



## Broadband Passive Optical Networks Enrich Your Services for Access Networks

- Fully Compliant with IEEE 802.3ah
- 16 K MAC Addresses Table
- Management through Console, Telnet, SNMP or Web
- Firmware Upgrade via FTP
- Overheat Detection
- LED Indicators for Link Status
- IEEE 802.1d Spanning Tree Supporting
- IEEE 802.1Q VLAN
- IEEE 802.1p QoS
- 802.1x Port Authentication
- IGMP v1/v2 Snooping and Filtering
- MAC Filtering



8-port GEPON Optical Line Terminal

OLT-1308

OLT-1308H

### Benefits

#### Broadband Passive Optical Network

ZyXEL's GEPON system consists of an OLT-1308/1308H (Optical Line Termination, OLT) located in the operator's central office and an ONU-631HA-11/ONU-631HA-12 (Optical Network Units, ONU) located at customer premises for FTTH connections. The OLT-1308/1308H is connected by a single fiber to an optical power splitter that supplies the optical signal to as many as 256 sets of ONUs (Per PON port can support to 32 sets of ONUs.).

The OLT-1308 is a standalone managed Layer-2 GEPON switch with 8 GEPON ports, 4 combo uplink ports (copper plus SFP), and one 10/100 Mbps Ethernet port for out-of-band management; while the OLT-1308H is a model that provides 8 uplink ports without the Layer-2 switch. For CPE compatibility, ZyXEL provides two models for different network architecture needs; users can choose the ONU-631HA-11 for distance up to 10 km, or the ONU-631HA-12 for distance up to 20 km.

#### High Bandwidth

As demand for broadband services such as high-definition TV (HDTV), media-on-demand (MOD), voice-over-IP (VOIP) and online gaming increases continuously, GEPON technology emerges to provide an astounding 1.25 Gbps bandwidth for both upstream and downstream, giving a 30 Mbps bi-directional bandwidth to up to 32 subscribers each. It is a cost-effective access technology with reliable and scalable carrier-grade Ethernet work that really addresses Triple-play service needs.

#### Cost-Effective Operations beyond Initial Fiber Deployment

Construction of the fiber access network is the most labor-intensive task in FTTH projects and thus the most expensive. However, PON architecture requires less cost since it requires less fiber. PON networks use splitters to allow minimal fiber deployment in local loops. In addition, it requires no power between CO and network termination, which also lowers the maintenance cost.

#### 20 km Long-Distance Coverage

On a PON network, the subscribers must be within 10-20 km from the CO, depending on the total number of splits (distance decreases as splits increase). The OLT-1308 and 1308H support a maximum distance of up to 20 km, and users can choose the ONU-631-HA-11 or the ONU-631-HA-12 for 10 km or 20 km deployment to adapt to the existing network structure.

## High Scalability and Flexibility for Easy Installation and Maintenance

Since ONU can be added to or removed from the network architecture easily and economically, its great flexibility is perfect for deployment on different network architectures. FTTH deploys ONU in residence, while FTTN/FTTC is the combination of fiber and existing copper infrastructure. In addition, you can upgrade firmware, test loopback, and detect failure remotely.

## Specifications

### Standard Compliance

- IEEE 802.3ah
- IEEE 802.3 Ethernet
- IEEE 802.3u Fast Ethernet
- IEEE 802.3z Gigabit Ethernet
- IEEE 802.3x Flow Control
- IEEE 802.3ad LACP Aggregation (OLT-1308 only)
- IEEE 802.1d Spanning Tree (OLT-1308 only)
- IEEE 802.1w Rapid Spanning Tree Protocol (OLT-1308 only)
- IEEE 802.1Q VLAN tagging
- IEEE 802.1p QoS
- IEEE 802.1x Port Authentication
- IEEE 802.11 MIB

### MIBs

- RFC 1213 MIB II
- RFC 1493 Bridge MIB
- RFC 1757 Four groups of RMON
- RFC 2674 Q-BRIDGE-MIB and P-BRIDGE-MIB
- RFC 2925 PING-MIB and TRACEROUTE-MIB
- Private MIB (Set/Get/trap etc.), Support trap including cold start, warm start, link down, link up, topology change, new root, etc)

