

- **Compact outdoor deployable remote OLT**
- **10G PON (XGS-PON) for high-speed broadband to customers**
- **Ideal for rural and suburban deployments**
- **Scales to 512 subscriber connections**
- **NETCONF TR383 North bound interface**
- **Environmentally hardened (IP68) for pedestal, pole, pit, strand, tower deployment**
- **Low power consumption**
- **Includes fiber management and splitters**
- **Maximize optical power budget for a high split ratio**



## Overview

Technetix remote Optical Line Terminal (rOLT) is the ideal next generation fiber access platform for delivering high speed broadband services to customers in rural, suburban, and park locations including residential estates, business and science parks and campus communities. Connect towns and villages between large urban areas that can't be reached from CO infrastructure due to optical budget limitations.

The XGS-PON rOLT reduces time-to-market, shortens the build-to-bill cycle and enables targeted investment to customers for gigabit broadband and multi-play services.

The rOLT is a compact, field deployable and self-contained XGS-PON OLT with up to four 10 Gb/s PON ports supporting XGS-PON or EPON and providing class leading flexibility, low power consumption and ease of deployment.

The rOLT can be strand mounted or deployed in a pit/chamber and most locations including poles and towers, external building placements, street cabinets, building closets and is a high flexible micro Point of Presence (POP) for rapid and targeted delivery of high speed broadband services to business and residential customers.

The rOLT includes a fully non-blocking wire speed Ethernet switch supporting a comprehensive set of Carrier Ethernet Services. The rOLT can grow from a single XGS-PON port with a single 10GE uplink to four XGS-PON ports and four 10GE uplinks.

The rOLT uses 10G optical transceivers with an embedded Ethernet-to-PON MAC bridge integrated circuit supporting XGS-PON and 10G EPON.

The rOLT PON module is compliant with ITU-T G.9807.1 and G.988 specifications for XGS-PON; and IEEE802.3av, SIEPON, DPoE and PON AES specifications for EPON. Each port supports up to 128 subscribers and 2K services.

The rOLT provides comprehensive OAM features including an open API with a standard NETCONF/YANG interface for integration with third party control and management systems including SDN platforms.

## Modular and flexible platform

The outdoor rOLT is a highly modular system and incorporates fiber management trays and fiber connection termination points. The solution includes passive optical PLC splitters in 1:2, 1:4 or 1:8 splits as a first stage in a cascaded PON tree configuration.

The rOLT includes an environmentally hardened IP68 rated clam shell housing for external deployment in all locations and has an operating temperature range of -40°C to 65°C.

Power options include CATV plant power 42-90 VAC (quasi-square wave) 50/60 Hz or DC Input: -48 V (36-72 V) for telco powering.

**XGS-PON with integrated Optics** The PON side physical layer provides WDM optics, burst clock/data recovery, line encoding/decoding and optional Forward Error Correction (FEC). The PON data is optionally encrypted and the MAC controls transmit and receive of the control frames and bursts. Received frames are processed so that headers are filtered (VLANs) and switched into the assigned queues. The OLT supports jumbo frames up to 9.6 KB in XGS-PON mode, and 12.5 KB in 10G EPON mode.

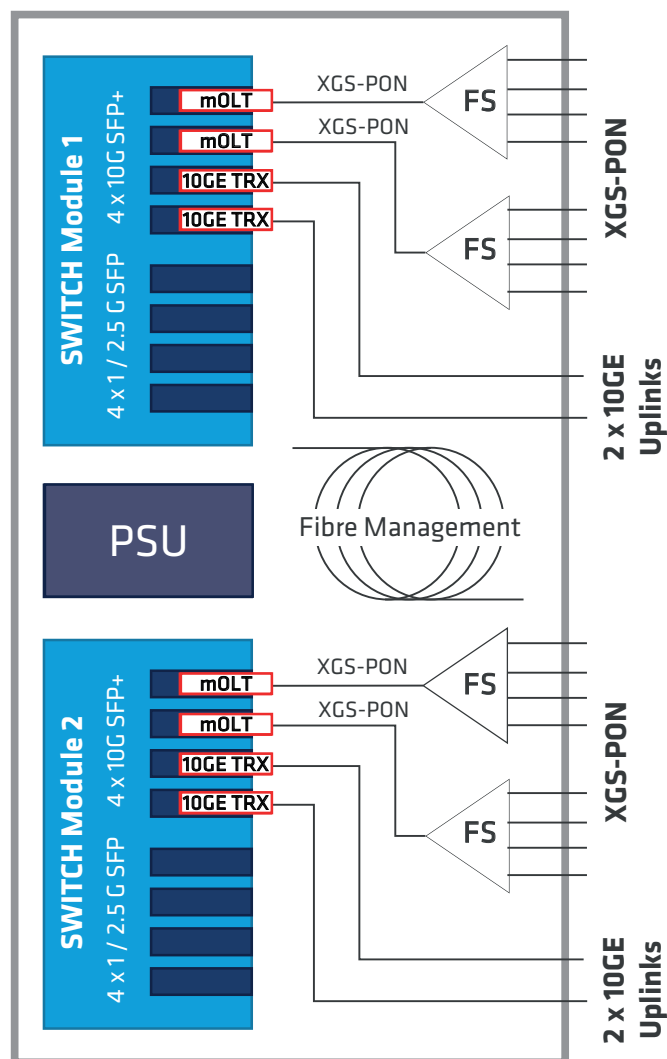
No additional PON transceiver optics are required. The PON MAC layer embedded in the OLT module performs the control functions necessary to operate the framing and service adaptation sublayers of transmission control in XGS-PON. This includes the following functions:

