

# **zNID 24xxA1 Series Hardware Installation Guide**

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# ABOUT THIS GUIDE

This guide is intended for use by installation technicians, system administrators, or network administrators. It explains how to install the zNID 24xxA1 series enclosure, electronics and cabling.

## Style and notation conventions

This document uses the following conventions to alert users to information that is instructional, warns of potential damage to system equipment or data, and warns of potential injury or death. Carefully read and follow the instructions included in this document.



**Caution:** A caution alerts users to conditions or actions that could damage equipment or data.

**Précaution :** Une mention Précaution avertit les utilisateurs au sujet d'états ou d'actions qui pourraient endommager le matériel ou les données.

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**Note:** A note provides important supplemental or amplified information.

**Remarque :** Une remarque fournit des informations supplémentaires ou amplifiées importantes.

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**Tip:** A tip provides additional information that enables users to more readily complete their tasks.

**Conseil :** Un conseil fournit une information supplémentaire qui permet aux utilisateurs de réaliser leurs tâches plus facilement.

---



**WARNING!** A warning alerts users to conditions or actions that could lead to injury or death.

**AVERTISSEMENT !** Un avertissement avertit les utilisateurs au sujet d'états ou d'actions qui pourraient entraîner des blessures voire la mort.

---



**WARNING!** A warning alerts users to conditions or actions that could lead to injury caused by a laser.

**AVERTISSEMENT !** Un avertissement avertit les utilisateurs au sujet d'états ou d'actions qui pourraient entraîner des blessures causées par un laser.



**WARNING!** This icon warns the user that metal surfaces can become hot to touch. Avoid contact or use caution when touching these surfaces.

**AVERTISSEMENT !** Cette icône prévient l'utilisateur que les surfaces métalliques peuvent devenir chaudes au toucher. Evitez le contact ou soyez prudent lorsque vous touchez ces surfaces.

## Typographical conventions

The following typographical styles are used in this guide to represent specific types of information.

<b>Bold</b>	Used for names of buttons, dialog boxes, icons, menus, profiles when placed in body text, and property pages (or sheets). Also used for commands, options, parameters in body text, and user input in body text.
Fixed	Used in code examples for computer output, file names, path names, and the contents of online files or directories.
<b>Fixed Bold</b>	Used in code examples for text typed by users.
<b><i>Fixed Bold Italic</i></b>	Used in code examples for variable text typed by users.
<i>Italic</i>	Used for book titles, chapter titles, file path names, notes in body text requiring special attention, section titles, emphasized terms, and variables.
PLAIN UPPER CASE	Used for environment variables.

## Related documentation

Refer to the following publication for additional information:

- zNID Quick Installation Instructions for the zNID you are installing. These instructions are shipped with the zNID, but are also available on the DZS website.
- *zNID RG Configuration Guide* — explains how to use the zNID web interface and describes the system commands and parameters.

Refer to the release notes for software installation information and for changes in features and functionality of the product (if any).

## Acronyms

The following acronyms are related to DZS products and may appear throughout this manual:

**Table 1: Acronyms and their descriptions**

Acronym	Description
Active E	Active Ethernet, also known as Gigabit Ethernet
APC	Angled physical contact (for fiber connector)
Coax	Coaxial cable
CNI	Comfort Noise Insertion
CPE	Consumer Premises Equipment
DHCP server	Dynamic host configuration protocol server
EZ touch™	DZS's implementation for managing CPEs and zNIDs
GigE	Gigabit Ethernet
GPON	Gigabit passive optical network
HPNA	Home phone line networking alliance
IPTV	Internet protocol TV
LED	Light-emitting diode
MALC	Multi-access line concentrator
MDU	Multiple Dwelling Unit
MIB	Management information bases
MoCA	Multimedia over Coax Alliance
OLT	Optical Line Terminator
ONT	Optical Network Terminator

**Table 1: Acronyms and their descriptions (Continued)**

<b>Acronym</b>	<b>Description</b>
ONU	Optical Network Unit
PoE	Power over Ethernet
PPPoE	Point-to-point protocol over Ethernet
QoS	Quality of service
RF	Radio Frequency
RFoG	Radio Frequency over Glass
SC adaptor	Subscriber connector adaptor
SIP	Session initiation protocol
SNMP	Simple network management protocol
T1/E1	T1 is Trunk line 1 (or DS 1, digital signal level 1). E1 is the European equivalent, though there are a number of differences between the North American T1 and the European E1.
UPC	Ultra physical contact (for fiber connector)
Wi-Fi	Wireless local area network (trademark of Wi-Fi alliance)
VAD	Voice Activity Detection
VOIP	Voice over IP
zNID	Zhone Network Interface Device
ZMS	Zhone Management System

## Contacting Global Service and Support

Support for this product is provided by your Internet service provider



## Important Safety Instructions

Read and follow all warning notices and instructions marked on the product and included in the manual.

Veillez lire et respecter toutes les notices d'avertissement et les instructions indiquées sur le produit et incluses dans le manuel.

## Laser Safety Instructions

DZS equipment and associated optical test sets use laser sources that emit light energy into fiber cables. This energy is within the red (visible) and infrared (invisible) regions of the electromagnetic spectrum.

Laser products are subject to federal and state or provincial regulations, and local practices. Regulation 21 CFR 1040 of the U.S. Bureau of Radiological Health requires manufacturers to certify each laser product as Class I, II, III, or IV, depending upon the characteristics of the laser radiation emitted. In terms of health and safety, Class I products present the least hazard (none at all), while Class IV products present the greatest hazard.

Although DZS optical products have a Class I certification, hazardous exposure to laser radiation can occur when fibers connecting system components are disconnected or broken.

