

Outdoor GPON ONT with T1/E1

- ✓ *Triple Play Services - IP Video, VoIP, High Speed Internet Access*
- ✓ *GPON Uplink*
- ✓ *Eight T1/E1 Ports*
- ✓ *Eight Voice Ports*
- ✓ *Eight Gigabit Ethernet Ports with PoE*
- ✓ *One Gigabit Ethernet Accessory Port with PoE*
- ✓ *1 Gbps Throughput Bridging or Routing*



The zNID-GPON-94xx ONTs are designed for business applications.

These ONTs provide up to eight Voice ports and eight 10/100/1000bT LAN ports, plus a ninth 10/100/1000bT LAN port for connecting an auxiliary device such as a Wi-Fi access point or video camera.

In addition to the voice and data services, the 94xx ONTs provide up to 8 T1/E1 ports. The T1/E1 data is transported over the packet network using Pseudowire Emulation Edge to Edge (PWE3) technology. The PWE3 technology allows voice, Ethernet and the TDM traffic to be transported over the GPON link. These ONTs support multiple TDM clock recovery methods (Adaptive, Synchronous, Differential) to provide accurate clock recovery in a variety of network configurations. The unit also supports IEEE 1588v2 timing recovery.

Each Voice port, LAN port, and T1/E1 port is individually controlled, and can be assigned to a specific customer. A customer can have as many Voice, LAN, or T1/E1 connections as needed. Unique VLANs are configured per customer to ensure full isolation of each customer's traffic.

All 9000 series ONTs provide the same voice features found on the 4200 series of Single Family Unit (SFU) ONTs. SIP-PLAR signaling is supported for connection via Zhone's Voice Gateway to traditional Class 5 TDM switches, while both MGCP and SIP are supported for direct connection to a VoIP Softswitch. This flexibility allows Zhone's 4200 and 9000 Series ONTs to work in nearly all Telco networks, with interoperability support for a broad array of Softswitches.

All LAN ports are capable of supplying Power over Ethernet (IEEE 802.3at compliant) making this also an ideal product for applications such as video surveillance.

Enclosure

All 9000 series ONTs are designed for outdoor use. The weather proof enclosure can be installed in two stages for carriers that want to terminate the fiber before installing the active components.

The standard Cable Entrance Box provides a single 1.5" diameter Conduit opening, so that the power, voice, LAN, and T1/E1 cables can be routed from the zNID-9000 series product into the building in a secure fashion. An optional Large Cable Entrance Box is available that provides 4 separate conduit opening and extra room for cable slack storage for installations that require secure routing of the power, voice, LAN and T1/E1 cables in separate conduits.

Management

All 9000 series ONTs share a common SW architecture with the 4200 series of zNIDs. It has the same intuitive Web interface and command line interface that is found on the 4200 series of zNIDs. The zNID is also managed by the Zhone Network Management System (ZMS), using SNMP. Software upgrades and configuration backups can be handled automatically by the ZMS using the CPE Manager feature.

Applications

The 94xx ONTs designed for business applications, with multiple voice, LAN and T1/E1 connections. Each business customer can have as many Voice, LAN, or T1/E1 connections as needed. Although the zNID-9488 is ideal for business applications, it also can be used in many other applications.

The unit's Power over Ethernet ports could be used to power up to nine IP cameras, providing an excellent solution for video surveillance. With the GPON fiber uplink, there is plenty of bandwidth available for the video data.

Technical Specifications

Dimensions

- Fiber Tray:
- 11.8 in. H x 11.4 in. W x 2.7 in. D
- (30 cm H x 29 cm W x 6.9 cm D)
- Complete Enclosure:
- 15.3 in. H x 12.8 in. W x 6.4 in. D
- (38.9 cm H x 32.5 cm W x 16.3 cm D)

Weight

- 12 lbs. (5.4 kg)

Power

- 48 Vdc
- Max Power: 40 W
- Power options include:
 - Indoor Battery Backup
 - Outdoor Battery Backup
 - Separate Power in for PoE
 - Up to 15 W PoE on Gigabit Ethernet ports

Interfaces

- Uplink Options:
 - SC/APC connector for GPON
 - OptiTap support
- Common Interfaces:
 - GPON uplink
 - USB Host Port
- 9488 Model:
 - 8x FXS
 - 9x RJ45 10/100/1000Base-T (with PoE)
 - 1x RJ21 (50 pin) 8x T1/E1
 - 1x SFP
- 9480 Model:
 - 9x RJ45 10/100/1000Base-T (with PoE)
 - 1x RJ21 (50 pin) 8x T1/E1
 - 1x SFP
 - 1x RJ45 (1588v2 ToD and 1PPS clock)
 - 1x BNC (1588v2 clock output)
- 9444 Model:
 - 4x FXS
 - 5x RJ45 10/100/1000Base-T (with PoE)
 - 1x RJ21 (50 pin) 4x T1/E1
 - 1x SFP
- 9440 Model:
 - 5x RJ45 10/100/1000Base-T (with PoE)
 - 1x RJ21 (50 pin) 4x T1/E1
 - 1x SFP
 - 1x RJ45 (1588v2 ToD and 1PPS clock)
 - 1x BNC (1588v2 clock output)

