PL-1000TN 10G OTN Transponder

6x10G OTN multi-protocol multi-rate OTN transponders, with total capacity of 60G

Features Overview

- 6 independent ITU G.Sup43 standard-based multi-rate 8/10G OTN transponders
- Supported clients:
  - 10Gb/40Gb Ethernet
  - 8G/10G Fibre Channel (FC)
  - STM-64/OC-192
  - OTU2/2e
- Three FEC types: ITU G.709 GFEC, G.975.1 EFEC I.4 and UFEC I.7 for enhanced performance
- Supports full C-band tunable DWDM on line side optics
- Supports multi-rate client interfaces over a common OTN infrastructure
- 1+1 facility and optical switch line protection
- Comprehensive performance monitoring and full OTN managed layer
- Optional integrated EDFAs, DCM, mux/demux and optical switch modules
- Remote management with in-band GCC or out-of-band optical supervisory channel (OSC)
- Cost-effective 1U platform with low power consumption, ideal for customer located equipment (CLE)
- Supports standard MSA pluggable modules:
  - SFP+ (client)
  - XFP (uplink)
- Dual AC or DC pluggable power supply and pluggable fan unit
- Operates on single or dual fiber networks

Multi-protocol 10G OTN Transponders

The PL-1000TN holds up to 6 multi-protocol transponders for mapping 8G/10G services over OTU2/2e/2f OTN. It is a highly integrated solution for unified transport of different protocols over a common optical transport layer.

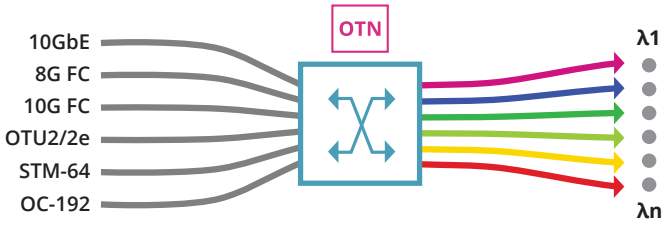
Main Benefits

- **Long haul connectivity for up to 52dB using a single 1U device**
- **Smallest integrated transport solution of its kind, saving rack space**
- **Enhanced forward error correction**
- **Reduces backbone cost by cutting the number of regenerators**

Integrated 1U OTU2 Transponder

The PL-1000TN meets market demands for low power consumption and rack space savings, reducing the overall solution CAPEX and OPEX.

The device provides the entire optical solution in a 1U, integrating EDFAs, mux/demux and DCM with the OTN transponders.



PL-1000TN Multi-rate Transponder Diagram

Recommended applications:

- Building efficient DWDM OTN transport solutions for enterprises over common OTN long distance optical network
- Building a robust packet optical network infrastructure
- Multi-rate OTN transpodner for ROADM-based applications
- CPE device for end-to-end managed services over carrier backbone
- Upgrading SONET/SDH backbones to OTN backbones
- OTU2e OTN regenerator

Low power consumption

1U rack mount

Multi operation modes

Technical Specifications

System

Transport Network Medium: Access/ metro CWDM, DWDM or dark fiber / long distance optical fiber networks / OTN backbone networks

Protection: 1+1 facility

Product Configurations

Transparent OTU2 Transponder:

- **Non-protected:** Up to 6 independent client signals mapped into corresponding OTU2 line protocols
- **1+1 protected:** Up to 3 dual independent client signals mapped into corresponding 10G OTU2/2e/2f line protocols

EDFA: Up to two EDFA modules

Mux/Demux: Up to two mux/demux modules

Optical Switch: 1+1 facility protection <50Ms switch time optical module

Optical Amplifier

Output Power: 14, 17, 20 or 23dBm

Input Power: -36dBm up to 16dBm

Gain: 8dB to 22dB

Operating Modes:

- Automatic Gain Control (AGC)
- Automatic Power Control (APC)

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

Mux/Demux

Channels: 4/8 CWDM or DWDM channels

Spacing: 50/100GHz (for DWDM)

Line (Uplink)

Protocols:

- OTU2 (10.709)
- OTU2e (11.095) as per G.Sup43
- OTU2f (11.317)

FEC Types: G.709 GFEC (RS) , G.975.1 EFEC I.4 , G.975.1 UFEC I.7

Optical Interface:

- Up to 6 pluggable XFP transceivers
- DWDM, tunable DWDM
- CWDM

Client Service

Client Protocols:

- 10G/40G LAN (10.3125G/4x10.3125G)
- 8G/10G FC (8.5G/10.518)
- STM-64/OC-192 (9.953)
- OTU2

Optical Interface:

- Up to 6 pluggable SFP+ transceivers
- 850nm multimode
- 1310nm single mode

Network Management

Management Ports:

- RJ-45 LAN port 10/100MBase-T
- 2xSFP MNG ports 100/1000MBase-X
- RJ-45 serial port
- RJ-45 external alarm port
- OTN in-band GCC channel

Management Protocols:

- SNMP, HTTP, HTTPS, CLI over RS-232 or CLI over Telnet/SSH, Syslog, RADIUS, TACACS+, SNTP, TFTP & FTP

NMS:

- PacketLight LightWatch™ NMS/EMS, or third party NMS over SNMP

OAM:

- Facility loopback (client and line interfaces), PRBS, event log, alarms
- Automatic laser shut-down (ALS)

Performance Monitoring:

- Layer-1 PM for all services
- Layer-2 PM for Ethernet
- OTN PM for uplinks
- Optical power 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: Hitless traffic – dual image

Power Supply

AC/DC: 90 to 246 VAC, 50/60 Hz, -36 to -60 VDC, 70W 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

Physical Dimensions

1U:

- 1.77" (H) x 17.32" (W) x 9.05" (D)
- 45mm (H) x 440mm (W) x 230mm (D)

Weight: 5.5kg / 12.1lb (max)

Mounting: 19", ETSI and 23"

Configuration

License-based: 4, 6 transponders

Approvals & Standards

- CE, FCC, RoHS, REACH
- NEBS ready

For more information please contact us at www.packetlight.com

PacketLight™ NETWORKS