Reimagine Your Edge

4226XS-EL

XGS-PON/10GS Outdoor ONT

1G/10G optimized hardened electronics with multiple data and voice FXS ports for outdoor and indoor installations using Zhone leading-edge technology.

Features & Benefits

+ Supports 1Gbps/10Gbps (Downstream/Upstream) with pluggable SFP+ WAN interface
+ One 10 gigabit multi-rate 100M/1G/2.5G/5G/10G Base-T or LR/LW Ethernet interface
+ Four gigabit multi-rate 10/100/1000Base-T Ethernet interfaces
+ Two POTS interfaces compliant to SIP and MGPC telephony standards
+ Supported within Corning fiber transition housing with integrated fiber management

The Zhone 4226XS-EL is the next generation of 10Gbit Optical Network Terminal (ONT), able to support service provider requirements for high-speed data and voice for outdoor enclosure and indoor structured wiring applications. The SFP+ based uplink supports both symmetric 10/10 XGSPON and 1G and 10G Active Ethernet technologies by simply swapping the optical transceiver.

All Ethernet LAN ports can be used to support any-port-any-service model or separated into different services, allowing the configuration of dedicated ports for IP video and data. Unique VLANs may also be configured per user to ensure full isolation of each customer's data traffic. With unique Zhone's software management features, subscribers can enjoy hyperconnected multimedia services much easier, faster, and more reliable than ever before.

The Zhone 4226XS-EL includes one SFP+ WAN interface, four 10/100/1000Base-T LAN ports, one 10GBase-T or Base-LR/ LW (SFP) LAN port, and two FXS RJ11 voice ports for phone or fax. The ONT supports wire-speed L2 bridging and L3 gateway features, with carrier-grade voice services and an option for Zhone approved battery backup unit with battery status telemetry.

Service Scenario

The XGS-PON/10GS network consists of a 1G and 10G+ Optical Line Termination (OLT) located in a central location, and a set residential Single-Family Unit (SFU) and Multi Dwelling Unit (MDU) locations with Optical Network Terminals (ONTs). Between them is the optical distribution network (ODN) comprised of fibers, passive optical splitters, and couplers.

The 4226XS-EL ONT supports 1G and 10G capable downlinks using the XGS-PON or 10G Ethernet standard. Services include High-Speed Internet (HIS), Packet Voice, IPTV, OTT video, and cloud enabled services to multi-media devices.

Key Service Attributes

+ XGS-PON ITU-T G.9807.1-compliant interface or 1G and 10G point-to-point Ethernet interface
+ Supports 10Gbps 1270nm burst-mode transmitter and 1577nm continues-mode receiver
+ One 10GBase-T (RJ45) or Base-LR/LW (SFP) Ethernet port, supporting 10Gbps symmetrical services
+ Four 10/100/1000MBase-T Ethernet ports (RJ45) supporting 1Gbps symmetrical services
+ Two voice ports, FXS interfaces compliant to ANSI or ETSI standards, SIP and MGCP
+ IPTV multicast, IGMPv2 and IGMPv3 services
+ Any-port, Any-service data model
+ Traffic management including Q-in-Q tagging, 802.1Q VLANs, multiple subscriber VLANs, per-port rate limiting
+ 802.1p priority bits, DiffServ and priority ques based on services types.
+ OMCI and TR-069/TR-98 management
+ Zhone Universal Service Provisioning (USP), ONT SNMP Client
+ Local Web UI, Zhone CPE Manager feature set
+ +12 VDC power source, option for battery backup

4226XS-EL Industrial Temp Outdoor ONT

Product Specifications

Hardware

- Electronic Dimensions
  Width: 7.9” (200mm)
  Depth: 1.2” (30.5mm)
  Height: 9.0” (229mm)
- Electronics Weight .9 LB (0.4 kg)
- Enclosure Dimensions
  Width: 9.9” (251mm)
  Depth: 3.8” (97mm)
  Height: 12.7” (322mm)
- Enclosure Weight 3.5 LB (1.6 kg)
- 256MByte Flash Memory
- 512MByte SDRAM (DDR3)
- SFP+ cage WAN Interface
- Capacity: 10 Gbps Down/10 Gbps Up

Interfaces

- WAN: 1 SFP+ cage, xPON or Ethernet
- LAN: 4 ports 10/100/1000MBase-T Ethernet (RJ45) and 1 port 10GBase-T (RJ45 or Base-LR/LW (SFP)
- Telephone: 2 ports 2-wire RJ11
- Power: 1 7-pin screw-terminal connector
- LED Indicators
- Recessed RESET button

