

# XP4202M | 1514514



CommScope FLX™ XGS-PON Remote Optical Line Terminal (R OLT) OLT with vOLT for CommScope HFC Nodes and VHUBs, specifically designed for cable MSOs

## PRELIMINARY SPECIFICATION

### CommScope FLX XP4202M R-OLT Module

The XP4202 XGS-PON 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 XGS-PON based services to their legacy DOCSIS® HFC network. The R-OLT lowers the cost of deploying PON, saves space and power using existing fiber and enclosures, 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 node or VHUB, 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 the 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 XGS-PON ports, each supporting coexistent symmetric 10G/10G XGS-PON, 2.4/1.2 GPON or combo mode (coexistent GPON and XGS-PON). Each XGS-PON port is fully interoperable with GPON and XGS-PON ONUs via OMCI and supports 128 ONUs for a total of 256 subscriber ONUs per R-OLT module.

### CommScope FLX Virtual OLT (vOLT)

The CommScope FLX™ vOLT is a virtual OLT application supporting a software-defined networking architecture (SDN) that separates the Management plane from the control and data planes found in the physical network function (PNF) of the R-OLT. By centralizing the control plane, the vOLT facilitates network management and programmability to improve scalability of operating a highly scaled, disaggregated network with PON DAA devices like the R-OLT, thus simplifying and reducing the number of interface points to operator back-office system. Key features of the vOLT include:

- Seamless integration of the management and assurance of multiple R-OLTs resulting in a fully managed service deployment using existing operational production processes and procedures
- Full lifecycle management of multiple R-OLTs from initial deployment through the application of services and subscriber provisioning, and integration into monitoring and network operational support systems.
- For GPON and XGS-PON based PON services, integration into the northbound provisioning and management systems
- Full standards-based interfaces to northbound SDN and telemetry gathering applications

## Product Classification

### Regional Availability

Asia | Australia/New Zealand | EMEA | Latin America | North America

### Product Type

Remote OLT

### Product Brand

CommScope FLX™

## General Specifications

<b>LED Indicator, PWR</b>	Dark = Module OFF (not receiving power)   Green = Module ON (receiving power)
<b>LED Indicator, PON</b>	Refer to TM 1512184 XE4202M Physical Installation Guide for LED indicator colors and definitions
<b>Ports, Network Side</b>	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
<b>Ports, Subscriber Side</b>	CommScope qualified SFP+ PON transceivers are purchased separately   Each port supports up to 128 subscriber ONUs: (256 total per module, using external splitters)   Two (2) simplex bidirectional subscriber-side optical XFP plug-in ports (PON 0 and PON 1) for ITU-T G.984 GPON, ITU-T G.9807.1 XGS-PON or ITU-T G.984/G.9807.1 G/XGS-PON Combo mode optical transceiver support
<b>Provisioning and Monitoring</b>	vOLT SDN: Cloud-based, virtualized OLT management and OMCI provisioning and monitoring control plane interface for R-OLTs and Optical Network Units (ONUs)

## Dimensions

<b>Height</b>	38.1 mm   1.5 in
<b>Width</b>	101.6 mm   4 in
<b>Length</b>	165.1 mm   6.5 in

## Port Configuration

### Node and VHUB Configurations and Features

Platform <sup>2,6</sup>	NC4000 HFC Node/OM4000 Node	OM6000 <sup>10</sup>	NH4000-Legacy VHUB <sup>9</sup> or NH4000-UVP UVHUB	NH4600-UVP DAA UVHUB <sup>7</sup>	NH4000-Legacy VHUB <sup>9</sup> with RFoG	NH4000-UVP UVHUB with RFoG	NH2000-VHPx <sup>8</sup> Mini-VHUB	DC2180 Cabinet Node
Deployment Model	RF and G/XGS-PON	RF and G/XGS-PON	G/XGS-PON Only	G/XGS-PON Only	RFoG and G/XGS-PON	RFoG and G/XGS-PON	G/XGS-PON Only	G/XGS-PON Only
RFoG Receivers	0	0	0	0	1 <sup>3</sup>	1, 2 <sup>4</sup>	0	0
R-OLT Modules	1	1	1, 2, 3	1, 2, 3	1, 2	1, 2	1, 2	1
PON Serving Groups	2	2	2, 4, 6	2, 4, 6	2, 4, 6	2, 4	2, 4	2
10GE Uplinks	2	2	2, 4, 6	2, 4, 6	2, 4, 6	2, 4	2, 4	2
PON Subscriber ONUs <sup>5</sup> (max)	256	256	768	768	256 <sup>9</sup>	256 <sup>9</sup>	512	256

