Prisma Mini FiberLinX-II SNMP-Manageable Optical Ethernet Demarcation Unit for 10/100 Mbps Ethernet

Transparent LAN service providers require remote management capabilities, and must be able to isolate management traffic from customer data. Typical Customer Premises Equipment (CPE) does not allow for this because the CPE devices are usually owned by the customer and inaccessible to the network operator. The compact Prisma® Mini FiberLinX-II functions as an Optical Ethernet Demarcation Unit designed for operation by service providers and campus network administrators. It provisions point-to-point fiber optic connections, and provides a remote network interface at the customer location that monitors the entire link between two locations.

The Prisma Mini FiberLinX-II for fiber optic networks allows service providers to deliver managed, high-bandwidth “triple play” voice, video and data services to customer premises. The Prisma Mini FiberLinX-II and the fiber link can be managed as a single entity, allowing for remote configuration and autonomous alerting of network administrators to fault conditions. As a copper-to-fiber media converter, it allows low-cost copper switches to connect to the fiber line. Offering unparalleled flexibility, the Prisma Mini FiberLinX-II supports multiple fiber, types including multi-mode and single-mode as well as singlestrand fiber, doubling the capacity of installed fiber. Coarse Wavelength Division Multiplexing (CWDM) functionality is also an option.

The Prisma Mini FiberLinX-II comes equipped with one 100 Mbps fiber port for data and management, one 10/100 twisted pair port for customer data, and an RS-232 port for local configuration of the unit during installation.

The Prisma Mini FiberLinX-II supports multiple powering options. Use the included AC power adapter, or use a 4-terminal DC power block with an extended voltage range of 5 to 50 VDC. The Prisma Mini FiberLinX-II also complies with the IEEE 802.3af Power over Ethernet standard, acting as a Powered Device (PD) to draw power when connected to 802.3af compliant Power Sourcing Equipment (PSE). Combining copper-to-fiber conversion, extended temperature performance, plug-and-play operation, miniature size and multiple power options, the Prisma Mini FiberLinX-II is one of the most versatile fiber optic Optical Ethernet Demarcation Unit devices available on the market today.

Figure 1. Optical Ethernet Demarcation Unit & Outdoor Housing

Features

- Smallest Standalone Fiber Optic Network Interface Device
- VLAN Compatible - secure and separate customer traffic
- Extra Tagging (Q-in-Q)
- Supports Remote Loopback with MAC Address Swap
- Management:
  - Carrier-grade SNMP management and line provisioning
  - Link loss and loopback troubleshooting
  - PrismaView EMS allows remote bandwidth management and traffic prioritization
- Industrial Equipment (IE) features for operation in difficult environments:
  - Extended temperature functionality (-20°C to 75°C)
  - Multiple power options: AC, DC and 802.3af Power over Ethernet
  - DIN clips for DIN-rail mounting
- Quality product - Made in America with a 6-year warranty on converter and power adapter

Full-Featured Prisma Mini FiberLinX-II

From a central location, network operators are able to receive real-time device and traffic statistics on the remote device, allocate bandwidth, turn services on or off, initiate loopback testing, modify VLAN settings and adjust QoS policies assigned to different traffic types.

- VLAN Support— VLAN tagging capability keeps customer data and SNMP traffic separated.
- Troubleshooting Features— FiberAlert and LinkLoss along with LEDs assist in diagnosing potential problems on fiber optic networks.
- Loopback Testing— Functionality loops back all frames arriving on the fiber port (except for device management traffic). Supports MAC Address swap on Loopbacks.
- Bandwidth Control— Fine granularity allows operators to offer custom levels of service and easily change bandwidth allocation remotely in seconds via SNMP.

Using the VLAN Functionality on the Prisma Mini FiberLinX-II

Service providers routinely use IEEE 802.1Q Virtual Local Area Network (VLAN) tagging to secure, separate and differentiate customer traffic. The Prisma Mini FiberLinX-II enables service provider support of multiple VLAN-based applications.