Certain procedures carried out during testing require the handling of optical fibers without dust caps and therefore increase the risk of exposure. Exposure to either visible or invisible laser light can damage your eyes under certain conditions.

Read and observe the following precautions to decrease the risk of exposure to laser radiation.



**WARNING! Risk of eye damage. At all times, when handling optical fibers, follow the safety procedures recommended by your company.**

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**WARNING! Avoid direct exposure to fiber ends or optical connector ends. Laser radiation may be present and can damage your eyes.**

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**WARNING! Never look into an active optical fiber or an optical fiber connector opening of an active or powered-up unit.**

---

Note: When working with optical fibers, take these precautions:

- Wear safety glasses when installing optical fibers.
- Clean hands after handling optical fibers. Small pieces of glass are not always visible and can cause eye damage. Get medical assistance immediately for any glass that comes into eye contact.

- Prevent direct exposure to optical fiber ends or optical connector ends where laser signals are directly accessed. Do not handle pieces of optical fiber with fingers. Use tweezers or adhesive tape to lift and discard any loose optical fiber ends.
- Wear rubber gloves to clean optical connectors. The gloves prevent direct contact with the isopropyl alcohol and prevent contamination of the ferrules with skin oils.
- Place all optical fiber clippings in a plastic container provided for that purpose.
- Handle optical fibers with caution. Place the optical fibers in a safe location during installation.
- Follow the manufacturer instructions when using an optical test set. Incorrect calibration or control settings can create hazardous levels of radiation.

## Instructions de sécurité relatives au laser

Le matériel de DZS et les ensembles de tests optiques associés utilisent des sources de laser qui émettent de l'énergie lumineuse dans les câbles optiques. Cette énergie se situe entre les régions rouge (visible) et infrarouge (invisible) du spectre électromagnétique.

Les produits laser sont sujets à des réglementations fédérales et étatiques ou provinciales, ainsi que des pratiques locales. La Réglementation 21 CFR 1040 du U.S. Bureau of Radiological Health oblige les fabricants à certifier chaque produit laser selon les Classes I, II, III, ou IV, en fonction des caractéristiques de la radiation laser émise. En termes de santé et de sécurité, les produits de Classe I présentent le moins de danger (aucun), alors que les produits de Classe IV présentent les plus grands dangers.

Bien que les produits optiques de DZS disposent d'une certification de Classe I, une exposition dangereuse aux radiations laser peut se produire lorsque les composants du système de connexion des fibres sont déconnectés ou cassés.

Certaines procédures réalisées lors des essais nécessitent la manipulation de fibres optiques sans capuchons antipoussière et augmentent donc le risque d'exposition. L'exposition à la lumière laser visible ou invisible peut endommager vos yeux dans certaines conditions.

Lisez et observez les précautions suivantes pour diminuer le risque d'exposition aux radiations laser.



**WARNING! AVERTISSEMENT ! Risque de blessure aux yeux.**

**Lors de la manipulation de fibres optiques, suivez en permanence les procédures de sécurité recommandées par votre société.**

---



**WARNING! AVERTISSEMENT ! Évitez l'exposition directe aux extrémités des fibres ou aux embouts des connecteurs optiques.**

**Le laser pourrait vous irradier et blesser vos yeux.**

---



**WARNING! AVERTISSEMENT ! Ne regardez jamais dans une fibre optique active ou une ouverture de connecteur de fibre optique d'un appareil actif ou sous tension.**

Remarque : Lorsque vous travaillez avec des fibres optiques, prenez ces précautions :

- Portez les lunettes de protection lorsque vous installez des fibres optiques.
- Lavez-vous les mains après avoir manipulé des fibres optiques. De petites pièces de verre ne sont pas toujours visibles et peuvent provoquer des affections oculaires. Obtenez une assistance médicale immédiatement pour tout morceau de verre entrant en contact avec les yeux.
- Evitez l'exposition directe aux extrémités des fibres optiques ou aux extrémités des connecteurs optiques où les signaux laser sont directement accessibles. Ne manipulez pas de parties de fibres optiques avec les doigts. Utilisez des pinces typographiques ou du ruban adhésif pour lever et éliminer des extrémités lâches de fibres optiques.
- Portez des gants de caoutchouc pour nettoyer les connecteurs optiques. Les gants protègent du contact direct avec l'alcool isopropylique et évitent la contamination des ferrules avec les huiles de peau.
- Placez toutes les rognures de fibre optique dans un récipient en plastique fourni à cet effet.
- Manipulez les fibres optiques avec précaution. Placez les fibres optiques dans un endroit sûr lors de l'installation.
- Suivez les instructions du fabricant lors de l'utilisation d'un ensemble de test optique. Un étalonnage ou des paramètres de contrôle incorrects peuvent provoquer des niveaux dangereux de radiation.

## General Instructions

Other precautions to take before installing or servicing the product are as follows:

- Never install telephone wiring during a lightning storm.
- Never touch uninsulated telephone wires or terminals unless the telephone line has first been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Only authorized service technicians can service this product. Unauthorized service to this product can cause exposure to dangerous high-voltage points or other risks and may result in injury or damage to the unit and void all warranties.
- Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the buyer.

- When installed in the final configuration, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.
- Install the zNID in accordance with national and local electric codes in order to meet all applicable requirements. Consult a qualified electrical consultant.

