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**Architectural and Engineering Specifications**

The following are A&E specs on Meridian Technologies' fiber optic transmission systems for video, voice and data. As per design requirements, choose transmitters, receivers and transceivers which are available as stand alone modules or card units for EIA 19"L x 5.25"H (18 slots and power supply), 19"L x 10.5"H (36 slots and dual, redundant power supplies) subracks or a variety of desk chassis - 2, 4 and 7 slots (latter with one or dual redundant supplies).

YOUR PARTNER IN FIBER OPTIC COMMUNICATIONS HAS ENGINEERED SYSTEMS THAT ARE ON THE CUTTING EDGE, HAVE NO APPROVED EQUAL AND FEATURE:

a) State of the art Surface Mount Technology (SMT) components in PCB designs. Results are excellent use of real estate: smaller boxes and greater density, Ex: 3 channels of video (AGC on receiver) per card;

b) Intensity Modulation transmission schemes for systems that require video only with maximum distance of 4Km - utilizing emitters and detectors @ 850nm on multimode fiber, 50/125u and 62.5/125u with ample margin of gain (over and above the 4Km) to account for LED aging (6dB);

c) Frequency Modulation for systems that require video only with distances of up to 6Km - utilizing emitters and detectors @ 850nm or 1300nm on multimode fiber, 50/125u and 62.5/125u; with ample margin of gain to account for LED aging (3dB);

d) Frequency Modulation for systems that require multiple video signals on single fiber or video multiplexed with audio and/or data sub-carriers, in one or two directions on single and dual fibers, for use with 50/125u and 62.5/125u multimode or singlemode;

e) Best optical loss budgets; best dynamic range that covers 50/125 and 62.5/125 multimode fibers regardless of distance (short or long) and for singlemode fibers;

f) SpectraSmart (tm), status monitor LEDs in modules and a microprocessor based, real time diagnostic and Network Management w/graphics display and access keypad in subrack (local diagnostics) or remote to Personal Computer via Ethernet or RS-232 port.

Please note: 62.5/125u is popular for datacom; 50/125u is best suited for video communications. One major reason is FM based multiplexed video systems or w/multiple sub carriers -video, audio and data in one or two directions on same fiber. FM (as opposed to IM) designed with center frequencies of 70MHz or higher, feature superior signal to noise ratio, immunity from electrical crosstalk (between channels) and are not affected by non linear sources as 1300nm LEDs and Lasers. When using higher frequency FM systems with 62.5 fiber @ 850nm, transmission distance is limited not by the loss but by the lack of bandwidth @ the 850nm window of 62.5/125u. 50/125u fiber is readily available with 600Mhz in each window (850nm and 1300nm).

**Series 100** Fiber Optic IM Video - system description: for (fixed cameras) video uni directional transmission choose from the following transmitters and receivers.

**PT-100u** - FO video transmitter micro for cameras in pressurized housings

1- The Fiber Optic Video System shall consist of Meridian Technologies PT-100u fiber optic transmitter micro at camera location.

2- Unit shall convert PAL, SECAM or NTSC video signal from source to Intensity Modulated (IM) light for coupling into 50/125u or 62.5/125u multimode fiber.

3- Dimensions shall be 38mm(1.5")L x 13mm(0.5") dia.; unit to include 4 pin male electrical input connector* and threaded ST optical receptacle to accommodate nut and O ring for maintaining atmospheric pressure. *Electrical connection to camera shall be via Meridian Technologies HPT-100u harness.

4- Optical Source shall be an 850nm LED (light emitting diode); w/output power (50% APL) of -20dbM into 50/125u; -17dBm into 62.5/125u fiber.

5- Unit shall be powered by 12VDC supply and operate at temperatures - 20C to +65C; humidity 0 to 95% non condensing.

6- The HPT-100U harness shall include 4 pin female connector, mini coaxial cable, twisted pair wire (for power supply) and BNC connector. The length of the assembly will depend on dimensions of camera and housing. Use Meridian Technologies P/N 94-005-02001 interconnect drawing.

**PT-100uB** - FO video transmitter micro BNC for plug-in connection to cameras

1- The Fiber Optic Video System shall consist of Meridian Technologies PT-100uB fiber optic transmitter micro BNC at camera location.

2- Unit shall convert PAL, SECAM or NTSC video signal from source to Intensity Modulated (IM) light for coupling into 50/125u or 62.5/125u multimode fiber.

3- Dimensions shall be: 51mm(2")L x 16mm(0.65")dia.; unit to include BNC video connector, duplex wire for power supply and ST optical receptacle.

4- Optical source shall be an 850nm LED (light emitting diode); w/output power (50% APL) of -20dbM into 50/125u; -17dBm into 62.5/125u fiber.

5- Unit shall be powered by 12VDC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PT-100M** - FO video transmitter module for wallmount, polemount or inside camera housing installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PT-100M fiber optic transmitter module at camera location.

2- Unit shall convert PAL, SECAM or NTSC video signal from source to Intensity Modulated (IM) light for coupling into 50/125u or 62.5/125u multimode fiber.

3- Dimensions shall be: 90mm(3.5")L x 60mm(2.3)"W x 25mm(1")H (add 30mm for mounting flanges); unit to include BNC video connector; 2 pin terminal block connector for power; an ST optical receptacle; a tri colored LED for status monitoring.

4- Status monitor LED for diagnostics shall indicate the following:

Color green = presence of sync and video; power on
Color amber = presence of sync; absence of video; power on
Color red = absence of electrical input signal; power on
No color = absence of power
Flashing any color = low input voltage (<10V)

5- Optical Source shall be an 850nm LED (light emitting diode); w/output power (50% APL) of -20dbM into 50/125u; -17dBm into 62.5/125u fiber.

6- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PT-130R** - FO 3 channel video transmitter card for wall, desk or rackmount installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PT-130R fiber optic 3 channel transmitter card at camera (or if loop through - monitor) location.

2- Unit shall convert PAL, SECAM or NTSC video signal from source to Intensity Modulated (IM) light for coupling into 50/125u or 62.5/125u multimode fiber.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include 3 BNC video connectors and 3 ST optical receptacles.

4- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Optical sources shall be 850nm LEDs; w/output power (50% APL) of -20dbM into 50/125u; -17dBm into 62.5/125u multimode fiber.

7- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**PR-100M** - FO AGC video receiver module for wallmount installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PR-100M fiber optic receiver module at monitor location.

2- Unit shall convert Intensity Modulated (IM) light from 50/125u or 62.5/125u multimode fiber to PAL, SECAM or NTSC video signal.

3- Dimensions shall be: 90mm(3.5")L x 60mm(2.3")W x 25mm(1")H (add 30mm for mounting flanges); unit to include BNC video connector; 2 pin terminal block connector for power; an ST optical receptacle; a tri colored LED for status monitoring.

4- Status monitor LED for diagnostics shall indicate the following:

| | |
|---|---|
| Color green | = signal within optical budget; power on |
| Color amber | = signal within the last 3dB of optical budget; power on |
| Color red | = signal exceeds receiver sensitivity; power on |
| No Color | = absence of power |
| Flashing any color | = low input voltage (<10V) |

5- Unit shall employ an 850nm PIN Diode detector, feature Automatic Gain Control (AGC) and have sensitivity of -46dBm.

6- System video performance shall be:

| | |
|---|---|
| Video In/Output Level | 75 Ohm (unbalanced) |
| Video In/Output Impedance | 1.0V p-p, 1.5V max |
| Bandwidth | 10Hz to 15MHz (-3dB) |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | >67dB. |

7- System optical performance shall be:

| | 50/125u | 62.5/125u |
|---|---|---|
| Optical loss budget | 26 dB | 29 dB |
| Optical Dynamic range | 34dB | 34dB |

8- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PR-130R** - FO 3 channel AGC video receiver card for wall, desk or rackmount installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PR-130R fiber optic 3 channel receiver card at monitor location.

2- Unit shall convert per channel Intensity Modulated (IM) light from 50/125u or 62.5/125u multimode fiber to PAL, SECAM or NTSC video signal.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include 3 BNC video connectors and 3 ST optical receptacles.

4- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,

c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Unit shall employ 850nm PIN Diode detectors, feature Automatic Gain Control (AGC) and have sensitivity of -46dBm in each of 3 channels.

7- System video performance per channel shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 10Hz to 15MHz (-3dB) |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | >67dB |

8- System optical performance per channel shall be:

| | 50/125u | 62.5/125u |
|---|---|---|
| Optical loss budget | 26 dB | 29 dB |
| Optical Dynamic range | 34dB | 34 dB |

9- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**end of Series 100**

**Series 140/190, 145/195** Fiber Optic FM video - system description: for (fixed cameras) video uni directional transmission, choose from the following transmitters and receivers.

**PT-140M** - FO video transmitter module for wallmount, polemount or inside camera housing installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PT-140M fiber optic transmitter module at camera location.

2- Unit shall convert PAL, SECAM or NTSC video signal from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 90mm(3.5")L x 60mm(2.3)"W x 25mm(1")H (add 23mm for mounting flanges); unit to include BNC video connector; 2 pin terminal block for power; an ST optical for multimode or FC optical for singlemode fiber; an LED for status monitoring.

4- Status monitor LED for diagnostics shall indicate the following:

| | Green | No Color | Red (alarm condition) |
|---|---|---|---|
| LED | video present | video absent | N/A |

5- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

6- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

7- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

8- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PT-190R** - FO 3 channel video transmitter card for wall, desk or rackmount installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PT-190R fiber optic 3 channel transmitter card at camera (or if loop through - monitor) location.

2- Unit shall convert PAL, SECAM or NTSC video signal from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include 3 BNC video connectors and 3 ST opticals for multimode or FC for singlemode.

4- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Optical sources for multimode shall be 850nm LEDs for up to 2Km or 1300nm LEDs for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

7- Optical sources for singlemode shall be:

1310nm Lasers for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Lasers for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

8- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

**PR-140M** - FO video receiver module for wallmount installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PR-140M fiber optic receiver module at monitor location.

2- Unit shall convert Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM or NTSC video signal. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H; unit to include BNC video connector; 2 pin terminal block for power; an ST optical receptacle for multimode, FC for singlemode fiber; an LED for status monitoring.

4- LED shall indicate:

| | Green | Red (alarm condition) |
|---|---|---|
| LED | Operating | Not Operating |

5- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments and have sensitivity of -34dBm.

6- System video performance shall be:

| | |
|---|---|
| Video/In/Output Impedance | 75 Ohm (unbalanced) |
| Video/In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

| 7- System optical performance shall be: | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 15 dB | 18 dB | 26 to 36 dB |

| | | | |
|---|---|---|---|
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

8- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

**PR-190R** - FO 3 channel video receiver card for wall, desk or rackmount installation 1- The Fiber Optic Video System shall consist of Meridian Technologies PR-190R fiber optic 3 channel receiver card at monitor location.

2- Unit shall convert per channel Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM or NTSC 75 Ohm composite video signal. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include 3 BNC video connectors and 3 ST optical for multimode, FC for singlemode.

4- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Unit shall employ 850nm or 1300nm PIN Diode detectors for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments and have sensitivity of -34dBm in each of three channels.

7- System video performance per channel shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5 max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

8- System optical performance per channel shall be:

| | 50/125u | 62.5/125u | Singlemode |
|---|---|---|---|
| Optical loss budget | 15 dB | 18 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

9- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

**PT-145M** - FO high resolution video transmitter module for wallmount, polemount or inside camera housing installation



1- The Fiber Optic High Resolution Video System shall consist of Meridian Technologies PT-145M fiber optic transmitter module at camera location.

2- 2- Unit shall convert PAL, SECAM, NTSC or high resolution video signal from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 90mm(3.5")L x 60mm(2.3)"W x 25mm(1")H (add 23mm for mounting flanges); unit to include BNC video connector; 2 pin terminal block for power; an ST optical for multimode or FC optical for singlemode fiber; an LED for status monitoring.

4- LED shall indicate:

| | Green | No Color | Red (alarm condition) |
|---|---|---|---|
| LED | Video Present | Video Absent | N/A |

5- Optical source for multimode shall be a 1300nm LED for up to 5Km; w/output power (50% APL) of -17dBm into 50/125u; -13dBm into 62.5/125u fiber.

6- Optical source for singlemode shall be:

1310nm Lasers for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Lasers for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

7- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

**PT-195R** - FO 3 channel high resolution video transmitter card for wall, desk or rackmount installation

1- The Fiber Optic High Resolution Video System shall consist of Meridian Technologies PT-195R fiber optic 3 channel transmitter card at camera (or if loop through - monitor) location.

2- Unit shall convert PAL, SECAM, NTSC or high resolution video signal from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include 3 BNC video connectors and 3 ST opticals for multimode or FC for singlemode.

4- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Optical sources for multimode shall be 1300nm LEDs for up to 5 Km; w/output power (50% APL) of



-17dBm into 50/125u; -13dBm into 62.5/125u fiber.

7- Optical sources for singlemode shall be:

1310nm Lasers for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Lasers for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

8- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

**PR-145M** - FO high resolution video receiver module for wallmount installation

1- The Fiber Optic High Resolution Video System shall consist of Meridian Technologies PR-145M fiber optic receiver module at monitor location.

2- Unit shall convert Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM, NTSC or high resolution video signal. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H; unit to include BNC video connector; 2 pin terminal block for power; an ST optical receptacle for multimode, FC for singlemode fiber; an LED for status monitoring.

4- LED shall indicate:

| | Green | Red (alarm condition) |
|---|---|---|
| LED | Operating | Not Operating |

5- Unit shall employ a 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments and have sensitivity of -32dBm with multimode and -34dBm with singlemode fiber.

6- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 30MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 150MHz |

7- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 17 dB | 24 to 32 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

8- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.



**PR-195R** - FO 3 channel high resolution video receiver card for wall, desk or rackmount installation

1- The Fiber Optic High Resolution Video System shall consist of Meridian Technologies PR-195R fiber optic 3 channel receiver card at monitor location.
2- Unit shall convert per channel Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM, NTSC or high resolution video signal. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include 3 BNC video connectors and 3 ST optical for multimode, FC for singlemode.

4- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,

c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Unit shall employ 1300nm PIN Diode detectors for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments, have sensitivity of -32dBm with multimode fiber and -34dBm with singlemode fiber in each of the 3 channels.

7- System video performance per channel shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.oV p-p, 1.5V max |
| Bandwidth | 5Hz to 30MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 150MHz |

8- System optical performance per channel shall be:

| | 50/125u | 62.5/125u | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 17 dB | 24 to 32 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

9- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

**end of Series 140/190 and 145/195**



**Series 160/170/180** Fiber Optic FM Video, Audio, Data - system description: for (fixed cameras) video, uni directional transmission with one channel or stereo audio and/or one or two data, choose from

the following transmitters and receivers.

**PT-160M** - FO video w/1 audio or video w/1 data channel transmitter module for wallmount installation

1- The Fiber Optic Video and 1 Audio or Video w/1 Data System shall consist of Meridian Technologies PT-160M fiber optic transmitter module at camera location.

2- Unit shall convert PAL, SECAM or NTSC video and one audio or video and one data signal from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H; unit to include BNC video connector; DE15 (high density 15 pin) for audio and data, 2 pin terminal block for power; an ST optical for multimode or FC for singlemode; power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |

5- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

6- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

7- Optical source for singlemode shall be:

1310nm Lasers for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Lasers for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

8- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PT-160R** - FO video w/1 audio or video w/1 data transmitter card for wall, desk or rackmount installation

1- The Fiber Optic Video and 1 Audio or Video w/1 Data System shall consist of Meridian Technologies PT-160R fiber optic transmitter card at camera (or if loop through - monitor) location.



2- Unit shall convert PAL, SECAM or NTSC video and one audio or video and one data signal from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include BNC video connector, DE15 (high density 15 pin) for audio and data and ST optical for multimode or FC for singlemode; a power on led and Leds for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

8- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310nm Lasers for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Lasers for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

10- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**PR-160M** - FO video w/1 audio or video w/1 data receiver module for wallmount installation

1- The Fiber Optic Video and 1 Audio or Video w/1 Data System shall consist of Meridian Technologies PR-160M fiber optic receiver module at monitor location.



2- Unit shall convert Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM or NTSC video and one audio or video and one data signal. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H; unit to include BNC video connector; DE15 (high density 15 pin) for audio and data; 2 pin terminal block for power; an ST optical receptacle for multimode, FC for singlemode fiber; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |

5- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

6- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments and have sensitivity of -34dBm.

7- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5 max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

8- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

9- System data performance per channel shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |



10- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Optical loss budget | 15 dB | 18 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

11- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PR-160R** - FO video w/1 audio or video w/1 data receiver card for wall, desk or rackmount installation

1- The Fiber Optic Video and 1 Audio or Video and 1 Data System shall consist of Meridian Technologies PR-160R fiber optic receiver card at monitor location.

2- Unit shall convert Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM or NTSC video and one audio or video and one data signal. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include BNC video connector, DE15 (high density 15 pin) for audio and data and ST optical for multimode or FC for singlemode; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

8- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments and have sensitivity of -34dBm.



9- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |

| | |
|---|---|
| Video In/Output Level | 1.0V p-p, 1.5 max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

9- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

10- System data performance per channel shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125u | 62.5/125u | Singlemode |
|---|---|---|---|
| Optical loss budget | 15 dB | 18 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

12- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**PT-170M** - FO video w/2 audio or video w/2 data or video w/1 audio and 1 data transmitter module for wallmount installation

1- The Fiber Optic Video and 2 Audio or Video and 2 Data or Video, 1 Audio and 1 Data System shall consist of Meridian Technologies PT-170M fiber optic transmitter module at camera location.

2- Unit shall convert PAL, SECAM or NTSC 75 Ohm composite video and two audio or video and two data or video, one audio and one data signals from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H; unit to include BNC video connector; DE15 (high density 15 pin) for audio and data; 2 pin terminal block for power; an ST optical for multimode or FC for singlemode; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |

5- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

6- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

7- Optical source for singlemode shall be:

1310nm Lasers for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Lasers for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

8- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PT-170R** -

FO video w/2 audio or video w/ 2 data or video w/1 audio and 1 data transmitter card for wall, desk or rackmount installation

1- The Fiber Optic Video and 2 Audio or Video and 2 Data or Video, one Audio and one Data System shall consist of Meridian Technologies PT-170R fiber optic transmitter card at camera (or if loop through - monitor) location.

2- Unit shall convert PAL, SECAM or NTSC video and two audio or video and two data or video, one audio and one data signals from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include BNC video connector, DE15 (high density 15 pin) for audio and data and ST optical for multimode or FC for singlemode; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.



6- Card shall feature:
a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,

c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

8- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310nm Lasers for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Lasers for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

10- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**PR-170M** - FO video w/2 audio or video w/2 data or video w/1 audio and 1 data receiver module for wallmount installation

1- The Fiber Optic Video and 2 Audio or Video and two Data or Video, one Audio and one Data System shall consist of Meridian Technologies PR-170M fiber optic receiver module at monitor location.

2- Unit shall convert Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM or NTSC video and two audio or video and two data or video, one audio and one data signals. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H; unit to include BNC video connector; DE15 (high density 15 pin) for audio and data; 2 pin terminal block for power; an ST optical receptacle for multimode, FC for singlemode fiber; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |

5- Data formats shall be one of the following:



Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232
RS-422

4-20mA Current Loop
TTL
Contact Closure
RS-485

6- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments and have sensitivity of -34dBm.

7- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video IN/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

8- System audio performance per channel shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k, or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

9- System data performance per channel shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

10- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 15 dB | 18 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

11- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PR-170R** - FO video w/2 audio or video w/2 data or video w/1 audio and 1 data receiver card for wall, desk or rackmount installation

1- The Fiber Optic Video and 2 Audio or Video and 2 Data or Video, one Audio and one Data System shall consist of Meridian Technologies PR-170R fiber optic receiver card at monitor location.



2- Unit shall convert Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM or NTSC video and two audio signals. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include BNC video connector, DE15 (high density 15 pin) for audio and data and ST optical for multimode or FC for singlemode; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

8- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments and have sensitivity of -34dBm.

9- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

10- System audio performance per channel shall be:



| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |

| | |
|---|---|
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

10- System data performance per channel shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125u | 62.5/125u | Singlemode |
|---|---|---|---|
| Optical loss budget | 15 dB | 18 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

12- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**PT-180M** - FO video w/2 audio and 1 data or w/2 data 1 audio or w/3 data transmitter module for wallmount installation

1- The Fiber Optic Video, 2 Audio and 1 Data or Video, 2 Data and 1 Audio or Video and 3 data System shall consist of Meridian Technologies PT-180M fiber optic transmitter module at camera location.

2- Unit shall convert PAL, SECAM or NTSC video, two audio and one data; or video, two data and one audio; or video and three (3) data signals from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H; unit to include BNC video connector; DE15 (high density 15 pin) for audio and data; 2 pin terminal block for power; an ST optical for multimode or FC for singlemode; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

5- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232
RS-422
4-20mA Current Loop



TTL
Contact Closure
RS-485

6- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

7- Optical source for singlemode shall be:

1310nm Lasers for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Lasers for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

8- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PT-180R** - FO Video, 2 Audio and 1 Data or Video, 2 Data and 1 Audio or Video and 3 Data transmitter card for wall, desk or rackmount installation

1- The Fiber Optic Video, 2 Audio and 1 Data or Video, 2 Data and 1 Audio or Video w/3 Data System shall consist of Meridian Technologies PT-180R fiber optic transmitter card at camera (or if loop through - monitor) location.

2- Unit shall convert PAL, SECAM or NTSC video, two audio and one data; or video, two data and one audio; or video and 3 data signals from source to Frequency Modulated (FM) light for coupling into 50/125u or 62.5/125u multimode up to 5Km or if greater than 5Km into singlemode fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include BNC video connector, DE15 (high density 15 pin) for audio and data and ST optical for multimode or FC for singlemode; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Data formats shall be one of the following:



Manchester by American Dynamics
Biphase by Burle (Allegiant)
RS-232

RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

8- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310nm Lasers for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Lasers for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

10- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**PR-180M** - FO video w/2 audio and 1 data or w/2 data and 1 audio or w/3 data receiver module for wallmount installation

1- The Fiber Optic Video, 2 Audio and 1 Data or Video, 2 Data and 1 Audio or Video and 3 Data System shall consist of Meridian Technologies PR-180M fiber optic receiver module at monitor location.

2- Unit shall convert Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM or NTSC video, two audio and one data; or video, two data and one audio; or video and three (3) data signals. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H; unit to include BNC video connector; DE15 (high density 15 pin) for audio and data; 2 pin terminal block for power; an ST optical receptacle for multimode, FC for singlemode fiber; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

5- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
RS-232
RS-422
4-20mA Current Loop



TTL
Contact Closure
RS-485

6- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments and have sensitivity of -34dBm.

7- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

8- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

9- System data performance per channel shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

10- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 15 dB | 18 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

11- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PR-180R** - FO Video, 2 Audio and 1 data or Video, 2 Data and 1 Audio or Video and 3 Data receiver card for wall, desk or rackmount installation

1- The Fiber Optic Video, 2 Audio and 1 Data or Video, 2 Data and 1 Audio or Video and 3 Data System shall consist of Meridian Technologies PR-180R fiber optic receiver card at monitor location.

2- Unit shall convert Frequency Modulated (FM) light from 50/125u or 62.5/125u multimode if under 5Km or if over 5Km from singlemode fiber to PAL, SECAM or NTSC video, two audio and one data; or video, two data and one audio or video and three (3) data signals. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.



3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include BNC video connector, DE15 (high density 15 pin) for audio and ST optical for multimode or FC for singlemode; a power on led and LEDs for status monitoring.

4- LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent 4- Data formats shall be one of the following: |

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted removable fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, feature no user adjustments and have sensitivity of -34dBm.

8- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.5V p-p, 1.5V max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

9- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |



| | |
|---|---|
| Signal to Noise Ratio @ 1Km | 60 dB |

10- System data performance per channel shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125u | 62.5/125u | singlemode |
|---|---|---|---|
| Optical loss budget | 15 dB | 18 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

12- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**end of Series 160/170/180**



**Series 200** IM video and simplex return audio or data transceivers on two fibers - system description: for movable cameras that require simplex data, choose from the following transceivers:

**PT-200M** - FO video transmitter/audio or data receiver module for wallmount installation (camera end)

1- The Fiber Optic Video and simplex return Audio or Data shall consist of Meridian Technologies PT-200M fiber optic transceiver module at camera location.

2- Unit shall operate on two multimode fibers.

3- Unit shall convert PAL, SECAM or NTSC video signals from source to Intensity Modulated (IM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to data for camera PTZ control, sync. (genlock) or audio.

4- Dimensions shall be: 140mm(5.5")L x 108mm(4.25")W x 25mm(1")H (add 23mm for mounting flanges); unit to include BNC video connector; 2 pin terminal block for power; terminal block for audio or data (except up the Coax which has no connector - data is transmitted up the video coax cable); two (2) ST optical connectors for multimode; two LEDs for status monitoring.

5- LEDs for diagnostics shall indicate:

STATUS MONITOR 2 (IM video transmitter)

| | |
|---|---|
| Color Green | presence of sync and video input; power on |
| Color Yellow | presence of sync; absence of video; power on |
| Color Red | absence of electrical input signal; power on |
| No color | absence of power |
| Flashing any color | low input voltage (<10 VDC) |

STATUS MONITOR 1 (FM data receiver)

| | |
|---|---|
| Color Green | carrier (opt. signal) detected; power on |
| Color Red* | carrier (opt. signal) not detected; power on |
| Alternating colors (red and green) | data receive; power on |

* color red indicates that continuity must be checked.

6- Data formats shall be from the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
RS-232
RS-422
4-20mA Current Loop
TTL

7- Optical source for multimode shall be an 850nm LED for up to 5Km; w/output power (50% APL) of -20dbM into 50/125u; -17dBm into 62.5/125u fiber.

8- Unit shall employ an 850nm PIN Diode detector for multimode; require no user adjustments and



have sensitivity to -40dBm (except up the Coax sensitivity to -30dBm).

9- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

PT-200R - FO video transmitter/audio or data receiver card for rackmount installation (camera end)

1- The Fiber Optic Video and simplex return Audio or Data shall consist of Meridian Technologies PT-200R fiber optic transceiver card at camera location.

2- Unit shall operate on two multimode fibers.

3- Unit shall convert PAL, SECAM or NTSC video from source to Intensity Modulated (IM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to data for camera PTZ control, sync. (genlock) or audio.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8)"W or 40mm(1.7")W x 100mm(4")H; card to include BNC video connector; terminal block for audio or data (except up the Coax which has no connector - data is transmitted up the video coax cable); two (2) ST optical connectors for multimode.

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

8- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
RS-232
RS-422
4-20mA Current Loop
TTL

9- Optical source for multimode shall be an 850nm LED; w/output power (50% APL) of -20dbM into 50/125u; -17dBm into 62.5/125u fiber.

10- Unit shall employ an 850nm PIN Diode detector for multimode; require no user adjustments and have sensitivity to -40dBm (except up the Coax sensitivity to -30dBm).

11- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**PR-200M** - FO video receiver/audio or data transmitter module for wallmount installation (monitor end)

1- The Fiber Optic Video and simplex return Audio or Data shall consist of Meridian Technologies



PR-200M fiber optic transceiver module at monitor location.

2- Unit shall operate on two multimode fibers.

3- Unit shall receive from one fiber Intensity Modulated (IM) light and convert to PAL, SECAM or NTSC video; convert data from PTZ controller, genlock from sync generator or audio from source to Frequency Modulated (FM) light and transmit on second fiber.

4- Dimensions shall be: 140mm(5.5")L x 108mm(4.25")W x 25mm(1")H (add 23mm for mounting flanges); unit to include BNC video connector; 2 pin terminal block for power; terminal block for audio or data (except up the Coax which has no connector - data is transmitted up the video coax cable); two (2) ST optical connectors for multimode; 2 LEDs for status monitoring.

5- LEDs for diagnostics shall indicate:

STATUS MONITOR 2 (IM video receiver)

| | |
|---|---|
| Color Green | signal within optical budget; power on |
| Color Yellow | within the last 3dB of optical budget; power on |
| Color Red | signal exceeds receiver sensitivity; power on |
| No color | absence of power |
| Flashing any color low input voltage | (<10 VDC) |

STATUS MONITOR 1 (FM data transmitter)

| | |
|---|---|
| Color Green | carrier detected; power on |
| Color Red* | carrier not detected; power on |
| Alternating colors** (red and green) | data input detected; power on |

** American Dynamics Manchester units PR-200M (data) LEDs always alternate colors because clock is continually transmitted and detected.

6- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
RS-232D
RS-422A
4-20mA Current Loop
TTL

7- Optical source for multimode shall be an 850nm LED; w/output power (50% APL) of -20dbM into 50/125u; -17dBm into 62.5/125u fiber.

8- Unit shall employ an 850nm PIN Diode Detector for multimode; require no user adjustments and have sensitivity to -40dBm (except up the Coax sensitivity to -30dBm).

9- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |



| | |
|---|---|
| Bandwidth | 10Hz to 15mhz (-3dB) |

| | |
|---|---|
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |

10- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | 0 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

11- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

12- System optical performance shall be:

| | 50/125 | 62.5/125 |
|---|---|---|
| Optical loss budget | 20 dB | 23 dB |
| Optical Dynamic range | 23 dB | 23 dB |

13- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PR-200R** - FO video receiver/audio or data transmitter card for rackmount installation (monitor end)

1- The Fiber Optic Video and simplex return Audio or Data shall consist of Meridian Technologies PR-200R fiber optic transceiver card at monitor location.

2- Unit shall operate on two multimode fibers.

3- Unit shall receive from one fiber Intensity Modulated (IM) light and convert to PAL, SECAM or NTSC video; convert data from PTZ controller, genlock from sync generator or audio from source to Frequency Modulated (FM) light and transmit on second fiber.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W or 40mm(1.7") x 100mm(4")H; card to include BNC video connector; terminal block for audio or data (except up the Coax which has no connector - data is transmitted up the video coax cable); two (2) ST optical connectors for multimode.

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy



7- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
RS-232
RS-422
4-20mA Current Loop
TTL

8- Optical source for multimode shall be an 850nm LED; w/output power (50% APL) of -20dbM into 50/125u; -17dBm into 62.5/125u fiber.

9- Unit shall employ an 850nm PIN Diode detector for multimode; require no user adjustments and have sensitivity to -40dBm (except up the Coax sensitivity to -30dBm).

10- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 10Hz to 15mhz (-3dB) |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |

11- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47k Ohm (bal/unbal) |
| Audio In/Output Level | 0 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

12- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

13- System optical performance shall be:

| | 50/125 | 62.5/125 |
|---|---|---|
| Optical loss budget | 20 dB | 23 dB |
| Optical Dynamic range | 23 dB | 23 dB |

14- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**end of Series 200**

**Series 200i, 300i and 400i** FM video and simplex return audio or data; video and duplex audio or data; video, duplex audio and simplex return data or video, duplex data and simplex return audio transceivers on one fiber - system description: for movable cameras that require duplex data, or video w/duplex audio and genlock, choose from the following transceivers:

**PT-#00iM** - FO video, audio and/or data transmitter/audio and/or data receiver module for wallmount
| installation (camera end)
|
|_____# of signals=2, 3 or 4

1- The Fiber Optic

a- Video and simplex return Audio or Data shall consist of Meridian Technologies PT-200iM;

b- Video and duplex Audio or duplex Data shall consist of PT-300iM;

c- Video, duplex Audio and simplex return Data or Video, duplex Data and simplex return Audio shall consist of PT-400iM fiber optic transceiver module at camera location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert PAL, SECAM or NTSC video, audio and/or data signals from source to Frequency Modulated (FM) light to transmit; receive Frequency Modulated (FM) light from same fiber and convert to data for camera PTZ control, sync. (genlock) or audio. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include BNC video connector; one (1) or two (2) 3 pin terminal block connectors for audio or data; 2 pin terminal block for power; one (1) ST optical for multimode or FC for singlemode; an LED for status monitoring.

5- LED shall indicate:

| | Green | Red (alarm condition) |
|---|---|---|
| LED | Operating | Not Operating |

6- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

7- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

9- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

10- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

11- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C

12- Single mode field units shall incorporate environmentally (temperature) controlling circuitry for cooling/heating of lasers.

