

# PON Product

■ Datasheet

## U9016B



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# Table of Contents

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Table of Contents.....	III
PON Solution >> OLT >> U9016B.....	1
Overview.....	1
Deployment.....	2
Features.....	2
Specification.....	2

## PON Solution >> OLT >> U9016B



### Overview

The U9016B is a PON Optical Line Termination(OLT) with 2RU height of compact form factor. Its front access design allows rapid installation and reduced maintenance time. The U9016B OLT can be used for various passive optical network applications such as FTTH, FTTB, and FTTC.

The U9016B is designed to accept 1 (one) SCU (Switch and Control Unit), 2 (two) PSUs (Power Supply Units), 2 (two) PIUs (PON Interface Units), and 1(one) FMU(Fan Module Unit).

The SCU has built-in 4 x 1000Base-X (SFP) ports and 2 x 10GBase-R (SFP+) ports for uplinks.

The PSUs are hot swappable and supports load-balancing.

The PIU is an interface card with 8 (eight) PON ports. The PIUs of U9016B are fully compatible with the U9264H, a high density OLT model from Ubiquoss, which allows service providers to reduce CAPEX and OPEX when they build Passive Optical Networks in combination of U9016B and U9264H.

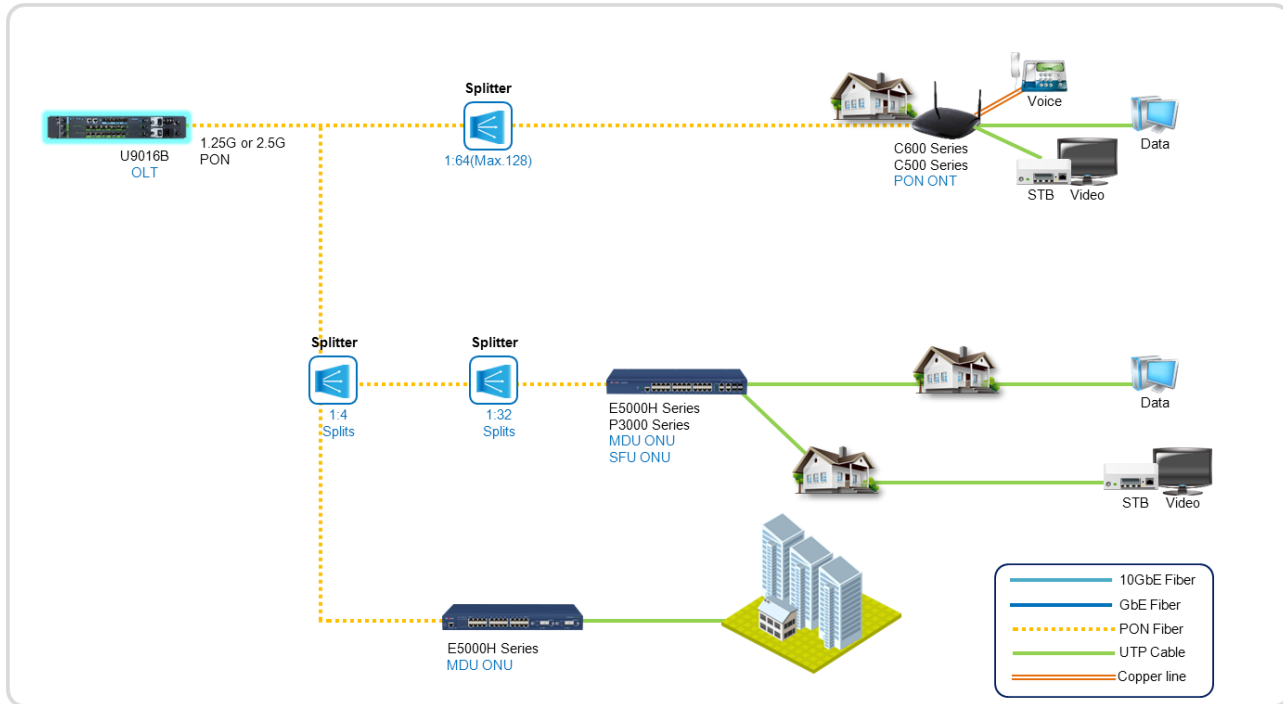
At the user side, the U9016B terminates PON links and connects ONUs or ONTs over PON. At the network side, it terminates Gigabit Ethernet or 10G Ethernet links (GE/10GE) for Service Node Interfaces(SNIs). The SNIs of U9016B can be bind in LACP protocol to connect to the aggregation switch for link protection.