## Instructions générales

Les autres précautions à prendre avant l'installation ou l'entretien du produit sont les suivantes :

- N'installez jamais un câblage téléphonique pendant un orage.
- Ne touchez jamais de bornes ou de câbles téléphoniques non isolés à moins que la ligne téléphonique ait été déconnectée depuis l'interface réseau auparavant.
- Soyez prudent lors de l'installation ou de la modification des lignes téléphoniques.
- Seuls les techniciens d'entretien autorisés peuvent entretenir ce produit. L'entretien non autorisé de ce produit peut provoquer une exposition à des points de haute tension dangereux ou à d'autres risques et peut entraîner des blessures ou des dommages à l'appareil et rendre nulles toutes les garanties.
- Les câbles spéciaux, qui peuvent être demandés par l'autorité d'inspection réglementaire pour le site d'installation, sont de la responsabilité du client.
- Lorsqu'il est installé et dans sa configuration finale, le produit doit se conformer aux normes de sécurité et exigences réglementaires applicables du pays dans lequel il est installé. Si nécessaire, consultez les agences réglementaires et autorités d'inspection appropriées afin d'assurer la conformité.
- Installez le zNID conformément aux codes sur l'électricité national et local afin de satisfaire à toutes les exigences applicables. Consultez un conseiller en produits électriques qualifié.

## Compliance

### FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### FCC Radiation Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and consider removing the no-collocation statement

### Caution!

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## CE

CE compliance certifications has been obtained for the following equipment:

### **GPON 4 Port WiFi Gateway**

- ZNID-GPON-2424A1, ZNID-GPON-2424A1-XX, ZNID-GPON-2424A1-NYY, ZNID-GPON-2424A1-XX-NYY;
- ZNID-GPON-2426A1, ZNID-GPON-2426A1-XX, ZNID-GPON-2426A1-NYY, ZNID-GPON-242461-XX-NYY;
- ZNID-GPON-2408A1, ZNID-GPON-2408A1-XX, ZNID-GPON-2408A1-NYY, ZNID-GPON-2408A1-XX-NYY;
- ZNID-GPON-2428A1, ZNID-GPON-2428A1-XX, ZNID-GPON-2428A1-NYY, ZNID-GPON-2428A1-XX-NYY;

### **GE 4 Port WiFi Gateway**

- ZNID-GE-2424A1, ZNID-GE-2424A1-XX, ZNID-GE-2424A1-NYY, ZNID-GE-2424A1-XX-NYY;
- ZNID-GE-2426A1, ZNID-GE-2426A1-XX, ZNID-GE-2426A1-NYY, ZNID-GE-242461-XX-NYY;
- ZNID-GE-2408A1, ZNID-GE-2408A1-XX, ZNID-GE-2408A1-NYY, ZNID-GE-2408A1-XX-NYY;
- ZNID-GE-2408A1, ZNID-GE-2428A1-XX, ZNID-GE-2428A1-NYY, ZNID-GE-2428A1-XX-NYY;

"XX"-NA, EU, UK, SG, which indicates the power adapter plug type. For the optional "NYY" used only in Customer-specific configurations, "N" identifies the Revision number of the configuration from 0 to 9 or blank, and "YY" specifies the customer using a unique two letter identifier from A to Z or blank.

The equipment named above is confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (2004/108/EC), Low-voltage Directive (2006/95/EC) and R&TTE (1999/5/EC). The equipment passed the test which was performed according to the following European standards:

- ETSI EN 301 489-17 V2.1.1: 2009
- ETSI EN 301 489-1 V1.9.2: 2011
- ETSI EN 300 328 V1.7.1: 2006
- EN 62311: 2008
- EN 60950-1: 2006+A11 2009+ A1:2010 + A12:2011

## Canada Statement

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

- (1) This device may not cause interference; and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage;
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne sur l'exposition et la conformité de rf.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems

Les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) des bandes de 5 250 à 5 350 MHz et de 5 650 à 5 850 MHz et, d'autre part, que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs de RL-EL.

## FCC - Part 68

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the bottom of this equipment is a label that contains, among other information, a product identifier in the format US: 6RTDL01A6768. If requested, this number must be provided to the telephone company.

This equipment uses the following USOC jacks: RJ-11, RJ-45, USB Jack, Power Jack.

## REN (Ringer Equivalent Numbers) Statement

**Notice:** The Ringer Equivalence Number (REN: 0.1) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

## REN Statement (Canada)

This product meets the applicable Innovation, Science and Economic Development Canada technical specifications.

The Ringer Equivalence Number (REN=0.1) indicates the maximum number of devices allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices not exceed five.

Le présent produit est conforme aux spécifications techniques applicables d'Innovation, Sciences et Développement économique Canada.

L'indice d'équivalence de la sonnerie (IES=0.1) sert à indiquer le nombre maximal de dispositifs qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme des IES de tous les dispositifs n'excède pas cinq.

## Attachment Limitations Statement

**Notice:** This equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). This is confirmed by marking the equipment with the Industry Canada certification number. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The



equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together.

This precaution may be particularly important in rural areas. Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate

## **EMI Precautions**

### **Canada**

This Class B digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du règlement sur le matériel brouilleur du Canada.

# 1

## zNID 24xxA1 SERIES

This chapter describes the 24xxA1 series of zNIDs. It includes the following sections:

- [Overview, page 19](#)
- [zNID 24xxA1 series features, page 23](#)
- [zNID 24xxA1 models, page 23](#)
- [zNID 24xxA1 series specifications, page 24](#)
- [zNID 24xxA1 series dimensions, page 29](#)
- [zNID 24xxA1 series LEDs, page 30](#)
- [Logging in to the 24xxA1 series zNID, page 33](#)

### Overview

The zNID 24xxA1 Series (Zhone Network Interface Device) is a family of indoor residential GPON ONTs, Gigabit Ethernet and Fast Ethernet ONTs and copper based Ethernet devices which are standards based Consumer Premises Equipment (CPE) designed for advanced triple-play deployments. The indoor models in DZS's zNID product line of ONT's provide a lower cost alternative to outdoor ONT solutions. The small package contains many features including QoS, VoIP, and multicast video support. The zNID ONT is only one component in the PON network. DZS provides the entire FTTx solution to our customers including the OLT, splitters, cabinets, and the ONT.

