PL-1000TE

Up to 16G Universal WDM Transponder

PL-1000TE is Low Latency Multirate and Multi-Protocol transponder providing high capacity optical transport solution for rates up to 16G in a single 1RU unit

FEATURE OVERVIEW

Multirate and Multi-Protocol 8 transponder configurable from 100Mbps up to 16Gbps in compact 1U chassis

Supports the following client service type-
- **Data: 1000Base-T/GbE/10G Ethernet**
- **Storage: 1G/2G/4G/8G/16G FC**
- **SONET/SDH: STM4/OC12, STM16/OC48, STM64/OC192**
- **CPRI: 614M to 9.8G rates**
- **Video: SD-SDI, HD-SDI**

Low latency connectivity, ideal for Data Center connectivity applications

Leyer-1 GCM-AES-256 Encryption

Remote management and topology discovery of the optical network

Supports the innovative IEEE 802.3 FEC (Forward Error Correction) capability for rates up to 16G FC, increasing the link budget and improving BER performance

Pluggable SFP/SFP+ optics for both service and uplink side allowing maximum flexibility, as well as, ease of maintenance and operation

Supports full C-Band Tunable DWDM Line sides (SFP+)

Optional integrated EDFAs, Mux/Demux and Optical Switch modules

1+1 facility protection for ring and point to point topologies.

Bidirectional performance monitoring for all services

Supports single and dual fiber connections

Dual AC or DC pluggable Power Supply and pluggable FAN Unit

PRODUCT DESCRIPTION

PL-1000TE is an advanced, all-in-one CWDM/DWDM optical transport product supporting up to 8 transponders with flexible mix of industry standard based protocols. It integrates a rich and cost effective feature set in a compact 1U chassis with low power consumption.

The PL-1000TE is designed for CWDM/DWDM solutions that require high throughput, transparent and low latency, data, storage, TDM and Common Public Radio connectivity. By combining a variety of multi-rate services, The PL-1000TE allows maximum flexibility and scalability for fiber optic connectivity. The availability of sub 10G, 10G and 16G flexible services mix in the same product, provides transparent migration capability from sub 10G to 10G services with zero downtime.

PL-1000TE allows easy upgrade or expansion of the required services by simply adding the needed pluggable optical modules (SFPs/SFP+) in the available slots or by stackable solution. This architecture provides true scalability at the minimum possible cost.
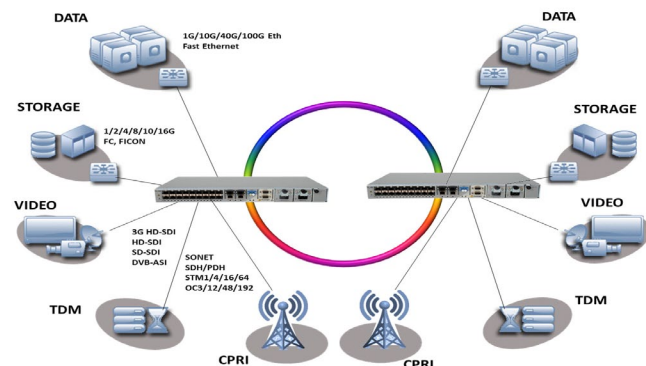
The PL-1000TE supports the full spectrum of FC protocol rates: 1Gbps, 2Gbps, 4Gbps, 8Gbps, and 16Gbps. and wide spectrum of Common Public Radio Interface (CPRI) protocol rates.
Together with its extremely low latency, low power consumption, small foot print (1U, ETSI) and affordability, The PL-1000TE is the best in class CWDM/DWDM solution for connecting two data centers or back up sites.

The PL-1000TE is designed to support point-to-point, Linear ADM, Ring and Regenerator topologies with facility protection. The PL-1000TE is a highly integrated device incorporating optional Mux/DeMux, EDFAs and an optical switch module, enabling a simple and cost effective upgrade of existing infrastructure with any type of service.

