

**Enabling the  
hyper-connected world**



## **5222XG**

### **Advanced XGS-PON ONT**

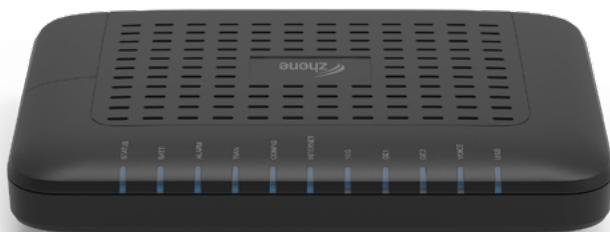
The first generation of 10 Gigabit X-Series ONT enables subscribers to enjoy bandwidth-intensive multimedia services with leading-edge XGS-PON technology.

#### **Features & Benefits**

- + Supports 10Gbps/10Gbps (Downstream/Upstream) with integrated XGS-PON WAN interface
- + High-capacity multi-rate 1G/2.5G/5G/10G Ethernet interface
- + Two gigabit multi-rate 10/100/1000M Ethernet interfaces
- + Two POTS interfaces compliant to SIP and MGPC telephony standards
- + USB 3.0
- + Integrated with Zhone Xtreme OEO/SDN-C

The Zhone 5222XG is a high-performance, XGS-PON compliant Optical Network Terminal (ONT) able to support service provider requirements for high-speed data and voice in a cost-effective design. The ONT is fully compliant with ITU-T G.9807.1 XGS-PON standard with integrated, on-board optics supporting 1270nm and 1577nm wavelengths. The 5222XG offers symmetrical data rates of 10Gbps downstream and 10Gbps upstream able to deliver access edge services and full range of residential and business use cases required. With unique software management features, subscribers can enjoy hyper connected multimedia services faster, easier, and more reliably.

The 5222XG includes one SC/APC XGS-PON interface, one 1G/2.5G/5G/10G Base-T port, two 10/100/1000 Base-T ports, and two FXS RJ11 voice ports. The ONT supports wire-speed L2 bridging and carrier grade lifeline voice services using a Zhone approved battery backup unit with battery status telemetry.



## Service Scenario

The XGS-PON network consists of an Optical Line Termination (OLT) located at the Central Office, and a set of 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 optical fibers, passive optical splitters and couplers.

The 5222XG ONT supports 10 Gigabit symmetrical data using the XGS-PON standard. Services may include High-Speed Internet (HIS), Packet Voice, IPTV, OTT video, and cloud-enabled services to multi-media devices.

## Key Service Attributes

- + FSAN ITU-T G.9807.1 XGS-PON compliant
- + One 10GBase-T Ethernet port, RJ45 supporting 10Gbps symmetrical services
- + Two 10/100/1000MBase-T Ethernet ports, RJ45 supporting 1Gbps symmetrical services
- + Two voice ports, FXS interfaces compliant to ANSI and ETSI standards, SIP and MGCP
- + MTU jumbo frame 9216-byte support
- + 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 queues based on service types
- + Transparent LAN services, LLDP-MED
- + 12 VDC power adapter, optional uninterruptible service power source with battery backup

## 5222XG Advanced XGS-PON ONT Product Specifications

### Hardware

- Dimensions
  - Width: 8.5" (216mm)
  - Depth: 5.6" (142mm)
  - Height: 1.4" (35mm)
- Weight 0.81 (0.37 kg)
- 256MByte Flash Memory
- 512MByte SDRAM (DDR3)
- Capacity: 10Gbps Down/10Gbps Up

### Interfaces

- WAN: 1x SC/APC port, XGS-PON
- LAN: 1x port 10GBase-T Ethernet (RJ45), 2x ports 10/100/1000MBase-T Ethernet (RJ45)
- Telephone: 2x ports 2-wire RJ11
- USB 3.0 port
- Power:
  - 1x 2-pin barrel connector
  - 1x 2x4 8-pin battery connector
- LED Indicators
- Power switch
- Recessed RESET button

### XGS-PON

- N1 Class, 20km (12.4 miles), reach (max split 128)
- Maximum ODN Attenuation, +29 dB link budget
- Transmitter: 1270nm, +2.0 to +7 dBm
- Receiver: 1577nm, -28 dBm
- 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/5GBase-T
- IEEE 802.3ab 1000Base-T
- IEEE 802.3u 100Base-T
- IEEE 802.3az EEE
- IEEE 802.1x Authentication

### Quality of Service

- HW-based internal IEEE 802.1p (CoS)
- Strict Priority (SP)
- 802.1Q(VLAN tag) QoS mapping ToS/CoS
- DSCP IP CoS (RFC 2475)
- 8 queues per port
- Classified traffic tagging with VLAN ID and Ethernet Priority bit, and priority queue assignment
- Traffic Shaping (ratelimit) range: 64 kbps to the maximum port rate with 64kbps granularity. Accuracy error: < ±10%.

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## Product Specifications

### Telephone

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

### Software Features

- IEEE802.1D and IEEE802.1Q
- L2 address learning with auto-aging & BPDU Filter
- Learns and stores up to 2048 MAC addresses
- Multiple T-CONTs/GEM ports per device
- Flexible mapping between GEM port and T-CONT
- Priority queues and scheduling on upstream
- Activation via automatic discovery of Serial Number and password

### Management

- ITU-T 984.1/G988 compliant OMCI interface
- CPE Manager Web UI
- CLI over telnet
- SNMP Client
- TR-069, TR-104, TR-98

### Environmental

- Operating temperature 32 to 104°F (0 to 40°C)
- Storage temperature -40 to 185°F (-40 to 85°C)
- Operating humidity 5 to 95% (non-condensing)
- Altitude: -200 to 10,000 feet (-61 to 3,048 m)

### Powering

- Input power: 100-240VAC, 50/60Hz
- DC power, 12VDC, 1.5A maximum
- Power consumption: 14W maximum

### Compliance

- FCC Part 15 Class B
- ICES-003 Class B
- CE Mark
- Safety ETL/Intertek
- IEC 62368-1, UL 62368-1, EN 62368-1
- FDA IEC 60825-1
- RoHS 2015/863/EU

## Ordering Information

| Model        | Description                                                                                                                                                                                                  |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5222XG       | 1x SC/APC port, XGS-PON (Class N1)<br>1x 10G RJ45 port, 2x 1G RJ45 ports<br>2x POTS RJ11 ports<br>1x USB 3.0<br>1x 12VDC (2-pin) barrel connector<br>1x 2x4 (8-pin) Molex Battery-Backup (BBU)<br>0 to +40°C |
| HX-5222XG-NA | North America                                                                                                                                                                                                |
| HX-5222XG-EU | Europe                                                                                                                                                                                                       |
| HX-5222XG-UK | United Kingdom                                                                                                                                                                                               |
| HX-5222XG-00 | No power supply                                                                                                                                                                                              |



Zhone Technologies, Inc