

# PL-2000T 800G Transponder

## 800G Transport Platform for high capacity applications

### Features Overview

- Pay-as-you-grow architecture based on pluggable 200G digital coherent optical modules
- Operation modes: QPSK 100G long haul and 8/16 QAM 200G metro
- Supported clients: 100Gb Ethernet, OTU4
- Supported FEC modes:
  - Line: SD-FEC for metro and long haul applications
  - OTU4 service: ITU G.709 GFEC
  - 100GbE service: IEEE Clause BJ-FEC
- Standard MSA pluggable:
  - CFP2 DCO tunable DWDM for 100G/200G line interface
  - QSFP28 SR4/LR4/ER4/CWDM4 for 100G client interface
- Layer-1 GCM-AES-256 encryption
- Elliptic Curve Diffie-Hellman key exchange
- Comprehensive line and service performance monitoring
- Optional integrated EDFA, mux/demux and optical switch
- Facility protection using an optional integrated optical switch
- Remote management with in-band GCC, or out-of-band OSC
- Easy maintenance with field-replaceable parts:
  - Dual hot pluggable power supply units AC/DC
  - Fan unit

### 200G Metro and 100G Long Haul Applications

The PL-2000T is a modular and cost-effective solution for rolling out 100G services or increasing existing network capacity. The device has four 200G pluggable optical modules, delivering up to 800G in a 1U chassis, and enabling pay-as-you-grow architecture.

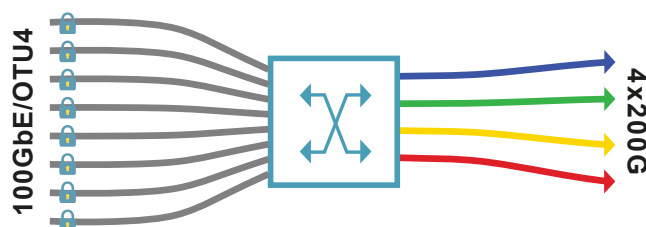


### Main Benefits

- **Integrated EDFA, mux/demux and optical switch in 1U**
- **High transport capacity of 800G with configurable modulation scheme**
- **Embedded Layer-1 optical encryption**
- **Managed service platform**
- **Modular and cost-effective for future growth and maintenance**

### Flexible Pay-as-you-grow Architecture, with Redundancy

The solution provides full demarcation point between the service and the uplink DWDM side and is interoperable with any third party switch or router. This provides full visibility and performance monitoring of both line optical transport layer (OTN) and 100G LAN/OTU4 service interfaces.



PL-2000T Transponder Diagram

### Recommended applications:

- Metro network applications ranging up to 1,000km
- High capacity DCI for enterprise, campus and cloud computing networks
- 200G links to bolster existing OTN/DWDM infrastructure
- Last mile access/aggregation CPE for 100G managed services
- Secured and encrypted communication for 100G protocols



Layer-1 encryption

1U

1U rack mount



Cost-effective solution

## Technical Specifications

### Product Configurations

**Transponder:** 4x200G metro or 4x100G long haul

**Optical Amplifiers:** Optional up to two EDFA modules

**Mux/Demux:** Optional 4ch mux/demux module

**Optical Switch:** Optional 1+1 facility protection

### Uplink Characteristics

#### Bit Rate:

- 200G OTUC2'
- 100G OTUC1'

**Optical Interface:** CFP2 coherent (DCO)

#### Tunability range:

- DWDM ITU-T G.694.1 Grid
- C-band, with 100GHz/50GHz spacing

#### FEC Support:

- Standard ITU-T G.709 GFEC
- SD-FEC

#### Tx Power:

- 8/16 QAM (200G): -0.5 to -10dBm
- DP-QPSK (100G): -0.5 to -5dBm

#### Rx Power:

- 16 QAM (200G): -22dBm
- 8 QAM (200G): -24dBm
- DP-QPSK (100G): -29dBm

#### OSNR Sensitivity (at -18dBm Rx Power):

- 16 QAM (200G): 19.8dB
- 8 QAM (200G): 18.1dB
- DP-QPSK (100G): 11.4dB

#### Chromatic Dispersion

- 16 QAM (200G): 16,000ps/nm
- 8 QAM (200G): 20,000ps/nm
- DP-QPSK (100G): 40,000ps/nm

### Client Characteristics

#### Service types:

- 100G LAN
- OTU4

#### Optical Interface:

- SM QSFP28 - LR4/ER4 (1310nm)
- MM QSFP28 - SR4 (850nm)

#### FEC Support:

- OTU4: Standard ITU-T G.709 GFEC or Zero FEC
- 100G LAN: BJ-FEC or no-FEC

### Amplifier

**Applications:** Booster, pre-amp

#### Output Power:

- Booster: up to +20dBm
- Pre-amp: +5dBm

#### Input Power:

- Booster: -24 to +10dBm
- Pre-amp: -36 to -9dBm

#### Gain:

- Booster: 5 to 22dB
- Pre-amp: 13 to 22dB

#### Operating Modes:

- Automatic gain control (AGC)
- Automatic power control (APC)

### Network Management

#### Management Ports:

- 2xRJ-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:

- SNMPv1/v2/v3, HTTP/HTTPS, CLI over RS-232 or CLI over Telnet/SSH, Syslog, RADIUS, TACACS+, SNMP, TFTP & FTP/SFTP, REST, NETCONF

#### NMS:

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

#### OAM:

- Facility loopback (client and line interfaces), PRBS, event log, alarms

#### Performance Monitoring:

- Layer-1/2 PM for 100G LAN services
- OTN PM for uplink and OTU4 services
- Optical PM for optical ports

**Visual Indicators:** Status indicators for client and line ports, Management and LAN ports, amplifier/s, system Critical/Major/Minor and Power Supply

**Software Upgrade:** Dual image, hitless swap

### Power Supply

**AC/DC:** 100 to 240 VAC, 50/60 Hz, -36 to -60 VDC, 250W max

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

**Cooling Unit:** Hot swappable fan unit

### Environmental

**Operating Temperature:** -5°C to 50°C (+23°F to +122°F) operational

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

### Physical Dimensions

#### 1U:

- 1.77" (H) x 17.32" (W) x 11.22" (D)
- 45mm (H) x 440mm (W) x 285mm (D)

**Weight:** 8.5kg / 18.75lb (max)

**Mounting:** 19", ETSI, 21" and 23"

### Encryption

#### Functionality:

Full speed transparent Layer-1 encryption for OTU4 uplinks

#### Algorithms:

- Encryption/decryption: GCM-AES-256
- Key exchange: ECC CDH, Curve P-384
- Message digest: SHA-384

#### Authentication:

Role-based user/password authentication

#### Compliance:

- FIPS 140-2
- CNSA Top Secret Suite B 2015

**Note:** For specific countries, models that include Layer-1 GCM-AES-256 based encryption will be marked with the suffix C.

### Approvals & Standards

- CE, FCC, RoHS, REACH
- NEBS ready

For more information please contact us at [www.packetlight.com](http://www.packetlight.com)

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