## MERIDIAN TECHNOLOGIES

### FM Video with One Duplex Channel and One Return Channel

VIDEO + AUDIO OR DATA
+ DATA OR AUDIO
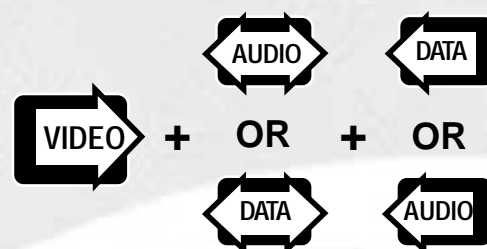
## FEATURES:

- Surface Mount Technology (SMT) for High Reliability and Repeatability

- Hot Swappable Cards

- Laser Based Back-Biased Photo Detection Circuitry for Stable Optical Output Over Full Temperature Range (Singlemode)

- ST™, FC Optical Connector

- 7 MHz Video Bandwidth

- 10 Hz to 20 KHz Audio Bandwidth

- DC to 300 Kb/s Data Rate

- Meets EIA RS-170, RS-343A

- Frequency Modulated (FM) Transmission

- SpectraSmart™ Compatible

- Meets NEMA TS1/TS2 and Caltrans Specifications

- Utilizes Internal Switching Power Supplies

- Meets RS-250C Transmission Requirements

- Compatible with All NTSC, PAL, or SECAM Systems

- Automatically Resettable Solid-State Current Limiters on All Power Lines: Provides Equipment Protection

- Wide Optical Dynamic Range: Optical Attenuators are Never Required

- BNC Video Connector

- DB Type Connector for Data and/or Audio

## DESCRIPTION:

The Series 400i is a Frequency Modulated (FM), fiber optic video system that transmits one video signal in one direction along with a duplex audio or data signal plus a return audio or data signal for distances of 6Km over one multimode fiber and 100Km over one singlemode fiber. PAL, SECAM or NTSC formats, in B&W or color, are seamlessly transmitted. The Series 400's capabilities are enhanced by it's compatibility with Meridian's PC based SpectraSmart™ Network Management and Diagnostic software system. SpectraSmart supervises the operating parameters of the transmission system such as status on video levels, sync, FM carrier detect, voltage, temperature, optical levels, etc., and external equipment which are attached to the Meridian equipment. See the SpectraSmart™ brochure for more details.

## CONFIGURATIONS:

The 400 product family is available as rack mount cards that can be installed in all of Meridian's card chassis, desk chassis and 19″ racking frames. This system can be configured in either star (module to rack) or trunking (rack to rack) configurations. This product requires no user adjustments & features superior quality and performance.

## APPLICATIONS:

Security and Surveillance
Intelligent Transportation Systems (ITS)
Access Control
Distance Learning

# SPECIFICATIONS:

## Video

| | |
|---|---|
| Format . . . . . . . . . . . . . . . . . | NTSC, PAL, SECAM |
| Voltage/Impedance . . . . . . . | 1Vp-p, 75 Ohm, 1.5 Vp-p max. |
| Bandwidth . . . . . . . . . . . . . | 5 Hz to 7 MHz @ -3dB |
| Differential Gain . . . . . . . . | <2% typical |
| Differential Phase . . . . . . . | <1.5° typical |
| SNR . . . . . . . . . . . . . . . . . . | 64 dB weighted* |
| Return Loss . . . . . . . . . . . . | >30 dB |
| Field Tilt . . . . . . . . . . . . . . | <0.5% max. |
| Carrier Frequency . . . . . . . . | 70 MHz |

## Audio

| | |
|---|---|
| I/O Impedance. . . . . . . . . . . | 600 Ohm, 10 kOhm, 47 kOhm |
| . . . . . . . . . . . . . . . . . . . . . | Balanced/Unbalanced |
| I/O Level. . . . . . . . . . . . . . . | -6 to +6 dBm |
| Frequency Responce. . . . . . . | 10 Hz to 20 KHz |
| THD. . . . . . . . . . . . . . . . . . | <1%, 1 KHz @ max modulation |
| SNR. . . . . . . . . . . . . . . . . . . | >60 dB (weighted)* |

## Data

| | |
|---|---|
| Formats. . . . . . . . . . . . . . . . | RS-232D, RS-422A, GenLock, |
| . . . . . . . . . . . . . . . . . . . . . | RS-485 2w/4w, Manchester, |
| . . . . . . . . . . . . . . . . . . . . . | Biphase, 4-20 mA Current Loop, |
| . . . . . . . . . . . . . . . . . . . . . | TTL, Contact Closure,Sensornet |
| Rate. . . . . . . . . . . . . . . . . . | DC to 300 Kb/s |
| Bit Error Rate. . . . . . . . . . . | $10^{-9}$ * |