Standards Support

- RFC 4553 (SAToP)
- RFC 5086 (CESoPSN)
- RFC 2236 (IGMPv2)
- RFC 1631 (NAT)
- RFC 2516 (PPPoE)
- ITU G.8261, G.823, G.824
- ITU G.984.1, G.984.2, G.984.3
- ITU G.703
- ITU Y.1413 (MPLS)
- ITU Y.1453, Y.1452 (TDM over IP)
- CTR 12/13 and ETX 30011 (Jitter)
- IEEE 802.3 Ethernet
- IEEE 802.1Q/p VLANs
- IEEE 802.3u Fast Ethernet
- IEEE 802.3ab 1000Base-T
- IEEE 802.3at (PoE)
- IEEE 802.3z (Gigabit Ethernet)
- IEEE 802.3x (Flow control)
- IEEE 1588-2008 PTP (1588v2)

Voice Support

- MGCP
- SIP
- SIP-PLAR
- Codec Support: G.711, G.726, G.729
- Major CLASS features supported
- Three way calling, distinctive ringing
- 5 REN per port

Protocol Support

- DHCP Server, DHCP Client
- FTP, TFTP
- Telnet
- HTTP
- SSH
- SNMP
- PPPoE
- NAT
- QoS
 - CoS 802.1P/Q prioritization
 - ToS IP Precedence

Management

- Web GUI
- ZMS (Zhone Management System) CPE Manager
- CLI
- SNMP

Bandwidth/Distance

- GPON interface with Class B+ optics (20km)
- 1310 nm
 - Launch Power:
 - Minimum 0.5 dBm
 - Average 2 dBm
 - Maximum +5dBm
- 1490 nm
 - Sensitivity -28 dBm

Regulatory Compliance

- EMC: FCC Part 15 Class A, ICES-003 Class A
- Safety: UL60950-1, CSA C22.2 No. 60950-1

Operating Requirements

- Temperature: -40°C to +55°C
- MTBF: greater than 100,000 hours

Ordering Information

ZNID-GPON-9488	Outdoor MDU ONT, 8x Voice, 9x GE, 8x T1/E1.
ZNID-GPON-9480	Outdoor MDU ONT, No Voice, 9x GE, 8x T1/E1.
ZNID-GPON-9444	Outdoor MDU ONT, 4x Voice, 5x GE, 4x T1/E1.
ZNID-GPON-9440	Outdoor MDU ONT, No Voice, 5x GE, 4x T1/E1.
ZNID-GPON-9488-OPTITAP	Outdoor MDU ONT, 8x Voice, 9x GE, 8x T1/E1, w/OPTITAP Connector.
ZNID-GPON-9480-OPTITAP	Outdoor MDU ONT, No Voice, 9x GE, 8x T1/E1, w/OPTITAP Connector.
ZNID-GPON-9444-OPTITAP	Outdoor MDU ONT, 4x Voice, 5x GE, 4x T1/E1, w/OPTITAP Connector.
ZNID-GPON-9440-OPTITAP	Outdoor MDU ONT, No Voice, 5x GE, 4x T1/E1, w/OPTITAP Connector.
ZNID-GPON-9488-EL	Outdoor MDU ONT, 8x Voice, 9x GE, 8x T1/E1, electronics only. (Fiber enclosure sold separately).
ZNID-GPON-9480-EL	Outdoor MDU ONT, No Voice, 9x GE, 8x T1/E1, electronics only. (Fiber enclosure sold separately).
ZNID-GPON-9444-EL	Outdoor MDU ONT, 4x Voice, 5x GE, 4x T1/E1, electronics only. (Fiber enclosure sold separately).
ZNID-GPON-9440-EL	Outdoor MDU ONT, No Voice, 5x GE, 4x T1/E1, electronics only. (Fiber enclosure sold separately).
ZNID-ENCL-9000	Fiber termination enclosure user to terminate and store fiber.
ZNID-ENCL-9000-OPTITAP	Fiber termination enclosure user to terminate and store fiber with the OptiTap connector.
ZNID-BATT-IN-48VDC-NA	Indoor 48VDC, 50W, Battery Backup Unit
ZNID-BATT-OUT-48VDC-NA	Outdoor 48VDC, 150W, Battery Backup Unit
ZNID-BATT-CABLE-10METER	7 Wire Power Cable used with indoor Battery Backup Unit, 10 m
ZNID-BATT-CABLE-7COND-1000FT	1000 foot spool of 7 conductor cable for use with Battery Backup Unit