**PT-#00iR** - FO video, audio and/or data transmitter/audio and/or data receiver card for rackmount
| installation (camera end)
|
|_____# of signals=2, 3 or 4

1- The Fiber Optic

a- Video and simplex return Audio or Data shall consist of Meridian Technologies PT-200iR;

b- Video and duplex Audio or duplex Data shall consist of PT-300iR;

c- Video, duplex Audio and simplex return Data or Video, duplex Data and simplex return Audio shall consist of PT-400iR fiber optic transceiver card at camera location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert PAL, SECAM or NTSC video, audio and/or data signals from source to Frequency Modulated (FM) light to transmit; receive Frequency Modulated (FM) light from same fiber and convert to data for camera PTZ control, sync. (genlock) or audio. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W or 40mm(1.7")W x 100mm(4")H; card to include BNC video connector; one (1) or two (2) three pin terminal block connectors for audio or data; one (1) ST optical for multimode or FC for singlemode.

5- Card shall occupy one slot (or two slots if laser temperature controlling circuitry is incorporated) in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- LED shall indicate:

| | Green | Red (alarm condition) |
|---|---|---|
| LED | Operating | Not Operating |

8- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

9- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

10- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

11- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

12- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

13- Single mode field units shall incorporate environmentally (temperature) controlling circuitry for cooling/heating of lasers.

**PR-#00iM** - FO video, audio and/or data receiver/audio and/or data transmitter module for wallmount installation (monitor end)

|
|_____# of signals=2, 3 or 4

1- The Fiber Optic

a- Video and simplex return Audio or Data shall consist of Meridian Technologies PR-200iM;

b- Video and duplex Audio or duplex Data shall consist of PR-300iM;

c- Video, duplex Audio and simplex return Data or Video, duplex Data and simplex return Audio shall consist of PR-400iM fiber optic transceiver module at monitor location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall receive from fiber Frequency Modulated (FM) light and convert to PAL, SECAM or NTSC

video, audio and/or data signals; convert data from PTZ controller, genlock from sync generator or audio from source to Frequency Modulated (FM) light and transmit on same fiber. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include BNC video connector; one (1) or two (2) three pin terminal block connectors for audio or data, 2 pin terminal block for power; one (1) ST optical for multimode or FC for singlemode; an LEDs for status monitoring.

5- LED shall indicate:

| | Green | Red (alarm condition) |
|---|---|---|
| LED | Operating | Not Operating |

6- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

7- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

9- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

10- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

11- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

12- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

13- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

14- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

**PR-#00iR** - FO video, audio and/or data receiver/audio and/or data transmitter card for rackmount installation (monitor end)

|_____# of signals=2, 3 or 4

1- The Fiber Optic

a- Video and simplex return Audio or Data shall consist of Meridian Technologies PR-200iR;

b- Video and duplex Audio or duplex Data shall consist of PR-300iR;

c- Video, duplex Audio and simplex return Data or Video, duplex Data and simplex return Audio shall consist of PR-400iR fiber optic transceiver card at monitor location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall receive from fiber Frequency Modulated (FM) light and convert to PAL, SECAM or NTSC video, audio and/or data signals; convert data from PTZ controller, genlock from sync generator or audio from source to Frequency Modulated (FM) light and transmit on same fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W or 40mm(1.7")W x 100mm(4")H; card to include BNC video connector; one (1) or two (2) terminal block connectors audio or data; one (1) ST optical for multimode or FC for singlemode.

5- Card shall occupy one slot (or two slots if laser temperature controlling circuitry is incorporated in camera end) in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- LED shall indicate:

| | Green | Red (alarm condition) |
|---|---|---|
| LED | Operating | Not Operating |

8- Data formats shall be one of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
RS-232
RS-422
4-20mA Current Loop
TTL
Contact Closure
RS-485

9- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

10- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

11- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

12- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

13- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |

Signal to Noise Ratio @ 1Km 60 dB

14- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

15- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

16- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**end of Series 200i, 300i and 400i**

**Series 500i and 700i** FM video and bi-directional (duplex) data and/or (duplex) audio transceivers on one fiber - system description: for movable cameras that require duplex data, or video w/duplex audio and data, or video w/3 data channels, choose from the following transceivers:

**PT-#00iM** - FO video, audio and/or data transmitter/audio and/or data receiver module for wallmount
| installation (camera end)
|
|_____# of signals=5 or 7

1- The Fiber Optic

a- Video, duplex Audio and duplex Data or Video and two (2) duplex Audio or Video and two (2) duplex Data shall consist of Meridian Technologies PT-500iM;

b- Video, two (2) duplex Audio and duplex Data or Video, duplex Audio and two (2) duplex Data or Video and three (3) duplex Data shall consist of PT-700iM fiber optic transceiver module at camera location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert PAL, SECAM or NTSC

a- video, duplex audio and duplex data (one slot module); or video and two (2) duplex audio (two slot module); or video and two (2) duplex data (one slot 500i); or

b- video, two (2) duplex audio and duplex data; or video, duplex audio and two (2) duplex data; or video and three (3) data signals (two slot 700i)

from source to Frequency Modulated (FM) light to transmit; receive Frequency Modulated (FM) light from same fiber and convert to

a- duplex audio and duplex data; or two (2) duplex audio; or two (2) duplex data (500i); or

b- two (2) duplex audio and duplex data; or duplex audio and two (2) duplex data; or three (3) duplex data signals (700i).

Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

4- If three (3) data channel units are specified, third data shall be either RS-232, RS-422, 20mA Current Loop, TTL or Contact Closure.

5- One slot dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include BNC video connector; two pin terminal block for power; one (1) DE15 (high density 15 pin) for audio and data; one (1) ST optical for multimode or FC for singlemode; one power on led and two LEDs for audio status monitoring.

5A- Two slot dimensions shall be: 182mm(7.16”)L x 165mm(6.5”)W x 44mm(1.75”)H (in SR-1000); unit to include BNC video connector; 5 pin DIN connector for power; two (2) DE15 (high density 15 pin) for audio and data; one (1) ST optical for multimode or FC for singlemode; two (2) four segment LEDs for status monitoring.

6- On two slot LEDs shall indicate:

Video Audio/Data Transmitter

LEDs shall indicate:

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

Audio/Data Receiver

| | Green | No Color |
|---|---|---|
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

7- Data formats shall be one or more of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
Proteus/VD2 Pulse
RS-232 w/optional controls
RS-422
Switch Select RS-232/RS-422/RS-485
4-20mA Current Loop
TTL
Contact Closure
RS-485

8- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

10- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

11- Unit shall be powered by 12VDC or 24VAC supply (one slot) and 110/220V switcher supply (two slot) and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

12- A **NEMA version** of the unit shall operate at -34C to +74C.

**PT-#00iR** - FO video, audio and/or data transmitter/audio and/or data receiver card for rackmount installation (camera end)

|_____# of signals= 5 or 7

1- The Fiber Optic

a- Video, duplex Audio and duplex Data or Video and two (2) duplex Audio or Video and two (2) duplex Data shall consist of Meridian Technologies PT-500iR;

b- Video, two (2) duplex Audio and duplex Data or Video, duplex Audio and two (2) duplex Data or Video and three (3) duplex Data shall consist of PT-700iR fiber optic transceiver card at camera location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert PAL, SECAM or NTSC

a- video, duplex audio and duplex data (one slot card); or video, two (2) duplex audio (two slot 500i); or video and two (2) duplex data (one slot 500i) ; or

b- video, two (2) duplex audio and duplex data; or video, duplex audio and two (2) duplex data; or video and three (3) duplex data signals (two slot 700i)

from source to Frequency Modulated (FM) light to transmit; receive Frequency Modulated (FM) light from same fiber and convert to

a- duplex audio and duplex data; or two (2) duplex audio; or two (2) duplex data (500i); or

b- two (2) duplex audio and duplex data; or duplex audio and two (2) duplex data; or three (3) duplex data signals (700i).

Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- If three (3) data channel units are specified, third data shall be either RS-232, RS-422, 20mA Current Loop, TTL or Contact Closure.

5- Dimensions shall be: 160mm(6.3")L x 20mm (0.8”) x 100mm (4”)H for one slot or 160mm (6.3”)L x 40mm(1.7")W x 100mm(4")H for two slot; card to include BNC video connector; one (1) DE15 (high density 15 pin) for one slot series 500i, or two (2) for two slot series 500i or 700i for audio and data; one (1) ST optical for multimode or FC for singlemode.

6- Card shall occupy one slot (if one audio 500i) or two slots (if two audio 500i and 700i) in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

7- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses

c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

e) 4 segment LEDs for status monitoring.

8- LEDs shall indicate:

Video Audio/Data Transmitter

| Green | No Color |
|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

Audio/Data Receiver

| | Green | No Color |
|---|---|---|
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

9- Data formats shall be one or more of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
Proteus/VD2 Pulse
RS-232 w/optional controls
RS-422
Switch Select RS-232/RS-422/RS-485
4-20mA Current Loop
TTL
Contact Closure
RS-485

10- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

11- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

12- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

13- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

**PR-#00iM** - FO video, audio and/or data receiver/audio and/or data transmitter module for wallmount installation (monitor end)

|
|_____# of signals=5 or 7

1- The Fiber Optic

a- Video, duplex Audio and duplex Data or Video and two (2) duplex Audio or Video and two (2) duplex Data shall consist of Meridian Technologies PR-500iM;

b- Video, two (2) duplex Audio and duplex Data or Video, duplex Audio and two (2) duplex Data or Video and three (3) duplex Data shall consist of PR-700iM fiber optic transceiver module at monitor location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall receive from fiber Frequency Modulated (FM) light and convert to PAL, SECAM or NTSC

a- video, duplex audio and duplex data (one slot module); or video and two (2) duplex audio (two slot module); or video and two (2) duplex data (one slot 500i); or

b- video, two (2) duplex audio and duplex data; or video, duplex audio and two (2) duplex data; or video and 3 duplex data signals (two slot 700i); convert

a- duplex audio and duplex data; or two (2) duplex audio; or two (2) duplex data (500i); or

b- duplex stereo audio and duplex data; or duplex audio and two (2) duplex data; or three (3) duplex data signals (700i)

from source to Frequency Modulated (FM) light and transmit on same fiber. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- If three (3) data channel units are specified, third data shall be either RS-232, RS-422, 20mA Current Loop, TTL or Contact Closure.

5- One slot dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include BNC video connector; two pin terminal block for power; one (1) DE15 (high density 15 pin) for audio and data; one (1) ST optical for multimode or FC for singlemode; one power on led and two LEDs for audio status monitoring.

5A- Two slot dimensions shall be: 182mm(7.16”)L x 165mm(6.5”)W x 44mm(1.75”)H (in SR-1000); unit to include BNC video connector; 5 pin DIN connector for power; two (2) DE15 (high density 15 pin) for audio and data; one (1) ST optical for multimode or FC for singlemode; two (2) four segment LEDs for status monitoring.

6- LEDs shall indicate:

Video Audio/Data Receiver

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |

| | | |
|---|---|---|
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

Audio/Data Transmitter

| | | |
|---|---|---|
| | Green | No Color |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

7- Data formats shall be one or more of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
Proteus/VD2 Pulse
RS-232 w/optional controls
RS-422
Switch Select RS-232/RS-422/RS-485
4-20mA Current Loop
TTL
Contact Closure
RS-485

8- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

10- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

11- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 7 MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

12- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |

| | |
|---|---|
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

13- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

14- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

15- Unit shall be powered by 12VDC or 24VAC supply (one slot) and 110/220V switcher supply (two slot) and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

**PR-#00iR** - FO video, audio and/or data receiver/audio and/or data transmitter card for rackmount installation (monitor end)

|_____# of signals=5 or 7

1- The Fiber Optic

a- Video, duplex Audio and duplex Data or Video and two (2) duplex Audio or Video and two (2) duplex Data shall consist of Meridian Technologies PR-500iR;

b- Video, two (2) duplex Audio and duplex Data or Video, duplex Audio and two (2) duplex Data or Video and three (3) duplex Data shall consist of PR-700iR fiber optic transceiver card at monitor location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall receive from fiber Frequency Modulated (FM) light and convert to PAL, SECAM or NTSC

a- video, duplex audio and duplex data (one slot card); or video and two (2) duplex audio (two slot card); or video and two (2) duplex data (one slot 500i); or

b- video, two (2) duplex audio and duplex data; or video, duplex audio and two (2) duplex data; or video

and three (3) duplex data signals (two slot 700i); convert

a- duplex audio and duplex data; or two (2) duplex audio; or two (2) duplex data (500i); or

b- two (2) duplex audio and duplex data; or duplex audio and two (2) duplex data; or three (3) duplex data signals (700i)

from source to Frequency Modulated (FM) light and transmit on same fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

4- If three (3) data channel units are specified, third data shall be either RS-232, RS-422, 20mA Current Loop, TTL or Contact Closure.

5- Dimensions shall be: 160mm(6.3")L x 20mm(0.8”)L x 100mm(4”)H for one slot or 40mm(1.7")W x 100mm(4")H for two slot; card to include BNC video connector; one (1) DE15 (high density 15 pin) for one slot series 500i or two (2) for two slot series 500i and 700i for audio and data; one (1) ST optical for multimode or FC for singlemode.

6- Card shall occupy one or two slots in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

7- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy
e) 4 segment LEDs for status monitoring.

8- LEDs shall indicate:

Video Audio/Data Receiver

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

Audio/Data Transmitter

| | Green | No Color |
|---|---|---|
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

9- Data formats shall be one or more of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
Proteus/VD2 Pulse
RS-232 w/optional controls
RS-422
Switch Select RS-232/RS-422/RS-485
4-20mA Current Loop
TTL
Contact Closure
RS-485

10- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

11- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

12- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34.

13- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 8MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

14- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600 or 10 kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

15- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

16- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 26 dB | 26 dB | 26 dB |

17- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**end of Series 500i and 700i**

**Series 600 and 800** FM bi-directional video, audio and data; or bi-directional video, stereo audio and data; or bi-directional video, audio and 2 data or bi-directional video and 3 data transceivers on two fibers - system description: for videoteleconferencing with or w/o movable cameras that require duplex data, choose from the following transceivers:

PX-#00M - FO video, audio and data transmitter/video audio and data receiver module for wallmount
| installation (camera end)
|
|_____# of signals=6 or 8

1- The Fiber Optic

a- bi-directional Video, Audio and Data or bi-directional Video and two (2) Audio or bi-directional Video and two (2) Data shall consist of Meridian Technologies PX-600M;

b- bi-directional Video, two (2) Audio and Data or bi-directional Video, Audio and two (2) Data or bi-directional Video and three (3) Data shall consist of PX-800M fiber optic transceiver module at camera location.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall receive from one fiber Frequency Modulated (FM) light and convert to PAL, SECAM or NTSC

a- video, audio and data (one slot module); or video and two (2) audio (two slot module); or video and two (2) data (one slot 600) or

b- video, two (2) audio and data; or video, audio and two (2) data; or video and three (3) data (two slot 800) and convert

a- video, audio and data; or video and two (2) audio; or video and two (2) data (600) or

b- video, two (2) audio and data; or video, audio and two (2) data; or video and three (3) data (800)

to Frequency Modulated (FM) light and transmit on second fiber. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- If three (3) data channel units are specified, third data shall be either RS-232, RS-422, 20mA Current Loop, TTL or Contact Closure.

5- One slot dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include BNC video connector; two pin terminal block for power; one (1) DE15 (high density 15 pin) for audio and data; one (1) ST optical for multimode or FC for singlemode; one power on led and two LEDs for audio status monitoring.

5A- Two slot dimensions shall be: 182mm(7.16”)L x 165mm(6.5”)W x 44mm(1.75”)H (in SR-1000); unit to include BNC video connector; 5 pin DIN connector for power; two (2) DE15 (high density 15 pin) for audio and data; one (1) ST optical for multimode or FC for singlemode; two (2) four segment LEDs for status monitoring.

6- LEDs for diagnostics shall indicate:

Video (up to 2) Audio & Data Transmitter

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

Video (up to 2) Audio & Data Receiver

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

7- Data formats shall be one or more of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
Proteus/VD2 Pulse
RS-232 w/optional controls
RS-422
Switch Select RS-232/RS-422/RS-485
4-20mA Current Loop
TTL
Contact Closure
RS-485

8- Optical source for multimode shall be an 850nm LED for up to 1.5Km w/output power (50% APL) of -19dbM into 50/125u; -16dBm into 62.5/125u fiber or 1300nm LED for up to 5Km; w/output power (50% APL) of -17dBm into 50/125u; -13dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310nm Laser >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser >50Km but <80Km; w/output power (50% APL) of +2dBm.

10- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

11- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 7MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |

| | |
|---|---|
| S/N ratio @ 1Km | 67dB |
| Carrier Frequency | 70MHz |

FM

12- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

13- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

14- System optical performance shall be:

| | 850nm | | 1300nm | | |
|---|---|---|---|---|---|
| | 50/125 | 62.5/125 | 50/125 | 62.5/125 | Singlemode |
| Optical loss budget | 15 dB | 18 dB | 17 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 21 dB | 21 dB | 26 dB |

15- Unit shall be powered by 12VDC or 24VAC supply (one slot) and 110/220V switcher supply (two slot) and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PX-#00R** - FO video, audio and data receiver/video, audio and data transmitter card for rackmount installation (monitor end)

|_____# of signals= 6 or 8

1- The Fiber Optic

a- bi-directional Video, Audio and Data or bi-directional Video and stereo Audio or bi-directional Video and 2 Data shall consist of Meridian Technologies PX-600R;

b- bi-directional Video, stereo Audio and Data or bi-directional Video, Audio and 2 Data or bi-directional Video and 3 Data shall consist of PX-800R fiber optic transceiver card at monitor location.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall receive from one fiber Frequency Modulated (FM) light and convert to PAL, SECAM or NTSC

a- video, audio and data (one slot card); or video and stereo audio (two slot card); or video and 2 data (one slot 600) or

b- video, stereo audio and data; or video, audio and 2 data; or video and 3 data signals (two slot 800); convert

a- video, audio and data; or video and stereo audio; or video and 2 data (600) or



b- video, stereo audio and data; or video, audio and 2 data; or video and 3 data (800) signals from source

to Frequency Modulated (FM) light and transmit on second fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

4- If 3 data channel units are specified, third data shall be either RS-232, RS-422, 20mA Current Loop, TTL or Contact Closure.

5- Dimensions shall be: 160mm(6.3")L x 20mm (0.8") x 100mm (4")H for one slot or 160mm (6.3")L x 40mm(1.7")W x 100mm(4")H for two slot; card to include BNC video connector; one (1) DE15 (high density 15 pin) for one slot series 600, or two (2) for two slot series 600 or 800 for audio and data; one (1) ST optical for multimode or FC for singlemode.

6- Card shall occupy one (if one audio 600) or two slots (if two audio 600 or 800) in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

7- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy
e) 4 segment LEDs for status monitoring.

8- LEDs shall indicate:

Video (up to 2) Audio & Data Transmitter

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

Video (up to 2) Audio & Data Receiver

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

7- Data formats shall be one or more of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
Proteus/VD2 Pulse
RS-232 w/optional controls
RS-422

Switch Select RS-232/RS-422/RS-485
4-20mA Current Loop
TTL
Contact Closure
RS-485

8- Optical source for multimode shall be an 850nm LED for up to 1.5Km w/output power (50% APL) of -19dbM into 50/125u; -16dBm into 62.5/125u fiber or 1300nm LED for up to 5Km; w/output power (50% APL) of -17dBm into 50/125u; -13dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310nm Laser >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser >50Km but <80Km; w/output power (50% APL) of +2dBm.

10- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

11- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 7MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

12- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

13- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

14- System optical performance shall be:

| | 850nm | | 1300nm | | |
|---|---|---|---|---|---|
| | 50/125 | 62.5/125 | 50/125 | 62.5/125 | Singlemode |
| Optical loss budget | 15 dB | 18 dB | 17 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 21 dB | 21 dB | 26 dB |

**end of Series 600 and 800**

**Series 600i and 800i** FM bi-directional video, audio and data; or bi-directional video, stereo audio and data; or bi-directional video, audio and 2 data or bi-directional video and 3 data transceivers on one fiber - system description: for videoteleconferencing with or w/o movable cameras that require duplex data choose from the following transceivers:

**PX-#00iM** - FO video, audio and data receiver/video, audio and data transmitter module for wallmount
| installation (monitor end)
|
|_____# of signals=6 or 8

1- The Fiber Optic

a- bi-directional Video, Audio and Data or bi-directional Video and stereo Audio or bi-directional Video and 2 Data shall consist of Meridian Technologies PX-600iM;

b- bi-directional Video, stereo Audio and Data or bi-directional Video, Audio and 2 Data or bi-directional Video and 3 Data shall consist of PX-800iM fiber optic transceiver module at monitor location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall receive from fiber Frequency Modulated (FM) light and convert to PAL, SECAM or NTSC

a- video, audio and data (one slot module); or video and stereo audio (two slot module); or video and 2 data (one slot 600i); or

b- video, stereo audio and data; or video, audio and 2 data; or video and 3 data signals (two slot 800i); convert

a- video, audio and data; or video and stereo audio; or video and 2 data (600i); or

b- video, stereo audio and data; or video, audio and 2 data; or video and 3 data signals (800I) from source

to Frequency Modulated (FM) light and transmit on same fiber. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- If 3 data channel units are specified, third data shall be either RS-232, RS-422, 20mA Current Loop, TTL or Contact Closure.

5- One slot dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include BNC video connector; two pin terminal block for power; one (1) DE15 (high density 15 pin) for audio and data; one (1) ST optical for multimode or FC for singlemode; one power on led and two LEDs for audio status monitoring.

5A- Two slot dimensions shall be: 182mm(7.16”)L x 165mm(6.5”)W x 44mm(1.75”)H (in SR-1000); unit to include BNC video connector; 5 pin DIN connector for power; two (2) DE15 (high density 15 pin) for audio and data; one (1) ST optical for multimode or FC for singlemode; two (2) four segment LEDs for status monitoring.

6- LEDs for diagnostics shall indicate:



Video (up to 2) Audio & Data Transmitter

Green No Color

| | | |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

Video (up to 2) Audio & Data Receiver

| | | |
|---|---|---|
| | Green | No Color |
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

7- Data formats shall be one or more of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
Proteus/VD2 Pulse
RS-232 w/optional controls
RS-422
Switch Select RS-232/RS-422/RS-485
4-20mA Current Loop
TTL
Contact Closure

8- Optical source for multimode shall be an 850/1300nm LED for up to 1.5Km; w/output power (50% APL) of -15dBm into 50/125u; -12dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310/1550nm Laser >15Km but <25Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >50Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

10- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -27dBm.

11- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 7MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |



| | |
|---|---|
| FM Carrier Frequency | 70MHz |

12- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

13- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

14- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 12 dB | 15 dB | 26 to 36 dB |
| Optical Dynamic range | 15 dB | 15 dB | 26 dB |

15- Unit shall be powered by 12VDC or 24VAC supply (one slot) and 110/220V switcher supply (two slot) and operate at temperatures -20C to +65C; humidity 0 to 95% non condensing.

**PX-#00iR** - FO video, audio and data receiver/video, audio and data transmitter card for rackmount installation (monitor end)

|_____# of signals=6 or 8

1- The Fiber Optic

a- bi-directional Video, Audio and Data or bi-directional Video and stereo Audio or bi-directional Video and 2 Data shall consist of Meridian Technologies PX-600iR;

b- bi-directional Video, stereo Audio and Data or bi-directional Video, Audio and 2 Data or bi-directional Video and 3 Data shall consist of PX-800iR fiber optic transceiver card at monitor location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall receive from fiber Frequency Modulated (FM) light and convert to PAL, SECAM or NTSC

a- video, audio and data (one slot card); or video and stereo audio (two slot card) ; or video and 2 data (one slot 600i) or

b- video, stereo audio and data; or video, audio and 2 data; or video, and 3 data signals (two slot 800i); convert

a- video, audio and data; or video and stereo audio; or video and 2 data (600i) or

b- video, stereo audio and data; or video, audio and 2 data; or video and 3 data signals from



source (800i)

to Frequency Modulated (FM) light and transmit on same fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

4- If 3 data channel units are specified, third data shall be either RS-232, RS-422, 20mA Current Loop, TTL or Contact Closure.

5- Dimensions shall be: 160mm(6.3")L x 20mm (0.8") x 100mm (4")H for one slot or 160mm (6.3")L x 40mm(1.7")W x 100mm(4")H for two slot; card to include BNC video connector; one (1) DE15 (high density 15 pin) for one slot series 600i, or two (2) for two slot series 600i or 800i for audio and data; one (1) ST optical for multimode or FC for singlemode.

6- Card shall occupy one (if one audio 600i) or two slots (if two audio 600i or 800i) in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

7- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy
e) 4 segment LEDs for status monitoring.

8- LEDs shall indicate:

Video (up to 2) Audio & Data Transmitter

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

Video (up to 2) Audio & Data Receiver

| | Green | No Color |
|---|---|---|
| 1st LED | Video Present | Video Absent |
| 2nd LED | Audio/Data Present | Audio/Data Absent |
| 3rd LED | Audio/Data Present | Audio/Data Absent |
| 4th LED | Data Present | Data Absent |

9- Data formats shall be one or more of the following:

Manchester by American Dynamics
Biphase by Burle (Allegiant)
Genlock
up the Coax
Proteus/VD2 Pulse
RS-232 w/optional controls



RS-422

Switch Select RS-232/RS-422/RS-485
4-20mA Current Loop
TTL
Contact Closure

10- Optical source for multimode shall be an 850/1300nm LEDs for up to 1.5Km; w/output power (50% APL) of -15dBm into 50/125u; -12dBm into 62.5/125u fiber.

11- Optical source for singlemode shall be:

1310/1550nm Laser >15Km but <25Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >50Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

12- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -27dBm.

13- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 7MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 70MHz |

14- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10k or 47kOhm (bal/unbal) |
| Audio In/Output Level | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| Signal to Noise Ratio @ 1Km | 60 dB |

15- System data performance shall be:

| | |
|---|---|
| Data Rate | DC up to 300 Kbs/sec |
| Bit Error Rate | $10^{-9}$ |

16- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 12 dB | 15 dB | 26 to 36 dB |
| Optical Dynamic range | 15 dB | 15 dB | 26 dB |

17- Operating temperature shall be -20C to +65C; operating humidity 0 to 95% non condensing.

**end of Series 600i and 800i**

**Series 1100i** T1/E1Data - system description: for data communications, choose from the following transceivers:

**PX-1100iM** - FO T1/E1data transceiver module for wallmount or polemount installation

1- The Fiber Optic T1/E1 Data System shall consist of Meridian Technologies PX-1100iM fiber optic transceiver module at transmit and receive locations.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert T1/E1 switch select data from source to modulated light to transmit on one fiber; receive modulated light from same fiber and convert to T1/E1 data.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include 2 pin terminal block for power; two (2) three pin terminal block connector for data; one (1) ST optical for multimode or FC for singlemode; a power on LED.

5- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

6- Optical source for singlemode shall be:
1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

7- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

8- System data performance shall be:

| | T1 | E1 |
|---|---|---|
| Data Rate | DC to 1.544 Mbs | DC to 2.048 Mbs |
| Bit Error Rate | $10^{-9}$ | $10^{-9}$ |

9- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

10- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

11- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PX-1100iR** - FO T1/E1 data transceiver card for rackmount installation

1- The Fiber Optic duplex T1/E1 Data System shall consist of Meridian Technologies PX-1100iR fiber optic transceiver card at transmit and receive locations.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert T1/E1switch select data signals from source to modulated light to transmit on one fiber; receive modulated light from same fiber and convert to T1/E1 data.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8)"W x 100mm(4")H; card to include two (2) three pin terminal block connector for data; one (1) ST optical for multimode or FC for singlemode.

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:
1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

9- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

10- System data performance shall be:

| | T1 | E1 |
|---|---|---|
| Data Rate | DC to 1.544 Mbs | DC to 2.048 Mbs |
| Bit Error Rate | $10^{-9}$ | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

**end of Series 1100i**

**Series 1100** T1/E1Data - system description: for data communications, choose from the following transceivers:

**PX-1100M** - FO T1/E1data transceiver module for wallmount or polemount installation

1- The Fiber Optic T1/E1 Data System shall consist of Meridian Technologies PX-1100M fiber optic transceiver module at transmit and receive locations.



2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert T1/E1 switch select data from source to modulated light to transmit on one fiber; receive modulated light from second fiber and convert to T1/E1 data.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include 2 pin terminal block for power; two (2) three pin terminal block connector for data; two (2) ST optical for multimode or FC for singlemode; a power on LED.

5- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

6- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

7- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

8- System data performance shall be:

| | T1 | E1 |
|---|---|---|
| Data Rate | DC to 1.544 Mbs | DC to 2.048 Mbs |
| Bit Error Rate | $10^{-9}$ | $10^{-9}$ |

9- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

10- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

11- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PX-1100R** - FO T1/E1 data transceiver card for rackmount installation

1- The Fiber Optic duplex T1/E1 Data System shall consist of Meridian Technologies PX-1100R fiber optic transceiver card at transmit and receive locations.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert T1/E1switch select data signals from source to modulated light to transmit on one fiber; receive modulated light from second fiber and convert to T1/E1 data.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8)"W x 100mm(4")H; card to include two (2) three pin terminal block connector for data; two (2) ST optical for multimode or FC for singlemode.

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

9- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

10- System data performance shall be:

| | T1 | E1 |
|---|---|---|
| Data Rate | DC to 1.544 Mbs | DC to 2.048 Mbs |
| Bit Error Rate | $10^{-9}$ | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

**end of Series 1100**

**Series 1300i** FM duplex RS-232 data w/optional (handshakes) controls -system description: for data communications, choose from the following transceivers:

**PX-1300iM** - FO RS-232 data transceiver module
**PX-1300iHM** - FO RS-232 data transceiver module with handshakes for wallmount or polemount installation

1- The Fiber Optic duplex RS-232 Data System shall consist of Meridian Technologies PX-1300iM fiber optic transceiver module at transmit and receive locations.

1A- The Fiber Optic duplex RS-232 Data and Handshakes System shall consist of Meridian Technologies PX-1300iHM fiber optic transceiver module at transmit and receive locations.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert RS-232 data from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from same fiber and convert to RS-232 data.

3A- Unit shall convert RS-232 data and handshakes from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from same fiber and convert to RS-232 data and handshake signals. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include 2 pin terminal block for power; two (2) three pin terminal block connector for data; one (1) ST optical for multimode or FC for singlemode; a power on LED.

4A- Dimensions (if with handshakes) shall be: 182mm(7.16”)L x 165mm(6.5”)W x 44mm(1.75”)H (in SR-1000); unit to include 5 pin DIN connector for power and DE15 (high density 15 pin); one (1) ST optical for multimode or FC for singlemode; an LED for status monitoring.

5- LED shall indicate:

| | Green | No Color |
|---|---|---|
| LED | Data Present | No Connection |

6- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

7- Optical source for singlemode shall be:
1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

8- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

| 9- System data performance shall be: | PX-1300iHM | PX-1300iM |
|---|---|---|
| Data Rate | DC to 19.2 Kbs | DC to 100 Kbs |
| Bit Error Rate | $10^{-9}$ | $10^{-9}$ |

10- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

11- Unit shall be powered by 12VDC or 24VAC supply or if with letter “H” by 110/220V switcher supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

12- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PX-1300iR** - FO RS-232 data transceiver card
**PX-1300iHR** - FO RS-232 data transceiver card with handshakes for rackmount installation

1- The Fiber Optic duplex RS-232 Data System shall consist of Meridian Technologies PX-1300iR fiber optic transceiver card at transmit and receive locations.

1A- The Fiber Optic duplex RS-232 Data and Handshakes System shall consist of Meridian Technologies PX-1300iHR fiber optic transceiver card at transmit and receive locations.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert RS-232 data signals from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from same fiber and convert to RS-232 data.

3A- Unit shall convert RS-232 data and handshake signals from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from same fiber and convert to RS-232 data and handshakes. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8)"W x 100mm(4")H; card to include two (2) three pin terminal block connector for data; one (1) ST optical for multimode or FC for singlemode.

4A- Dimensions shall be: 160mm(6.3”)L x 40mm(1.7")W x 100mm(4")H; card to include DE15 (high density 15 pin) connector for data; one (1) ST optical for multimode or FC for singlemode.

5- Card shall occupy one or two slots in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy
e) (if handshakes) an LED for status monitoring.

