Reimagine Your Edge



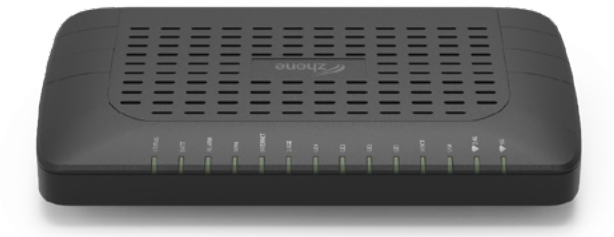
2428A1

Wi-Fi 5 GPON and Active Ethernet ONTs

Carrier grade 802.11ac G-Series ONT enables subscribers to enjoy multimedia services over wireless with Zhone leading-edge GPON and AE technology.

Features & Benefits

- Supports 2.5Gbps/1.25Gbps (Downstream/ Upstream) with integrated GPON WAN interface
- Supports 1Gbps/1Gbps (Downstream Upstream) with integrated Active Ethernet WAN interface
- Four gigabit multi-rate 10/100/1000M Ethernet interfaces
- Two POTS interfaces compliant to SIP and MGPC telephony standards
- Dual-band 2.4GHz 2x2 802.11n, 5GHz 3x3 802.11ac Carriergrade Wi-Fi 5 interfaces
- USB 2.0 with support of 3G and LTE wireless WAN backup



The Zhone 2428A1 is an advanced Optical Network Terminal (ONT) that supports GPON or Active Ethernet WAN interfaces with integrated Wi-Fi 5 802.11ac, able to support service provider requirements for highspeed data and video over wireless interfaces. The ONT with integrated Home Gateway features is fully compliant with ITU-T G.984 GPON standard with integrated, Class B+ on-board optics, or 1Gbps Active Ethernet. The 2428A1 is able to deliver access edge services and full range of residential wireless use cases required, including whole-home wireless extensions using Zhone MESH-2100 products. With unique Zhone's software management features, subscribers can enjoy hyper-connected multimedia services much easier, faster, and more reliably than ever before.

The Zhone 2428A1 includes one SC/APC GPON or SC/UPC AE interface, four 10/100/1000Base-T ports, two FXS RJ11 voice ports, dual-band 2.4GHz 802.11n and 5GHz 802.11ac wireless, and one USB2.0 compliant port. The ONT supports wire-speed L2 bridging and L3 gateway features, with carrier grade voice services with the option for Zhone approved battery backup unit with battery status telemetry.

Service Scenario

The GPON 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 fibers, passive optical splitters and couplers.

The Active Ethernet network consists of point-to-point fiber terminations from OLT to the SFU or MDU, with dedicated fiber termination to the ONT.

The 2428A1 ONT supports 2.5G capable downlinks using the GPON standard or 1G using AE. Services include High-Speed Internet (HIS), carrier-grade wireless, packet Voice, IPTV, OTT video, and cloud enabled services to multi-media devices.

Key Service Attributes

+ FSAN ITU-T G.984 GPON Class B+ compliant
+ 1.0 GigE Active Ethernet supporting 60km point-to-point fiber
+ Four 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
+ 2.4GHz 2x2 802.11n, 20MHz and 40MHz channels
+ 5GHz 3x3 802.11ac, 20MHz, 40MHz and 80MHz channels
+ Downstream MU-MIMO
+ USB 2.0 port, support of 3G and LTE wireless dongles
+ 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.
+ +12 VDC uninterruptable service power source, option for battery backup

2428A1 GPON and Active Ethernet ONT

Product Specifications

Hardware

- Dimensions
  Width: 10.3” (260mm)
  Depth: 6.1” (155mm)
  Height: 1.4” (35mm)
- Weight 0.81 LB (0.37 kg)
- 128MByte Flash Memory
- 256MByte SDRAM (DDR3)
- GPON WAN Interface
- Capacity:2.5Gbps Down/1.25Gbps Up

Interfaces

- WAN: 1 SC/APC port, GPON, 1 SC/UPC port, AE
- LAN:4 ports 10/100/1000MBase-T Ethernet (RJ45)
- Telephone: 2 ports 2-wire RJ11
- USB: USB2.0 port
- Power: 1 2-pin barrel connector, 1 2x4 8-pin battery connector
- LED Indicators
- Recessed RESET button

GPON

- Class B+ optics, 20km (12.4 miles), reach, max split 64
- Maximum ODN Attenuation, +28.5 dB link budget
- GPON Type B redundancy support
- xPON co-existence filter
- Transmitter, 1310nm, +0.5 to +5 dBm, DBF
- Receiver, 1490nm, -28 dBm, APD/TIA
- Forward Error Correction (FEC) per G.989.3

AE

- SFF optics, 60km (37 miles), reach
  Transmitter, 1310nm, -2.0 to +8.0 dBm, DFB
- Receiver, 1490nm, -23 dBm, APD/TIA

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

2428A1 GPON and Active Ethernet ONT

Product Specifications

Wireless
- 2.4GHz 2x2 802.11n, 5GHz 3x3 802.11ac MU-MIMO
- SSIDs: 4x2.4GHz, 4x5GHz
- Devices per radio: 120
- Authentication WEP, WPA-PSK, WPA2, WPA2-PSK, 802.1x
- Encryption: WEP (64-bit, 128-bit), AES, TKIP+AES
- WPS modes: Push-button, API PIN, STA PIN
- RADIUS Server support
- MAC filtering
- Wireless bridge mode

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 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
- Dying Gasp

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
- Operating Temperature 32~104°F (0~+40°C) Commercial
- Storage temperature -4~149°F (-20~65°C)
- Operating humidity 5 to 90% (noncondensing)
- Altitude: –200 to 10,000 feet (–61 to 3,048 m) above sea level

Powering
- DC power, 12VDC, 1.0A maximum
- 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
- LED indications for status

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 + RoHS 2015/863

Ordering Information

Model	Description
2428A1	1x SC/APC port, GPON (Class B+) or 1x SC/UPC port, Active Ethernet 2x POTS RJ11 ports, 4x 1G RJ45 ports, 1x USB2.0 2.4GHz 2x2 802.11n, 5GHz 3x3 802.11ac 1x 2-pin barrel, 12VDC power input 1x 2x4 Molex Battery-Backup (BBU), 8-pin power input 0 to +40°C
Power Supply	**Description**
GPON	
ZNID-GPON-2428A1-NA **ZNID-GPON-2428A1-EU** **ZNID-GPON-2428A1-UK** **ZNID-GPON-2428A1-00**	North America UK EU No power supply
Active Ethernet	
ZNID-GE-2428A1-NA **ZNID-GE-2428A1-EU** **ZNID-GE-2428A1-UK** **ZNID-GE-2428A1-00**	North America UK EU No power supply

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