CommScope FLX™ 10G EPON Remote Optical Line Terminal (R-OLT) OLT with DPoE™ for NH series nodes and VHub/U VHubs 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 RFoPON (RFoG+PON overlay) or PON-only services.

The R-OLT incorporates full traffic management and PON MACPHY 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 FTTH 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™

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-PX30), and 1G/1G (1000BASE-PX20) optical transceiver support

Provisioning and Monitoring
OLT Manager application: Operator-based virtualized R-OLT lifecycle manager and DDoE 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 | FC4128 RFT 16.12 Node with OA Tray RFP Amplifier | FC4128 Legacy VHUB | NH4000-4000-UDVP UVHUB | NH4000-4000-UDVP UVHUB | NH4000-4000-UDVP UVHUB with RFoG | NH4000-4000-UDVP UVHUB with RFoG | NH4000-4000-UDVP UVHUB with RFoG | NH4000-4000-UDVP UVHUB with RFoG | NH4000-4000-UDVP UVHUB with RFoG | NH4000-4000-UDVP UVHUB with RFoG | NH4000-4000-UDVP UVHUB with RFoG | NH4000-4000-UDVP UVHUB with RFoG | NH4000-4000-UDVP UVHUB with RFoG | NH4000-4000-UDVP UVHUB with RFoG |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Deployment Model | RF and 10G EPON Only | 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only | RFoG and 10G EPON Only |
| RFoG Receivers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R-OLT Modules | 1 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 | 1, 2, 3 |
| PON Serving Groups | 2 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 |
| 10GE Uplinks | 2 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 | 2, 4, 6 |
| PON Subscriber ONUs (max) | 256 | 768 | 768 | 256 | 256 | 512 | 512 | 512 | 512 | 512 | 512 | 512 | 512 | 512 | 512 |

Notes:
1. Using 1:128 splitters (maximum) on each R-OLT Port
2. Using 95 °C XFP for uplinks and industrial temp range 65 °C XFP PON transceiver optics (1000/34) for NC4 RF Node application and extended industrial temp range 90 °C XFP PON transceiver optics (1000/34) for EPON only and RFoG NH4/NHU VHUB applications
3. Using COR4128B1 Dilapex/Receiver (RF of ONUs and returns depends on configuration)
4. Using COR4128B1 Dilapex/Receiver (RF of R-OLTs and returns depends on configuration)
5. NH4000-RFP, NH4000-CNPX, NH4000-VIFP
6. All platforms must use PI4030 or PI4030 150-Watt Power Supplies
7. Recommended for 3x R-OLT and very dense RFoG + R-OLT implementations
8. NH4000-VIFP (with PI4010 power supply) supports one R-OLT; VIFP (with PI4010 power supply) supports two R-OLTS
9. Since EPON and RFoG access fibers are shared inside of the COR4128B1, 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. 60950-22-07+G1 (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:
XE4202M    |    1514003


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)

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

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<th>Model Name</th>
<th>Part Number</th>
<th>Description</th>
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<td>1000947</td>
<td>10G EPON Optical Line Terminal (R-OLT) for NH series nodes and VHub/UVHub 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.</td>
</tr>
<tr>
<td>XE4202M-01-D</td>
<td>1514003</td>
<td>10G EPON Optical Line Terminal (R-OLT) with extended scale traffic management function for NH series nodes and VHub/UVHub 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.</td>
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<td>PON XFP Transceivers</td>
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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

Regulatory Compliance/Certifications
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<th>Agency</th>
<th>Classification</th>
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<td>Designed, manufactured and/or distributed under this quality management system</td>
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<td>UK-ROHS</td>
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