The U9016B can be configured and managed by the Command Line Interface (CLI) locally. It can be also managed remotely by the secure SSH command line or through the Simple Network Management Protocol Version 3 (SNMPv3). For remote management, out-of-band and in-band management modes are supported.

The U9016B supports remote configuration and management of VLANs and port interfaces of PON ONTs. PON ONTs can be configured and managed remotely through the OLT, which allows easy and effective management of CPEs.

To manage the passive optical network, the U9016B OLT measures optical power from the ONU/ONTs and assigns a unique ID to each of them for identification and management when new ONU/ONTs are added to the network.

## Deployment



## Features

- 19 inch rack mountable chassis type PON OLT
- 3 service card slots
- All cards hot swappable
- 1(one) Switch and Control Unit(SCU) with built-in 4 x 1G ports (SFP) and 2 x 10G ports (SFP+)
- 8-port 2.5G GPON Interface Unit (PIU-8G) up to two slots
- 8-port 1.25G EPON Interface Unit (PIU-8E) up to two slots
- 1(one) FAN Module Unit
- 2(two) Power Supply Units(2 AC, 2 DC, or 1 AC and 1 DC), Hot Swappable and Load-Balancing
- UL/FCC, CE Compliant

## Specification

### Hardware

Item	Description
Chassis Slot Configuration	Total 4 slots - 1 Slot for SCU (Switching and Control Unit) - 2 Slots for PIU-8G (GPON Interface Unit) - 2 Slots for PIU-8E (EPON Interface Unit) - 2 Slots for PSU-DC or AC (Power Supply Unit – AC or DC) - 1 slot for FMU (Fan Module Unit)
Switching Capacity	128 Gbps
System Throughput	95 Mpps
Physical Size	482mm(W) x 295mm(D) x 88.8mm(H) - 19inch Standard Rack Mountable - 2RU height
Weight	Max. 12 kg

Total power Consumption	Max. 160 Watt
Rated input voltage	AC type: 100-240VAC, 50/60Hz DC type: -48 VDC
Operating Temperature	0° C ~ 50° C (32°F ~ 122°F)
Storage Temperature	-20° C ~ 60° C
Humidity Condition	10~ 85 % (relative humidity)
System Monitoring	Watchdog Sensing failure of FAN and Improper power Monitoring temperature Console Port Connection Detection
Management Interfaces	RS-232C Console Port 10/100 Base-Tx Management Port

