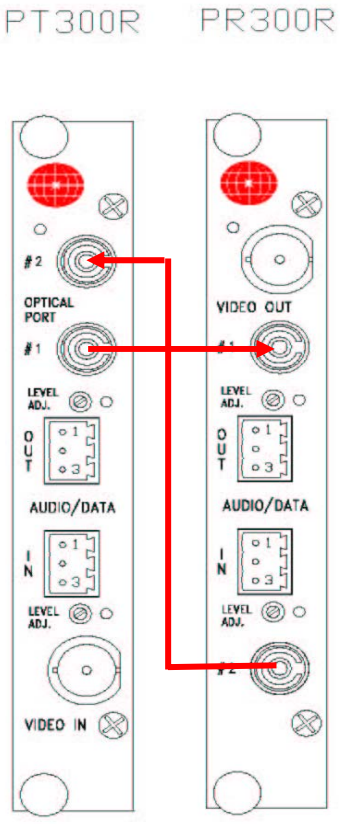
Audio	
In/Out Impedance	600Ω, Balanced
Frequency Response	10Hz to 20KHz
SNR	>90dB (weighted) @ 1KHz
In/Out Level	-6 to +6dBm (4Vp-p, max)
THD	<0.01% @ 1KHz
Digitized Resolution	24 bit

(Audio Adjustment: Each modem (PT & PR) has a front panel mounted potentiometer for adjusting the input and output of the audio channel. Adjustments can be made from -6 dBm (counter-clockwise) to +6 dBm (clockwise). The audio should be first adjusted at the input side to approx. 0 dBm. This will cause the audio input level indicator to go on. Once this is done, the audio output level should be adjusted for approx. 0 dBm output. As with the input adjustment, the output level LED should also illuminate.)

4.0 Optical Connections

The PT/PR-300R-x/x series products utilize two fibers for bi-directional optical communications between the transmitter (PT) and receiver (PR) units. The correct way to optically interface the two complementary units (PT & PR) is shown in the figure on the right. The top optical connector on the PT unit is connected to the bottom optical connector on the receiver. Likewise, the bottom optical connector on the PT unit is connected to the top optical connector on the PR units. It is imperative that the optical interfaces are connected this way to ensure proper operation.

The data/audio input/output connectors are identified on the attached front-panel diagrams in Section 5.0



Optical Specifications						
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	-24	21	1300/850	ST	24
Singlemode (FP Laser) 9/125	-3	-24	21	1310/1550	ST, FC	24
Singlemode (DFB Laser) 9/125	+3	-24	27	1310/1550	ST, FC	24

Connectors	
Video	75Ω BNC w/gold center pin
Data/Audio	Two, 3-pin terminal blocks (see front-panel diagrams for input/output connections)
Optical	Singlemode – ST or FC Multimode - ST

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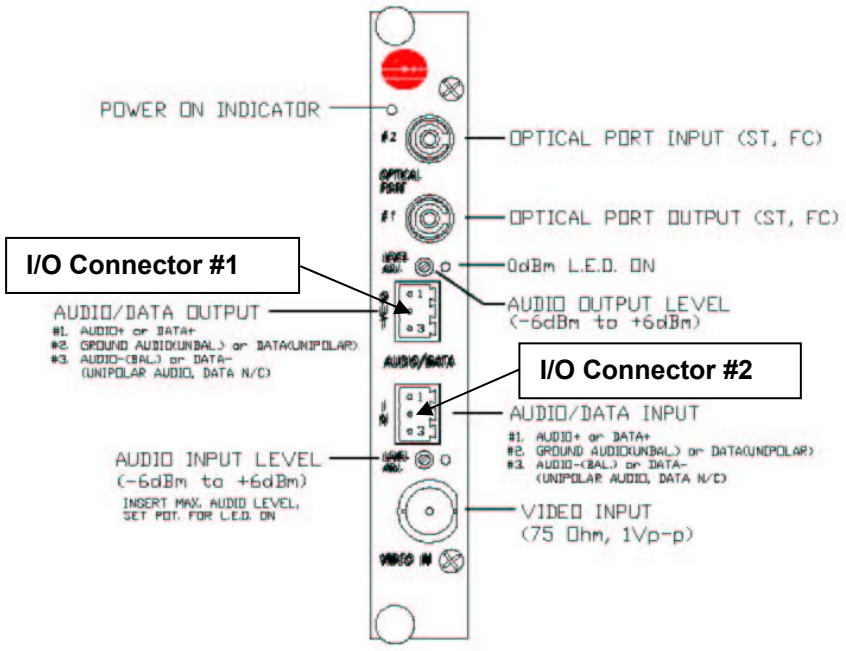
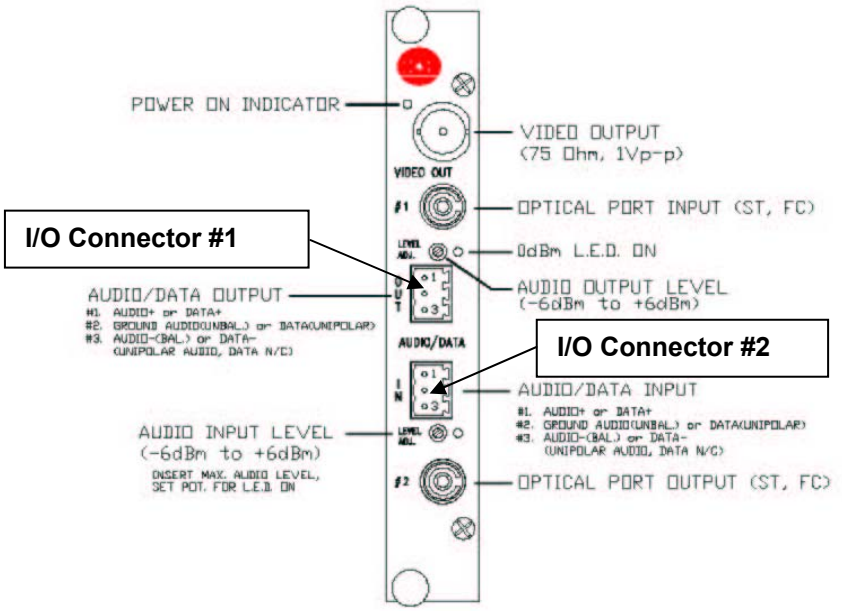
5.0 Front Panel Pinout Diagrams

The figures below show the front panel layout along with the front panel input/output interface layouts and data/audio pinout information.

PT300R
PINOUT DIAGRAM



PR300R
PINOUT DIAGRAM



6.0 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, data or audio at output of module*
Action: Check to ensure that the fibers between the PT & PR units are connected properly (see section 4.0)

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.

Problem: *No Data or Audio*
Action: Check the data input status indicator light #1 on the transmit module to ensure it is on (indicating a data input signal). Also check the data output status indicator light #2 on the corresponding receiver module to ensure that the signal is being transmitted and received. If not, please check the data input/output and fiber connections.

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