## Connectors

| | |
|---|---|
| Video . . . . . . . . . . . . . . . . . | 75 Ohm BNC (Gold Center Pin) |
| Audio. . . . . . . . . . . . . . . . . | DE-15 Female |
| Data. . . . . . . . . . . . . . . . . . | DE-15 Female |
| Optical . . . . . . . . . . . . . . . . | ST™ , FC |
| Power . . . . . . . . . . . . . . . . . | 2 Pin Terminal Block |

## Power **

| | |
|---|---|
| Card . . . . . . . . . . . . . . . . . . | 3.2 W |
| Module . . . . . . . . . . . . . . . . | 130 mA @ 24 VAC |
| Adapter for SR-500/S. . . . . . | Model WP-24 |

## Indicators (LEDs)

| | |
|---|---|
| Red . . . . . . . . . . . . . . . . . . . | Power On |

## Physical

Dimensions:

| | |
|---|---|
| Module (w/SR-500) . . . . . . . . | 182 mm (7.16") L, 132 mm (5.21") W |
| . . . . . . . . . . . . . . . . . . . . . . . | 29 mm (1.15") H |
| Card . . . . . . . . . . . . . . . . . . . | 160 mm (6.3") L, 20 mm (0.8") W |
| . . . . . . . . . . . . . . . . . . . . . . . | 100 mm (4") H |

Weight:

| | |
|---|---|
| Module (w/SR-500) . . . . . . . . | 900 g (32 oz.) |
| Card . . . . . . . . . . . . . . . . . . . | 450 g (16 oz.) |
| Number of Rack Slots . . . . . . | One |

## Enviromental

| | |
|---|---|
| Operating Temperature. . . . . | -40°C to +74°C |
| Storage Temperature. . . . . . . | -55°C to +85°C |
| Relative Humidity. . . . . . . . . | 0 to 95% Non-condensing |

## Quality

| | |
|---|---|
| MTBF. . . . . . . . . . . . . . . . . . | >175,000 hours @ Ground Fix |
| . . . . . . . . . . . . . . . . . . . . . . | 35°C per MIL217F |

\* As per RS-250C, measured @ 1Km (multimode), @ 10Km (singlemode)
\*\* Due to variations of drivers and diagnostic options, power shown at maximum measurements
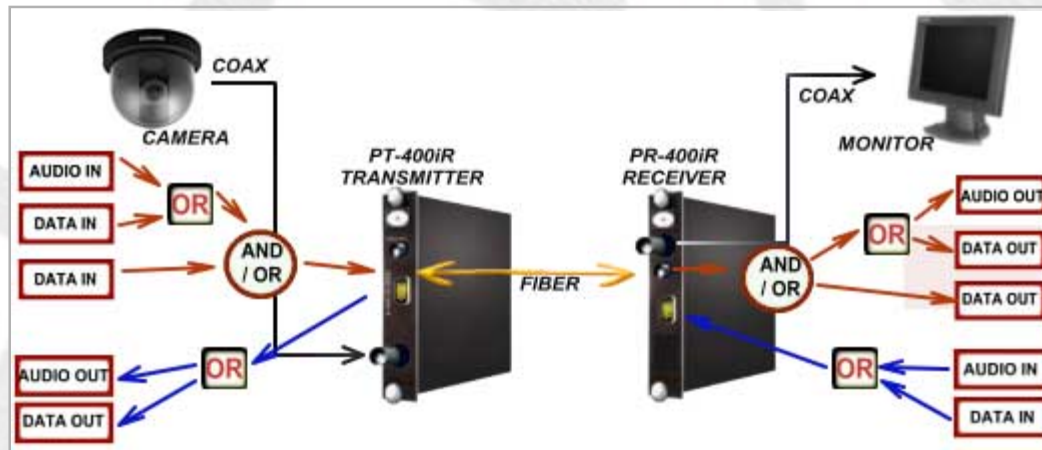


# OPTICAL:

| Fiber Type/Size (um) | Optical Output (dBm) | Reciever Sensitivity (dBm) | Optical Budget (dB) | Wavelength (nm) | Optical Connector | Optical Dynamic Range (dB) |
|---|---|---|---|---|---|---|
| **Multimode* (SLED)** | | | | | | |
| 62.5/125 | -13 | -34 | 21** | 850 | ST | 39 |
| 62.5/125 | -16 | -34 | 18** | 1300 | ST | 39 |
| 62.5/125 | -15/-18 | -33/-33 | 15** | 850/1300 | ST | 39 |
| **Singlemode (Laser)** | | | | | | |
| 9/125 | -7*** | -36 | 29 | 1310 | ST, FC | 41 |
| 9/125 | -10*** | -36 | 26 | 1550 | ST, FC | 41 |
| 9/125 | -10/-10 | -34 | 24 | 1310/1550 | ST, FC | 41 |

\* Distance is limited to fiber loss, splices and fiber bandwidth
\*\* For 50/125μm fiber, subtract 3dB
\*\*\* Higher output lasers available