**Software**

Features	Description
GPON Features	<ul style="list-style-type: none"> <li>Fully compatible with ITU-T G.984.x</li> <li>ITU-T G.984.4 ONT OMCI</li> <li>4K port-ID and 1K alloc-ID</li> <li>Multiple T-CONTs per ONU (ONT)</li> <li>Wire speed forwarding rate</li> <li>On-chip embedded reassembly buffer per GPON channel</li> <li>2.5 Gbps downstream rate on each PON channel</li> <li>1.25 Gbps upstream rate on each PON channel</li> <li>512 Alloc-IDs per GPON channel</li> <li>Internal GPON SERDES and Burst CDR</li> <li>128-bit Advanced Encryption Standard (AES) encryption engine for PON security and privacy with up to 128 unique keys.</li> <li>Flexible optical transceiver interface for multiple vendor support.</li> <li>ITU-T G.984 compliant Forward Error Correction (FEC) encoding and decoding for improved link budget.</li> <li>Hardware-based configurable Dynamic Bandwidth Allocation (DBA)</li> <li>IEEE 802.1D bridging: 8K MAC Address learning and aging on local interface</li> <li>IEEE 802.1p with four priority queues</li> <li>IEEE 802.1Q VLAN mapping</li> </ul>
EPON Features	<ul style="list-style-type: none"> <li>Single LLID per ONU</li> <li>Wire speed processing</li> <li>1.25 Gbps upstream/downstream rate</li> <li>128-bit Advanced Encryption Standard (AES) encryption engine for PON security and privacy with up to 128 unique keys.</li> <li>AES-128 Downstream Encryption</li> <li>Forward Error Correction(FEC) encoding and decoding</li> <li>Flexible optical transceiver interface for multiple vendor support.</li> <li>Hardware-based configurable Dynamic Bandwidth Allocation (DBA)</li> <li>IEEE 802.1D bridging: 8K MAC Address learning and aging on local interface</li> <li>IEEE 802.1p with four priority queues</li> <li>IEEE 802.1Q VLAN mapping</li> <li>Supports Local and Remote Loop-back test</li> </ul>
L2 Features	<ul style="list-style-type: none"> <li>802.1Q, Max 4K VLANs, 4K VLAN IDs</li> <li>Private VLAN</li> <li>802.3ad Link Aggregation</li> <li>Load-balancing based on source and destination MAC/IP</li> <li>802.1d Spanning Tree Protocol</li> <li>802.1w Rapid STP</li> <li>Per VLAN STP</li> <li>IGMP v1/v2, Snooping</li> <li>Max 1K Group Support</li> <li>Static Mac Address</li> </ul>

	<ul style="list-style-type: none"> <li>• Port Mirroring</li> </ul>
L3 Features	<ul style="list-style-type: none"> <li>• Static Routing</li> <li>• RIP, OSPF, BGP</li> <li>• Default Gateway</li> <li>• VRRP</li> <li>• ECMP Max 8 paths</li> <li>• PBR (Policy Based Routing)</li> <li>• PIM-SM, IGMP v2</li> <li>• Max 1K Group Support</li> <li>• DHCP Server/Relay</li> <li>• Blocking of illegal IP users</li> <li>• DAI (Dynamic ARP Inspection)</li> </ul>
QoS Features	<ul style="list-style-type: none"> <li>• Layer 2: Source/Destination MAC Address, VLAN ID, COS Field</li> <li>• Layer 3: Source/Destination IP address, DSCP</li> <li>• Layer 4: Source/Destination TCP/UDP port</li> <li>• TCP control flag</li> <li>• Marking/Remarking: DSCP, COS</li> <li>• Packet Drop</li> <li>• Mirroring to Port, Redirect to Port</li> <li>• Metering, Rate Limiting with 1Mbps unit</li> <li>• COS – Queue</li> <li>• DSCP - Queue</li> <li>• 8 queues per port</li> <li>• SPQ, DWRR, Hybrid (SPQ+DWRR)</li> <li>• Egress rate shaping per port/queue with 1Mbps unit</li> </ul>
Security Features	<ul style="list-style-type: none"> <li>• Netbios, NBT filtering</li> <li>• DHCP filtering</li> <li>• Packet filtering with ACLs</li> <li>• Block the illegal Source MAC address</li> <li>• ALL 0's, 1's, System Mac, Default G/W Mac</li> <li>• Block the illegal Source IP address</li> <li>• Broadcast, DLF, Multicast packet rate control</li> <li>• Cut-off of illegal traffic per Source MAC</li> <li>• Static Mac address</li> <li>• Mac filtering</li> <li>• Limitation on Maximum Mac counts</li> <li>• Port based Self Loop Detect</li> </ul>
System Security Features	<ul style="list-style-type: none"> <li>• RADIUS,</li> <li>• TACACS+</li> <li>• Telnet, SNMP with ACL</li> <li>• CPU Packet Filtering with ACL</li> <li>• Isolate the users who generate overly CPU-intensive Packet</li> <li>• TCP sync attack protection with sync cookies</li> <li>• CPU packet rate-limit</li> <li>• Management packet priority control</li> <li>• Gratuitous ARP</li> </ul>