7- LED shall indicate:

| | Green | No Color |
|---|---|---|
| LED | Data Present | No Connection |

8- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:
1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

10- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

11- System data performance shall be:

| | PX-1300iHM | PX-1300iM |
|---|---|---|
| Data Rate | DC to 19.2 Kbs | DC to 100 Kbs |
| Bit Error Rate | $10^{-9}$ | $10^{-9}$ |

12- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

**end of Series 1300i**

**Series 1300** FM duplex RS-232 data w/optional (handshakes) controls -system description: for data communications, choose from the following transceivers:

**PX-1300M** - FO RS-232 data transceiver module
**PX-1300HM** - FO RS-232 data transceiver module with handshakes for wallmount or polemount installation

1- The Fiber Optic duplex RS-232 Data System shall consist of Meridian Technologies PX-1300M fiber optic transceiver module at transmit and receive locations.

1A- The Fiber Optic duplex RS-232 Data and Handshakes System shall consist of Meridian Technologies PX-1300HM fiber optic transceiver module at transmit and receive locations.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert RS-232 data from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to RS-232 data.

3A- Unit shall convert RS-232 data and handshakes from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to RS-232 data and handshake signals. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include 2 pin terminal block for power; two (2) three pin terminal block connector for data; two (2) ST optical for multimode or FC for singlemode; a power on LED.

4A- Dimensions (if with handshakes) shall be: 182mm(7.16")L x 165mm(6.5")W x 44mm(1.75")H (in SR-1000); unit to include 5 pin DIN connector for power and DE15 (high density 15 pin); two (2) ST optical for multimode or FC for singlemode; an LED for status monitoring.

5- LED shall indicate:

| | Green | No Color |
|---|---|---|
| LED | Data Present | No Connection |

6- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

7- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

8- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

9- System data performance shall be:

| | PX-1300HM | PX-1300M |
|---|---|---|
| Data Rate | DC to 19.2 Kbs | DC to 100 Kbs |
| Bit Error Rate | $10^{-9}$ | $10^{-9}$ |

10- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

11- Unit shall be powered by 12VDC or 24VAC supply or if with letter "H" by 110/220V switcher supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

12- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PX-1300R** - FO RS-232 data transceiver card
**PX-1300HR** - FO RS-232 data transceiver card with handshakes for rackmount installation

1- The Fiber Optic duplex RS-232 Data System shall consist of Meridian Technologies PX-1300R fiber optic transceiver card at transmit and receive locations.

1A- The Fiber Optic duplex RS-232 Data and Handshakes System shall consist of Meridian Technologies PX-1300HR fiber optic transceiver card at transmit and receive locations.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert RS-232 data signals from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to RS-232 data.

3A- Unit shall convert RS-232 data and handshake signals from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to RS-232 data and handshakes. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8)"W x 100mm(4")H; card to include two (2) three pin terminal block connector for data; two (2) ST optical for multimode or FC for singlemode.

4A- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include DE15 (high density 15 pin) connector for data; two (2) ST optical for multimode or FC for singlemode.

5- Card shall occupy one or two slots in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy
e) (if handshakes) an LED for status monitoring.

7- LED shall indicate:

| | Green | No Color |
|---|---|---|
| LED | Data Present | No Connection |

8- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

10- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

11- System data performance shall be:

| | PX-1300HM | PX-1300M |
|---|---|---|
| Data Rate | DC to 19.2 Kbs | DC to 100 Kbs |
| Bit Error Rate | $10^{-9}$ | $10^{-9}$ |

12- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

**end of Series 1300**

**Series 1400i** FM duplex RS-422 data -system description: for data communications, choose from the following transceivers:

**PX-1400iM** - FO RS-422 data transceiver module for wallmount or polemount installation

1- The Fiber Optic duplex RS-422 Data System shall consist of Meridian Technologies PX-1400iM fiber optic transceiver module at transmit and receive locations.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert RS-422 data from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from same fiber and convert to RS-422 data. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include 2 pin terminal block for power; two (2) three pin terminal block connector for data; one (1) ST optical for multimode or FC for singlemode; a power on LED.

5- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

6- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

7- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

8- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 300 Kbs |
| Bit Error Rate | $10^{-9}$ |

9- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

10- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

11- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PX-1400iR** - FO RS-422 data transceiver card for rackmount installation

1- The Fiber Optic duplex RS-422 Data System shall consist of Meridian Technologies PX-1400iR fiber optic transceiver card at transmit and receive locations.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert RS-422 data signals from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from same fiber and convert to RS-422 data. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8)"W x 100mm(4")H; card to include two (2) three pin terminal block connector for data; one (1) ST optical for multimode or FC for singlemode.

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

9- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

10- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 300 Kbs |
| Bit Error Rate | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

**end of Series 1400i**

**Series 1400** FM duplex RS-422 data -system description: for data communications, choose from the following transceivers:

**PX-1400M** - FO RS-422 data transceiver module for wallmount or polemount installation

1- The Fiber Optic duplex RS-422 Data System shall consist of Meridian Technologies PX-1400M fiber

optic transceiver module at transmit and receive locations.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert RS-422 data from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to RS-422 data. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include 2 pin terminal block for power; two (2) three pin terminal block connector for data; two (2) ST optical for multimode or FC for singlemode; a power on LED.

5- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

6- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

7- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

8- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 300 Kbs |
| Bit Error Rate | $10^{-9}$ |

9- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

10- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

11- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PX-1400R** - FO RS-422 data transceiver card for rackmount installation

1- The Fiber Optic duplex RS-422 Data System shall consist of Meridian Technologies PX-1400R fiber optic transceiver card at transmit and receive locations.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert RS-422 data signals from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to RS-422 data. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8)"W x 100mm(4")H; card to include two (2) three pin terminal block connector for data; two (2) ST optical for multimode or FC for singlemode.

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

9- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

10- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 300 Kbs |
| Bit Error Rate | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

**end of Series 1400**

**Series 1500e** FM Phone Electrical Card -system description: for data communications, choose from the following transceivers:

**PX-1500eLR** - Electrical Telephone transceiver card for rackmount installation (line end)

1- The Electrical Telephone System shall consist of Meridian Technologies PX-1500eLR electrical transceiver card at transmit and/or receive line side location.

2- Unit shall interface with Meridian Technologies audio fiber system.

3- Unit shall convert voice signals from line set source to connect electrically to the fiber optic system; receive from fiber optic system and convert to voice signals for interfacing to line set.

4- Unit shall be fully compatible with the operating telephone and support duplex voice, dial tone, true 90V RMS AC ring voltage, touch-tone and pulse dialing.

5- Unit shall have monitoring line test capability.

6- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include two (2) RJ11C connector.

7- Card shall occupy two slots in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

8- Card shall feature:

a) front panel power on LED
b) solid state circuitry
c) short circuit protection with PCB mounted chemical fuses
d) "Hot" swapping capability - installation or removal with power on
e) built in circuitry for power supply redundancy
f) 4 segment LEDs for status monitoring.

9- LEDs shall indicate:

| | Color |
|---|---|
| 1st LED | Far Side Audio Receive |
| 2nd LED | Near Side Audio Send |
| 3rd LED | Near Side off Hook |
| 4th LED | Far Side off Hook |

10- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 10k Ohm unbal |
| Frequency Response | 50 Hz to 10 KHz |
| Signal to Noise Ratio | 60 dB |

11- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**PX-1500eR** - Electrical Telephone transceiver card for rackmount installation (phone end)

1- The Electrical Telephone System shall consist of Meridian Technologies PX-1500eR electrical

transceiver card at transmit and/or receive phone side location.

2- Unit shall interface with Meridian Technologies audio fiber system.

3- Unit shall convert voice signals from telephone set source to connect electrically to the fiber optic system; receive from fiber optic system and convert to voice signals for interfacing to telephone set.

4- Unit shall be fully compatible with the operating telephone and support duplex voice, dial tone, true 90V RMS AC ring voltage, touch-tone and pulse dialing.

5- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include one (1) RJ11C connector.

6- Card shall occupy two slots in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

7- Card shall feature:

a) front panel power on LED
b) solid state circuitry
c) short circuit protection with PCB mounted chemical fuses
d) "Hot" swapping capability - installation or removal with power on
e) built in circuitry for power supply redundancy
f) 4 segment LEDs for status monitoring.

8- LEDs shall indicate:

| | Color |
|---|---|
| 1st LED | Far Side Audio Receive |
| 2nd LED | Near Side Audio Send |
| 3rd LED | Near Side off Hook |
| 4th LED | Far Side off Hook |

9- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 10k Ohm unbal |
| Frequency Response | 50 Hz to 10 KHz |
| Signal to Noise Ratio | 60 dB |

10- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**end of Series 1500e**

**PX-1500iLR** - FO Line transceiver card for rackmount installation (line end)

1- The Fiber Optic bi-directional Telephone System shall consist of Meridian Technologies PX-1500iLR fiber optic transceiver card at transmit/receive line side location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert voice signals from line set source to Frequency Modulated (FM) light to transmit; receive Frequency Modulated (FM) light from same fiber and convert to voice signals for interfacing to

telephone set. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Unit shall be fully compatible with the operating telephone and support duplex voice, dial tone, true 90V RMS AC ring voltage, touch-tone and pulse dialing.

5- Unit shall have monitoring line test capability.

6- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include two (2) RJ11C connectors, one (1) ST optical for multimode or FC for singlemode.

7- Card shall occupy two slots in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

8- Card shall feature:

a) front panel power on LED
b) solid state circuitry
c) short circuit protection with PCB mounted chemical fuses
d) "Hot" swapping capability - installation or removal with power on
e) built in circuitry for power supply redundancy
f) 4 segment LEDs for status monitoring.

9- LEDs shall indicate: Color

| | |
|---|---|
| 1st LED | Far Side Audio Receive |
| 2nd LED | Near Side Audio Send |
| 3rd LED | Near Side off Hook |
| 4th LED | Far Side off Hook |

10- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

11- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

12- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

13- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 10k Ohm unbal |
| Frequency Response | 50 Hz to 10 KHz |
| Signal to Noise Ratio | 60 dB |

14- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

15- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**PX-1500iR** - FO Telephone transceiver card for rackmount installation (phone end)

1- The Fiber Optic bi-directional Telephone System shall consist of Meridian Technologies PX-1500iR fiber optic transceiver card at transmit and/or receive phone side location.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert voice signals from telephone set source to Frequency Modulated (FM) light to transmit; receive Frequency Modulated (FM) light from same fiber and convert to voice signals for interfacing to telephone set. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Unit shall be fully compatible with the operating telephone and support duplex voice, dial tone, true 90V RMS AC ring voltage, touch-tone and pulse dialing.

5- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include one (1) RJ11C connector, one (1) ST optical for multimode or FC for singlemode.

6- Card shall occupy two slots in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

7- Card shall feature:

a) front panel power on LED
b) solid state circuitry
c) short circuit protection with PCB mounted chemical fuses
d) "Hot" swapping capability - installation or removal with power on
e) built in circuitry for power supply redundancy
f) 4 segment LEDs for status monitoring.

8- LEDs shall indicate:

| | Color |
|---|---|
| 1st LED | Far Side Audio Receive |
| 2nd LED | Near Side Audio Send |
| 3rd LED | Near Side off Hook |
| 4th LED | Far Side off Hook |

9- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

10- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

11- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

12- System audio performance shall be:



| | |
|---|---|
| Audio In/Output Impedance | 10k Ohm unbal |
| Frequency Response | 50 Hz to 10 KHz |
| Signal to Noise Ratio | 60 dB |

13- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

14- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**End of Series 1500i**

**PX-1500LR** - FO Line transceiver card for rackmount installation (line end)

1- The Fiber Optic bi-directional Telephone System shall consist of Meridian Technologies PX-1500LR fiber optic transceiver card at transmit/receive line side location.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert voice signals from line set source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from a second fiber and convert to voice signals for interfacing to telephone set. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Unit shall be fully compatible with the operating telephone and support duplex voice, dial tone, true 90V RMS AC ring voltage, touch-tone and pulse dialing.

5- Unit shall have monitoring line test capability.

6- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include two (2) RJ11C connectors, two (2) ST optical for multimode or FC for singlemode.

7- Card shall occupy two slots in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

8- Card shall feature:

a) front panel power on LED
b) solid state circuitry
c) short circuit protection with PCB mounted chemical fuses
d) "Hot" swapping capability - installation or removal with power on
e) built in circuitry for power supply redundancy
f) 4 segment LEDs for status monitoring.

9- LEDs shall indicate:

| | Color |
|---|---|
| 1st LED | Far Side Audio Receive |
| 2nd LED | Near Side Audio Send |
| 3rd LED | Near Side off Hook |

10- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

11- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

12- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

13- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 10k Ohm unbal |
| Frequency Response | 50 Hz to 10 KHz |
| Signal to Noise Ratio | 60 dB |

14- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

15- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**PX-1500R** - FO Telephone transceiver card for rackmount installation (phone end)

1- The Fiber Optic bi-directional Telephone System shall consist of Meridian Technologies PX-1500R fiber optic transceiver card at transmit and/or receive phone side location.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert voice signals from telephone set source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from a second fiber and convert to voice signals for interfacing to telephone set. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Unit shall be fully compatible with the operating telephone and support duplex voice, dial tone, true 90V RMS AC ring voltage, touch-tone and pulse dialing.

5- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include one (1) RJ11C connector, two (2) ST optical for multimode or FC for singlemode.

6- Card shall occupy two slots in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

7- Card shall feature:

a) front panel power on LED
b) solid state circuitry

c) short circuit protection with PCB mounted chemical fuses
d) "Hot" swapping capability - installation or removal with power on
e) built in circuitry for power supply redundancy
f) 4 segment LEDs for status monitoring.

8- LEDs shall indicate:

| | Color |
|---|---|
| 1st LED | Far Side Audio Receive |
| 2nd LED | Near Side Audio Send |
| 3rd LED | Near Side off Hook |
| 4th LED | Far Side off Hook |

9- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

10- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

11- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

12- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 10k Ohm unbal |
| Frequency Response | 50 Hz to 10 KHz |
| Signal to Noise Ratio | 60 dB |

13- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

14- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**End of Series 1500**

**Series 1800i** FM duplex RS-485 data -system description: for data communications, choose from the following transceivers:

**PX-1800iM** - FO RS-485 data transceiver module for wallmount or polemount installation

1- The Fiber Optic duplex RS-485 Data System shall consist of Meridian Technologies PX-1800iM fiber optic transceiver module at transmit and receive locations.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert RS-485 data from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from same fiber and convert to RS-485 data. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include 2 pin terminal block for power; two (2) three pin terminal block connector for data; one (1) ST optical for multimode or FC for singlemode; a power on LED.

5- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

6- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

7- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

8- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 19.2 Kbs |
| Bit Error Rate | $10^{-9}$ |

9- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

10- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

11- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PX-1800iR** - FO RS-485 data transceiver card for rackmount installation

1- The Fiber Optic duplex RS-485 Data System shall consist of Meridian Technologies PX-1800iR fiber optic transceiver card at transmit and receive locations.

2- Unit shall operate on one multimode or singlemode fiber.

3- Unit shall convert RS-485 data signals from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from same fiber and convert to RS-485 data. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8)"W x 100mm(4")H; card to include two (2) three pin terminal block connector for data; one (1) ST optical for multimode or FC for singlemode.

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -21dBm into 50/125u; -18dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,
1310/1550nm Laser >40Km but <70Km; w/output power (50% APL) of +2dBm*.
*measured @ 1310nm

9- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

10- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 19.2 Kbs |
| Bit Error Rate | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 13 dB | 16 dB | 26 to 36 dB |
| Optical Dynamic range | 20 dB | 20 dB | 26 dB |

**end of Series 1800i**

**Series 1800** FM duplex RS-485 data -system description: for data communications, choose from the following transceivers:

**PX-1800M** - FO RS-485 data transceiver module for wallmount or polemount installation

1- The Fiber Optic duplex RS-485 Data System shall consist of Meridian Technologies PX-1800M fiber optic transceiver module at transmit and receive locations.



2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert RS-485 data from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to RS-485 data. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 182mm(7.16")L x 108mm(5.21")W x 29mm(1.15")H (in SR-500); unit to include 2 pin terminal block for power; two (2) three pin terminal block connector for data; two (2) ST optical for multimode or FC for singlemode; a power on LED.

5- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

6- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

7- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

8- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 19.2 Kbs |
| Bit Error Rate | $10^{-9}$ |

9- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

10- Unit shall be powered by 12VDC or 24VAC supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

11- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PX-1800R** - FO RS-485 data transceiver card for rackmount installation

1- The Fiber Optic duplex RS-485 Data System shall consist of Meridian Technologies PX-1800R fiber optic transceiver card at transmit and receive locations.

2- Unit shall operate on two multimode or singlemode fibers.