The 24xxA1 indoor ONT is designed for high performance applications. Depending on model hardware features include 10/100/1000Mbps LAN Ports and POTS Voice FXS ports, RF video, WiFi and USB in a compact enclosure for indoor use. zNID 24xxA1 Series units may be installed as a desktop or, wall mounted and is powered via an AC Adaptor.

The zNID 24xxA1 Series are ideal for triple-play service deployments in Fiber-to-the-Home application. Industry standard SIP and MGCP voice signaling provides reliable voice services while DZS's experience with packet voice ensures interoperability and support with a large number of soft switches.

All 24xxA1 series Single Family Unit (SFU) ONTs provide the same voice features found on the 42xx series of outdoor residential ONTs and 9xxx series

of outdoor Multiple Dwelling Unit (MDU) ONTs. SIP-PLAR signaling is supported for connection via DZS'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 DZS's 42xx, 9xxx and 24xx Series ONTs to work in nearly all Telco networks, with interoperability support for a broad array of Softswitches.

The Ethernet ports can be separated into different services allowing the configuration of dedicated ports for IP video and data.

Compliant with standard OMCI definition, the zNID-24xxA1 is manageable at the remote site and supports the full range FCAPS functions including supervision, monitoring and maintenance.

DZS provides THE complete PON solution: ONT, OLT, splitter, EDFA, RF Transmitters, and cabinet solutions are available from DZS because our customers want to buy a complete and fully tested solution from one trusted source.

The zNID 24xxA1 series may be managed by

- EZ Touch (DZS's CPE and zNID management application)
- Zhone Management System (ZMS)
- Web (HTTP)
- Command Line Interface (CLI/Telnet/SSH)
- SNMP

More information about management capabilities see the *zNID Administrator and Operators Guide*.

## zNID 24xxA1 series components

The zNID 24xxA1 series indoor ONTs provide a variety of interfaces for triple play deployments. These indoor units may be mounted to a wall or placed on a desktop.

Figure 1: The interfaces, displays and buttons for the zNID 24xxA1



Depending upon the zNID model selected, the interfaces on the zNID can include:

- Four Gigabit Ethernet RJ45 ports
- Two phone ports (POTS)
- WiFi antennae
- USB
- Connection for uninterruptable power supply (UPS)

Figure 2: The zNID 24xxA1 series attaches to a fiber tray base



Figure 3: The unit may also be wall mounted, with or without a fiber tray



## zNID 24xxA1 series features

Under ideal circumstances, GPON can reach up to 20 or 30 km, however the practical limit is 12 km (about eight miles). Reach is dependent on the configuration of the optical distribution network (ODN).

All 24xxA1 series ONTs are designed for indoor use.

The 24xxA1 series of zNIDs share a common SW architecture with the 42xx and 9xxx series of zNIDs, including the same intuitive Web interface and command line interface. 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 EZ Touch management feature.

This section covers:

- [zNID 24xxA1 models](#)
- [zNID 24xxA1 series specifications](#)
- [zNID 24xxA1 series dimensions](#)

The zNID enables service providers to provide voice, data, and video services along with advanced IP and data support.

## zNID 24xxA1 models

**Table 2: zNID 24xxA1 models**

Model	Description
ZNID-GPON-2408A1	GPON Uplink, 4 GigE, 2x2 2.4GHz 802.11b/g/n and 3x3 5.8GHz 802.11a/n/ac, 1 USB port
ZNID-GPON-2424A1	GPON Uplink, 2 POTS, 4 GigE
ZNID-GPON-2426A1	GPON Uplink, 2 POTS, 4 GigE, 2x2 2.4GHz 802.11b/g/n, 1 USB port
ZNID-GPON-2428A1	GPON Uplink, 2 POTS, 4 GigE, 2x2 2.4GHz 802.11b/g/n and 3x3 5.8GHz 802.11a/n/ac, 1 USB port
ZNID-GE-2408A1	GE Uplink, 4 GigE, 2x2 2.4GHz 802.11b/g/n and 3x3 5.8GHz 802.11a/n/ac, 1 USB port
ZNID-GE-2424A1	GE Uplink, 2 POTS, 4 GigE
ZNID-GE-2426A1	GE Uplink, 2 POTS, 4 GigE, 2x2 2.4GHz 802.11b/g/n, 1 USB port
ZNID-GE-2428A1	GE Uplink, 2 POTS, 4 GigE, 2x2 2.4GHz 802.11b/g/n and 3x3 5.8GHz 802.11a/n/ac, 1 USB port

## zNID 24xxA1 series specifications

The possible interfaces and number of interfaces depend on the specific model, see [zNID 24xxA1 models on page 23](#) for a list of models and their interfaces.

