PL-1000TE-Crypto

8 Multirate Tranponders with Layer-1 Encryption

PL-1000TE-Crypto provides transparent low latency layer-1 encryption solution for both Ethernet and Fibre Channel protocols up to 80G in compact 1U chassis.

FEATURE OVERVIEW

8 Encrypted Transponders in a compact 1U chassis

Supports the following client service types:
• Data: GbE/10G/40G Ethernet
• Storage: 4G/8G/10G FC

Designed for several applications:
• Encrypted fiber link solution
• Encrypted Wavelength solution
• Encryption solution feeding OTN networks

Bit transparent without any reduction of throughput

High end Encryption core:
GCM- AES-256 Layer-1 data encryption
Periodical Diffie Hellman key exchange
Configurable period of up to 1 minute
Complies with NIST FIPS-140-2
Level 2 and NSA Suite B requirements

Low latency connectivity, ideal for Data Center & Financial applications

Remote management and topology discovery

Uses pluggable SFP/SFP+ optics for both service and uplinks

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

Optional integrated EDFAs, Mux/Demux and Optical Switch modules.

Bidirectional performance monitoring

Supports single and dual fiber

Dual AC/DC pluggable Power Supply and pluggable FAN Unit

PRODUCT DESCRIPTION

The PL-1000TE-Crypto is a multi-rate, multi-service Dense Wavelength Division Multiplexing transponder (DWDM) supporting innovative cryptographic capability for 40GE, 10GbE, GbE data and 4/8/10G FC storage services. With this capability, the PL-1000TE-Crypto provides added security benefit to any DWDM link by encrypting the data passing between the sites.

On the data plane PL-1000TE cryptography performs layer-1 AES-256 Encryption to full bandwidth passing services. The encryption provides end-to-end transparency of data and clock with a low latency of less than 12usec for 10GbE.
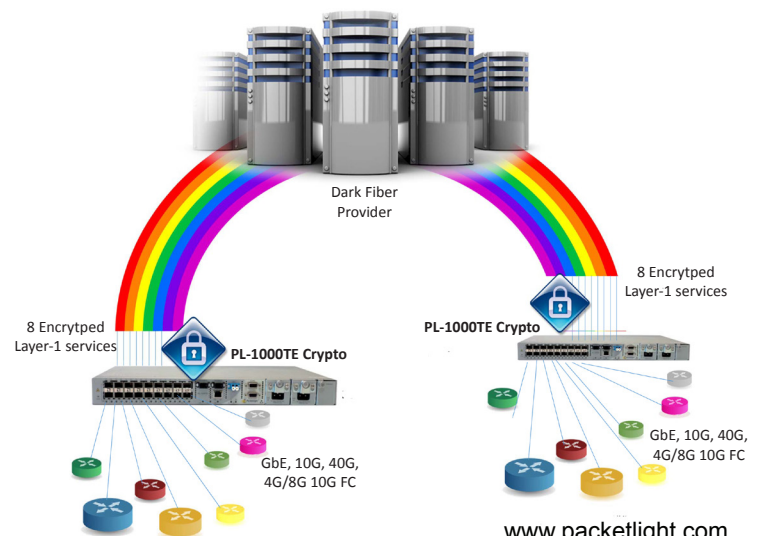
PacketLight's comprehensive encryption solution ensures three major concerns of optical link security:

• Confidentiality- preventing disclosure of information to unauthorized parties
• Data integrity- ensuring that the message has not been altered
• Authentication- validating that both parties involved are indeed who they claim to be

On the management plane the PL-1000TE-Crypto supports the secured management protocols HTTPS, SSH, SNMPv3 and RADIUS, roll based user password and firewall. The PL-1000TE-Crypto also detects degradation in the fiber link performance for automatic detection of tapping attempt.

The PL-1000TE-Crypto fits to the following applications:

• Secured remote data center connectivity for Gov and Financial institutes
• Cloud providers and ISP secured fiber network infrastructure
• Feeder of encryption services to Optical Transport Networks (OTN)
• Managed encrypted wavelength services offered by service providers
• Internal data center secured connectivity

Dark Fiber Provider

8 Encrytped Layer-1 services
PL-1000TE Crypto

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PL-1000TE Crypto

GbE, 10G, 40G, 4G/8G 10G FC

GbE, 10G, 40G, 4G/8G 10G FC

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TECHNICAL SPECIFICATIONS

System

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

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
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
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	1Gbps up to 10.025Gbps
Optical Interface	850nm/1310nm/1550nm
Optical Services	4G/8G/10G FC, GbE 10G Eth LAN 40G Eth LAN
Copper Services	1000MBase-T

Environmental

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

Approvals & Standards

	CE, FCC, RoHS, REACH ISO 9000, NEBS Compliant
	FIPS-140-2 Level 2 Compliant

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 layer-2 PM for the data services 1G and 10G
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"