3- Unit shall convert RS-485 data signals from source to Frequency Modulated (FM) light to transmit on one fiber; receive Frequency Modulated (FM) light from second fiber and convert to RS-485 data. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.



4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8)"W x 100mm(4")H; card to include two (2) three pin terminal block connector for data; two (2) ST optical for multimode or FC for singlemode.

5- Card shall occupy one slot in any Meridian EIA subrack or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted removable fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

9- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

10- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 19.2 Kbs |
| Bit Error Rate | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

**end of Series 1800**

**Series 2300** FM multidrop RS-232/RS-422/RS-485 switch select data - system description: for drop and insert bus, single ring or dual redundant, counter rotating ring topologies data communications, choose from the following transceivers:

**PX-2300M** - FO RS-232/RS-422/RS-485 data transceiver module for wallmount or polemount installation

1- The Fiber Optic multidrop RS-232/RS-422/RS-485 switch select Data System shall consist of Meridian Technologies PX-2300M fiber optic transceiver module at transmit and receive locations.

2- Unit shall operate on four multimode or singlemode fibers.

3- Unit shall convert RS-232/RS-422/RS-485 data from source to Frequency Modulated (FM) light to transmit on one fiber in one direction, transmit on a second fiber in another direction; receive Frequency Modulated (FM) light from a third fiber from one direction and a fourth fiber from another direction and convert to RS-232/RS-422/RS-485 data.

4- Unit shall be capable of receiving data from either up or downlink and re-transmitting same.

5- Unit shall feature:

a) Alarm dry contact output
b) optional battery backup with trickle charger
c) selectable anti streaming (anti jabber)
d) local and remote loop back test/diagnostics
e) dip switch configurable as either master or slave
f) bus, single ring or dual redundant, counter rotating capabilities

6- Dimensions shall be: 182mm(7.16")L x 165mm(6.5")W x 44mm(1.75")H (in SR-1000); unit to include 5 pin DIN connector for power; two (2) DE15 (high density 15 pin) connectors for data; four (4) ST optical for multimode or FC for singlemode; dip switches and LEDs for status monitoring.

7- LEDs shall indicate:

| | Green | Red |
|---|---|---|
| 1st LED | Data Present | Data Absent |
| 2nd LED | Data Present | Data Absent |
| 3rd LED | Data Present | Data Absent |
| 4th LED | Data Present | Data Absent |

8- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

10- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

11- System data performance shall be:



| | |
|---|---|
| Data Rate | DC to 100 Kbs |
| Bit Error Rate | $10^{-9}$ |

12- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

13- Unit shall be powered by 110/220V switcher supply and operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

14- A **NEMA version** of the unit shall operate at temperatures of -34C to +74C.

**PX-2300R** - FO RS-232/RS-422/RS-485 data transceiver card for rackmount installation

1- The Fiber Optic multidrop RS-232/RS-422/RS-485 switch select Data System shall consist of Meridian Technologies PX-2300R fiber optic transceiver card at transmit and receive locations.

2- Unit shall operate on four multimode or singlemode fibers.

3- Unit shall convert RS-232/RS-422/RS-485 data from source to Frequency Modulated (FM) light to transmit on one fiber in one direction, transmit on a second fiber in another direction; receive Frequency Modulated (FM) light from a third fiber from one direction and a fourth fiber from another direction and convert to RS-232/RS-422/RS-485 data.

4- Unit shall be capable of receiving data from either up or downlink and re-transmitting same.

5- Unit shall feature:

a) Alarm dry contact output
b) optional battery backup with trickle charger
c) selectable anti streaming (anti jabber)
d) local and remote loop back test/diagnostics
e) dip switch configurable as either master or slave
f) bus, single ring or dual redundant, counter rotating capabilities

6- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include two (2) DE15 (high density 15 pin) connectors for data; four (4) ST optical for multimode or FC for singlemode; dip switches and LEDs for status monitoring.

7- LEDs shall indicate:

| | Green | Red |
|---|---|---|
| 1st LED | Data Present | Data Absent |
| 2nd LED | Data Present | Data Absent |

| | | |
|---|---|---|
| 3rd LED | Data Present | Data Absent |
| 4th LED | Data Present | Data Absent |

8- Optical source for multimode shall be an 850nm LED for up to 2Km or 1300nm LED for up to 5Km;



w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:

1310nm Laser for >0Km but <50Km; w/output power (50% APL) of -8dBm,
1310nm Laser for >50Km but <80Km; w/output power (50% APL) of +2dBm.
1550nm Laser for >80Km w/output power (50% APL) of +2dBm

10- Unit shall employ an 850nm or 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

11- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 100 Kbs |
| Bit Error Rate | $10^{-9}$ |

12- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 18 dB | 21 dB | 26 to 36 dB |
| Optical Dynamic range | 21 dB | 21 dB | 26 dB |

12- Unit shall operate at temperatures -25C to +70C; humidity 0 to 95% non condensing.

**end of Series 2300**

**Series 4000i** FM 4 channel video multiplexer on one fiber - system description: for video multiplexed transmission the following cards are available.

**PT-4000iR** - FO 4 channel video transmitter card for wall, desk or rackmount installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PT-4000iR fiber optic 4 channel multiplexer transmitter card at camera (or if loop through - monitor) location.

2- Unit shall convert four (4) PAL, SECAM or NTSC video signals from source to Frequency Modulated (FM) light to transmit on one (1) multimode or singlemode fiber . Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include four (4) BNC video connectors and one (1) ST optical for multimode or FC for singlemode.

4- Card shall occupy one slot in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Optical source for multimode shall be a 1300nm LED for up to 4Km; w/output power of -14dbM into 50/125u; -11dBm into 62.5/125u fiber.

7- Optical source for singlemode shall be:

1310nm Laser >15Km but <25Km; w/output power of -10dBm,
1310nm Laser >25Km but <40Km; w/output power of 0dBm.

8- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

**PR-4000iR** - FO 4 channel video receiver card for wall, desk or rackmount installation (monitor end)

1- The Fiber Optic Video System shall consist of Meridian Technologies PR-4000iR fiber optic 4 channel multiplexer receiver card at monitor location.

2- Unit shall receive Frequency Modulated (FM) light from fiber and convert to four (4) PAL, SECAM or NTSC video signals on one (1) multimode or singlemode fiber. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include four (4) BNC video connectors and one (1) ST optical for multimode or FC for singlemode.

4- Card shall occupy one slot in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:



a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Unit shall employ a 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

7- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 10MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km (multimode) | 58dB |
| S/N ratio @ 10Km (singlemode) | 58dB |
| FM Carrier Frequency | 150MHz |

8- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 11 dB | 14 dB | 17 to 24 dB |
| Optical Dynamic range | 20 dB | 20 dB | 24 dB |

9- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**End of Series 4000i**

**Series 4100/4200/4300i** FM 4 channel video multiplexer and up to three data return on one fiber - system description: for video multiplexed with return data transmission the following cards are available.

**PT-4100/4200/4300iR** - FO 4 channel video transmitter, up to 3 data receiver card for wall, desk or rackmount installation

1- The Fiber Optic Video and Data System shall consist of Meridian Technologies PT-4100/4200/4300iR fiber optic 4 video and up to 3 data return transceiver card at camera (or if loop through - monitor) location.

2- Unit shall convert four (4) PAL, SECAM or NTSC video from source to Frequency Modulated (FM) light to transmit on one (1) multimode or singlemode fiber; convert Frequency Modulated (FM) light into up to three (3) data from same fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W or 100mm(4")H; card to include four (4) BNC video connectors, one (1) DE15 (high density 15 pin) for data and one (1) ST optical for multimode or FC for singlemode.

4- Card shall occupy two slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy
e) LEDs for status monitoring

6- LEDs shall indicate:

Data Receiver

| | Green | No Color |
|---|---|---|
| 1st LED | Data Present | Data Absent |
| 2nd LED | Data Present | Data Absent |
| 3rd LED | Data Present | Data Absent |

7- Data formats shall be:

Manchester by American Dynamics
Biphase by Burle
RS-232
RS-422
20mA Current Loop
TTL

8- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

9- Optical source for singlemode shall be:



1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,

10- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

11- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

**PR-4100/4200/4300iR** - FO 4 channel video receiver, up to 3 data transmitter card for wall, desk or rackmount installation (monitor end)

1- The Fiber Optic Video and up to 3 Data System shall consist of Meridian Technologies PR-4100/4200/4300iR fiber optic 4 video, data return transceiver card at monitor location.

2- Unit shall receive Frequency Modulated (FM) light from fiber and convert to four (4) PAL, SECAM or NTSC video signals on one (1) multimode or singlemode fiber; convert up to three (3) data into Frequency Modulated (FM) light into the same fiber. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include four (4) BNC video connectors, one (1) DE15 (high density 15 pin) connector for data and one (1) ST optical for multimode or FC for singlemode.

4- Card shall occupy two slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy
e) LEDs for status monitoring

6- LEDs shall indicate:

Data Receiver

| | Green | No Color |
|---|---|---|
| 1st LED | Data Present | Data Absent |
| 2nd LED | Data Present | Data Absent |
| 3rd LED | Data Present | Data Absent |

7- Data formats shall be:

Manchester by American Dynamics
Biphase by Burle
RS-232
RS-422
20mA Current Loop

TTL

8- Optical source for multimode shall be an 850/1300nm LEDs for up to 4Km; w/output power (50% APL) of -16dBm into 50/125u; -13dBm into 62.5/125u fiber.



9- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm.

10- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

11- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 10MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km (multimode) | 58dB |
| S/N ratio @ 10Km (singlemode) | 58dB |
| FM Carrier Frequency | 150MHz |

12- System Data performance shall be:

| | |
|---|---|
| Data rate | DC to 100 Kbs |
| Bit error rate | $10^{-9}$ |

13- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 9 dB | 12 dB | 17 to 24 dB |
| Optical Dynamic range | 20 dB | 20 dB | 20 dB |

14- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**end of Series 4100/4200/4300i**

**PT-4400iR** - FO 4 channel video, 4 audio and/or data transmitter card for wall, desk or rackmount installation

1- The Fiber Optic Video, Audio, Data System shall consist of Meridian Technologies PT-4400iR fiber optic 4 video and 4 audio; 4 video and 4 data; 4 video and 2 audio and 2 data multiplexer transmitter card at camera (or if loop through - monitor) location.

2- Unit shall convert four (4) PAL, SECAM or NTSC video, 4 audio and/or data signals from source to Frequency Modulated (FM) light to transmit on one (1) multimode or singlemode fiber . Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include four (4) BNC video connectors, up to four (4) mini din or RCA for audio and up to four (4) terminal block for data and one (1) ST optical for multimode or FC for singlemode.

4- Card shall occupy two slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Data formats shall be:

RS-232
RS-422

7- Optical source for multimode shall be a 1300nm LED for up to 4Km; w/output power of -14dbM into 50/125u; -11dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310nm Laser >15Km but <25Km; w/output power of -8dBm,
1310nm Laser >25Km but <40Km; w/output power of +2dBm.

9- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

**PR-4400iR** - FO 4 channel video, 4 audio and/or data receiver card for wall, desk or rackmount installation (monitor end)

1- The Fiber Optic Video, Audio, Data System shall consist of Meridian Technologies PR-4400iR fiber optic 4 video, 4 audio; 4 video, 4 data; 4 video, 2 audio and 2 data multiplexer receiver card at monitor location.

2- Unit shall receive Frequency Modulated (FM) light from fiber and convert to four (4) PAL, SECAM or NTSC video signals on one (1) multimode or singlemode fiber. Intensity (IM) or amplitude (AM) shall not be acceptable.



3- Dimensions shall be: 160mm(6.3")L x 40mm(0.8")W x 100mm(4")H; card to include four (4) BNC video connectors, up to four (4) mini din or RCA for audio, up to four (4) terminal block for data and one (1) ST optical for multimode or FC for singlemode.

4- Card shall occupy two slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Data formats shall be:

RS-232
RS-422

7- Unit shall employ a 1300nm PIN Diode detector for multimode; 1310nm or 1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

8- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 7MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km (multimode) | 58dB |
| S/N ratio @ 10Km (singlemode) | 58dB |
| FM Carrier Frequency | 150MHz |

9- System Audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600 Ohm, 10K or 47k Ohm bal/unbal |
| Audio In/Output Voltage | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| S/N ratio | 60dB |

10- System Data performance shall be:

| | |
|---|---|
| Data rate | DC to 100 Kbs |
| Bit error rate | $10^{-9}$ |

11- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | | 11 dB | 14 dB | 17 to 24 dB |
| Optical Dynamic range | 20 dB | 20 dB | 20 dB | |



12- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**end of Series 4400i**

**Series 4600i** FM 4 channel video multiplexer and duplex audio/data on one fiber - system description: for video multiplexed with duplex audio/data transmission the following cards are available.

**PT-4600iR** - FO 4 channel video transmitter, duplex audio/data transceiver card for wall, desk or rackmount installation

1- The Fiber Optic Video and duplex Audio/Data System shall consist of Meridian Technologies PT-4600iR fiber optic 4 video and duplex audio/data transceiver card at camera (or if loop through - monitor) location.

2- Unit shall convert four (4) PAL, SECAM or NTSC video and audio/data from source to Frequency Modulated (FM) light to transmit on one (1) multimode or singlemode fiber; convert Frequency Modulated (FM) light into audio/data from same fiber. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W or 100mm(4")H; card to include four (4) BNC video connectors, one (1) DE15 (high density 15 pin) for data and one (1) ST optical for multimode or FC for singlemode.

4- Card shall occupy two slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Data formats shall be:

Manchester by American Dynamics
Biphase by Burle
RS-232
RS-422
20mA Current Loop
TTL

7- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power (50% APL) of -19dBm into 50/125u; -16dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm*,

9- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.



10- Operating temperatures shall be -25C to +70C; humidity 0 to 95% non condensing.

**PR-4600iR** - FO 4 channel video receiver, duplex audio/data transceiver card for wall, desk or rackmount installation (monitor end)

1- The Fiber Optic Video and duplex Audio/Data System shall consist of Meridian Technologies PR-4600iR fiber optic 4 video, duplex audio/data transceiver card at monitor location.

2- Unit shall receive Frequency Modulated (FM) light from fiber and convert to four (4) PAL, SECAM or NTSC video and audio/data signals on one (1) multimode or singlemode fiber; convert audio/data into Frequency Modulated (FM) light into the same fiber. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include four (4) BNC video connectors, one (1) DE15 (high density 15 pin) connector for data and one (1) ST optical for multimode or FC for singlemode.

4- Card shall occupy two slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Data formats shall be:

Manchester by American Dynamics
Biphase by Burle
RS-232
RS-422
20mA Current Loop
TTL

7- Optical source for multimode shall be an 850/1300nm LEDs for up to 4Km; w/output power (50% APL) of -16dBm into 50/125u; -13dBm into 62.5/125u fiber.

8- Optical source for singlemode shall be:

1310/1550nm Laser >0Km but <40Km; w/output power (50% APL) of -8dBm.

9- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

10- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 7MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |



| | |
|---|---|
| Field Tilt | <0.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| S/N ratio @ 1Km (multimode) | 58dB |
| S/N ratio @ 10Km (singlemode) | 58dB |
| FM Carrier Frequency | 150MHz |

11- System Audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600 Ohm, 10K or 47k Ohm bal/unbal |
| Audio In/Output Voltage | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| S/N ratio | 60dB |

12- System Data performance shall be:

| | |
|---|---|
| Data rate | DC to 100 Kbs |
| Bit error rate | $10^{-9}$ |

13- System optical performance shall be:

| | 50/125 | 62.5/125 | Singlemode |
|---|---|---|---|
| Optical loss budget | 9 dB | 12 dB | 17 to 24 dB |
| Optical Dynamic range | 20 dB | 20 dB | 20 dB |

14- Operating temperature shall be -25C to +70C; operating humidity 0 to 95% non condensing.

**end of Series 4600i**

**Series 8000/8800i** FM 8 channel video; 4 duplex video; 4 duplex video, 4 duplex audio, 4 duplex data on one fiber - system description: for video, audio, data multiplexed transmission the following cards are available.

**PT-8000iR** - FO 8 channel video transmitter card for wall, desk or rackmount installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PT-8000iR fiber optic 8 channel multiplexer transmitter card at camera (or if loop through - monitor) location.