**Table 3: zNID 24xxA1 common specifications**

Specifications	Values
<b>Dimensions</b>	~1.50 in (38 mm) high x 10.00 in (254 mm) wide x 5.98 in (152 mm) deep height does not include feet
<b>Weight</b>	500 g (1.1 lb.)
<b>Operating temperature</b>	0° C to +40° C (32° F to +104° F)
<b>Storage temperature</b>	-20° C to +85° C (-4° F to +185° F)
<b>Relative humidity</b>	0 to 95%, non-condensing
<b>Power</b>	Input: 12Vdc 1.5A Adapter: 100-240V~ 50/60 Hz Max 0.7A Power Consumption: 15-20W, depending on model Dying Gasp Support <ul style="list-style-type: none"> <li>• ZNID-2428A1                              MAXIMUM POWER: 19 W, 12VDC, 2A                              Typical power required by ONT: 15-19W</li> <li>• ZNID-2426A1                              MAXIMUM POWER: 15 W, 12VDC, 1.5A                              Typical power required by ONT: 13-15W</li> <li>• ZNID-2424A1:                              MAXIMUM POWER: 12W, 12VDC, 1.5A                              Typical power required by ONT: 12-13W</li> </ul>



Table 3: zNID 24xxA1 common specifications (Continued)

Specifications	Values
<b>Interfaces</b>	<p><b>Uplinks:</b></p> <ul style="list-style-type: none"> <li>• GPON: SC/APC connector for ZNID-GPON-24xxA1 <ul style="list-style-type: none"> <li>– 1.244Gbps Burst Mode Upstream Transmitter (1310nm)</li> <li>– 2.488Gbps Downstream Receiver (1490nm)</li> <li>– Downstream Video Receiver (1550nm) for ZNID-GPON-2403, 2425, 2427 only</li> </ul> </li> <li>• GE: SC/UPC connector for ZNID-GE-24xxA1 SFF non-removable optics work over a 20km distance <ul style="list-style-type: none"> <li>– 1.244Gbps Upstream Transmitter (1310nm)</li> <li>– 1.244Gbps Downstream Receiver (1490nm)</li> </ul> </li> </ul> <p><b>Customer facing interfaces (Depends on model):</b></p> <ul style="list-style-type: none"> <li>• POTS interfaces (RJ11)</li> <li>• Gig E interfaces (RJ45 - 10/100/1000Base-T Ethernet)</li> </ul> <p><b>Host port interface:</b></p> <ul style="list-style-type: none"> <li>• USB craft port (standard type A USB connector) zNID 2426A1 and 2428A1 USB port rating: 1A</li> </ul> <p><b>Wi-Fi interface:</b></p> <ul style="list-style-type: none"> <li>• 2x2 2.4GHz 802.11b/g/n (zNID 2426A1)</li> <li>• 2x2 2.4GHz 802.11b/g/n and 3x3 5.8Ghz 802.11a/n/ac (zNID 2428A1)</li> </ul>
<b>Standards Support</b>	<ul style="list-style-type: none"> <li>• ITU-T G.984 compliant</li> </ul>

**Table 3: zNID 24xxA1 common specifications (Continued)**

Specifications	Values
<b>Protocol Support</b>	<ul style="list-style-type: none"> <li>• GPON uplink                             <ul style="list-style-type: none"> <li>– ITU-T G.984 (GPON)</li> <li>– Multiple T-CONTS per device</li> <li>– Multiple GEM Ports per device</li> <li>– 1:1 mapping of GEM ports into T-CONTS with priority queue based scheduling</li> <li>– Activation with automatic discovered SN and password in conformance with ITU-T G.984.3</li> <li>– AES-128 Decryption with key generation and switching</li> <li>– FEC (Forward Error Correction)</li> <li>– 802.1p mapper service profile on U/S</li> <li>– Mapping of GEM Ports into a T-CONT with priority queues based scheduling</li> <li>– Support for Multicast GEM Port</li> </ul> </li> <li>• Ethernet/IP                             <ul style="list-style-type: none"> <li>– Bridging and switching (802.1D / 802.1 Q)</li> <li>– Eight traffic classes with 802.1p</li> <li>– 802.3<sub>x</sub> flow control</li> <li>– MAC address entries</li> <li>– <b>For OMCI-configured traffic flows</b>, no limit (no bridge table)</li> <li>– <b>For Bridged VLANs</b>, configured via Web UI or CLI in RG Mode, 4096 bridge table entries are supported. (only the most recent 100 entries are displayed).</li> <li>– VLAN tagging / untagging</li> <li>– VLAN stacking (Q-in-Q)</li> <li>– MAC limiting</li> <li>– 802.1x Ethernet Authentication</li> <li>– PPPoE client</li> </ul> </li> <li>• DHCP server, DHCP client</li> <li>• FTP, TFTP</li> <li>• Telnet</li> <li>• HTTP</li> <li>• SSH</li> <li>• SNMP</li> <li>• NAT</li> <li>• QoS                             <ul style="list-style-type: none"> <li>– 802.1P/Q prioritization</li> <li>– ToS IP Precedence</li> <li>– Traffic shaping – bandwidth management and rate limiting</li> </ul> </li> <li>• Firewall and Security</li> </ul>

Table 3: zNID 24xxA1 common specifications (Continued)

