

# Prisma<sup>®</sup> Optical Media Converters T1/E1/J1 Telco Converters With Remote Management

## Description

The Scientific-Atlanta<sup>®</sup> Prisma<sup>®</sup> T1/E1/J1 Media Converter products are physical layer devices that convert twisted pair to fiber optics and operate at a switch-selectable protocol rate of T1 (1.544), E1 (2.048) and the Japanese J1 (1.544). Prisma T1/E1/J1 products offer more fiber choices and distances because they are engineered to industry standard 8B/10B PHY encoding. Modules are available in single-mode, and multi mode fiber, and can extend distances to as much as 80 km.

Available with remote management via the fiber port, Prisma T1/E1/J1 products enable network managers to conduct loopback testing, and monitor and manage units located up to 80 km away at a remote location. Since Scientific-Atlanta's management technology functions transparently to the frame format, customers will not experience overhead or loss of a data channel typically associated with remote management or SNMP polling. Customer traffic will always be full bit rate of 1.544 Mbps or 2.048 Mbps.



Troubleshooting is easy with Prisma T1/E1/J1 products that include a line integrity test feature, three modes of operation for loopback testing (local loopback, remote loopback and analog loopback), and the Transmit Data Source diagnostic feature, which sends specific patterns of data (transmit all unframed ones; transmit a pattern of zeros, and ones and transmit a Pseudo Random Bit Sequence [PRBS]) to determine problems with the cable. All test modes can be configured remotely via PrismaView<sup>™</sup> SNMP software or locally by manually setting DIP switches on the units. In addition, Prisma T1/E1/J1 also includes an internal elastic buffer to remove jitter from transmitted data, and a mechanism for testing line integrity. Prisma T1/E1/J1 modular media converters install in any Prisma MediaCenter<sup>™</sup> chassis or in an unmanaged MediaCPE<sup>™</sup>.\* To effectively double fiber capacity choose a single-strand fiber version of Prisma T1/E1/J1.

\*When installed in a Prisma MediaCPE chassis, Prisma T1/E1/J1 modules are only SNMP-manageable and software configurable if connected to a Prisma T1/E1/J1 module installed in a managed Prisma MediaCenter chassis. Some features may not be software configurable on a remote unit

## Features

- Switch Selectable Protocol
  - Operates at T1 (1.544), E1 (2.048) and J1 (1.544) protocols
- Remote management
  - Conduct loopback tests, monitor/manage units via GUI-Based PrismaView<sup>™</sup>
  - Full bit rate for customer traffic
- Supports more fiber choices
  - Available for multi-mode or single-mode fiber
  - Single-strand fiber versions
  - Supports very long fiber distances
- Eases Troubleshooting
  - Three loopback testing modes, plus SNMP management and LEDs, assist in diagnosing problems on fiber optic networks

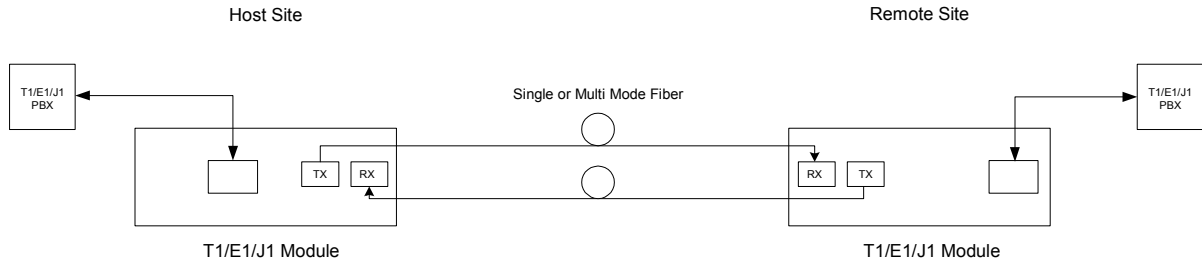
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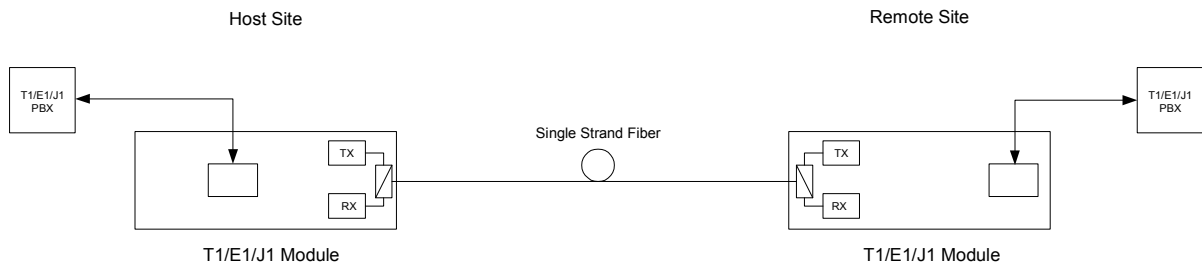
## Typical Application

Prisma T1/E1/J1 media converters allow the user to link two PBXs, CSUs or routers and extend the distance between the two over fiber.

## 2-Fiber Block Diagram



## Single-Strand Fiber Block Diagram



## SNMP-Management

Prisma T1/E1/J1 modules are easy to configure and manage with the GUI-based PrismaView SNMP management application software, or with any other SNMP application. PrismaView runs standalone on Windows™ NT4/2000/XP, or as a plug-in to HP OpenView on Windows or Solaris™. For users of Windows 98 and other operating systems, a Java version is also available. Features and functionality are configurable via the software and/or hardware DIP switch settings.

