PL-1000TE

8 Multi-rate Transponders, Supporting Layer-1 Optical Encryption

Low latency multi-rate multi-protocol transponders providing high DCI capacity

Features Overview

■ Multi-rate and multi-protocol mix of 8 transponders, configurable from 622M up to 40G
■ Service types: Data - GbE/10G and 40G LAN, Storage - 1G/2G/4G/8G/10G/16G FC, SONET/SDH - STM-4/OC-12, STM-16/OC-48, STM-64/OC-192, Video - HD-SDI/3G-SDI (PAL and NTSC), Wireless - CPRI 1-7 (614M to 9.8G rates)
■ Low latency connectivity, ideal for data center interconnect applications
■ Supported Layer-1 Encryption services: Data - GbE/10Gb/40Gb Ethernet Storage - 4G/8G/10G/16G FC
■ Remote management and topology discovery for the optical network
■ Pluggable SFP/SFP+ interfaces for both service and WDM channels
■ Supports full C-band tunable DWDM on the line side (SFP+)
■ Optional integrated EDFAs, mux/demux, DCM and optical switch
■ Supports 1+1 facility protection
■ Bi-directional performance monitoring
■ Dual AC or DC pluggable power supply and pluggable fan unit
■ Supports single and dual fiber networks

Low Latency 1G-16G WDM Transponder

The PL-1000TE/PL-1000TE Crypto is a CWDM/DWDM solution for connecting two data centers or back up sites. The device is an advanced, all-in-one DWDM and CWDM optical transport solution, supporting up to 8 transponders with a flexible mix of industry-standard-protocols. The product integrates a rich and cost-effective feature set in a 1U chassis with low power consumption.

The PL-1000TE Crypto supports innovative Layer-1 optical encryption capability for 1G/10G/40G Ethernet LAN and 4G/8G/16G FC storage services.

Main Benefits

■ Flexible mix of services in the same product provides transparent migration capability from sub-10G to 10G services with zero downtime
■ Optical Layer-1 encryption prevents disclosure of information to unauthorized parties with 100% throughput
■ Maximum flexibility and scalability

Layer-1 Encryption with the Latest Security Standards

The PL-1000TE/PL-1000TE Crypto allows easy upgrade or expansion of the required services by simply adding pluggable optic modules (SFP/SFP+) into the available slots or by implementing PacketLight’s multi-chassis stackable solution. This architecture provides true scalability at a minimum cost.

Recommended for the following applications:

■ High capacity, low latency, secure data center interconnect (DCI)
■ Efficient connectivity for campus, ISP and enterprise networks
■ Upgrade of existing WDM networks to support 10/40Gb Ethernet and 16G FC services
■ Trading applications and synchronous data center replication requiring low latency
■ Distance extension for 40G data networks up to 120 km
## Technical Specifications

### System
**Topology:** Point-to-point, ring, linear ADM, dual or single fiber

**Transport Network Medium:** Metro CWDM, DWDM and dark fiber

### Cryptography
**Crypto Algorithm:** GCM-AES-256

**Key Management:** ECC Cofactor Diffie-Hellman with P-384 curve

**Message Authentication:** SHA-384

### Crypto Services:
- Data: GbE/10G/40G Ethernet
- Storage: 4G/8G/10G/16G FC

### Product Options
- **Transponder:** 850/1310nm to C/DWDM, 3R
- **Mux/Demux:** 2x4 / 1x8 wavelengths
- **Amplifier:** 1/2 EDFA (booster/pre-amp)
- **DCM:** Up to 200km
- **Optical Switch:** 1+1 facility protection

### DWDM Link
**Wavelength:** ITU-T G.694.2 1270-1610nm, 20nm spacing

### CWDM Link
**Wavelength:** ITU-T G.694.1 15-60, 100GHz spacing, optional tunable SFP+ with 50GHz spacing

**OSC:** 1490nm, 1510nm

**Optical Reach:**
- 400km for 1.25Gbps, 200km for 2.5Gbps, 80km for 4.25/5.125/10Gbps, 40km for 16G FC

### Visual Indicators:
- LED: client and line ports, Management and LAN ports, amplifier/s, system Critical/Major/Minor and Power Supply

### Service Side
**Interface Rates:** 1.25G to 10.51875G

**Optical Interface:** 850nm, 1310nm, 1550nm

**Non Crypto Services:**
- 1G/2G/4G/8G/10G/16G FC, 1G/10G LAN, STM-4/OC-12, STM-16 /OC-48, STM-64/OC-192, CPRI 1-7, Video HD-SDI, 3G-SDI

**Amplifier Services:**
- Booster, pre-amp

**Output Power:**
- Booster: +17dBm, +20dBm, +23dBm, pre-amp: +14dBm

**Input Power:**
- Booster: -24 to +16dBm, pre-amp: -36dBm up to 0dBm

**Gain:**
- Booster: +8dB to +22dB, pre-amp: +20dB

**Operating Modes:**
- Automatic gain control (AGC), automatic power control (APC)

**Eye Safety:**
- Automatic laser power reduction upon fiber cut or disconnection

### Network Management
**Management Ports:**
- RJ-45 LAN port 10/100MBase-T
- 2xSFP MNG ports 10/100MBase-X
- RS-232 serial port
- DB9 external alarm port

**Protocols:** SNMP, HTTP, HTTPS, Telnet, SSH, Syslog, RADIUS, SNTP, RSTP, TFT and FTP

**Management:**
- Web browser over HTTP/HTTPS, PacketLight LightWatch™ 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, Layer-2 PM for Ethernet, optical power Tx, Rx levels for all optical ports, 1G & 10G

### Power Supply and Fans
**AC/DC:**
- 100 to 240 VAC, 50/60Hz, -38 to -60 VDC, 120W max

**PSU Redundancy:** Single/dual feeding, hot swappable

**Cooling Unit:** Hot swappable fan unit

### Environmental
**Operating Temperature:** -5ºC to 50ºC (+23ºF to +122ºF) operational

**Humidity:** 5% to 85% RH

**Size:**
- **1U:**
  - 1.77” (H) x 17.32” (W) x 9.05” (D)
  - 45mm (H) x 440mm (W) x 230mm (D)

**Weight:** 7kg / 15.4lb (max)

**Mounting:** 19”, 23” and ETSI

### Approvals & Standards
- CE, FCC, RoHS, REACH
- NEBS ready
- FIPS-140-2 Level 2 compliant
- CNSA Top Secret Suite 2015