- IEEE 802.1Q VLAN compatible
- Valid VLAN IDs are 1 to 4,094
- Port-based VLAN tagging and Q-in-Q (extra tagging)
- Transparency Mode passes all data and respects the VLAN tag or lack thereof, i.e., allows a mixture of VLAN Tagged and Untagged traffic.
- Configure to support VLAN IDs, filtering/passing up to 32 VLAN IDs for data, plus an additional VLAN ID for SNMP management.
- IEEE 802.1p provides a two-tier queue for differential prioritization of inbound and outbound traffic, which is especially beneficial for traffic requiring high priority, such as VoIP.

Using Coarse Wavelength Division Multiplexing with the Mini FiberLinX-II

Optionally, the Prisma Mini FiberLinX-II provides for Coarse Wave Division Multiplexing (CWDM), adding scalability to data delivery.

- Scalability allows transport of data on up to 8 wavelengths.
- Increase bandwidth without the addition of more fiber strands.

SNMP Management Made Easy

The Prisma Mini FiberLinX-II features an SNMP management agent for monitoring the status and activity on copper and fiber ports at the remote end. Initial setup and modifications can be performed in the field via PrismaView SNMP application, Telnet/TFTP, or a local serial (CRAFT) connection.

- Remote software upgrades via Telnet/TFTP or management software (PrismaView).
- Monitor unit and fiber with real-time monitoring and statistics.
- Change bandwidth “on-the-fly” up to 100 Mbps.
- Create a secure management domain to isolate management domain broadcasts from TX Data ports on both units.
- User-definable unit/port descriptions and information.

Product Specifications

Table 1. General Specifications

Feature	Description
General	• Preserves complete end-to-end fiber connection integrity • Bi-directional bandwidth control • Read/write IEEE 802.1Q VLAN-tags • Supports Extra Tagging (Q-in-Q) • QoS: IEEE 802.1p-based packet prioritization (2 queues [high/low] with 8 levels of priority) • Layer 2 packet switching, store and forward operation • Forwarding rate: 14,880pps for 10 Mbps; 148,800pps for 100 Mbps; • AutoCross for MDI-II/MDI-X • Features Auto-Negotiation and Selective Advertising • Supports Half and Full-Duplex operation • MTU: Supports over-sized packets up to 1916 bytes per packet
Security	• Password Control • Multiple Access Levels: User Assigned Accounts & Access Levels
Management	• SNMP V1 and V2c compatible • Includes GUI-based PrismaView software for remote management and upgrades • Monitors far-end (remote) status without a physical presence or separate connection • IEEE 802.3x Flow Control • Includes DHCP and TFTP clients • Supports Telnet • Includes loopback test modes (MAC swap) • Includes LinkLoss and FiberAlert • Supports the Unified Management Agent (UMA) • Includes status LEDs • RS-232 (Craft) interface for local management • Serial cable for direct connection to a PC's Serial Port
Ethernet Types Supported	• IEEE 802.3i 10Base-T twisted pair • IEEE 802.3u 100Base-TX twisted pair • IEEE 802.3u 100Base-FX or SX fiber

Table 2. Physical Specifications

Specification	Value
Fiber Types Supported	• 50/125 µm or 62.5/125 µm multi-mode fiber • 9/125 µm single-mode fiber • Single-strand fiber or CWDM
Connectors	RJ-45, and ST or SC Includes DIN clips for mounting
Power	• DC Input Voltage: 750 mA@5 V to 75 mA@50 VDC • IEEE 802.3af Power over Ethernet
Environmental	• Humidity: 5 - 95% (non-condensing) • Operating Temperature: -4 to +167°F (-20 to 75°C) excluding AC wall adapter; with AC wall adapter: 32 to 122°F (0 to 50°C) • Storage Temperature: -49 to 185°F (-45 to +85°C)
Dimensions	0.83 in. H x 1.80 in. W x 3.35 in. D (2.11 cm x 4.57 cm x 8.51 cm)
Shipping Weight	0.30 lbs (0.14 kg)
Compliance	RoHS Compliant