Specifications	Values
<b>POTS (Voice) Support</b>	<ul style="list-style-type: none"> <li>• SIP (RFC 3261)</li> <li>• SIP-PLAR</li> <li>• MGCP</li> <li>• 5 REN per line, balanced Ring at 60V RMS, DTMF dialing</li> <li>• Multiple voice codec: G.711 (u/a-law), G.726, G.729 (A and B)</li> <li>• Echo Canceling, Voice Activity Detection (VAD), Comfort Noise Insertion (CNI)</li> <li>• Various CLASS services — Caller ID, Call Waiting, Call Forwarding, Call Transfer, etc.</li> <li>• T.30 and T.38 Fax</li> <li>• G.711 fallback for FAX</li> <li>• Pulse metering</li> </ul>
<b>Wireless (WiFi) Support</b>	<ul style="list-style-type: none"> <li>• 2x2 MIMO</li> <li>• Antenna: 5dBi</li> <li>• 25dBm EIRP (316mW) Maximum Tx Power</li> <li>• max number of subscribers: 16 per SSID</li> <li>• SSID support: 4</li> <li>• 1:1 mapping of SSIDs to VLANs</li> <li>• WEP, WPA-PSK, WPA2-PSK (AES, TKIP)</li> <li>• 802.1x</li> <li>• 64 bit and 128 bit WEP support</li> <li>• MAC address filtering</li> </ul>
<b>IPTV</b>	<ul style="list-style-type: none"> <li>• IGMP multicast</li> <li>• IGMP snooping</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>• Zhone Management System <ul style="list-style-type: none"> <li>– EZ Touch</li> <li>– CPE Manager</li> </ul> </li> <li>• OMCI</li> <li>• Web UI</li> <li>• Command Line Interface</li> <li>• SNMP</li> </ul>
<b>Regulatory Compliance</b>	<ul style="list-style-type: none"> <li>• CE</li> <li>• UL</li> <li>• FCC Part B</li> </ul>

**Table 4: ONT Power Requirements**

Model	Watts	Voltage	Amps	Typical
ZNID-2428A1	19W	12VDC	2A	15-19W
ZNID-2426A1	15W	12VDC	1.5A	13-15W
ZNID-2424A1	12W	12VDC	1.5A	12-13W



**WARNING!** Using a power supply not meeting these requirements may result in system damage, overheating, or even fire.

**ATTENTION!** L'utilisation d'une source d'alimentation électrique qui ne répond pas à ces exigences peut résulter dans les dommages du système, une surchauffe, ou même un incendie.



**ADVERTENCIA**



NO CONTIENE FUENTE DE ALIMENTACION PARA SU USO  
Equipo para ser utilizado con fuente de alimentación de las siguientes características:

Entrada: 100-240Vca, 50/60Hz, .8A

Salida: 12Vcc, 1.5-2.0A

Potencia: 12-19 Watts



El uso de fuentes que no sean compatibles puede causar daños al equipo o incluso peligro para el usuario.

## zNID 24xxA1 series dimensions

Figure 4: zNID 24xxA1 dimensions

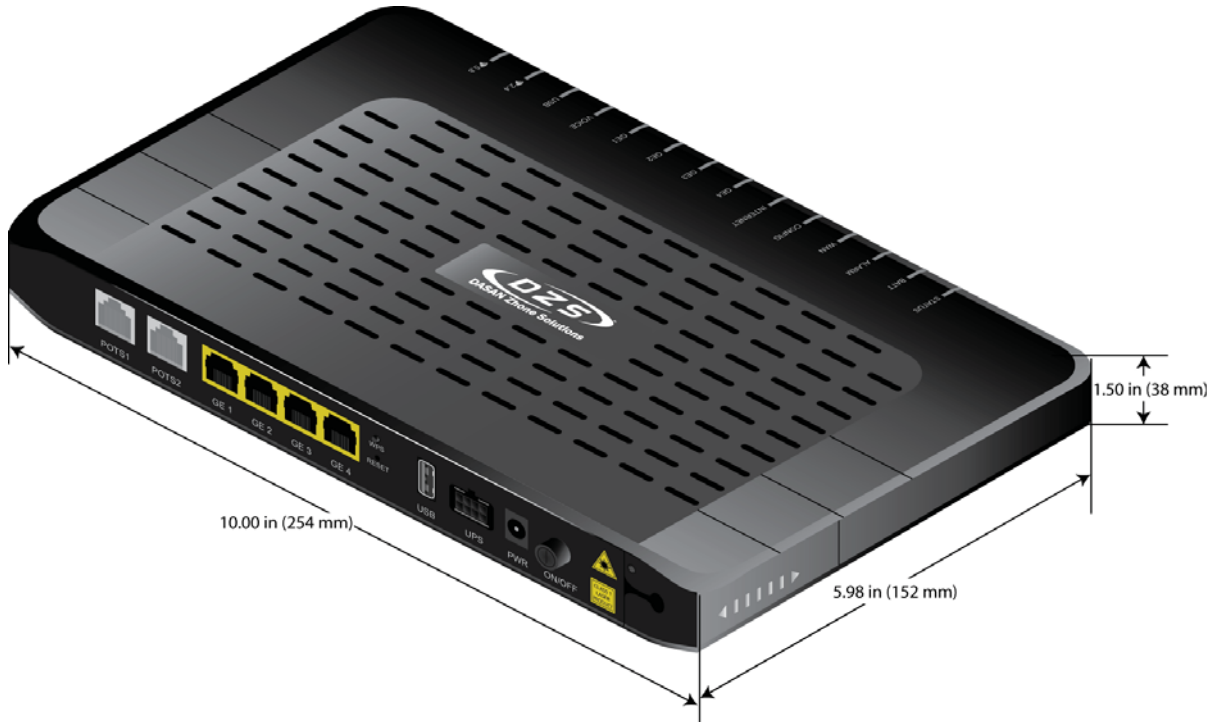
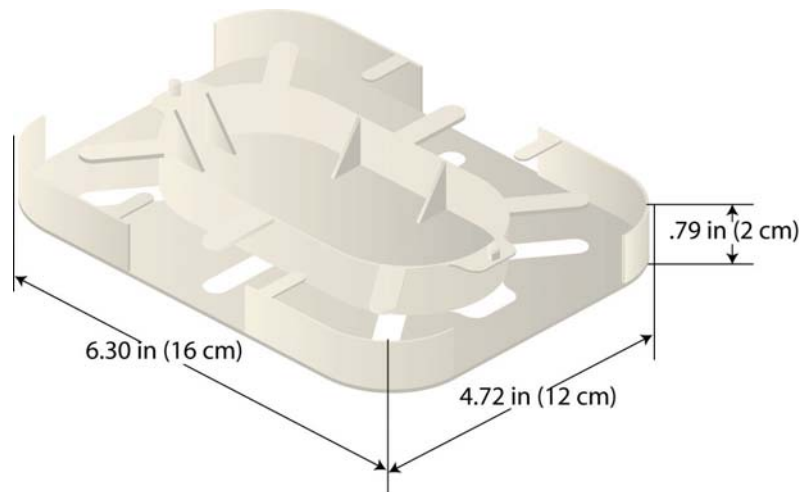


