PL-2000GM 200G | 2×100G Muxponder/ADM

Multi-protocol multi-rate optical transport solution for metro and long haul networks

Features Overview

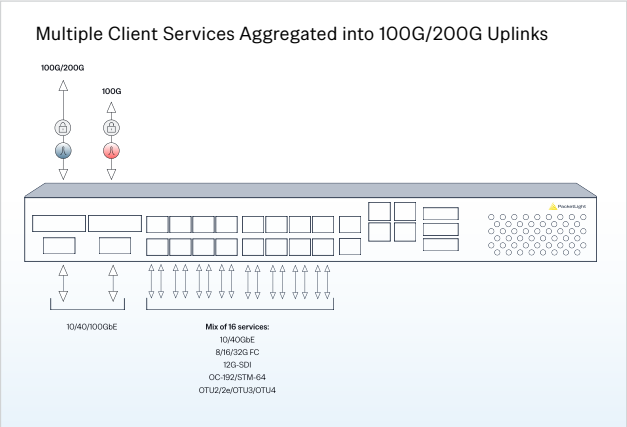
- Multiple user-configurable operation modes: muxponder, transponder and ADM
- **Supported services:**
  - 10GbE/40bE/100GbE
  - 8G/16G/32G Fibre Channel
  - STM-64/OC-192 SDH/SONET
  - OTU2/OTU2e/OTU3/OTU4 OTN
- Forward error correction (FEC) - oFEC
- Dual pluggable CFP2 coherent tunable DWDM line interfaces
- Layer-1 GCM-AES-256 based encryption
- Comprehensive line and service performance monitoring
- Flexible OTN cross connect
- Integrated EDFAs, mux/demux, and optical switch
- OTN SNCP 1+1 service protection for ring applications
- Remote management with in-band or out-of-band OSC
- Remote management and fiber monitoring with OSC OTDR SFP
- **Supports standard MSA pluggable modules:**
  - SFP+ (8G/16G FC client)
  - SFP28 (32G FC client)
  - QSFP+ (40GbE client)
  - QSFP28 (100GbE client)
  - CFP2 (uplink)
- Dual AC or DC pluggable power supply and pluggable fan unit

For Metro and Long Haul 200G Applications

The PL-2000GM delivers up to 200km/42dB without intermediate sites and 4,500km with inline sites. It is a powerful 200G muxponder/transponder/ADM solution for building high capacity optical transport networks.
The PL-2000GM transports 200G over point-to-point networks, and dual 100G uplinks over ring topologies, using flexible cross connect matrix.

Main Benefits

- Dynamic mix of services
- Embedded encryption for all protocols
- Highly integrated 1U solution
- Supports 200G PtP or 100G ring network topologies



Secured and Encrypted Communication for all Services

The flexible architecture of the PL-2000GM enables the same device to be used in multiple applications and adapt to network growth and changes. It supports and aggregates a flexible mix of Ethernet, Fibre Channel, Video, SDH/SONET and OTN client services into a 200G uplink or two 100G uplinks.

The platform supports various client services, allowing easy migration from current to future services without replacing the unit. The product supports standards-based Layer-1 encryption, configurable per service or per uplink.

Recommended applications

- 100G/200G long hall applications up to 4,500km
- High capacity DCI for enterprise, campus and cloud computing networks
- 200G links to bolster existing OTN/DWDM infrastructure
- Dynamic add/drop of services in ring and linear add/drop topologies
- Last mile access/aggregation CPE for 100GbE managed services
- Secured, encrypted communication for 8/16/32G FC, 10/40/100GbE, and OTU2/2e/4 services

Technical Specifications

Product Configurations

200G Muxponder:
Mix of services mapped into a 200G OTUC2 uplink.

Dual 100G ADM: Mix of services mapped into 2x100G OTU4 uplinks, and OTN cross-connect.

Optical Amplifiers:
Optional up to two EDFA modules

Mux/Demux:
Optional 2ch mux/demux module

Optical Switch: 1+1 facility protection

Uplink Characteristics

Optical Interface:
CFP2 coherent (DCO)

Tunability Range: DWDM ITU-T G.694.1 GRID channels 17-60.5, with 50/100GHz spacing and flexgrid

FEC Support: oFEC

Optical Reach: Up to 4,500km with standard inline EDFAs

Optical Output Power:
-10dBm to +3dBm, configurable

OSNR Sensitivity:
200G QPSK: 15.7dB

100G DEQPSK: 12.9dB

Optical Monitoring:
Tx and Rx power, dispersion, OSNR

Client Interfaces

Service type: 10GbE, 40GbE, 100GbE, 8G/16G/32G FC, STM-64/OC-192, OTU2, OTU2e, OTU3, OTU4

Optical Interface:

- SFP+: LR (1310nm), SR (850nm), ER (1550nm), ZR (1550nm), C/DWDM
- SFP28: LR (1310nm), SR (850nm)
- QSFP+: LR4 (1310nm), ER4 (1310nm), SR4 (850nm), LR PSM
- QSFP28: LR4 (1310nm), ER4 (1310nm), SR4 (850nm), CWDM4 (CWDM)

Amplifier

Applications: Booster, pre-amp

16ch red PreAmp:

- Pin: -40dBm to +7dBm
- Pout: -10dBm to +20dBm
- Gain: +13dB to +30dB, configurable (flat gain +10dB to +22dB)

16ch red Booster:

- Pin: -24dBm to +10dBm
- Pout: -10dBm to +20dBm
- Gain: +5dB to +22dB, configurable (flat gain +10dB 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 1000MBase-X
- RJ-45 serial port
- RJ-45 external alarm port
- OTN in-band GCC channel

Protocols: SNMP, HTTP, HTTPS, Telnet, SSH, Syslog, RADIUS, TACACS+, SNTP, TFTP & FTP, REST and NETCONF

Management:

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

OAM:

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

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
- RX, TX and OSNR

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: 100 to 240 VAC or -44 to -60 VDC, 50/60 Hz, 190W max

PSU Redundancy: Single/dual feeding, hot swappable

Cooling Unit:
Hot swappable fan unit

Environmental

Operating Temperature:
0ºC to 45ºC (32ºF to 113ºF)

Humidity: 5% to 90% RH

Air Flow: Front to back

Physical Dimensions

1U:

- 1.77" (H) x 17.32" (W) x 13.78" (D)
- 45mm (H) x 440mm (W) x 350mm (D)

Weight: 8.5kg / 18.74lb (max)

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

Encryption

Functionality:

- Full speed, transparent Layer-1 encryption for selected clients or for the 100G uplinks
- Supports QKD/PQC

Certifications:

- FIPS 140-3 Level 2 compliant
- Common Criteria EAL2 compliant
- CNSA Top Secret Suite B 2015 compliant

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

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