ZyXEL

- **Modular Design Supports Up to 8 GEPON Ports (2 Fixed PON Ports + 3 Slot PON Modules, 2 PON Ports per Module)**
- **2 Gigabit Combo + 2 GE SFP Uplink Ports Compliant with IEEE 802.3/u/ab**
- **Up to 4 Trunking Ports for Uplinks**
- **Support Up to 32 ONUs per PON Interface**
- **Support FEC**
- **Support AES or Triple Churning Encryption**
- **Support 4 LLIDs per ONU**
- **16K MAC Addresses Table**
- **Management through Console, Telnet, SNMP or Web Management**
- **FTP for Firmware Upgrades**
- **Configuration Saving and Retrieving**
- **Overheat Detection**
- **LED Indicators for Link Status**
- **AC/DC Power Input for Redundancy**
- **PON Port Redundancy**
- **Hot Swappable Fan Module and PON Modules**

OLT-1308S-22

8-port GEPON Optical Line Termination

Broadband Passive Optical Networks Enriching Access Network Services

Benefits

Broadband Passive Optical Network

ZyXEL's OLT-1308S-22 GEPON system (Optical Line Termination, OLT) is located in the operator's central office and different types of ONU (Optical Network Unit, ONU) are located at customer premises for FTTB/H connections. The OLT-1308S-22 is connected by a single fiber to an optical power splitter that supplies the optical signal to as many as 256 sets of ONUs (each OLT PON port supports up to 32 ONU sets). The OLT-1308S-22 is a mini chassis with a Layer-2 GEPON switch featuring 8 GEPON ports (including 3 PON modules), 4 Gigabit uplink ports (2 copper and 2 combo ports) and one 10/100 Mbps Ethernet port for out-of-band management. For CPE compatibility, ZyXEL provides several models for different network architecture needs.

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 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 a reliable and scalable carrier-grade Ethernet infrastructure that really addresses Triply-play service needs.

Cost-Effective Operations beyond Initial Fiber Deployment

Construction of the fiber access network is the most labor-intensive task in FTTX 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's termination that lead to lower maintenance costs.

20 km Long Distance Coverage

On a PON network, subscribers must be within 10 to 20 km from the CO, depending on the total number of splits (distance decreases as splits increase). The OLT-1308S-22 supports a maximum distance of up to 20 km, and users can choose the different distances ONU type 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 the deployment of different network architectures. FTTH deploys ONU in residences, while FTTN/FTTC is the combination of fiber and existing copper infrastructure. In addition, administrators can upgrade firmware, test loopbacks and detect failures remotely.

PON Module | Auto Detect | PON Port Redundancy | HOT SWAP

Specifications

System Specifications

Standard Compliance

- IEEE 802.3ah
- IEEE 802.3ab
- IEEE 802.3 Ethernet
- IEEE 802.3u Fast Ethernet
- IEEE 802.3z Gigabit Ethernet
- IEEE 802.3x flow control
- IEEE 802.3ad LACP aggregation
- IEEE 802.1d spanning tree protocol
- IEEE 802.1w rapid spanning tree protocol
- IEEE 802.1Q VLAN tagging
- IEEE 802.1p QoS
- IEEE 802.1x port authentication
- IEEE 802.11 MIB

MAC and Packet Buffer

- 16K MAC entries

Traffic Management and QoS

- IEEE 802.1p QoS with 8 priority queues per port
- IEEE 802.1Q tag-based VLAN
- 2K static VLAN, up to 4K dynamic VLAN
- VLAN trunking
- Supports to GVRP, automatic VLAN member registration
- IGMP v1, v2 & v3

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)
- Limits to the number of MAC address per port
- 802.1x port-based security that prevent unauthorized client access to the network
- Private VLAN provides security and isolation between ports on a switch that prevent users to snoop on each others' traffic
- VLAN stacking provides CVLAN and SVLAN to help separate different user traffic for security concern and also enable the flexible VLAN usage for users

Network Administration Security

- User name/password required for web/Telnet/local console administrators
- Two-level security by specific SNMP read/write community
- SSH provides network security by encryption administration traffic

Network Management

- Web-based management
- Telnet CLI
- SNMP v1, v2c & v3
- RS-232 local console
- Out of band management
- NetAtlas EPON manager

Remote ONU Management through OAM Channel

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

Hardware Specifications

- 2 embedded GEPON ports
- 3 open slots for GEPON modules, each module supports 2 PON ports
- Wavelength: 1.31 um for upstream and 1.49 um for downstream
- Distance: 1000Base-PX20 for distances up to 20 km
- 4 GE uplinks with 2-port RJ-45 1000Base-T and 2 combo ports
- One 10/100Base-T for out-band management
- 1 DB9 RS-232 for craft interface
- 1 alarm input port
- Power input:
  - AC: 100 V ~ 240 V
  - DC: -48 V
- Power consumption:
  - AC: 90 Watt max
  - DC: 80 Watt max

Physical Specifications

- Item weight: 4,500 g (9.94 lb)
- Item dimensions:
  440 (W) x 312 (D) x 44 (H) mm
  (17.32 (W) x 12.28 (D) x 1.73 (H) inch)
- Item and package weight: 6,000 g (13.26 lb)
- Package dimensions:
  574 (W) x 460 (D) x 161 (H) mm
  (22.59 (W) x 18.11 (D) x 6.34 (H) inch)