- Notes:
- Using 1:128 splitters (maximum) on each R-OLT Port
  - Using 95 °C SFP+ for uplinks and industrial temp range 85 °C SFP+ PON transceiver optics for NC4 RF Node application and for PON only and RFoG NH4/NH2 VHUB applications
  - Using OR4178H Diplexer/Receiver (# of R-ONUs and Returns depends on configuration)
  - Using OR4178H or OR4216R Diplexer/Receivers (# of R-ONUs and Returns depends on configuration)
  - NH4000-RFPx, NH4000-CNPx, NH4000-VHPx
  - All platforms must use PS4101 or PS4102 150-Watt Power Supplies
  - Recommended for 3x R-OLT and very dense RFoG + R-OLT implementations
  - NH2000-VHP1 (with PS4001 power supply) supports one R-OLT; VHP4 (with PS4101 power supply) supports two R-OLTs
  - Since GPON/XGS-PON and RFoG access fibers are shared inside of the OR4178H, PON ONU feed is limited to 256 when 2x R-OLTs are used
  - With backplate adapter for module installation in the OM6000 (in development).

## Electrical Specifications

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## Electrical Safety Standard

CAN/CSA-C22.2 No. 60950-1-07+Amd 1+Amd 2 | CAN/CSA-C22.2 No.60950-22-07+G11 (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 and 1/1 or Turbo 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
XP4202M-00-S	1514514	XGS-PON 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 GPON, XGS-PON and combo SFP+. Network interface SFP+ and G/XGS/Combo-PON SFP+ plug-in transceiver modules must be purchased separately.
		PON SFP+ Transceivers
	619630-001-00	GPON SFP+ Optical Transceiver Module for R-OLT PON interface, ITU-T G.984 Class C+, -40 °C to +85 °C (-40 °F to 194 °F) industrial temperature rated.
	619631-001-00	XGS-PON SFP+ Optical Transceiver Module for R-OLT PON interface, ITU-T G.9807.1 Class N2, -40 °C to +85 °C (-40 °F to 194 °F) industrial temperature rated.
	619632-001-00	Combo (GPON/XGS-PON) SFP+ Optical Transceiver Module for R-OLT PON interface, ITU-T G.984/G.9807.1 Class N2/C+, -40 °C to +85 °C (-40 °F to 194 °F) industrial temperature rated.
		Uplink SFP+ Transceivers 40km/80km DWDM
TTD4540-xx-PI		SFP+ Transceiver, 10Gbps, ITU channel xx (20-61), LC/UPC, 40km, -40 °C to +95 °C (-40 °F to +203 °F), DWDM.
TTD4580-xx-PI		SFP+ Transceiver, 10Gbps, ITU channel xx (20-61), LC/UPC, 80km, -40 °C to +95 °C (-40 °F to +203 °F), DWDM.
		Uplink SFP+ Transceivers 40km/80km CWDM
TTCxxxx-TL40		SFP+ Transceiver, 10Gbps, xxxx = 8 CWDM wavelengths 1470-1610 nm, LC/UPC, 40km, -40 °C to +95° C (-40 °F to +203 °F).
TTCxxxx-TL80		SFP+ Transceiver, 10Gbps, xxxx = 8 CWDM wavelengths 1470-1610 nm, LC/UPC, 80km, (1570, 1590, 1610 nm limited to 70km) -40 °C to +95 °C (-40 °C to 203 °F).

## 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

**Agency**

ISO 9001:2015

ROHS

**Classification**

Designed, manufactured and/or distributed under this quality management system

Compliant