### MAC and Packet Buffer

- 16 K MAC entries

### Traffic Management and QoS

- IEEE 802.1p QoS with 8 priority queues per port
- IEEE 802.1q tag-based and port-based VLAN
- 256 static VLAN, up to 4 K dynamic VLAN
- Support GVRP, automatic VLAN member registration
- IGMP v1 & v2

### User Security and Authentication

- MAC filtering per port secure access to each port

- Specific MAC forwarding per port: only specified MAC addresses can access the network (per lock)
- Limit the number of MAC address per port
- 802.1x port-based security, prevent unauthorized client access to the network
- Private VLAN provides security and isolation between ports on a switch, ensures that the users cannot snoop on each other's traffic

### Network Administration Security

- Username/password required for web/telnet/local console administrators
- Two level security by specific SNMP read/write community
- SSH provides network security by encrypting administration traffic

### Network Management

- Web-based management
- Telnet CLI
- SNMP v1, v2
- RS-232 local console

### MIBs

- RFC1213 MIBII
- RFC1157 SNMP
- RFC1493 MIBs for Bridges
- RFC1757 RMON group 1, 2, 3, 9
- RFC2674 MIBs for bridge with extensions

### Remote ONU management through OAM channel

- Firmware upgrade
- Configuration/provisioning
- Status/alarm report
- Loop-back test

### Management Interface

- Web, Console, Telnet and SNMP

### Performance

- Upstream/Downstream: 1.25/1.25 Gbps

### Hardware Specifications

- 8 GEAPON interfaces (SC type connectors), supporting up to 32 ONUs per PON
- Wavelength: 1.31 um for upstream & 1.49 um for downstream
- Distance: 1000BASE-PX20 for distance up to 20 Km
- 4 GE Uplinks with optical or 1000Base-T interface (OLT-1308 only)
- 8-port 1000Base-T interfaces for uplink (OLT-1308H only)
- 1 10/100Base-T for out-band management
- 1 DB9 RS-232 for craft interface

### Power Requirements

- Input voltage of AC: 100 ~ 240 VAC/50 ~ 60 Hz, 1.9 A

### Physical Specifications

#### OLT-1308

- Dimensions: 440 (W) x 443 (D) x 43.6 (H) mm
- Weight: 5 Kg



#### OLT-1308H

- Dimensions: 440 (W) x 443 (D) x 43.6 (H) mm
- Weight: 4.7 Kg



### Environmental Specifications

- Temperature: 0°C ~ 50°C
- Humidity: 5% ~ 90% (non-condensing)

### Certification

- FCC, CE, VCCI, CSA-International

# Compatible CPE

## GEPON Optical Network Unit

ONU-631HA-11/ONU-631HA-12



## Specifications

### Wall Mountable

- 1 GEPON interface with SC type connector (IEEE 802.3ah)
- 1 Auto MDI/MDI-X 10/100/1000 Mbps port compliant with IEEE 802.3/u/ab
- Wavelength: 1.31  $\mu$ m for upstream & 1.49  $\mu$ m for downstream
- Distance: 10 km (1000BASE-PX-10), 20 km (1000BASE-PX-20)

### Network Management

- Support OAM or data loop back test
- Support remote control from OAM channel
- Loop back test
- Remote firmware upgrade

### Support

- IEEE 802.3ah
- IEEE 802.3/3u/3x
- IEEE 802.1x port authentication
- IEEE 802.1Q VLAN
- 802.1q VLAN, tag-based and port-based

- 802.1p QoS
- IGMP snooping
- Broadcast control
- Multicast drop/flooding

### Encryption Function

- IEEE 802.1x: AES algorithm with 128-bit encryption key

### Hardware Specifications

- 1 GEPON interface with SC type connector (IEEE 802.3ah)
- 1 Auto MDI/MDI-X 10/100/1000 Mbps port compliant with IEEE 802.3/u/ab
- Power 12 V/1 ADC

### Physical Specifications

- Dimensions: 188 (W) x 120 (D) x 30 (H) mm
- Weight: 500 g

### Environmental Specifications

- Temperature: 0°C ~ 50°C
- Humidity: Less than 95% RH (non-condensing)

### Certification

#### EMC

- FCC Part 15 Class B
- CE-EMC Class B
- VCCI class B

#### Safety

- CSA-International



For more product information, visit us on the web [www.ZyXEL.com](http://www.ZyXEL.com)



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