Figure 5: zNID fiber tray dimensions



## zNID 24xxA1 series LEDs

The LEDs vary depending on the model of zNID. See [zNID 24xxA1 models on page 23](#) for a complete list of zNID models.

Figure 6: zNID-GPON-24xxA1 (A and non A) LEDs



Table 5: zNID-GPON-24xxA1 (A and non A) LEDs

LED Name	Color	Behavior	Indicates
STATUS	Green	Heartbeat (1 short blink every 5 seconds)	Normal Operation
	Green	Rapid blink (10/sec)	Unit has been reset to Factory Defaults / is unconfigured
	Green	Alternating fast blinking and Off (1 second rapid blink/1 second off)	EZ Touch communications in process
	Green	Slow blink (1/second)	Remote Mgt Access (OMCI, SNMP, HTTP, Telnet, or TR-069)
	Green	On	Reboot or restart in process
	None	Off	Power off
BATT	Yellow	On	Operating on Battery Power
	Yellow	Slow blink (2/ sec)	Battery Alarm (Low Battery, Missing, or Replace)
	None	Off	Normal operation on AC power
ALARM	Red	On	Running on battery
	Red	50% cycle: 1 sec Rapid Blink/ 1 sec Off	EZ Touch actions pending -- SW or Config update required
	None	Off	Normal operation on AC power

Table 5: zNID-GPON-24xxA1 (A and non A) LEDs

LED Name	Color	Behavior	Indicates
WAN	Green	On	Ranged successfully
	Green	Slow blink (1/sec)	Ranging in progress
	None	Off	Not ready for ranging or not provisioned
CONFIG	Green	On	OMCI provisioning is complete
	Green	Rapid blink (10/sec)	OMCI provisioning is written to FLASH
	Green	Slow blink (1/second)	OMCI provisioning is in progress
	None	Off	No OMCI provisioning
INTERNET	Green	On	Internet service is available
	None	Off	Internet service is unavailable (no response from DNS server)
GE1 – GE4	Green	On	Ethernet interface link
	Green	Flash	Data transmitting
	None	Off	No link on Ethernet interface
VOICE	Green	On	Registered successfully
	Green	Slow blink (1/second)	Off hook
	None	Off	Registration failed or telephone service is not provisioned
USB	Green	On	Connected
	None	Off	No power/USB not connected
2.4	Green	On	2.4GHz WiFi service is enabled on ONT
	Green	Slow blink (1/second)	2.4GHz WiFi data passing between ONT and connected device
	None	Off	2.4GHz WiFi service is disabled on ONT

**Table 5: zNID-GPON-24xxA1 (A and non A) LEDs**

LED Name	Color	Behavior	Indicates
5.8	Green	On	5.8GHz WiFi service is enabled on ONT
	Green	Slow blink (1/second)	5.8GHz WiFi data passing between ONT and connected device
	None	Off	5.8GHz WiFi service is disabled on ONT



## Logging in to the 24xxA1 series zNID

The zNID 24xxA1 series may be managed from OMCI, Web UI or CLI. This section describes logging into the zNID locally using the subscriber facing LAN port, GE1.

**Figure 7: Log into GE port 1 to reach the Web UI or CLI on the zNID**



### To login with a browser:

- 1 Connect an Ethernet cable from your computer to GE1 on the zNID.
- 2 Launch a browser and point it to 192.168.1.1.
- 3 Enter the username and password.

The default username/password is admin/zhone.

### To login with a telnet session:

- 1 Connect an Ethernet cable from your computer to GE1 on the zNID
- 2 Launch a telnet session and point it to 192.168.1.1.
- 3 Enter the username and password.

The default username/password is admin/zhone.



# 2 zNID 24xxA1 INSTALLATION

This chapter can be used as separate installation instructions. This chapter explains how to install the zNID 24xxA1 hardware. It includes the following sections:

- [Install the zNID, page 35](#)
- [Overview of zNID 24xxA1 series installation, page 36](#)

## Install the zNID

This section describes the procedures for installing the zNID. The overview procedure provides options for wall mounting or placing the zNID on a surface with or without the optional fiber tray.

This section contains the following topics:

- [Overview of zNID 24xxA1 series installation on page 36](#)
- [Installation precautions on page 37](#)
- [Mount the zNID on page 38](#)
  - [Wall mount with fiber tray on page 38](#)
  - [Wall mount without fiber tray on page 41](#)
  - [Desktop with fiber tray on page 43](#)
- [Manage the optical cable on page 44](#)
- [Fiber handling on page 44](#)
- [Testing optical power on page 44](#)
- [Optical fiber cable placement in the zNID fiber tray on page 45](#)
- [Connect to network on page 46](#)
- [Connect power on page 48](#)
- [Connecting phone terminals on page 49](#)
- [Connecting Ethernet ports on page 50](#)
- [Complete the zNID installation on page 52](#)

## Overview of zNID 24xxA1 series installation

### 1 Select the location

Ensure that the environment is free of dust and excessive moisture and has sufficient ventilation.