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## Fiber Optics Specifications

Description	
Supported Protocols	1.544 Mbps T1 (ANSI T1.403) 2.048 Mbps E1 (G.703) 1.544 Mbps J1
Supported Fiber	50/125µm or 62.5/125µm multi-mode 9/125µm single-mode
Connector Types	RJ-48 and SC
LEDs	Copper: <ul style="list-style-type: none"> <li>• Loopback</li> <li>• No Link</li> <li>• PBEO</li> </ul> Fiber: <ul style="list-style-type: none"> <li>• NRZ</li> <li>• Remote Management</li> <li>• No Link</li> <li>• Symbol Error</li> </ul>
Switch Selectable Configurations	<ul style="list-style-type: none"> <li>• Protocol (T1/E1/J1)</li> <li>• Jitter Attenuation</li> <li>• Remote Management</li> <li>• Receive Equalizer Gain Limit*</li> <li>• NRZ*</li> <li>• Line Build Out</li> <li>• Loopback* (local, remote, analog)</li> <li>• Line Termination</li> <li>• MDI/MDIX</li> <li>• Internal Linear Gain Boost</li> <li>• Line Encoding*</li> </ul> Transmit all unframed ones, Alternating ones and zeros, Pseudo Random Bit Sequence*

\* Also configurable via software

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## Specifications, continued

### Prisma T1/E1/J1 TP/SSFiber-SM1310-SC/UPC *(single strand fiber)*

Optical	
Tx Wavelength	1310 nm
Avg. Distance	20 km
Tx optical output range	-15 to -7 dBm
Rx optical input range	-33 to -3 dBm

### Prisma T1/E1/J1 TP/SSFiber-SM1550-SC/UPC *(single strand fiber)*

Optical	
Tx Wavelength	1550 nm
Avg. Distance	20 km
Tx optical output range	-15 to -7 dBm
Rx optical input range	-33 to -3 dBm

### Prisma T1/E1/J1 TP/SSFiber-SM1310/PLUS-SC/UPC *(single strand fiber)*

Optical	
Tx Wavelength	1310 nm
Avg. Distance	40 km
Tx optical output range	-8 to -3 dBm
Rx optical input range	-33 to -3 dBm

### Prisma T1/E1/J1 TP/SSFiber-SM1550/PLUS-SC/UPC *(single strand fiber)*

Optical	
Tx Wavelength	1550 nm
Avg. Distance	40 km
Tx optical output range	-8 to -3 dBm
Rx optical input range	-33 to -3 dBm

### Prisma T1/E1/J1 TP/Fiber-MM1300-SC/UPC

Optical	
Tx Wavelength	1300 nm
Avg. Distance	2 km
Tx optical output range	-20 to -14 dBm
Rx optical input range	-30 to -14 dBm

### Prisma T1/E1/J1 TP/Fiber-SM1310/PLUS-SC/UPC

Optical	
Tx Wavelength	1310 nm
Avg. Distance	40 km
Tx optical output range	-15 to -8 dBm
Rx optical input range	-31 to -8 dBm

### Prisma T1/E1/J1 TP/Fiber-SM1310/LONG-SC/UPC

Optical	
Tx Wavelength	1310 nm
Avg. Distance	80 km
Tx optical output range	-5 to 0 dBm
Rx optical input range	-34 to -2 dBm

### Prisma T1/E1/J1 TP/Fiber-SM1550/LONG-SC/UPC

Optical	
Tx Wavelength	1550 nm
Avg. Distance	80 km
Tx optical output range	-5 to 0 dBm
Rx optical input range	-34 to -3 dBm

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## Ordering Information

The approximate average fiber distance for each Prisma T1/E1/J1 product is listed below in the Ordering Information section after the product name. The distance in km is designated by the number in the brackets [XX]. Distances are based on factory testing; actual installation distances may vary. Prisma T1/E1/J1 products must be used in pairs.

Single-Strand Fiber	Part Number
Prisma FiberLinX, T1/E1/J1, TP/SSFiber-SM1310-SC/UPC [20km]	4006154
Prisma FiberLinX, T1/E1/J1, TP/SSFiber-SM1550-SC/UPC [20km]	4006155
Prisma FiberLinX, T1/E1/J1, TP/SSFiber-SM1310/PLUS-SC/UPC [40km]	4006157
Prisma FiberLinX, T1/E1/J1, TP/SSFiber-SM1550/PLUS-SC/UPC [40km]	4006156

Dual Fiber	Part Number
Prisma FiberLinX, T1/E1/J1, TP/Fiber-MM1300-SC/UPC [2km]	1002870
Prisma FiberLinX, T1/E1/J1, TP/Fiber-SM1310/PLUS-SC/UPC [40km]	1002869
Prisma FiberLinX, T1/E1/J1, TP/Fiber-SM1310/LONG-SC/UPC [80km]	1002868
Prisma FiberLinX, T1/E1/J1, TP/Fiber-SM1550/LONG-SC/UPC [80km]	1002867

For Prisma MediaCenter and Prisma MediaCPE Chassis specifications and ordering information, see data sheet #7001716 "Prisma Optical Media Converters – Prisma MediaCenter Chassis."



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