XE4202M | 1514003

Base Product

CommScope FLX™ 10G EPON Remote Optical Line Terminal (R OLT) OLT with DPoE ™ for NH series nodes and VHub/ UVHubs in a triple wide module

PRELIMINARY SPECIFICATION

CommScope XE4202M R-OLT Module

The XE4202 10G EPON R-OLT (Remote Optical Line Terminal) module for CommScope HFC Nodes and VHubs is specifically designed for cable MSOs to substantially increase the ROI of their existing network infrastructure by adding high bandwidth 10G EPON based services to their legacy DOCSIS® HFC network. The R-OLT lowers the cost of deploying PON, saves space and power using existing assets, and drives PON based services through the last mile, enabling the migration to FTTX through seamless coexistence of RF/HFC, RFoG overlay, and digital returns all in the same enclosure, supporting nodes with coexistent RF/PON, or VHubs with RFPON (RFoG+PON overlay) or PON-only services.

The R-OLT incorporates full traffic management and PON MAC/PHY capabilities in a compact module and utilizes standard long haul 10GE uplinks, including CWDM and DWDM options, to connect to the S-Leaf switch/router in their Converged Interconnect Network (CIN), so operators can extend the deployment of FTTX to serve customers at distances well beyond the typical 20km reach of centralized chassis-based PON, while utilizing their transport backhaul fiber resources efficiently. For subscriber access, the R-OLT includes two 10G EPON ports, each supporting coexistent symmetric 10G/10G, and 1G/1G or Turbo EPON data speeds. Each 10G EPON port is fully interoperable with 1G and 10G ONUs via DPoE V2.0 OAM and supports 128 ONUs for a total of 256 subscriber ONUs per R-OLT module.

CommScope OLT Manager

The R-OLT is managed through its full lifecycle by the cloud-based CommScope OLT Manager software-defined networking (SDN) application. The OLT Manager integrates seamlessly with existing DOCSIS® provisioning and OSS systems through the CableLabs™ DPoE V2.0 specification with full flexibility for existing management, service provisioning and operational support systems and processes already in use in the HFC plant, such as DHCP, TFTP, NTP, syslog, ToD, SNMP and IPDR.

The high-availability OLT Manager facilitates and simplifies network management and programmability to support the high scalability requirements of operating a disaggregated PON network, by reducing the number of interface points to operator back-office systems. Each OLT Manager HA pair supports up to 200 R-OLTs (400 PON Ports) which equates to 51,200 ONUs with 1x128 splits per OLT Manager.

The R-OLT and OLT Manager system allows operators to cost-effectively migrate to standards-based 10G EPON as it becomes required by bandwidth demand and potential revenue, all while maintaining DOCSIS® provisioning compatibility.

Product Classification

Regional Availability	Asia	Australia/New Zealand	EMEA	Latin America	North America
Product Type	Remote OLT
Product Brand	CommScope FLX™

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General Specifications

LED Indicator, PWR	Dark = Module OFF (not receiving power) | Green = Module ON (receiving power)
LED Indicator, PON	Refer to TM 1512184 XE4202M Physical Installation Guide for LED indicator colors and definitions
Ports, Network Side	CommScope qualified SFP+ transceivers are purchased separately | LC Duplex: Two (2) network-side optical ports (NSI Port 0 and NSI Port 1) support single-mode SFP+ (10 Gbps) cages for standard uplink applications
Ports, Subscriber Side	CommScope qualified XFP transceivers are purchased separately | Each port supports up to 128 subscriber ONUs: (256 total per module, using external splitters) | Two (2) simplex bidirectional IEEE 802.3av 10G EPON subscriber-side optical XFP plug-in ports (PON 0 and PON 1) for 10G/10G (10GBASE-PR30), 10G/1G (10 /1GBASE-PRX30), and 1G/1G (1000BASE-PX20) optical transceiver support
Provisioning and Monitoring	OLT Manager application: Operator-based virtualized R-OLT lifecycle manager and DPoE provisioning system interface for Optical Network Units (ONUs)

Dimensions

Height	38.1 mm | 1.5 in
Width	101.6 mm | 4 in
Length	165.1 mm | 6.5 in

Port Configuration

Node and VHUB Configurations and Features

Platform[2,6]	NC4000 HFC Node with OA Tray RF Amplifier	NH4000-Legacy VHUB[5] or NH4000-UVP UVHUB	NH4600-UVP DAA UVHUB[7]	NH4000-Legacy VHUB[5] with RFoG	NH4000-UVP UVHUB with RFoG	NH2000-VHPx[8] Mini-VHUB	DC-2148 Cabinet Node	OM6000
Deployment Model	RF and 10G EPON	10G EPON Only	10G EPON Only	RFoG and 10G EPON	RFoG and 10G EPON	10G EPON Only	10G EPON Only	
RFoG Receivers	0	0	0	1[3]	1, 2[4]	0	0	0
R-OLT Modules	1	1, 2, 3	1, 2, 3	1, 2	1, 2	1, 2	1, 2	1, 2
PON Serving Groups	2	2, 4, 6	2, 4, 6	2, 4, 6	2, 4	2, 4	2, 4	2, 4
10GE Uplinks	2	2, 4, 6	2, 4, 6	2, 4, 6	2, 4	2, 4	2, 4	2, 4
PON Subscriber ONUs[1] (max)	256	768	768	256[9]	256[9]	512	512	512

