ZHONE
Bandwidth Changes Everything™

zNID - Zhone's Intelligent NID

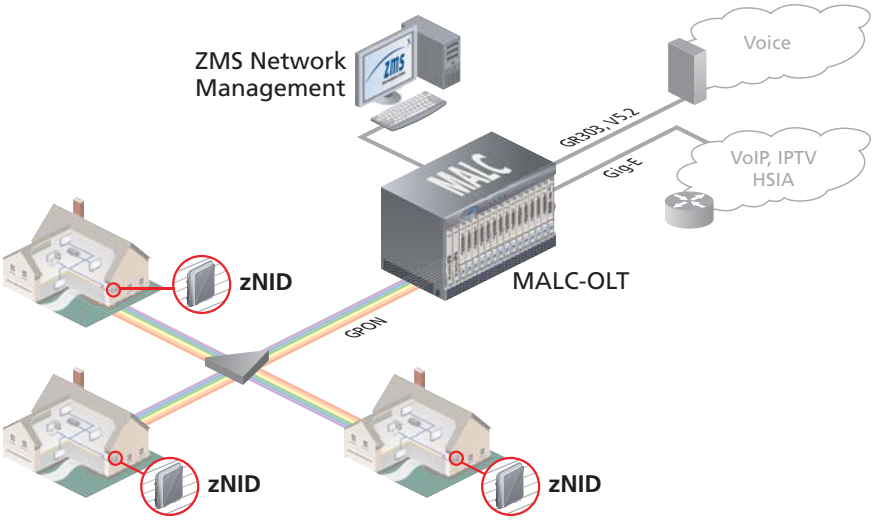
ZNID-GPON-4210, 4211, 4213

GPON ONT with integrated intelligent gateway functionality.

- ✓ *Triple Play Services - RF Video or IP Video, VoIP, High Speed Internet Access*
- ✓ *No New Home Wiring - HPNA supported simultaneously on Coax and Phone Line and power over Phone Line eliminates the need to run new wires.*
- ✓ *Two Step Easy Installation - Install fiber enclosure without the need for electronics. Electronics can be installed after services are orderd.*
- ✓ *Broadband Remote Access - Allows consumer to VPN into the zNID and access home computers*
- ✓ *Remote Management - Web GUI, TR-069, and SNMP.*

The zNID is an intelligent NID supporting GPON termination with full-featured gateway functionality providing an ideal solution for FTTH deployments.

Triple Play services - IPTV or RF TV, POTS or VoIP, and High Speed Internet Access (HSIA) - over existing coax and/or phone line make service offerings and installations flexible and easy.



No New Home Wiring - HomePNA

The zNID product line is the first gateway on the market to support both HPNA over coax and phone line using two HPNA chipsets giving greater flexibility to service providers who want to take advantage of the network already installed in the user's home. The zNID is able to guarantee the best throughput possible over the coax network and the phone line network giving added flexibility when offering triple play services. HPNA over the existing coax and the existing phone line simultaneously virtually eliminates the need to run new cables.

Gateway Features

The zNID is a full-featured gateway supporting services such as DHCP server, ALG's, scheduling, VPN termination, comprehensive logging, and more. The zNID product line implements a very flexible QoS allowing the service provider to guarantee that services are being prioritized correctly and the end-user is getting the Quality of Experience that is expected.

Enclosure

The zNID enclosure is designed to provide outstanding reliability and simple installation. Reliability is achieved in outdoor installations by optimizing the design for heat dissipation without the need for fans.

The enclosure can be installed in two stages for carriers wanting to terminate fiber before installing the active components. A small plastic enclosure can be installed first allowing the installer to terminate the fiber. Later, when the customer has ordered service, the active components are installed on top of the fiber enclosure for a clean appearance.

DATASHEET

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Technical Specifications

Dimensions

- Fiber Tray
- 11.8 in. (30cm) high x 11.4 in. (29cm) wide x 2.7 in. (6.9cm) deep
- Complete Enclosure
- 13.4 in. (34cm) high x 12.8 in. (32.5cm) wide x 3.9 in. (9.9cm) deep

Weight

- 7.1 lbs. (3.2 kg)

Power

- 12 Vdc
- Max Power: 18W
- Power options include:
  - Outdoor battery backup
  - Indoor battery backup
- The zNID can be powered over an unused phone line pair, from the home, eliminating the need to drill holes and pull thick power cables through exterior walls.

Interfaces

- Uplink options:
  - SC/APC connector for GPON
  - OptiTap support
- Common interfaces for GPON:
  - 2x FXS (SIP or SIP-PLAR) - HPNAv3 over phone line shares voice line 1
  - 3x RJ45 10/100Base-T
  - 1x Coax type F connector for RF Video Overlay and HPNAv3
  - Power: screw down connectors
- HPNA:
  --First phone line
  --Coax

