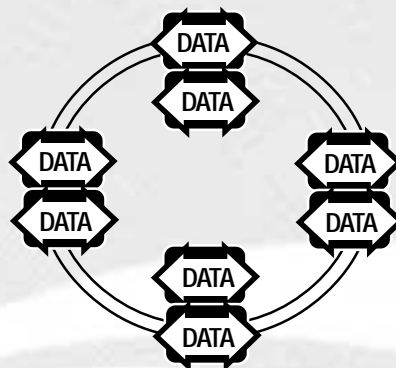


## Data Multidrop Self-Healing Optical Ring Modem



### FEATURES:

- Network Diagnostics - Local and Remote Access
- Surface Mount Technology (SMT) for High Reliability and Repeatability
- Fault Tolerant Self-Healing Ring or Linear Bus Topology
- Multiple-Master Capability
- 2x16 Character LCD Display on each Modem
- Asynchronous Data Rates up to 125 Kbps NRZ
- Uses Digital FPGA Technology
- Data Protocol Independent
- RS-232D, RS-422, RS-485 (2 and 4 wire) and TTL
- True Tri-State Sensing (no time outs needed)
- Single Handshake – RS-232D (RTS & CTS) or 2 Channel 125 Kbps Data Multiplexer
- Full Handshaking Available – RS-232D
- Data Re-clocked & Regenerated at each Modem
- 99 Node Capability
- Individually Addressable Modems
- Anti-streaming (on/off or variable time)
- Local and Remote Loop Back Test
- Local Dry Contact Alarm (N.O.)
- Built In Dual Input Power Redundancy
- Alarmed Battery Backup
- Dual Input: 12 VDC - 35 VDC, 9 VAC - 24 VAC
- Hot Swappable Input Power
- Fully Compatible with SpectraSmart™ PC Based Network Management
- Build In BER Tester w/GUI
- ESD Input Protection
- Exceeds NEMA TS-1/TS-2 and Caltrans Specifications

### DESCRIPTION:

The 2300M is a state of the art self healing, counter rotating multi-drop data modem designed to provide the user with trouble free data transmission in both ring and string configurations. In addition to being equipped with all of the expected features, local and remote diagnostic capabilities are included in each modem. The user-friendly diagnostics menu can be accessed via two small buttons located on the front panel. These buttons are used for scrolling through the menu functions. The status of any other modem can be viewed on the SpectraSmart™ System. Field technicians can perform local and remote diagnostics without the aid of a PC. Parameters viewable on the LCD display are internal modem temperature, power supply voltages, optical ring status, location of fiber breaks, unit failures and many other critical parameters. If a parameter is exceeded, a flashing light and audible alarm are activated at all modems. Both primary and secondary rings are monitored simultaneously by the network diagnostics. If the primary ring is broken, the LCD will display the address of the modems on each side of the break providing quick trouble free identification. In the event of a fault, customer data will automatically be transferred to the secondary ring. SpectraSmart™ PC, a windows based GUI driven network management system can be connected to the Master Primary and Master secondary modems via an RS-232 or RS-485 cable. When a PC is used, the GUI will display the entire Network and a change of color at the trouble location. The SpectraSmart™ software works in conjunction with the LCD display located on the individual modems. When operating normally the Primary Master modem monitors quantity and numerical sequence of slave modems on the ring and each modem stores the last five alarms, which can be displayed on the local LCD display. The 2300M family combines sophisticated self-healing ring topology and computer based local and remote diagnostics to provide your network with round the clock monitoring. The self-healing ring immediately detects faults and reroutes communications to keep your network operational while the built in diagnostics reduces the time required by technicians to analyze, locate and repair the fault.

### CONFIGURATIONS:

The modems can be installed as a string or counter rotating fault tolerant rings. The switch selectable feature allows each modem to be set as a Master Primary, Master Secondary or a Slave. The Master Primary and Master Secondary modems are connected to the PC by an RS-232 or RS-485 cable and provide redundancy if Master Primary or the optical ring is broken.