Environmental Specifications

- Operating temperature: 0ºC ~ 45ºC
- Storage temperature: -40ºC ~ 70ºC
- Operating humidity: 10% ~ 90% (non-condensing)
- Storage humidity: Less than 95% RH (non-condensing)

Certifications

- CE-EMC Class A
- FCC Part15 Class A
- CSA-International

Product Accessories

- OFA-1308: Fan module
- OLC-1302-22: OLT PON module, each module supports two PON ports
- OPA-1300-DC: DC power module to support -48 V DC

ZyXEL

Compatible CPE

ONU-6100B-22/21
ONU-6040B-22/21

ONU-6040BF-22

ONU-6100B-22/21
ONU-6040B-22/21
ONU-6040BF-22
GEPON Optical Network Unit

Specifications

System Specifications

Wall-Mountable
• 1 GEPON interface with SC type connector (IEEE 802.3ah)
• LAN interface:
  - ONU-6100B-22/21: 1 auto MDI/MDI-X 10/100/1000 Mbps port
  - ONU-6040B-22/21: 4 auto MDI/MDI-X 10/100 Mbps ports
  - ONU-6040BF-22: 4 auto MDI/MDI-X 10/100 Mbps ports
• Wavelength: 1310 nm for upstream & 1490 nm for downstram
• Wavelength: 1550 nm for RF overlay (ONU-6040BF-22)
• Transmission distance:
  20 km (PX-20): ONU-6100B-22, ONU-6040B-22, ONU-6040BF-22
  10 km (PX-10): ONU-6100B-21, ONU-6040B-21
• Power: 12 VDC @1.5 A
• RF overlay (ONU-6040BF-22)
• Fiber tray supported (ONU-6040BF-22)

Network Management
• Supports OAM or data loop back test
• Supports remote control from OAM channel
• Loop back tests
• Remote firmware upgrade

Support
• IEEE 802.3ah
• IEEE 802.3/u/ab
• IEEE 802.1x port authentication
• IEEE 802.1Q VLAN
• IEEE 802.1q VLAN, tag-based and port-based
• IEEE 802.1p QoS
• IGMP snooping
• Broadcast control
• Multicast drop/flooding

Security Function
• IEEE 802.1x: AES algorithm with 128-bit encryption key
• Triple churing encryption

Physical Specifications
• Item weight:
  - ONU-6100B-22/21: 300 g
  - ONU-6040B-22/21: 310 g
  - ONU-6040BF-22: 400 g
• Item dimensions:
  - ONU-6100B-22/21, ONU-6040B-22/21: 188 (W) x 120 (D) x 30 (H) mm
  - ONU-6040BF-22: 181 (W) x 123 (D) x 36 (H) mm
• Item and package weight:
  - ONU-6100B-22/21: 468 g
  - ONU-6040B-22/21: 466 g
  - ONU-6040BF-22: 1,000 g
• Package dimensions:
  - ONU-6100B-22/21: 280 (W) x 150 (D) x 100 (H) mm
  - ONU-6040B-22/21: 280 (W) x 150 (D) x 100 (H) mm
  - ONU-6040BF-22: 280 (W) x 232 (D) x 67 (H) mm

Environmental Specifications
• Operating temperature: 0ºC ~ 45ºC
• Storage temperature: -25ºC ~ 70ºC
• Operating humidity: Less than 95% RH (non-condensing)
• Storage humidity: Less than 95% RH (non-condensing)

Certification
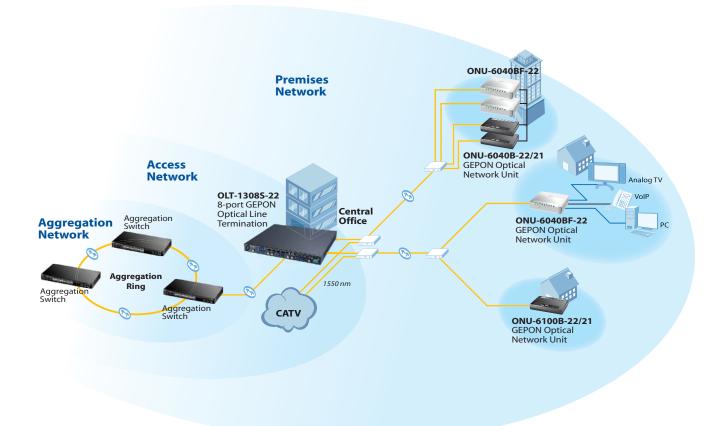
EMC
• FCC Part 15 Class B
• CE-EMC Class B

Safety
• CSA-International (ONU-6100B-22/21, ONU-6040B-22/21)

OLT-1308S-22
8-port GEPON
Optical Line Termination

Application Diagram

Premises Network

ONU-6040BF-22

ONU-6040B-22/21
GEPON Optical Network Unit

Access Network

OLT-1308S-22
8-port GEPON Optical Line Termination

Central Office

Analog TV

VoIP

ONU-6040BF-22
GEPON Optical Network Unit

PC

Aggregation Network

Aggregation Switch

Aggregation Ring

Aggregation Switch

Aggregation Switch

1550 nm

CATV

ONU-6100B-22/21
GEPON Optical Network Unit

For more product information, visit us on the web at www.ZyXEL.com

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