2- Unit shall convert eight (8) PAL, SECAM or NTSC video signals from source to Frequency Modulated (FM) light to transmit on one (1) multimode fiber or singlemode. Intensity (IM) or amplitude (AM) modulation shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include eight (8) BNC video connectors and one (1) ST for multimode or FC optical connector for singlemode.

4- Card shall occupy two slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Optical source for multimode shall be 850/1300nm LED for up to 1.5Km on 50/125, 500m on 62.5/125; w/output power of -17dbM into 50/125u; -14dBm into 62.5/125u fiber.

7- Optical source for singlemode shall be:

1310/1550nm Laser w/output power -8/-8dBm,

8- Unit shall employ an 850/1300nm PIN detector for multimode and 1310/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

9- Operating temperatures shall be 0 C to +50C; humidity 0 to 95% non condensing.

**PR-8000iR** - FO 8 channel video receiver for wall, desk or rackmount installation (monitor end)

1- The Fiber Optic Video System shall consist of Meridian Technologies PR-8000iR fiber optic 8 channel demultiplexer receiver card at monitor location.

2- Unit shall receive Frequency Modulated (FM) light from fiber and convert to four (8) PAL, SECAM or NTSC video signals on one (1) multimode or singlemode fiber. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include eight (8) BNC video connectors and one (1) ST for multimode or FC optical connector for singlemode.

4- Card shall occupy two slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.



5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Unit shall employ an 850/1300nm PIN Diode detector for multimode; 1310/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

7- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 10MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km (multimode) | 58dB |
| FM Carrier Frequency | 150MHz |

8- System optical performance shall be:

| | 50/125u | 62.5/125u | Singlemode |
|---|---|---|---|
| Optical Loss Budget | 7 dB | 10 dB | 17 dB |
| Optical Dynamic Range | 17 dB | 17 dB | 17 dB |

9- Operating temperature shall be -0C to +50C; operating humidity 0 to 95% non condensing.

**PX-8000iR** - FO 4 duplex video transceiver for wall, desk or rackmount installation

1- The Fiber Optic Video System shall consist of Meridian Technologies PX-8000iR fiber optic 4 duplex video multiplexer transceiver card at camera/monitor location.

2- Unit shall convert 4 PAL, SECAM or NTSC video signals from source to Frequency Modulated (FM) light to couple into one (1) multimode or singlemode fiber; receive Frequency Modulated (FM) light from same fiber and convert to four (4) PAL, SECAM or NTSC video signals. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 40mm(1.7")W x 100mm(4")H; card to include eight (8) BNC video connectors and one (1) ST for multimode or FC optical connector for singlemode.

4- Card shall occupy two slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on



d) built in circuitry for power supply redundancy

6- Optical source for multimode shall be 850/1300nm LED w/output power of -17dBm into 50/125u; -14dBm into 62.5/125u.

7- Optical source for singlemode shall be:

1310/1550nm Laser w/output power of -8/-8dBm

8- Unit shall employ an 850/1300nm PIN Diode detector for multimode; 1310/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

9- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 10MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km (multimode) | 58dB |
| S/N ratio @ 5Km (singlemode) | 58dB |
| FM Carrier Frequency | 150MHz |

10- System optical performance shall be:

| | 50/125u | 62.5/125u | Singlemode |
|---|---|---|---|
| Optical Loss Budget | 7 dB | 11 dB | 17 dB |
| Optical Dynamic Range | 17 dB | 17 dB | 17 dB |

11- Operating temperature shall be -0C to +50C; operating humidity 0 to 95% non condensing.

**PT-8800iR** - FO 8 video and 8 audio and/or 8 data transmitter for wall, desk or rackmount installation

1- The Fiber Optic Video, Audio, Data System shall consist of Meridian Technologies PT-8800iR fiber optic 8 video and 8 audio and/or 8 data multiplexer transmitter card at camera location.

2- Unit shall convert 8 PAL, SECAM or NTSC video and 8 audio and/or 8 data signals from source to Frequency Modulated (FM) light to couple into one (1) multimode or singlemode fiber. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 80mm(3.5")W x 100mm(4")H; card to include eight (8) BNC video connectors, eight (8) audio and/or data connectors and one (1) ST for multimode or FC optical connector for singlemode.

4- Card shall occupy four slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,



b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Optical source for multimode shall be 850 Laser/1300nm LED w/output power of -17dBm into 50/125u; -14dBm into 62.5/125u.

7- Optical source for singlemode shall be:

1310/1550nm Laser w/output power of -8/-8dBm,

8- Unit shall employ an 850/1300nm PIN Diode detector for multimode; 1310/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

9- Operating temperature shall be -0C to +50C; operating humidity 0 to 95% non condensing.

**PR-8800iR** - FO 8 video and 8 audio or 8 data receiver for wall, desk or rackmount installation

1- The Fiber Optic Video, Audio, Data System shall consist of Meridian Technologies PR-8800iR fiber optic 8 video and 8 audio or 8 data multiplexer receiver card at monitor location.

2- Unit shall convert Frequency Modulated (FM) light from one (1) multimode or singlemode fiber to 8 PAL, SECAM or NTSC video and 8 audio or 8 data signals. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 80mm(3.5")W x 100mm(4")H; card to include eight (8) BNC video connectors, 8 audio and/or data connectors and one (1) ST for multimode or FC optical connector for singlemode.

4- Card shall occupy four slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Optical source for multimode shall be 850 Laser/1300nm LED w/output power of -17dBm into 50/125u; -14dBm into 62.5/125u.

7- Optical source for singlemode shall be:

1310/1550nm Laser w/output power of -8/-8dBm,

8- Unit shall employ an 850/1300nm PIN Diode detector for multimode; 1310/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

9- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 7MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 150MHz |



10- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10K or 47K Ohm bal/unbal |
| Audio In/Output Voltage | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| S/N Ratio | 60 dB |

11- System Data Performance shall be:

| | |
|---|---|
| Data Rate | DC to 19.2 Kbs |
| Bit Error Rate | $10^{-9}$ |

12- System optical performance shall be:

| | 50/125u | 62.5/125u | Singlemode |
|---|---|---|---|
| Optical Loss Budget | 7 dB | 11 dB | 17 dB |
| Optical Dynamic Range | 17 dB | 17 dB | 17 dB |

13- Operating temperature shall be -0C to +50C; operating humidity 0 to 95% non condensing.

**PX-8800iR** - FO 4 duplex video, 4 duplex audio and/or 4 duplex data transceiver for wall, desk or rackmount installation

1- The Fiber Optic Video, Audio, Data System shall consist of Meridian Technologies PX-8800iR fiber optic 4 duplex video, 4 duplex audio and/or 4 duplex data multiplexer transceiver card at cameras/monitors locations.

2- Unit shall convert 4 PAL, SECAM or NTSC video, 4 audio; 4 video, 4 data; 4 video, 2 audio and 2 data signals from source to Frequency Modulated (FM) light to couple into one (1) multimode or singlemode fiber; receive Frequency Modulated (FM) light from same fiber and convert to four (4) PAL, SECAM or NTSC video, 4 audio; 4 video, 4 data; 4 video, 2 audio and 2 data signals. Intensity (IM) or amplitude (AM) shall not be acceptable.

3- Dimensions shall be: 160mm(6.3")L x 80mm(3.5")W x 100mm(4")H; card to include eight (8) BNC video connectors, 4 audio and/or data connectors and one (1) ST for multimode or FC optical connector for singlemode.

4- Card shall occupy four slots in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:



a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Optical source for multimode shall be 850 Laser/1300nm LED w/output power of -17dBm into 50/125u; -14dBm into 62.5/125u.

7- Optical source for singlemode shall be:

1310/1550nm Laser w/output power of -8/-8dBm,

8- Unit shall employ an 850/1300nm PIN Diode detector for multimode; 1310/1550nm for singlemode, require no user adjustments and have sensitivity to -25dBm.

9- System video performance shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p, 1.5V max |
| Bandwidth | 5Hz to 7MHz |
| Differential gain (10% to 90% APL) | <+/-1.5% |
| Differential phase (10% to 90% APL) | <+/-1.5 deg |
| Field Tilt | <0.5% |
| S/N ratio @ 1Km | 67dB |
| FM Carrier Frequency | 150MHz |

10- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600, 10K or 47K Ohm bal/unbal |
| Audio In/Output Voltage | -6 to +6 dBm |
| Frequency Response | 10 Hz to 20 KHz |
| THD | <1%, 1 KHz @ max modulation |
| S/N Ratio | 60 dB |

11- System Data Performance shall be:

| | |
|---|---|
| Data Rate | DC to 19.2 Kbs |
| Bit Error Rate | $10^{-9}$ |

12- System optical performance shall be:

| | 50/125u | 62.5/125u | Singlemode |
|---|---|---|---|
| Optical Loss Budget | 7 dB | 11 dB | 17 dB |
| Optical Dynamic Range | 17 dB | 17 dB | 17 dB |

13- Operating temperature shall be -0C to +50C; operating humidity 0 to 95% non condensing.

**end of Series 8000/8800i**



**Series 9000** RGB 160MHz video - system description: for remoting high resolution RGB workstations on three fibers the following cards are available.

**PT-9000R** - FO 160MHz RGB video transmitter card for wall, desk or rackmount installation

1- The Fiber Optic RGB Video System shall consist of Meridian Technologies PT-9000R fiber optic transmitter card at source location.

2- Unit shall convert (up to) 160MHz RGB signal from source to Amplitude Modulated (AM) light for coupling into three (3) 50/125u or 62.5/125u multimode fibers.

3- Sync input shall be on green channel or if monochrome signals on all three channels.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include 3 BNC video connectors and 3 ST optical receptacles.

5- Card shall occupy one slot in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

7- Optical sources shall be 850nm LEDs; w/output power (50% APL) of -13dbM into 50/125u; -10dBm into 62.5/125u multimode fiber.

8- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**PR-9000R** - FO 160MHz AGC RGB video receiver card for wall, desk or rackmount installation

1- The Fiber Optic RGB Video System shall consist of Meridian Technologies PR-9000R fiber optic receiver card at monitor location.

2- Unit shall convert Amplitude Modulated (AM) light from three (3) 50/125u or 62.5/125u multimode fibers into (up to) 160MHz RGB video signal.

3- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include 3 BNC video connectors and 3 ST optical receptacles.

4- Card shall occupy one slot in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

5- Card shall feature:

a) front panel power on LED,
b) short circuit protection with PCB mounted fuses,
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy

6- Unit shall employ 850nm PIN Diode detectors, feature Automatic Gain Control (AGC) and have sensitivity of -20dBm in each of 3 channels.



7- System video performance per channel shall be:

| | |
|---|---|
| Video In/Output Impedance | 75 Ohm (unbalanced) |
| Video In/Output Level | 1.0V p-p |
| Bandwidth | 10Hz to 160MHz |
| Differential gain (10% to 90% APL) | <+/-2% |
| Differential phase (10% to 90% APL) | <+/-2 deg |
| Field tilt | <0.5% |
| S/N ratio @ 1Km | >52dB |

8- System optical performance per channel shall be:

| | 50/125u | 62.5/125u |
|---|---|---|
| Optical loss budget | 7 dB | 10 dB |
| Optical Dynamic range | 10dB | 10 dB |

9- Operating temperatures shall be -0C to +50C; humidity 0 to 95% non condensing.

**end of Series 9000**

**Series 9900i** FM bi-directional 2 (duplex) data and 1 (duplex) audio transceivers on one fiber - system description: for audio/data communication, choose from the following transceivers:

**PX-9900iR** - FO 2 data, 1 audio transmitter/2 data, 1 audio receiver card for wall, desk or rackmount installation

1- The Fiber Optic bi-directional Audio and Data System shall consist of Meridian Technologies PX-9900iR fiber optic transceiver card at source location.

2- Unit shall operate on one multimode fiber.

3- Unit shall convert up to two (2) data and (1) audio signals from source to Frequency Modulated (FM) light to transmit; receive Frequency Modulated (FM) light from same fiber and convert to two (2) data one 1 audio signals. Intensity (IM) and amplitude (AM) modulation shall not be acceptable.

4- Dimensions shall be: 160mm(6.3")L x 20mm(0.8")W x 100mm(4")H; card to include female DB15 for audio and data, and RJ45 for data; one (1) ST optical for multimode or FC for singlemode.

5- Card shall occupy one slot in any Meridian EIA subrack, wall or desk chassis and feature digital circuitry compatible with microprocessor based local or remote PC SpectraSmart diagnostics.

6- Card shall feature:

a) front panel power on LED
b) short circuit protection with PCB mounted fuses
c) "Hot" swapping capability - installation or removal with power on
d) built in circuitry for power supply redundancy
e) 6 LEDs for status monitoring.

7- LEDs shall turn on to indicate:

Audio Data Data Transmitter

PTD - Printer Transmitted Data
PRD - Printer Received Data
KTA - Keyboard Transmitted Audio
KRA - Keyboard Received Audio
KTD - Keyboard Transmitted Data
KRD - Keyboard Received Data

8- Data formats shall be the following:

RS-232 wcontrols
RS-422

9- Optical source for multimode shall be an 850/1300nm LEDs for up to 4.5Km; w/output power of -18dbM into 50/125u; -15dBm into 62.5/125u fiber.

10- Unit shall employ an 850nm/1300nm PIN Diode detector for multimode; 1310nm/1550nm for singlemode, require no user adjustments and have sensitivity to -34dBm.

11- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.



12- System audio performance shall be:

| | |
|---|---|
| Audio In/Output Impedance | 600 Ohm bal/unbal |
| Audio In/Output Voltage | 0 dBm |
| Frequency Response | 20 Hz to 20 KHz |
| Signal to Noise Ratio @ 1Km | 60 dB |

15- System data performance shall be:

| | |
|---|---|
| Data Rate | DC to 19.2 Kbs |
| Bit Error Rate | $10^{-9}$ |

16- System optical performance shall be:

| | 50/125 | 62.5/125 |
|---|---|---|
| Optical loss budget | 14 dB | 17 dB |
| Optical Dynamic range | 17 dB | 17 dB |

17- Operating temperatures shall be -20C to +65C; humidity 0 to 95% non condensing.

**end of series 9900i**

**SR-1000/S** Universal Frame - description 2 slot desk Chassis with desk model switching power supply.

1- The chassis shall be Meridian Technologies SR-1000/S a wall mountable frame for installation of cards units.

2- Chassis shall be made of extruded aluminum and steel sheet metal components.

3- Dimensions shall be 182mm(7.16")L x 44mm(1.75")D x 165mm(6.5")H.

4- Chassis shall have 2 card slots and flanges with four (4) mounting holes for installation on a vertical surface.

5- Chassis shall feature a detachable desk model switcher supply for powering up to two (2) Meridian Technologies LED or Laser based transmitters, receivers or transceivers.

6- Power supply shall be PS-100 30W switcher that will feature:

a- auto ranging 87-264VAC, 50/60Hz
b- UL, CSA certified
c- low minimum load
d- high output efficiency
e- short circuit protection
f- over voltage protection

**end of SR-1000/S**

**SR-1200/S** Universal Frame - description 4 slot desk Chassis with built in 80W switching power supply.

1- The chassis shall be Meridian Technologies SR-1200/S a wall or desk mountable frame for installation of cards units.

2- Chassis shall be made of extruded aluminum and steel sheet metal components.

3- Dimensions shall be 152mm(6")L* x 184mm(7.25")D x 133mm(5.25")H. *add 2" for mounting flanges.

4- Chassis shall have four (4) card slots and one power supply slot and rear flanges with four (4) mounting holes for installation on a vertical surface.

5- Chassis shall feature a front loading procedure for cards and power supply.

6- Chassis shall feature a built in 80W switcher supply for powering up to four (4) Meridian Technologies LED or Laser based transmitters, receivers or transceivers.

7- Power supply shall be PS-150 80W switcher that will feature:

a- auto ranging 87-264VAC, 50/60Hz
b- UL, CSA certified
c- heavy duty heat sinks on 3 sides

d- low minimum load
e- high output efficiency
f- short circuit protection



g- over voltage protection
h- over current protection
i- led power on w/optional reset computer button

**end of SR-1200/S**

**SR-1500/S and SR-1500/R** Universal Frames - description 7 slot desk Chassis with built in one (1) or dual (2) redundant 80W switching power supplies.

1- The chassis shall be Meridian Technologies SR-1500/S with one supply or SR-1500/R w/dual redundant power supplies wall or desk mountable frame for installation of cards units.

2- Chassis shall be made of extruded aluminum and steel sheet metal components.