### APPLICATIONS:

Card Access Control  
 Security Telemetry Systems  
 SCADA System  
 Computer Networks  
 Process Control Systems  
 ITS

## SPECIFICATIONS:

### Data

Formats. . . . . RS-232D, RS-422A,  
 . . . . . RS-485 2w/4w, TTL,  
 . . . . . Single Handshake - RS-232  
 . . . . . (Full Handshaking Available)  
 Rate. . . . . DC to 125 Kb/s (Async.)  
 Bit Error Rate. . . . .  $10^{-9}$  \*  
 PWD (Pulse Width Distortion) <10% @ max. Data Rate

### Connectors

Optical . . . . . (4) ST™, FC, SC  
 Power . . . . . Dual 2 Pin Terminal Blocks  
 I/O Data. . . . . DB25 Female

### Power

Operating. . . . . 500mA @ 12 VDC  
 . . . . . 300 mA @ 24 VAC  
 . . . . . (Alarmed)  
 Inputs. . . . . Dual

### Indicators & LED

LCD Display. . . . . 2x16 Character Display  
 LED Display (12). . . . . Alarm, Power A, Power B,  
 . . . . . Master, Link A, Link B,  
 . . . . . Diagnostic A, Diagnostic B,  
 . . . . . Data TX, Data RX,  
 . . . . . Handshake TX, Handshake RX

### Physical

Dimensions:  
 PX-2300M\*\* . . . . . 152 mm (6")L, 47 mm (1.8")W  
 . . . . . 97 mm (3.8")H

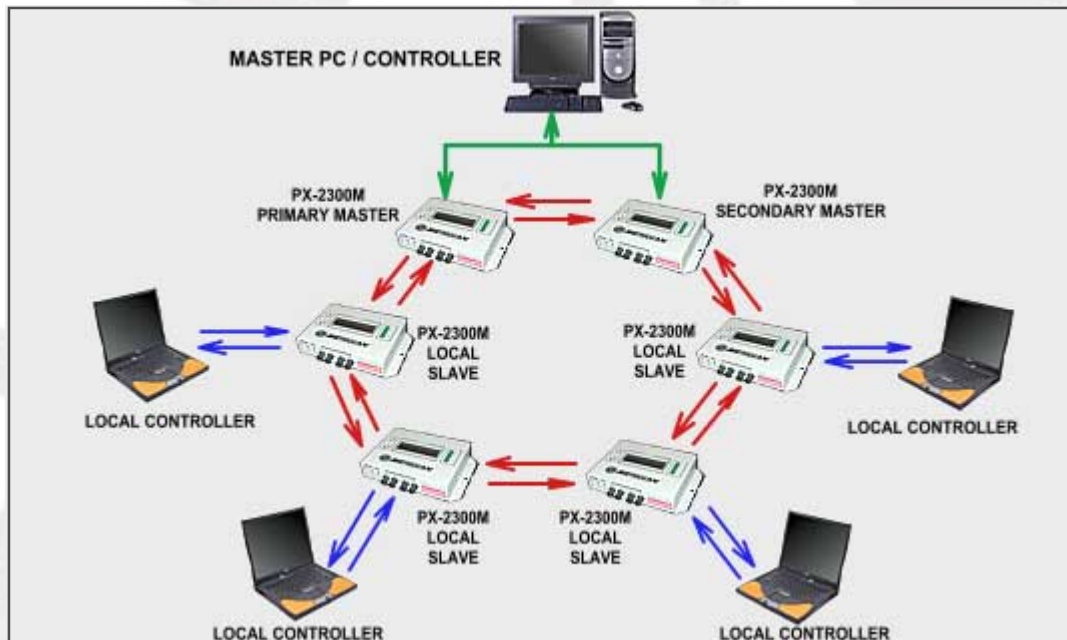
### Environmental

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

### Quality

MTBF. . . . . >260,000 hours @ Ground Fix  
 . . . . . 35°C per MIL217F

\* Measured @ 1Km (multimode), 10 Km (singlemode)  
 \*\* Add 30mm to include mounting flanges



## OPTICAL:

Fiber Type/Size (um)	Optical Output (dBm)	Receiver Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical Connector	Optical Dynamic Range (dB)
Multimode* (SLED)						
62.5/125	-15	-30	15	850	ST,SC	30
62.5/125	-16	-30	14	1300	ST,SC	30
Singlemode (Laser)						
9/125	-3**	-33	30	1310	ST,FC	30
9/125	-3**	-33	30	1550	ST,FC	30

\* Distance is limited to fiber loss and splices  
 \*\* Higher output lasers available

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