

TRIDENT7™ 10G OPTICAL LINE TERMINAL

The (TRIDENT7™) modular Optical Line Terminal (OLT) is a field proven universal optical access platform, The T7 OLT features an advanced broadband architecture and is optimized for triple play services. The T7 OLT provides Industry leading density (up to 4096 ONTs) and is managed via a comprehensive, easy-to-use management system. The T7 OLT works with a variety of Optical Network Terminals (ONTs) supporting high-speed data, IPTV and RF video and Industry standard VoIP capabilities



BENEFITS

- Among the highest capacity OLTs available for a standard 19" or 23" rack
- Superior Quality of Service with a unique ability to support Layer 2 and Layer 3 Switching
- Highest level of security and data link integrity available today in Gigabit speed access networks
- Centralized management
 - Open interface to OSS
 - Flow through provisioning
 - SNMP
- Employs IEEE 802.1q VLANs and VLAN stacking (Q-in-Q) for traffic segregation and prioritization.

FEATURES

- Support of Multiple Standards from a Common Platform including GPON, GE-PON, Point-to-Point Ethernet, and 10GE-PON
- Scalable Platform
 - 80 Gbps Uplink
 - Up to 4096 ONTs
- Compact size
 - 14-RU
 - 3 chassis per rack
- Video services support
 - video-on-demand (IP unicast)
 - premium services (IGMP-based IP multicast)

APPLICATIONS

- High quality, converged Voice, Video and Data triple-play services
- Use traditional RF broadcast services to deliver basic and premium channels while simultaneously using IP-based technology for video-on-demand and premium services
- Supports all standards-based FTTx standards in one platform

DATA SHEET

KEY ELEMENTS

PLATFORM SWITCH MODULES

The T7 chassis-based OLT includes two slots for redundant Platform Switch Modules (PSMs), which aggregate all (non-RF) services traffic of subtended ONTs. These modules utilize IEEE Spanning Tree protocols and Link Aggregation over Ethernet links in multiple common topologies to provide resilient interconnection with the distribution network. The total service network capacity through the PSMs is 80 Gbps using six (6) 10 Gigabit Ethernet XFP-based ports (model PSM-02).

PLATFORM INTERFACE MODULES

The T7 chassis-based OLT includes eighteen (18) slots for Platform Interface Modules (PIMs), which may be of one type or mixed PIM models. Each PIM provides SFP-based ports for FTTP connections to ONTs and other customer premise equipment through the Optical Distribution Network (ODN). The PIMs provide 128-bit encryption, Forward Error Correction, and integrated Layer 2 switching at wire speeds regardless of the size of the service frame.

PLATFORM MANAGEMENT MODULE

The T7 chassis-based OLT includes one slot for the Platform Management Module (PMM), which is the primary interface for external management applications. The PMM utilizes XML and SNMP for in-band or out-of-band communication with the TRIDENT7 Element Management Suite (T7 EMS) or other network management platforms. A command-line interface may be accessed with Telnet, SSH, and local craft port.

UNIFIED ELEMENT MANAGEMENT SYSTEM

The T7 OLT and all ONTs are managed easily via the TRIDENT7 Element Management Suite (T7 EMS), which allows network operators to easily configure and manage service delivery based on a host of options. The T7 EMS also enables the automatic and remote provisioning of new services for subscribers, which eliminates truck rolls and decreases operational costs. GPON, and GE-PON elements are all supported by the T7 EMS allowing for simplified network operations and outside plant to reduce ongoing maintenance and cost of ownership.

KEY FEATURES

DENSITY

The T7 OLT is amongst the highest capacity OLTs available for a standard 19" or 23" Utilizing a 1 x 64 split on each PON port, as many as 4,096 ONTs can be supported by a single OLT requiring only fourteen rack units (14 RU) of space. Up to three fully populated OLTs, providing support for up to 12,218 ONTs may be mounted in a single standard telecommunications rack.

HIGH BANDWIDTH

The T7 OLT includes a 180 Gbps full-duplex data backplane that interconnects the PSMs with the PIMs. Using only uplink interfaces on both PSMs, the T7 OLT chassis presently supports up to 80 Gbps (PSM-02). A fully populated and configured T7 OLT can provide up to 240 Gbps of uplink capacity.

RELIABILITY & RESILIENCY

Since the T7 OLT is a critical component of the network infrastructure, the T7 OLT has been designed for highly resilient operation using load sharing across modules, IEEE Layer 2 spanning tree protocols and link aggregation, and IETF Layer 3 link state protocols. The OLT may be redundantly provisioned to tolerate failures of electrical power, fiber optic links, peer network elements, optical, and electrical components. The modules within the T7 chassis are capable of recovering from these failures rapidly enough to avoid service disruption to subscribers, and all modules are hot-swappable.

QUALITY OF SERVICE

The T7 OLT serves as the bandwidth management engine for the FTTP network. The T7 OLT provides bandwidth management - both dedicated and dynamically adjustable - in highly granular increments. The T7 OLT is unique in its ability to support Layer 2 through Layer 3 packet inspection which is used for rate limiting. The OLT exploits IEEE 802.1q VLANs and VLAN stacking (Q-in-Q) for traffic segregation and prioritization. Additionally, the OLT can completely isolate subscriber traffic, even when that traffic is within the same VLAN.

COMPLETE VIDEO SOLUTION (RF & IP)

The T7 platform provides network operators with the most compelling combination of video services in the optical access industry. Network operators can use traditional RF broadcast services to deliver basic and premium channels while simultaneously using IP-based technology for video-on-demand (IP unicast) and premium services (IGMP-based IP multicast).

SPECIFICATIONS

Chassis:

- 1 Platform Management Module (PMM) Slot
- 2 Platform Switch Module (PSM) Slots
- 18 Platform Interface Module (PIM) Slots

Network-Side Interfaces:

- 10 x IEEE 802.3z Gigabit Ethernet via SFP (PSM-01)
- 6 x IEEE 802.3ee 10 Gigabit Ethernet via XFP (PSM-02)
- 4 x IEEE 802.3z Gigabit Ethernet via SFP (PSM-02)

Management

- T7 Element Management Suite
- Flow-Through Provisioning
- GUI & Cisco-based CLI

Power Requirements

- Dual Inputs, -40.5 VDC to -60 VDC
- 560 W nominal, 700 W maximum

Environmental Operating Temperature

- 0° C to +50° C

Physical Dimensions and Weight

- 17.5" W x 24.5" H x 12" D
- 44.45 cm W x 62.23cm H x 30.48cm D
- 88lbs (Fully populated)
- 39.92 kg (Fully populated)

NEBS

- NEBS Level 1 NEBS Level 3
- NEBS Level 3 (pending)

EMI/EMC

- FCC CFR47
- EN 55024: 1998
- EN 55022: 1998

Reliability

- MTBF redundant configuration availability:
 - >0.99999 at 40°, ground fixed in accordance with Telecordia TR-332

Service

- Modular design for ease of maintenance and upgrades
- All modules are hot-swappable

Mounting Options

- Standard relay rack (19" or 23")

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