Table 3. Technical Specifications

Specification	Value
IMC MIB	•Traps (Cold Start, Warm Start, Authentication Failure, Link Up, Link Down, Remote Unit Lost, Remote Unit Back Online, Far End TX Link On and Far End TX Link Off)* • Link Status of Ports • Port Type • Fiber Type • SNMP Port (Host/Remote) • SNMP Agent IP Address (Host/Remote/Single) • Link Partner • User-Definable Name of Product • User-Definable ID/Name of Ports • Enable/Disable Ports • Enable/Disable FiberAlert • Enable/Disable loopback modes • Set Duplex Mode for Twisted Pair Ports • Set Auto-Negotiation/Speed for Twisted Pair Ports
MIB-II (RFC 1213)	• Packets Transmitted • Packets Received • Octets (bytes) Transmitted • Octets (bytes) Received • Plus All Standard MIB II Objects
RMON Statistics provided for:	• Drop Events • Total Bytes • Total Packets • Broadcast Packets • Multicast Packets • CRC Align Errors • Undersize Packets • Oversize Packets • Fragments • Jabbers • Collisions • Distribution of Frame Size

*Send traps to a virtually unlimited number of trap-host server destinations.

Ordering Information

Table 4. Ordering Information

Prisma Mini FiberLinX-II TP-TX/FX (Managed) with AC Adapter	Part Number
Prisma Mini FiberLinX-II, MM1300-SC/UPC, 2 km	4030158
Prisma Mini FiberLinX-II, 1310/PLUS-SC/UPC, 40 km	4030159
Prisma Mini FiberLinX-II, 1310/LONG-SC/UPC, 80 km	4030160
Prisma Mini FiberLinX-II, 1550/LONG-SC/UPC, 80 km	4030180
Prisma Mini FiberLinX-II (Single-strand fiber Managed) with AC Adapter	
Prisma Mini FiberLinX-II, SS (1310TX/1550RX)-SC/UPC, 2 km	4030161
Prisma Mini FiberLinX-II, SS (1550TX/1310RX)-SC/UPC, 2 km	4030162
Prisma Mini FiberLinX-II, SS (1310TX/1550RX)-SC/UPC, 40 km	4030163
Prisma Mini FiberLinX-II, SS (1550TX/1310RX)-SC/UPC, 40 km	4030164
Prisma Mini FiberLinX-II, SS (1310TX/1550RX)-SC/UPC, 60 km	4030165
Prisma Mini FiberLinX-II, SS (1550TX/1310RX)-SC/UPC, 60 km	4030166
Prisma Mini FiberLinX-II (CWDM Managed) with AC Adapter	
Prisma Mini FiberLinX-II CWDM 1430-SC/UPC, 80 km	4030153
Prisma Mini FiberLinX-II CWDM 1450-SC/UPC, 80 km	4030154
Prisma Mini FiberLinX-II CWDM 1470-SC/UPC, 80 km	4030155
Prisma Mini FiberLinX-II CWDM 1490-SC/UPC, 80 km	4030156
Prisma Mini FiberLinX-II/CWDM 1510-SC/UPC, 80 km	4030157
Prisma Mini FiberLinX-II CWDM 1530-SC/UPC, 80 km	4030168
Prisma Mini FiberLinX-II/CWDM 1550-SC/UPC, 80 km	4030169
Prisma Mini FiberLinX-II CWDM 1570-SC/UPC, 80 km	4030170
Prisma Mini FiberLinX-II CWDM 1590-SC/UPC, 80 km	4030171
Prisma Mini FiberLinX-II CWDM 1610-SC/UPC, 80 km	4030172

Ordering Information

Table 5. Ordering Information - Accessories

Accessories	Part Number
AC Power Adapter (for Mini Media Converter or Mini FiberlinX-II)	4030141
Power Adapter Clip (USA)	4030142
Power Adapter Clip (UK)	4030143
Power Adapter Clip (Europe)	4030144
Power Adapter Clip (Australia/New Zealand)	4030145
USB Power Cable (for MiniMc, not for MiniMc-Gigabit)	4030146
DIN Clip	4030147

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