- PHY-layer OAM (PLOAM) layer discovery and registration of new ONUs
- BW mapping to track and grant upstream traffic slots for AllocIDs on the PON
- Dynamic Bandwidth Allocation [DBA] for upstream traffic against configured SLAs
- XGEM port framing for data and OMCC management traffic
- Ethernet frame Segmentation and Reassembly [SAR]

## Technical information

### PON OLT

- SFP+ 10G optical transceiver with embedded UNIVERSAL Ethernet-to-PON MAC bridge
- Software configurable - symmetric 10G/10G for XGSPON or 10G EPON protocols
- In XGS-PON mode: compliant with ITU-T G.9807.1
- In EPON mode: compliant with IEEE802.3AV, SIEPON, DPoE, and PON AES specification



- IEEE 802.1AE MACSec uplink encryption
- In-band management vi Ethernet link OAM (IEEE 802.3 CLAUSE 57)
- Supports up to 128 subscribers per OLT module
- IEEE 1588v2 & SyncE timing & sync support
- XGS CLASS N2 and EPON PR30+ OPTICAL power budget
- Integrated diagnostics and monitoring (SFF-8472), and burst mode RSSI measurements

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## Technical information

### Carrier Ethernet services

- E-LINE, E-LAN, E-TREE, and E-Access supported
- MEF-compliant dual rate policing and shaping

### Carrier Ethernet OAM

- IEEE 802.1AB Link Layer Discovery Protocol (LLDP)
- IEEE 802.1ag Connection Fault Management (CFM)
- IEEE 802.3ah Ethernet in the First Mile (EFM)
- IETF RFC 2544 performance benchmarking test
- ITU-T Y.1564 service activation test
- ITU-T Y.1731 performance monitoring

### Quality of Service

- 8 hardware priority queues
- Per-EVC QoS, policing and shaping for service isolation and traffic engineering
- Strict priority and Weighted Round-Robin (WRR) scheduling
- Per-Port/VLAN/ToS/DSCP classification
- Per-Port/VLAN/flow rate limiting

### Ethernet Layer 2 switching

- IEEE 802.1D bridge
- IEEE 802.1Q VLAN
- VLAN translation
- Private static VLAN
- Port isolation (static)
- Loop guard
- MAC-based and protocol-based VLAN
- Multiple registration protocol (MRP)
- Multiple VLAN registration protocol (MVRP)
  - GARP VLAN registration (GVRP)
- IEEE 802.1ad provider bridge (native or translated VLAN)
- IEEE 802.3ad link aggregation; static & LACP
- Bridge Protocol Data Unit (BPDU)
  - Guard and restricted role
  - Transparency and forwarding
- Voice VLAN & auto VoIP
- VLAN trunking
- DHCP snooping
- ARP inspection
- Port and flow mirroring

- Protocol-based and IP subnet-based VLAN
- Error disable discovery
- Classification of Layer 3 flow

### Multicast management

- IGMPv2 and IGMPv3 snooping
- MLDv1 and MLDv2 snooping
- IP multicast (IPMC) throttling, filtering, fast leave and leave proxy
- Multicast VLAN registration (MVR) and profile
- Broadcast/multicast storm control
- Unknown multicast filtering

### Ethernet Layer 3 switching

- DHCP option 82 relay
- IPv4 unicast static routing

### Protection

- IEEE 802.3ad LACP
- IEEE 802.1w/s RSTP / MSTP
- ITU-T G.8031 ELPS & G.8032 v1/v2 ERPS

### Port control

- Port speed, duplex mode, flow control
- Port frame size (jumbo frames)
- Port state (administrative status)
- Port status (linking monitoring)
- Port statistics (MIB counters)

### Security

- Network access server
  - Port-based IEEE 802.1X
  - Single and multiple IEEE 802.1X
  - MAC-based authentication
  - VLAN and QoS assignment
  - Guest VLAN
- RADIUS accounting
- MAC address limit
- TACACS+
- Web and CLI authentication

## Technical information

### Management

- NETCONF / YANG interface based on BBF TR-385 and TR-383)
- Web access through HTTP and HTTPS
- CLI - console port and Telnet

### Pluggable transceivers

- Four 10G capable SFP+ ports of which two are reserved for PON MAC bridge transceivers
- Four 1G/2.5G capable SFP+ ports

### Power input options

- CATV plant power 42-90 VAC (quasi-square wave) 50/60 Hz
- DC input: -48 V (36-72 V)
- AC power supply 85-264 VAC 47-63 Hz

### Power consumption

- 48 W maximum

### Environment

- Operating temperature -40°C to +65°C (-40°F to +149°F)
- Storage temperature -40°C to +75°C (-40°F to +167°F)
- Relative humidity 5%~95% (non-condensing)
- IP68 Ingress Protection rating

### Compliance

- FCC part 15, CE mark
- UL/cUL, CB
- RoHS, REACH

### Dimensions

- Height - 307 mm
- Width - 249 mm
- Depth - 226 mm

## Mechanical

