PL-1000IL
DWDM EDFA Amplification Solutions

Features Overview
- Up to 4 amplifier modules in a 1U chassis
- Supports up to 96 wavelengths
- Supports AGC and APC operation modes
- Embedded OSC for remote management and topology detection
- Optional optical switch for facility protection
- Integrated single/dual DCM for long distance 10G amplified links
- Supports single and dual fiber operation
- Supports optional up to 16 channel mux/demux
- Offers several EDFA types:
  - Booster
  - Inline
  - Pre-amplifiers
  - Midstage
- Low power consumption
- Built-in eye safety mechanism
- Monitoring on the input and output power and user configurable gain
- Dual AC or DC pluggable power supply and fan unit

For Long Distances and Attenuations in the Network
The PL-1000IL is designed to cost-effectively extend the optical link power budget for building long distance DWDM solutions. It provides amplification for a range of optical solutions, from single wavelength, up to the full C-band, and incorporates several types of low-noise Erbium-doped fiber amplifiers (EDFAs): booster, inline, and pre-amplifier.

Main Benefits
- Fully managed via dedicated integrated OSC
- Full remote monitoring on the input and output power, and user-configurable gain
- Eye safety feature - automatically shuts down the EDFA in case of fiber interruption
- Fully integrated solution including mux/demux, amplifier, and DCM
- Integrates with PacketLight management platforms and transponder/muxponder products

Flexibility in Services over the Same Fibre
The PL-1000IL is fully managed, configured and monitored remotely as part of the network, via optical supervisory channel (OSC). The device supports AGC and APC operation modes. The EDFA gain is controlled, adjusted and monitored by the user, and APC operating mode allows to maintain constant output power.

The EDFA has high optical signal to noise ratio (OSNR), enabling to cascade several EDFAs to form an amplified OTN link over long distances, without the need for regenerators.

Recommended for the following applications:
- Extending the optical link power budget to meet distance and attenuation requirements of DWDM networks
- Upgrading the optical link budget to support 10G/40G/100G services
- Reducing the number of regenerators and sites along the fiber
- Overcoming high loss in old fiber infrastructure
- Facility protection for fiber redundancy solutions
- Inline, edge and unidirectional mid-stage applications
Technical Specifications

System
Topology: Point-to-point, ring, linear
ADM, inline, edge or midstage
Transport Network Medium: Metro DWDM / dark fiber
Software Upgrade: Dual image, hitless swap

Booster
Output Power: Up to 23dBm
Input Power: -24dBm up to 16dBm
Gain: 8dB to 22dB

Inline
Output Power: Up to 23dBm
Input Power: -24dBm up to 13dBm
Gain: 5dB to 22dB

Pre-amplifier
Output Power: Up to 14dBm
Input Power: -36dBm up to 15dBm
Gain: 20dB

Midstage
Output Power: 8dBm per channel
Input Power: -36dBm up to 15dBm
Total Output Power: up to 23dBm
Gain: up to 40dB

General
Gain Flatness: +/-1dB
Noise Figure: 4-6dB
PMD: 0.3ps
PDL: 0.3 dB

Operating Modes:
■ Automatic gain control (AGC)
■ Automatic power control (APC)
Eye Safety: Automatic laser power reduction upon fibre cut or disconnection

Optional Optical Switch
Switching Time: <50ms
Max Input Power: 27dBm
Insertion Loss Transmit Side: 3.8dB
Receive side: 1.2dB

Network Management
Management Ports:
■ RJ45 10/100Base-T
■ 2xSFP 100Base-X
■ RS-232 serial port
■ DB9 alarm port
■ 8xSFP 100Base-X MC ports
Protocols: SNMP, HTTP, HTTPS, Telnet, SSH, Syslog, RADIUS, SNTP
Management: Web browser over HTTP/HTTPS, PacketLight LightWatch™ EMS or third party EMS over SNMP, CLI over RS-232 or CLI over Telnet/SSH
OAM: Input/output power monitoring event logger and alarms
Management Channel: 2 x optical supervisory channel (OSC)
Visual Indicators: LED status indicators for EDFA ports, power and system
Software Upgrade: Hitless traffic - dual image

DCM
DCM Type: Tunable DCM or fixed DCM
Fibre Type: G.652
Fibre Span: 20-200km
Max insertion loss: <3dB
Standard: ITU G.671

Power Supply
AC/DC: 90 to 246 VAC, 50/60 Hz, -36 to -60 VDC, 60W max
PSU Redundancy: Single/dual feeding, hot swappable
Cooling Unit: Hot swappable fan unit

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"

Environmental
Operating Temperature: -5ºC to 50ºC (+23ºF to +122ºF) operational
Humidity: 5% to 85% RH

Approvals & Standards
■ CE, FCC, RoHS, REACH
■ NEBS ready