The PL-1000TE is highly suitable for applications such as:
- High capacity low latency, data center connectivity
- Efficient connectivity for campus, ISP and enterprise networks
- Delivery of high bandwidth managed services over dark fiber
- Upgrade of existing WDM networks to support 10GEth and 16G FC services
- CPRI communication between RE and REC
- High throughput Metro Ethernet connectivity
- Solving bottlenecks in fiber exhausted optical networks

PacketLight
N E T W O R K S

TECHNICAL SPECIFICATIONS

System

Topology	Point-to-point, Ring, Linear ADM Regenerator, Dual or Single Fiber
Transport Network Medium	Metro CWDM, DWDM & Dark Fiber
Protection	1+1 Facility

Product Options

Transponder	850/1310nm to C/DWDM, 3R, 2x4/1x8 wavelengths Mux/Demux
Transponder + Amp	850/1310nm to DWDM, 3R, 2x4/1x8 wavelengths Mux Demux 1/2 EDFA (Booster, Pre-Amp)
Optical Switch	1+1 Facility Protection

CWDM Link

Wavelength	ITU-T G.694.2 1270-1610nm 20nm spacing
OSC	1310nm, 1290nm
Optical Reach	120Km for 1.25Gbps, 80Km up to 4.25/8/10Gbps, 40Km for 16G FC
Optical Output Power	0dBm (min) to +5dBm (max)
Sensitivity	-28dBm APD, -18dBm PIN
Optical Monitoring	Tx & Rx power
Link Attenuation	<4dB (Mux + DeMux)

DWDM Link

Wavelength	ITU-T G.694.1 Channels 15-60, 100GHz spacing, optional tunable SFP+ with 50GHz spacing
OSC	1490nm, 1510nm
Optical Reach	400Km for 1.25Gbps, 200Km for 2.66Gbps, 80Km for 4.25/8.5/10Gbps, 40Km for 16G FC
Optical Output Power	Sub 10G: 0dBm (min) to +4dBm (max) 8/10G: -1dBm (min) to +2dBm (max)
Sensitivity	Up to 2.66Gbps: -28 dBm APD 4/8/10G: -24dBm APD, -14dBm PIN
Optical Monitoring	Tx & Rx power
Link Attenuation	<4dB (Mux + DeMux)

Service Side

Interface Rates	125Mbps up to 14.025Gbps
Optical Interface	850nm/1310nm/1550nm
Optical Services	1G/2G/4G/8G/16G FC, FICON, FE, GbE (LX, SX), STM-4/OC-12, STM-16/OC-48, 10G Eth LAN/WAN, 614.4/1228.8/ 2457.6/3072.0/4915.2/6144.0/ 9830.4M CPRI
Copper Services	100/1000MBase-T

Environmental

Operating Temperature	-5° C to 50° C (+23° F to+122° F) Operational
Humidity	5% to 85% RHI

Amplifier

Applications	Booster, Pre-Amp
Output Power	Booster: +14dBm, +17dBm, +20dBm, +23dBm Preamp: +5 dBm
Input Power	Booster: -24 to +16 dBm Preamp: -36dBm up to 16dBm-15 dBm
Gain	Booster: +10dB to +22 dB Preamp: +18 dB
Operating Modes	AGC (Automatic Gain Control), APC (Automatic Power Control)
Eye Safety	Automatic laser power reduction upon fiber cut or disconnection

Network Management

Management Ports	• 1RJ-45 LAN port 10/100Mbase-T • 2x SFP MNG ports 100/1000MBase-X • RS-232 Serial port • DB9 External Alarm port
Protocols	SNMP, HTTP, HTTPS, Telnet, SSH, Syslog, RADIUS, SNTP, TFTP and FTP
Management	Web browser over HTTP/HTTPS, LightWatch PacketLight NMS/EMS, or 3rd party EMS NMS over SNMP, CLI over RS-232 or CLI over Telnet/SSH
OAM	Facility Loopback (Client and Line Interfaces), PRBS, Event Logger, Alarms, ALS
Performance Monitoring	Layer 1 PM for all Services, Optical Power Tx, Rx levels for all optical ports
Visual Indicators	LED status indicators for: client and line ports, Management and LAN ports, amplifier/s, System Critical/Major/Minor and Power Supply
Software Upgrade	Traffic Hitless – dual image

Optical Switch

Topology	Protected point to point
Switching time	Less than 50ms
Signal WL	C and L band
Max input power	27dBm
Insertion loss	Transmit side 3.8dB Receiver side 1.2dB

Power Supply and Fans

AC **DC**	90 to 240VAC, 50/60 Hz, 1.5 A max -48VDC, 3A max
PSU Redundancy	Single/Dual feeding, Hot Swappable
Cooling Unit	Hot Swappable Fan Unit

Physical Dimensions

Size	1.77" (1 RU) (H) x 17.32"(W) x 9.05"(D) 45 mm (H) x 440mm (W) x 230 mm (D)
Weight	5.5Kg / 12.1 lb (Max)
Mounting	19", ETSI and 23"

Approvals & Standards

	CE, FCC, RoHS, REACH ISO 9000, NEBS Compliant