XGS-PON/10GS

- 1 x10 MSA-compliant SFP+ cage for PON or AE modules (optical transceiver not included)
- XGSPON req: ITU-T G.9807.1-compliant module. 10Gbps 1270nm burst-mode transmitter and 577nm continues-mode receiver.
- 10G AE req: IEEE 802.3ae 10GBaseLR/LW compliant module.
- Forward Error Correction (FEC) per G.989.3
- Dying Gasp

Ethernet LAN ports

- Auto-MDI-X crossover control
- Auto-Speed or manual selection
- IEEE 802.3an 10GBase-T
- IEEE 802.3bz 2.5G/5GBaseT
- IEEE 802.3ae 10GBaseLR/LW
- IEEE 802.3ab 1000Base-T
- IEEE 802.3u 100Base-T
- IEEE 802.3az EEE
- IEEE 802.1x Authentication

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Product Specifications

Telephone
- SIP (RFC 3261)
- MGCP
- Codec: G.711 (u-law and A-law), G.729B, G726
- RENs per line: 5 maximum
- Drop length: Residential short loop, 152.4m (500 ft.)
- Output max: 25mA
- Ring voltage: 48Vrms @ 20/25 Hz

Quality of Service
- HW-based internal IEEE 802.1p (CoS)
- Strict Priority (SP)
- 802.1Q(VLAN tag) QoS mapping ToS/CoS
- 8 queues per port
- Classified traffic can be tagged with VLAN ID and Ethernet Priority bit, and can be assigned to priority queues
- Classify packets into different IEEE 802.1p priority queues according to DSCP values (RFC 2475)
- The range of traffic shaping or rate-limit shall be between 64 Kbps to the maximum port rate with 64kbps granularity. The accuracy error shall be less than ±10%
- DSCP IP CoS (RFC 2475)

Software Features
- IEEE802.1D and IEEE802.1Q
- Address learning with auto aging-L2/BPDU Filter
- Support 2048 MAC learning addresses
- Multiple T-CONTs/GEM ports per device
- Flexible mapping between GEM port and T-CONT
- Priority queues and scheduling on upstream
- Activation with automatic discovered serial Number and password

IP Routing and Firewall
- DHCP, Static-IP and PPPoE
- NAT/NAPT
- DNS Proxy
- DHCP Server
- UPnP, plug and play

IPv6
- IPv4 and IPv6 Dual-Stack-Lite
- Bridged Mode (transparent pass thru of IPv6 frames)
- IPv6 support of BRouted and PPPoE Bridged VLANs
- DHCPv6 client and server
- Router Advertisement on LAN-side interfaces
- SLAAC for automatic acquisition of WAN-side IPv6 addresses and GW
- CLI, HTTP and TR-069 management via IPv6

Environmental
- Enclosure IP45 Rating
- Operating Temperature -40~149°F (-40~+65°C) Industrial Temperature
- Storage temperature -40~185°F (-40~85°C)
- Operating humidity 10 to 95% (noncondensing)
- Altitude: –200 to 10,000 feet (–61 to 3,048 m) above sea level

Powering
- DC power, +12 VDC nominal, +10-16 VDC / s1.0A
- Input power, 90-240VAC, 50/60Hz
- Power consumption, ~12W maximum

Management
- ITU-T 984.1/G988 compliant OMCI interface
- CPE Manager Web UI
- CLI over telnet
- SNMP Client
- TR-069, TR-104, TR-98
- Zhone Universal Service Provisioning
- LED indications for status

Compliance
- FCC Part 15 Class B
- ICES-003 Class B
- EN55022, EN55024
- IEC 62368-1
- FDA IEC 60825-1
- RoHS 2015/863/EU

Ordering Information

Model	Description
4226XS-EL	1 x SFP+ cage, 10G PON, 1G and 10G AE uplink port 1x 10GBase-T (RJ45) or 10GBase-LR/LW (SFP) port 4x 1000MBase-T (RJ45) ports 2x POTS (RJ11) ports 1x 7-pin screw-terminal connector
HX-4226XS-EL	ONT electronics, no power supply
ZNID-ENCL- 42xx	42xx fiber termination enclosure. (ONT electronics sold separately.)
XCVR-XGS-SFP+-ONU-IA	XGSPON 10/10G ONU SFP+, 1270NM TX, 1577NM RX SINGLE FIBER SC/APC
XCVR-AE-SFP+-SBD-1270-20KM-IA	ACTIVE ETHERNET 10GB/S SFP+, 1270NM TX,1330NM RX, 20KM, SINGLE FIBER, LC/UPC

42xx Fiber Termination Enclosure

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