PL-1000TN 6x10G Transponder

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 OSC
- Remote management and fiber monitoring with OSC OTDR SFP
- Cost-effective platform with low power consumption
- **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.

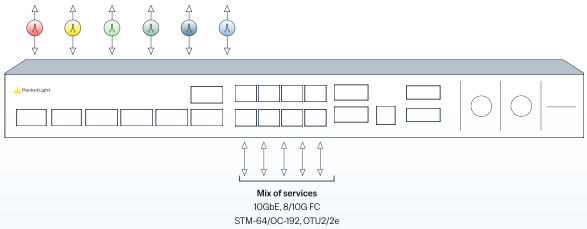
Main Benefits

- Long haul connectivity for up to 52dB
- Integrated transport solution, saving rack space
- Enhanced forward error correction
- Reduces backbone cost by cutting the number of regenerators.

Integrated 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, integrating EDFAs, mux/demux and DCM with the OTN transponders.

PL-1000TN Multi-rate Transponder Diagram



Recommended Applications

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

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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, OTU2e

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 LightWatchTM NMS, 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 or -36 to -60 VDC, 50/60 Hz, 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

Size:

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

Weight: 5.5kg / 12.13lb (max)

Mounting: 19", ETSI and 23"

Configuration

License-based:
4, 6 transponders

Approvals & Standards

- CE, FCC, RoHS, REACH
- NEBS ready

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