

PL-4000G 4.8T Transponder

Mix of 400GbE and 100GbE over 400G wavelengths for high capacity DCI applications, in integrated 1U

Features Overview

- Pay-as-you-grow architecture based on standard pluggable coherent optical modules
- Operation modes:
 - 12 x 400GbE transponder
 - 48 x 100GbE transponder
- Supported services: 100GbE, 400GbE
- Supports C-FEC on the line side (OIF-ZR standard)
- Standard MSA pluggable modules:
 - 12 x 400GbE QSFP-DD-DR4/FR4/LR8/FR8 clients
 - 48 x 100GbE QSFP-DD-DR4/FR4 clients
- Comprehensive line and service performance monitoring
- Integrated EDFA, mux/demux and optical switch (optional)
- Facility protection using an integrated optical switch (optional)
- Remote management with out-of-band OSC
- Easy maintenance with field-replaceable parts:
 - Dual hot pluggable power supply units (AC/DC)
 - Fan unit

100GbE/400GbE Transponder

The PL-4000G is a modular and cost-effective high capacity solution for rolling out 400GbE and 100GbE services, or increasing existing network capacity. The device has twelve 400G pluggable uplink optical modules, delivering up to 4.8T in a 1U chassis. The PL-4000G integrates mux/demux, EDFA and OSW and delivers the entire optical layer. This flexible solution enables pay-as-you-grow architecture.

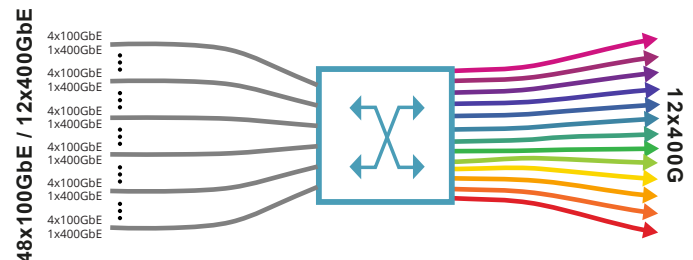


Main Benefits

- Cost-effective high capacity transport mix of 100GbE and 400GbE client services
- Up to 12 x 400GbE transponders
- Up to 48 x 100GbE transponders
- Integrates EDFA, mux/demux and optical switch in 1U
- Modular and cost-effective for future growth and maintenance
- Low power consumption, high density device ports

Full Demarcation

The device provides full demarcation point between the service and the DWDM network, and is interoperable with any third party switch or router. This provides full visibility and performance monitoring of both the optical transport layer and 100GbE/400GbE service interfaces.



PL-4000G Transponder Diagram

Recommended applications:

- High capacity DCI for Internet exchange and research and education networks
- 400G links to bolster existing DWDM infrastructure
- Last mile access/aggregation CPE for 100/400GbE managed services



Pay as you grow



1U rack mount



Cost-effective solution

Technical Specifications

Product Configurations

Transponder:

- Up to 12 x 400GbE
- Up to 48 x 100GbE

Optical Amplifiers: Up to two EDFA modules (optional)

Mux/Demux: 12ch mux/demux module (optional)

Optical Switch: 1+1 facility protection (optional)

Uplink Characteristics

Bit Rate:

- 400G ZR-OIF

Optical Interface:

- QSFP-DD-DCO ZR

Tunability range:

- DWDM ITU-T G.694.1 Grid
- C-band, with flex-grid support

FEC Support:

- C-FEC

QSFP-DD-DCO ZR:

- Tx power: -6dBm to -10dBm
- Rx power: -20dBm
- 400G 16QAM C-FEC OSNR Tolerance at -12dBm Rx power: typical 24dB, min. 26dB
- Rx sensitivity at high OSNR: 400G 16QAM/C-FEC -20dBm

Chromatic Dispersion Tolerance:

- 400G: 2,400ps/nm

Client Characteristics

Service Types:

- 400Gb Ethernet
- 100Gb Ethernet

Optical Interface:

- 400GbE QSFP-DD-DR4/FR4/LR8/FR8
- 100GbE QSFP-DD-DR4/FR4

FEC Support:

- 400GbE: KP4-FEC RS(544,514)
- 100GbE: KR4-FEC RS(528,514) or no-FEC

Amplifier

Applications: Booster, pre-amp

Output Power:

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

Input Power:

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

Gain:

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

Operating Modes:

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

Network Management

Management Ports:

- 2xRJ-45 LAN port 100/1000MBase-T
- 2xSFP MNG ports 100/1000MBase-X
- RJ-45 serial port
- RJ-45 external alarm port

Protocols:

SNMP v1/v2/v3, HTTP/HTTPS, Telnet/SSH, Syslog, RADIUS, TACACS+, SNMP, TFTP & SFTP

Management:

- Web browser over HTTP/HTTPS,
- PacketLight LightWatch™ NMS/EMS, or third party NMS over SNMP
- REST, NETCONF
- CLI over RS-232 or over Telnet/SSH

OAM:

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

Performance Monitoring:

- Layer-1/2 PM for 100/400GbE services
- FlexO
- FEC Corrected/Uncorrected errors
- 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:

Hitless traffic – dual image

Power Supply

AC/DC:

100 to 240 VAC, 50/60 Hz, -44 to -60 VDC, 250W max

PSU Redundancy:

Single/dual feeding, hot swappable

Cooling Unit:

Hot swappable fan unit

Environmental

Operating Temperature:

-5°C to 45°C (+23°F to +113°F) operational

Humidity: 5% to 85% RH

Storage: 85°C

Physical Dimensions

1U:

- 1.77" (H) x 17.32" (W) x 15.75" (D)
- 45mm (H) x 440mm (W) x 400mm (D)

Weight: 8.3kg / 18.3lb (max)

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

Approvals & Standards

- CE, FCC, RoHS, REACH
- NEBS ready