Notes:
1. Using 1:128 splitters (maximum) on each R-OLT Port
2. Using 95 °C SFP+ for uplinks and industrial temp range 85 °C XFP PON transceiver optics (1000940) for NC4 RF Node application and extended industrial temp range 90 °C XFP PON transceiver optics (1001310) for EPON only and RFoG NH4/NH2 VHUB applications
3. Using OR4178H Diplexer/Receiver (# of R-ONUs and Returns depends on configuration)
4. Using OR4178H or OR4216R Diplexer/Receivers (# of R-ONUs and Returns depends on configuration)
5. NH4000-RFPx, NH4000-CNPx, NH4000-VHPx
6. All platforms must use PS4101 or PS4102 150-Watt Power Supplies
7. Recommended for 3x R-OLT and very dense RFoG + R-OLT implementations
8. NH2000-VHP1 (with PS4001 power supply) supports one R-OLT; VHP4 (with PS4101 power supply) supports two R-OLTs
9. Since EPON and RFoG access fibers are shared inside of the OR4178H, PON ONU feed is limited to 256 when 2x R-OLTs are used

Electrical Specifications

Electrical Safety Standard	CAN/CSA-C22.2 No. 60950-1-07+Amd 1+Amd 2 | CAN/CSA-C22.2 No.60950-22-

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07+GI1 (R2012) | EN 60950-1:2006+A11+A1+A12+A2 | EN 60950-22: 2006+A11 | IEC 60950-1:2005+A1+A2 | IEC 60950-22:2005 | IEC/EN 60825-1: 2014 | IEC/EN 60825-2:2004+A1+A2 | UL 60950-1-07+A1+A2 | UL 60950-22: 2007 R12.11

Electrical Safety Standard Note Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

Electromagnetic Compatibility (EMC) CFR 47 Part 15, Subpart B, Class A | CISPR 24 IEC/EN 55024 | CISPR 32 IEC/EN 55032 | VCCI A | VCCI B | VCCI V-32-1

Power Consumption Note 35.5 W maximum, including two (2) XFP and two (2) SFP+ transceivers operating at 10 /10 or 10/1 Gbps

Power Requirements +24VDC and +5VDC, supplied by NH2000, NC/NH4000 VHub/UVHub platform | PS4101 or PS4102 power supplies (required), depending on the node /VHub platform used

Ordering Tree

Ordering Information

Model Name	Part Number	Description
XE4202M-00-D	1000947	10G EPON Optical Line Terminal (R-OLT) for NH series nodes and VHUB/UVHUBs in a triple-wide module. Two pluggable network uplink interfaces for 10GigE SFP+ and two pluggable access interfaces for 10G EPON XFPs. Network interface SFP+ and 10G EPON XFP plug-in transceiver modules must be purchased separately. The order includes access to download the OLT Manager application and documentation.
XE4202M-01-D	1514003	10G EPON Optical Line Terminal (R-OLT) with extended scale traffic management function for NH series nodes and VHUB/UVHUBs in a triple-wide module. Two pluggable network uplink interfaces for 10GigE SFP+ and two pluggable access interfaces for 10G EPON XFPs. Network interface SFP+ and 10G EPON XFP plug-in transceiver modules must be purchased separately. The order includes access to download of the OLT manager application and documentation.
		PON XFP Transceivers
	1000940	10G EPON XFP Optical Transceiver Module for R-OLT PON interface, 10G/10G (10GBASE-PR30), 10G/1G (10/1GBASE-PRX30), 2G/1G (Turbo Mode), and 1G/1G (1000BASE-PX20) -40 ⁰C to +85 ⁰C (-40 ⁰F to 194 ⁰F) industrial temperature rated. Industrial temperature XFP for NC4000 RF Node applications.
	1001310	10G EPON XFP Optical Transceiver Module for R-OLT PON interface, 10G/10G (10GBASE-PR30), 10G/1G (10/1GBASE-PRX30), 2G/1G (Turbo Mode), and 1G/1G (1000BASE-PX20) -40 ⁰C to +85 ⁰C (-40 ⁰F to 194 ⁰F) industrial temperature rated. Extended industrial temperature XFP for NC4000 RF Node applications.
		Uplink SFP+ Transceivers 40km/80km DWDM
TTD4540-xx-PI		SFP+ Transceiver, 10Gbps, ITU channel xx (20-61), LC/UPC, 40km, -40 ⁰C to +95 ⁰C (-40 ⁰F to +203 ⁰F), DWDM.
TTD4580-xx-PI		SFP+ Transceiver, 10Gbps, ITU channel xx (20-61), LC/UPC, 80km, -40 ⁰C to +95 ⁰C (-40 ⁰F to +203 ⁰F), DWDM.
		Uplink SFP+ Transceivers 40km/80km CWDM
TTCxxxx-TL40		SFP+ Transceiver, 10Gbps, xxxx = 8 CWDM wavelengths 1470-1610 nm, LC/UPC, 40km, -40 ⁰C to +95⁰ C (-40 ⁰F to +203 ⁰F).
TTCxxxx-TL80		SFP+ Transceiver, 10Gbps, xxxx = 8 CWDM wavelengths 1470-1610 nm, LC/UPC, 80km, (1570, 1590, 1610 nm limited to 70km) -40 ⁰C to +95 ⁰C (-40 ⁰C to 203 ⁰F).

Environmental Specifications

Operating Temperature -40 °C to +60 °C (-40 °F to +140 °F)

Storage Temperature -40 °C to +60 °C (-40 °F to +140 °F)

Relative Humidity 5%–95%, non-condensing

Packaging and Weights

Weight, net 1.293 kg | 2.85 lb

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Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant
UK-ROHS	Compliant

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