Overview

OCS Micro-OLT (M-OLT) is an ultra-compact GPON OLT system. The M-OLT product series currently offers two different models: the portable indoor-unit, and the hardened outdoor-unit. The outdoor unit is designed for deployment in difficult operating environments. It can be easily mounted on utility poles, installed inside CATV amplifier enclosures, inside non-climatically controlled remote cabinets, or in any other hard to reach areas. This allows network operators to deploy GPON throughout the serving areas with unparalleled flexibility.

Compact in size, M-OLT offers uncompromising features and quality. It is a carrier class platform that provides sufficient bandwidth and switching capabilities for high performance triple play services. M-OLT supports up to 2.4Gbps downstream and 1.2Gbps upstream rate on each PON link. It supports different types of PON link split ratio and distance configuration, it can be configured as 128 ONU/10km, 64 ONU/20km, or 64 ONU/40km. M-OLT offers bandwidth management and Quality of Service (QoS) functions to support Service Level Agreement (SLA) enforcement, and to support services that are sensitive to delay and jitter.

M-OLT provides comprehensive security features, such as guard for CPU-targeted packets, abnormal traffic blocking, Advanced Encryption Standard (AES) encryption, MAC limit, etc. M-OLT is fully remotely manageable; it also includes a Bluetooth-based wireless console for field troubleshooting. Those designs allow network operators to reduce the service outage time and operational costs. M-OLT uses a standards compliant, field-proven, time-tested OMCI stack and OLT Management software solution. This makes M-OLT highly interoperable with other standard-compliant third-party ONUs. As of reliability/redundancy, Type-B protection scheme is planned in the roadmap.

To summarize, OCS M-OLT system enables network operators to deliver high-performance triple play services over FTTx, with a reliable, flexible, optimal and cost-effective network infrastructure. M-OLT is an ideal candidate for different markets (Telecom, CATV networks, business parks, or college

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1 OCS Micro-OLT system is jointly developed by OCS and DEONET.
campuses, etc.), and to serve various application scenarios, such as regular residential FTTH, HFC network upgrade, mobile service front-hauling/back-hauling, etc.

**Key Features**

- Ultra-compact. Environmentally Hardened
- Fully compliant with ITU GPON standards. Uses field-proven, highly interoperable OMCI stack and OLT Management software solution
- Four uplink 1000Base-X Gigabit Ethernet interfaces
  - 802.1Q (VLAN Tagging)
  - 802.1p (priority queues)
  - Spanning Tree (STP, RSTP)
  - Link Aggregation
  - Strict Priority Queuing (SPQ), Deficit Weighted Round Robin (DWRR) and Rate Limiting
- Four downlink GPON interfaces
  - Support different types of PON link split ratio and distance configuration: 128 ONUs at 10km, 64 ONUs at 20km, 64 ONUs at 40km
  - SR/NSR Dynamic Bandwidth Allocation
  - AES encryption
  - Comprehensive PON link/ONU operation status monitoring, performance monitoring (PM) and alarm functions. Rogue-ONU monitoring
  - High speed ONU image upgrade using Extended OMCI message set
- Multicast and IPTV service
- Traffic management and QoS functions
- Full range of management options including SSH (Security Shell) CLI, SNMP, syslog, etc.

**Specifications**

- **GPON Interfaces**
  - 4 GPON ports (SFP, SC PC Type)
- **Ethernet Interfaces**
  - 4 1000Base-X ports (SFP, SX/LX/ZX Type)
  - 10Gbe Ethernet ports (planning)
- **GPON Features**
- **Console**
  - Wireless console (Bluetooth)
- **System memory**
  - 512MB DRAM
  - 1GB Flash Memory
Support ITU-T G.984.3 standard with
2.4Gbps @ 1490nm downstream and
1.2Gbps @ 1310nm upstream

Reach 20/40km physical distance at 32:1 or
64:1 split. Reach 10km physical distance at
128:1 split

Support SR/NSR Dynamic Bandwidth
Allocation (DBA), FEC (US/DS) and AES
(DS) configuration

GPON Encapsulation Method (GEM)
supports Ethernet packet payload

Signal Failure (SF), Signal Degrade (SD),
Loss of Frame (LOF), Loss of Signal (LOS),
Dying Gasp monitoring

Rx optical level measurement and low/high
threshold alarm

PON link status and ONU Ethernet PM
counters

Security features
  • MAC Limit
  • AES encryption
  • Abnormal traffic blocking
  • Guard for CPU-targeted packets
  • Rogue ONU monitoring

Type-B protection scheme (planning)

Switching Features
  • 32K MAC entries, 4,096 active VLANs
  • IEEE 802.1p priority queuing (8-level
    priority queues)
  • 802.1p marking

  • 1M unit ingress and egress rate limiting
  • Spanning Tree (STP, RSTP)
  • MTU 9K jumbo frame
  • Link Aggregation
  • IGMP Snooping (v1, v2)
  • IGMP Join-group limit/filter

Operation and management features
  • Secure Shell (SSH), Telnet, SNMP, Syslog
    features
  • System Monitoring (CPU load, Memory
    Usage, Gateway, Processor)
  • RADIUS, TACACS
  • Operation status monitoring through
    external LED
  • ONU Remote upgrade features through
    OLT. High speed upgrade using Extended
    OMCI message set

Physical and Environment
  • Height x width x depth:
    • Outdoor unit: 454mm x 190mm x
      240mm
    • Indoor unit: 203mm x 39mm x
      138mm
  • Weight:
    • Outdoor unit: 9.8kg (without
      powers)
    • Indoor unit: 1.2kg
  • Operation temperature: -20°C~50°C
  • Store temperature: -40°C~70°C
  • Operating humidity: 0%~95%
  • Power: AC 90V

Compliance