

PON.ext[™] Passive Optical Network ReachExtension System

Model PON-EXT-26/23

Single RU chassis with 26 dB upstream and 23 dB downstream gain.

Features

- ◆ Transparent all-optical reach extension for ITU-T G.984 GPON
- ◆ Transparent to any vendor-specific implementation of GPON frame structure
- ◆ Compliant with ITU-T G.984.6, recommendation for GPON reach extension
- ◆ Provides class B+ GPON with a simultaneous 60 km reach, and 128 subscriber capability
 - ◇ 23 dB - 26 dB optical gain for 1310 nm burst-mode upstream
 - ◇ 20 dB - 23 dB optical gain for 1490 nm downstream
- ◆ Utilizes Alphion QLight[®] semiconductor optical amplifier (SOA) technology
- ◆ Utilizes 40 nm (1310 ± 20 nm) optical filter in upstream direction to limit SOA amplified spontaneous emission (ASE)
- ◆ SNMPv2 management
- ◆ Optical port for external management ONT
- ◆ Single RU chassis fits into 19" standard rack, 600-mm ETSI rack or 23" rack using mounting adapters
- ◆ Redundant -48 V power supplies
- ◆ Front panel access to all interfaces

Applications

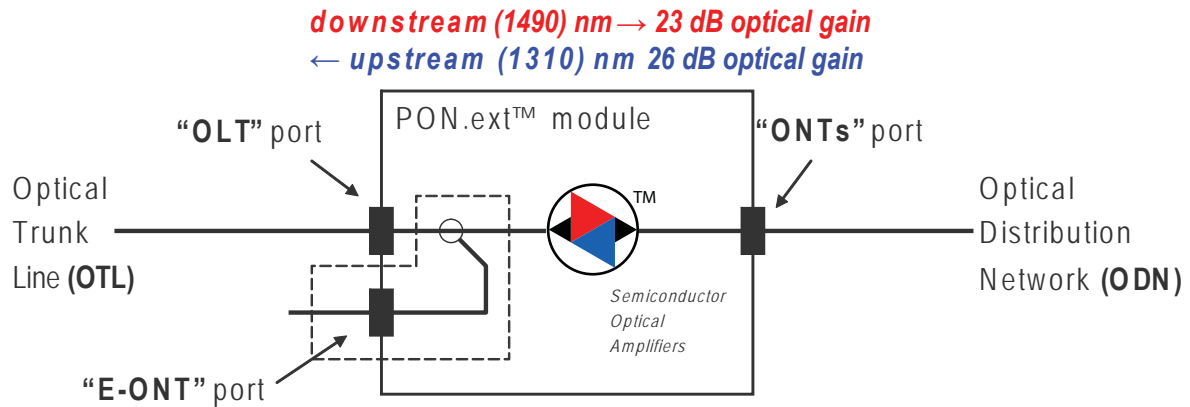
- ◆ Central office consolidation
- ◆ Serve hard to reach customers in rural areas
- ◆ Eliminate remote OLTs, increase network reliability, reduce OpEx
- ◆ Higher GPON split ratio



Description

The PON.ext[™] is based on Alphion's proprietary QLight[®] technology platform for the manufacturing of advanced discrete photonic integrated circuits (PICs). Because the PON.ext[™] uses the same InP semiconductor technology used in virtually all telecom lasers, it is able to amplify signals at 1310 and 1490 nm, wavelengths not accessible with commercial fiber-amplifier (EDFA) technology. Due to extremely fast response time of the InP semiconductor optical amplifier inside, the PON.ext[™] can accommodate both continuous (downstream) and bursty (upstream) traffic.

Alphion's proprietary approach to the incorporation of gain elements, optical filters, wavelength division multiplexers, input and output power detectors, as well as the associated control electronics for adiabatic gain control insures high and uniform performance over the lifetime of the PON.ext[™].



Operating Specifications: Model PON-EXT-26/23

PON.ext™ downstream	Units	Value	Comments
Wavelength range	nm	1480-1500	Complies with G.984.2
Minimum input power at “OLT” port	dBm	-23	
Minimum optical gain	dB	+23	Port to port at -23 dBm downstream input power
Maximum optical gain excursion	dB	+2	Port to port at -23 dBm downstream input power
Minimum saturation output power (3 dB)	dBm	+8	
Maximum optical noise figure	dB	+9.5	At -23 dBm downstream input power
Maximum ASE optical power in 1400-1600 nm range emitted from “ONTs” port relative to output signal power	dB	+5	19" standard rack, 600-mm ETSI rack or 23" rack using mounting adapters
Maximum ASE optical power in 1200-1400 nm range emitted from “ONTs” port	dBm	+9	At -28 dBm upstream input power; complies with G.984.6
PON.ext™ upstream	Units	Value	Comments
Wavelength range	nm	1290-1320	Complies with G.984.6
Minimum input power at “ONTs” port	dBm	-28	
Minimum optical gain	dB	+26	Port to port at -28 dBm upstream input power
Maximum optical gain excursion	dB	+4	Port to port at -28 dBm upstream input power
Minimum saturation output power (3 dB)	dBm	+7	
Maximum optical noise figure	dB	+8	At -28 dBm upstream input power
Maximum ASE optical power in 1285-1335 nm range from “OLT” port relative to output signal power	dBm	+5	At -28 dBm upstream input power; complies with G.984.6
Maximum combined ASE optical power in 1200-1285 nm and 1335-1400 nm ranges from “OLT” port relative to output signal power	dB	-6	At -28 dBm upstream input power; complies with G.984.6
Maximum ASE optical power in 1400-1600 nm range emitted from “OLT” port	dB	+2	At -23 dBm downstream input power; complies with G.984.6
PON.ext™ general optical specifications	Units	Value	Comments
Minimum optical return loss looking out from “OLT” port into OTL or from “ONTs” port looking into ODN	dB	+32	Complies with G.984.2
Optical connectors			SC/UPC or SC/APC
PON.ext™ PON-EXT-26/23	Value	Comments	
Power supply	-48 V	Redundant	
Maximum power consumption		30 W at room temperature; 34 W at 50 °C	
Environmental: temperature	+5°C to +50 °C		
Environmental: relative humidity		5% - 85% operating; 5% - 90% short-term	
Management interface		10/100-BaseT™ RJ-45	
Craft terminal	USB 2.0		

Specifications are subject to change without notice