3- Dimensions shall be 279mm(11")L* x 184mm(7.25")D x 133mm(5.25")H *add 2" for mounting flanges.

4- Chassis shall have seven (7) card slots and one or dual redundant power supply slots and rear flanges with four (4) mounting holes for installation on a vertical surface.

5- Chassis shall feature a front loading procedure for cards and power supply (ies).

6- Chassis shall feature a built in 80W switcher supply for powering up to four (4) Meridian Technologies LED or Laser based transmitters, receivers or transceivers.

7- First slot shall be designed to accept Meridian Technologies local (1 slot) and/or remote (2 slot) computer based SpectraSmart (tm) diagnostics cards.

8- Power supply shall be PS-150 80W switcher that will feature:

a- auto ranging 87-264VAC, 50/60Hz
b- UL, CSA certified
c- heavy duty heat sinks on 3 sides
d- low minimum load
e- high output efficiency
f- short circuit protection
g- over voltage protection
h- over current protection
i- led power on w/optional reset computer button

**end of SR-1500/S and SR-1500/R**

**SR-2001/AS2** Universal Frame - description stand alone 18 slot rackmount Chassis with built in one (1) 200W switching power supply.

1- The chassis shall be Meridian Technologies SR-2001/AS2 with one (1) supply, rack mountable frame for installation of cards units.

2- Chassis shall be made of extruded aluminum and steel sheet metal components.

3- Dimensions shall be 483mm(19")L x 279mm(11")D x 133mm(5.25")H.

4- Chassis shall have eighteen (18) card slots and one built in power supply slots and reversible mounting ears with four (4) mounting holes for installation in a standard EIA rack cabinet.

5- Chassis shall feature a front or rear loading procedure for cards and power supply.

6- Chassis shall feature a built in 200W switcher supply for powering up to eighteen (18) Meridian Technologies LED or Laser based transmitters, receivers or transceivers.

7- Power supply shall be PS-200, 200W switcher that feature:

a- auto ranging 87-264VAC, 50/60Hz
b- heavy duty heat sinks on 3 sides
c- low minimum load
d- high output efficiency
e- short circuit protection
f- over voltage protection
g- over current protection
h- led power on w/optional reset computer button

**end of SR-2001/AS2**

**SR-2000/S2** Universal Frame, Fiber Optic Command Center - description 18 slot rackmount Chassis with SpectraSmart and built in one (1) 200W switching power supply.

1- The chassis shall be Meridian Technologies SR-2000/S2 Command Center with one (1) supply, rack mountable frame for installation of cards units.

2- Chassis shall be made of extruded aluminum and steel sheet metal components.

3- Dimensions shall be 483mm(19")L x 279mm(11")D x 133mm(5.25")H.

4- Chassis shall have eighteen (18) card slots, one (1) built in power supply slot and reversible mounting ears with four (4) mounting holes for installation in a standard EIA rack cabinet.

5- Chassis shall feature a front or rear loading procedure for cards and power supply.

6- For local diagnostics only, chassis shall incorporate in its anterior compartment the following:

a) an expansion card that communicates to the SR-2000 microprocessor (computer) card for diagnostics and Network Management

b) a computer card with eprom and SpectraSmart (tm) software for diagnostics and Network Management



c) a cold cathode lit LCD for displaying processed information

d) a keypad for accessing the microprocessor

e) a piezo for sounding alarms - two beeps for minor; continuos beep for major alarm conditions

f) a lock for preventing access to the keypad

g) one male IDC connector that hooks up via flat ribbon cable to an SR-2001 expansion subrack

7- For remote PC based diagnostics, chassis shall incorporate in its anterior compartment the following:

a) an expansion card that communicates to the SR-2000 microprocessor (computer) card for diagnostics and Network Management

b) a computer card with eprom and SpectraSmart (tm) software for diagnostics and Network Management

c) an RS-232 or Ethernet port for communicating to remote PC

d) one male IDC connector that hooks up via flat ribbon cable to an SR-2001 expansion subrack

8- Chassis shall feature a built in 200W switcher supply for powering up to eighteen (18) Meridian Technologies LED or Laser based transmitters, receivers or transceivers.

9- Power supply shall be PS-200, 200W switcher that feature:

a- auto ranging 87-264VAC, 50/60Hz
b- heavy duty heat sinks on 3 sides
c- low minimum load
d- high output efficiency
e- short circuit protection
f- over voltage protection
g- over current protection
h- led power on w/optional reset computer button

10- SpectraSmart shall feature menu driven, upgradeable software that includes:

I- two level password security, master password for owner of system and user password for daily operator of system

II- setting time and date; stamping same on alarm condition screens

III- configuration and activation of system at

a- subrack level
b- card level
c- channel level

IV- alarm history buffer with storage capability of up to 999 alarms and overflow (LIFO) release



V- copyright and bios version information

11- Configuration and activation of system at subrack level shall incorporate:

a- recognition of subracks in system, Master=0; Expansions=1-9;

b- ability to activate or inactivate - command computer to scan (or stop scanning) existence and process diagnostic parameters of subracks in system

c- on screen display of subracks in system and level of activity

12- Configuration and activation of system at card level shall incorporate:

a- recognition of cards in each subrack, T=Transmitter, R=Receiver, X=Transceiver

b- ability to activate or inactivate - command computer to scan (or stop scanning) existance and process diagnostic parameters of cards in each subrack of system

c- on screen display that includes each subrack's 18 slot rear (card/channel) over view, level of activity of individual cards and over temperature condition in each slot as *=>55 C and @=>65 C

13- Configuration and activation of system at channel level shall incorporate:

a- recognition of channels in each card, v=video, a=audio, d=data, r=red, g=green, b=blue, p=phone, l=line

b- ability to activate or inactivate - command computer to scan (or stop scanning) existence and process diagnostic parameters of channels in each card

c- on screen display that includes channel over view and level of activity of individual channels

d- ability to address individual channels' remote links with twenty (11) alpha numeric characters

14- SpectraSmart status monitoring and diagnostics shall check system performance on real time basis and

a- generate alarm conditions defined as minor and major according to Meridian Technologies preset parameters; display same on screen

b- generate piezo sounds that match minor/major alarm conditions

c- generate on screen suggestions for trouble shooting new installations and/or resolving potential maintenance problems

d- parameters tested shall be:

* optical level presence/absence
* in last 3 dB of optical budget
* video presence/absence
* sync presence/absence
* FM data/audio carrier transmit detect/not detect
* FM data/audio carrier receive detect/not detect

* 75 Ohm load presence/absence



* channel in card current draw
* laser in card current draw
* remote source location
* expansion subrack presence/absence
* card configuration status
* channel configuration status
* system configuration status
* installation/removal of card
* card temperature status
* power supply temperature status
* subrack temperature status

**end of SR-2000/S2**

**SR-2001/ES2** Universal Frame - description 18 slot rackmount Chassis as an expansion unit to the microprocessor based SR-2000 Command Center with SpectraSmart and built in one (1) 200W switching power supply.

1- The expansion chassis to the SR-2000 Command Center shall be Meridian Technologies SR-2001/ES2 with one (1) supply, rack mountable frame for installation of cards units.

2- Chassis shall be made of extruded aluminum and steel sheet metal components.

3- Dimensions shall be 483mm(19")L x 279mm(11")D x 133mm(5.25")H.

4- Chassis shall have eighteen (18) card slots, one (1) built in power supply slot and reversible mounting ears with four (4) mounting holes for installation in a standard EIA rack cabinet.

5- Chassis shall feature a front or rear loading procedure for cards and power supply.

6- Chassis shall incorporate in its anterior compartment:

a) an expansion card for communicating to the SR-2000 microprocessor for diagnostics and Network Management

b) an identification card with 7 segment LED display for chassis ID

c) a BC decoder switch to identify chassis by number from 1 to 9

d) two male IDC connectors that hook up via flat ribbon cable to SR-2000 Master Subrack and if required to next expansion unit

e) a twenty (20) conductor flat ribbon cable with female IDC connectors on both ends

7- Chassis shall feature a built in 200W switcher supply for powering up to eighteen (18) Meridian Technologies LED or Laser based transmitters, receivers or transceivers.

8- Power supply shall be PS-200, 200W switcher that feature:

a- auto ranging 87-264VAC, 50/60Hz
b- heavy duty heat sinks on 3 sides

c- low minimum load



d- high output efficiency
e- short circuit protection
f- over voltage protection
g- over current protection
h- led power on w/optional reset computer button

**end of SR-2001/ES2**

**SR-4001/AR** Universal Frame - description stand alone 36 slot rackmount Chassis with built in dual (2) redundant 300W switching power supplies.

1- The chassis shall be Meridian Technologies SR-4001/AR with two (2) power supplies, rack mountable frame for installation of cards units.

2- Chassis shall be made of extruded aluminum and steel sheet metal components.

3- Dimensions shall be 483mm(19")L x 279mm(11")D x 266mm(10.5")H.

4- Chassis shall have thirty six (36) card slots and two (2) built in power supply slots and reversible mounting ears with four (4) mounting holes for installation in a standard EIA rack cabinet.

5- Chassis shall feature a front or rear loading procedure for cards and power supplies.

6- Chassis shall feature built in, two (2) redundant 300W switcher supplies for powering up to thirty six (36) Meridian Technologies LED or Laser based transmitters, receivers or transceivers.

7- Power supplies shall be PS-300, 300W switchers that feature:

a- auto ranging 87-264VAC, 50/60Hz
b- heavy duty heat sinks on 3 sides
c- low minimum load
d- high output efficiency
e- short circuit protection
f- over voltage protection
g- over current protection
h- led power on w/optional reset computer button

**end of SR-4001/AR**

**SR-4000/R** Universal Frame, Fiber Optic Command Center - description 36 slot rackmount Chassis with SpectraSmart and built in two (2), redundant 300W switching power supplies.

1- The chassis shall be Meridian Technologies SR-4000 Command Center with two (2) redundant supplies, rack mountable frame for installation of cards units.

2- Chassis shall be made of extruded aluminum and steel sheet metal components.

3- Dimensions shall be 483mm(19")L x 279mm(11")D x 266mm(10.5")H.

4- Chassis shall have thirty six (36) card slots, two (2) built in power supply slots and reversible mounting ears with four (4) mounting holes for installation in a standard EIA rack cabinet.

5- Chassis shall feature a front or rear loading procedure for cards and power supplies.

6- For local diagnostics only, chassis shall incorporate in its anterior compartment the following:

a) two expansion cards (1 per 18 slots) that communicate to the SR-4000 microprocessor (computer) card for diagnostics and Network Management

b) a computer card with eprom and SpectraSmart (tm) software for diagnostics and Network Management

c) an identification card that IDs the lower 18 slots

d) a cold cathode lit LCD for displaying processed information

e) a keypad for accessing the microprocessor

f) a piezo for sounding alarms - two beeps for minor; continuos beep for major alarm conditions

g) a lock for preventing access to the keypad

h) three male IDC connectors, one on upper level (top 18 slots of SR-4000) that hooks up via flat ribbon cable to the lower level (bottom 18 slots) for communication from expansion cards (within SR-4000) to computer card of SR-4000; a third IDC connector on lower level for communication via flat ribbon cable from computer to SR-4001 expansion subracks

7- FOR remote PC based diagnostics, chassis shall incorporate in its anterior compartment the following:

a) two expansion cards (1 per 18 slots) that communicate to the SR-4000 microprocessor (computer) card for diagnostics and Network Management

b) a computer card with eprom and SpectraSmart (tm) software for diagnostics and Network Management

c) and identification card that IDs the lower 18 slots

d) an RS-232 or Ethernet port for communicating to remote PC

e) three male IDC connectors, one on upper level (top 18 slots of SR-4000) that hooks up via flat ribbon cable to the lower level (bottom 18 slots) for communication from expansion cards (within SR-4000) to computer card of SR-4000; a third IDC connector on lower level for communication via flat ribbon cable from computer to SR-4001 expansion subracks

8- Chassis shall feature two, built in redundant 300W switcher supplies for powering up to thirty six (36) Meridian Technologies LED or Laser based transmitters, receivers or transceivers.

9- Power supply shall be PS-300, 300W switcher that feature:

a- auto ranging 87-264VAC, 50/60Hz
b- heavy duty heat sinks on 3 sides
c- low minimum load
d- high output efficiency
e- short circuit protection
f- over voltage protection

g- over current protection
h- led power on w/optional reset computer button

10- SpectraSmart shall feature menu driven, upgradeable software that includes:

I- two level password security, master password for owner of system and user password for daily operator of system

II- setting time and date; stamping same on alarm condition screens

III- configuration and activation of system at

a- subrack level
b- card level
c- channel level

IV- alarm history buffer with storage capability of up to 999 alarms and overflow (LIFO) release

V- copyright and bios version information

11- Configuration and activation of system at subrack level shall incorporate:

a- recognition of subracks in system, Master=0; Expansions=1-5

b- ability to activate or inactivate - command computer to scan (or stop scanning) existence and process diagnostic parameters of subracks in system

c- on screen display of subracks in system and level of activity

12- Configuration and activation of system at card level shall incorporate:

a- recognition of cards in each subrack, T=Transmitter, R=Receiver, X=Transceiver

b- ability to activate or inactivate - command computer to scan (or stop scanning) existence and process diagnostic parameters of cards in each subrack of system

c- on screen display that includes each subrack's upper and lower level 18 slot rear (card/channel) over view, level of activity of individual cards and over temperature condition in each slot as *=>55 C and @=>65 C

13- Configuration and activation of system at channel level shall incorporate:

a- recognition of channels in each card, v=video, a=audio, d=data, r=red, g=green, b=blue, p=phone, l=line

b- ability to activate or inactivate - command computer to scan (or stop scanning) existence and process diagnostic parameters of channels in each card

c- on screen display that includes channel over view and level of activity of individual channels

d- ability to address individual channels' remote links with twenty (20) alpha numeric characters

13- SpectraSmart status monitoring and diagnostics shall check system performance on real time basis

a- generate alarm conditions defined as minor and major according to Meridian Technologies preset parameters; display same on screen

b- generate piezo sounds that match minor/major alarm conditions

c- generate on screen suggestions for trouble shooting new installations and/or resolving potential maintenance problems

d- parameters tested shall be:

* optical level presence/absence
* in last 3 dB of optical budget
* video presence/absence
* sync presence/absence
* FM data/audio carrier transmit detect/not detect
* FM data/audio carrier receive detect/not detect
* 75 Ohm load presence/absence
* channel in card current draw
* laser in card current draw
* remote source location
* expansion subrack presence/absence
* card configuration status
* channel configuration status
* system configuration status
* installation/removal of card
* card temperature status
* power supply temperature status
* subrack temperature status

**end of SR-4000/R**

**SR-4001/ER** Universal Frame - description 36 slot rackmount Chassis as an expansion unit to the microprocessor based SR-4000 Command Center with SpectraSmart and built in two (2), redundant 300W switching power supplies.

1- The expansion chassis to the SR-4000 Command Center shall be Meridian Technologies SR-4001/ES with two (2), redundant supplies, rack mountable frame for installation of cards units.

2- Chassis shall be made of extruded aluminum and steel sheet metal components.

3- Dimensions shall be 483mm(19")L x 279mm(11")D x 266mm(10.5")H.

4- Chassis shall have thirty six (36) card slots, two (2) built in power supply slots and reversible mounting ears with four (4) mounting holes for installation in a standard EIA rack cabinet.

5- Chassis shall feature a front or rear loading procedure for cards and power supplies.

6- Chassis shall incorporate in its anterior compartment:

a) two expansion cards (1 per 18 slots) for communicating to the SR-4000 microprocessor for diagnostics and Network Management

b) an identification card with 7 segment LED display for chassis ID

c) a BC decoder switch to identify chassis by number from 1 to 5

d) two male IDC connectors that hook up via flat ribbon cable to SR-4000 Master Subrack and if required to next expansion unit
e) a twenty (20) conductor flat ribbon cable with female IDC connectors on both ends

7- Chassis shall feature two (2), redundant built in 300W switcher supplies for powering up to thirty six (36) Meridian Technologies LED or Laser based transmitters, receivers or transceivers.

8- Power supplies shall be PS-300, 300W switchers that feature:

a- auto ranging 87-264VAC, 50/60Hz
b- heavy duty heat sinks on 3 sides
c- low minimum load
d- high output efficiency
e- short circuit protection
f- over voltage protection
g- over current protection
h- led power on w/optional reset computer button

**end of SR-4001/ER**