Standards Support

- Network Applications
  - DHCP Server, DHCP Client
  - DHCP proxy (BOOTP relay agent), RFC 1542
  - DNS proxy (relay agent), DNS server
  - Dynamic DNS
- IP Routing and Bridging
  - Static routing
  - IP Multicasting
  - Private Network Address Allocation
- NAT
  - NAT-NAPT
  - Application Level Gateway (ALGs) modules
  - Port triggering
  - STUN pass through
- Virtual LAN bridging (VLAN)
  - 802.1P
  - 802.1Q
- PPPoE
  - PPP Authentication Protocols, RFC 1334
  -— PAP, RFC 1334
  -— CHAP, RFC 1994
  -— MS-CHAPv1, RFC 2433
  -— MS-CHAPv2, RFC 2759
  - PPP auto reconnect and configurable timeouts (Idle time)
  - PPP over Ethernet (PPPoE), RFC 2516
  - Multiple PPPoE connections
- Firewall and Security
  - Stateful Packet Inspection (SPI) Firewall
  - Firewall support in bridge mode
  - Comprehensive event logging
  - Keep connections active during reconfiguration
  - Denial of Service (DoS) protection
  - Demilitarized Zone (DMZ)
  - Access Control
  - MAC address filtering
  - Time of Day and day of week policies for firewall rules and access control
  - TCP MTU clamping
- QoS
  - 802.1P/Q prioritization
  - Diffserv (RFC2474, RFC2475) marking and queuing according to connection type, network interface, MAC, IP, hostname, DSCP/ToS value, port number and application
  - Traffic shaping – bandwidth management and rate limiting
  - Port based QoS

Voice Support

- SIP
- SIP PLAR
- Codec Support: G.711, G.723, G.726, G.729
- T.38 support for fax
- VAD, Silence suppression, comfort noise generation
- Major CLASS features supported
- RTP/RTCP
- SDP
- RTP payload for DTMF digits
- 5 REN per port
- VoIP QoS:
- – Layer 3 QoS: control ToS and DSCP for VoIP
- RTP:
  - Prioritization of voice over data

Protocol Support

- GPON uplink:
  -ITU-T G.984.1 G.984.2 G.984.3

Management

- Web GUI
- TR-069
- SNMP

Bandwidth/Distance

- GPON interface with Class B+ optics (20km)
- 1310nm
  - Launch Power:
  -- Minimum 0.5 dBm
  -- Average 2 dBm
  -- Maximum +5 dBm
- 1490nm
  - Sensitivity -28 dBm
- 1550nm
  - Receiving Avg. Power -8 to +2 dBm
  - Total RF output power 36 dBmV
  - RF output impedance 75 ohm

Regulatory Compliance

- UL
- CSA
- CE
- FCC

Operating Requirements

-40C to +55C plus solar loading
- MTBF: greater than 100,000 hours

Ordering Information

ZNID-GPON-4210	Outdoor ONT, 2x voice, 3x FE with fiber termination enclosure.
ZNID-GPON-4211	Outdoor ONT, 2x voice, 3x FE, RF Overlay, with fiber termination enclosure.
ZNID-GPON-4213	Outdoor ONT, 2x voice, 3x FE, RF Overlay, HPNA-Coax, HPNA-Phone, with fiber termination enclosure.
ZNID-GPON-4216-RFOG	Outdoor ONT, 2x voice, 3x FE, RF Overlay, RF Return, HPNA-Coax, HPNA-Phone, with fiber termination enclosure.
ZNID-GPON-4210-OPTITAP	Outdoor ONT, 2x voice, 3x FE, OptiTap support, with fiber termination enclosure.
ZNID-GPON-4211-OPTITAP	Outdoor ONT, 2x voice, 3x FE, RF Overlay, OptiTap support, with fiber termination enclosure.
ZNID-GPON-4213-OPTITAP	Outdoor ONT, 2x voice, 3x FE, RF Overlay, HPNA-Coax, HPNA-Phone, OptiTap support, with fiber termination enclosure.
ZNID-GPON-4216-RFOG-OPTITAP	Outdoor ONT, 2x voice, 3x FE, RF Overlay, RF Return, HPNA-Coax, HPNA-Phone, OptiTap support, with fiber termination enclosure.
ZNID-GPON-4210-EL	Outdoor ONT, 2x voice, 3x FE, Electronics only, without fiber termination enclosure. (Fiber enclosure sold separately as ZNID-ENCL-FIBER)
ZNID-GPON-4211-EL	Outdoor ONT, 2x voice, 3x FE, RF Overlay, Electronics only, without fiber termination enclosure (Fiber enclosure sold separately as ZNID-ENCL-FIBER)
ZNID-GPON-4213-EL	Outdoor ONT, 2x voice, 3x FE, RF Overlay, HPNA coax, HPNA phone line, Electronics only, without fiber termination enclosure. (Fiber enclosure sold separately as ZNID-ENCL-FIBER)
ZNID-ENCL-FIBER	zNID-421x fiber termination enclosure used to terminate and store fiber. (GPON and Active Ethernet electronics sold separately.)
ZNID-ENCL-FIBER-OPTITAP	zNID-421x fiber termination enclosure used to terminate and store fiber. OptiTap support. (GPON and Active Ethernet electronics sold separately.)
ZNID-BATT-IN-XX	zNID indoor battery backup. XX = NA, EURO, UK
ZNID-BATT-OUT-XX	zNID outdoor battery backup. XX = NA, EURO, UK
HPNA-COAX-ETH-XX	HPNA over coax with 2x RJ-45 Ethernet interfaces. XX = NA, EURO, UK
HPNA-PHONELINE-ETH-XX	HPNA over phoneline with 2x RJ-45 Ethernet interfaces. XX = NA, EURO, UK

ZHONE

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