The zNID may be installed in a vertical or horizontal orientation (wall or desktop). The zNID should be placed in a clean dry place as is appropriate for electronic equipment

*Installation precautions on page 37*

Install the system in reasonable proximity to all equipment or rooms where the TV or computer reside for straightforward connections.

### 2 Mount the zNID.

*Mount the zNID on page 38*

### 3 Install service fiber to the zNID.

*Connect to network on page 46*

### 4 Connect AC power and/or UPS

*Connect power on page 48*

### 5 Connect the subscriber facing services

#### a Connect telephone (POTS) service

See *Connecting POTS on page 49*.

#### b Connect Ethernet service

See *Connect Ethernet ports on page 50*.

### 6 Complete

*Checking the LEDs on page 52*

## Installation precautions

Maximum operating temperature should not exceed the range of 0° C to 40° C (32° F to 104° F).

Ensure that proper cable grades are used for all system and network connections. For best results, use the cables and connectors recommended in this document.

Connect the system to the power supply circuit as described in this document.

Before making fiber connections, be sure that the optical cable fiber tips and components are clean and free of dust and debris. Follow established cleaning procedures if required.



**Note:** Sharp bends in fiber cables create undesirable optical attenuation or loss. The zNID fiber tray provides fiber spools and hooks to avoid sharp bends in the fiber cable. A minimum bend radius of 30 mm (1.2 in) is recommended for stripped fiber.

---

La température maximum de fonctionnement ne doit pas dépasser le plage de 0° C à 40° C (32° F à 104° F).

Assurez-vous que les rangs de câbles corrects sont utilisés pour tous les raccordements du système et du réseau. Pour les meilleurs résultats, utilisez les câbles et connecteurs recommandés dans ce document.

Raccordez le système au circuit d'alimentation comme décrit dans ce document.

Avant de réaliser les raccordements des fibres, soyez sur que les embouts de fibre des câbles optiques et les composants sont propres et libres de poussière et autres débris. Suivez les procédures de nettoyage établies si nécessaire.



**Note: Remarque :** Les courbes serrées dans les câbles optiques créent une atténuation ou une perte optique indésirable. Le plateau de fibres zNID fournit des bobines et des crochets de fibre afin d'éviter les courbes serrées dans le câble optique. Un rayon de courbure minimum de 30 mm (1,2 po) est recommandé pour la fibre dénudée.

---

## Mount the zNID

The zNID enclosure can be mounted on a vertical surface or a horizontal surface (wall or desktop).

- [Wall mount with fiber tray on page 38](#)
- [Wall mount without fiber tray on page 41](#)
- [Desktop with fiber tray on page 43](#)

### Wall mount with fiber tray

The zNID fiber tray can be mounted on a wall using four screws.



**Caution:** To prevent damage to the enclosure, use screws appropriate to the mounting surface.

**Précaution :** Afin d'éviter d'endommager l'enceinte, utilisez des vis adaptées à la surface de montage.

---



**Caution:** Install the zNID fiber tray a proper height from the floor.

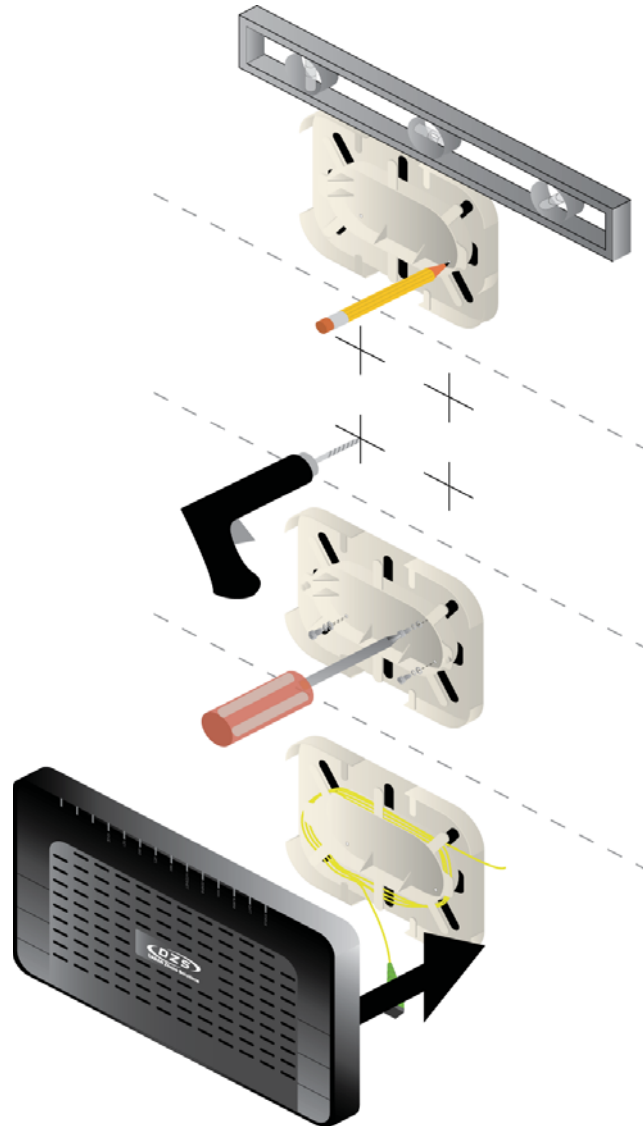
**Précaution :** Installez le plateau de fibres zNID à une hauteur correcte par rapport au sol.

---

## Mounting the zNID fiber tray on a wall

To mount the zNID fiber tray on a wall:

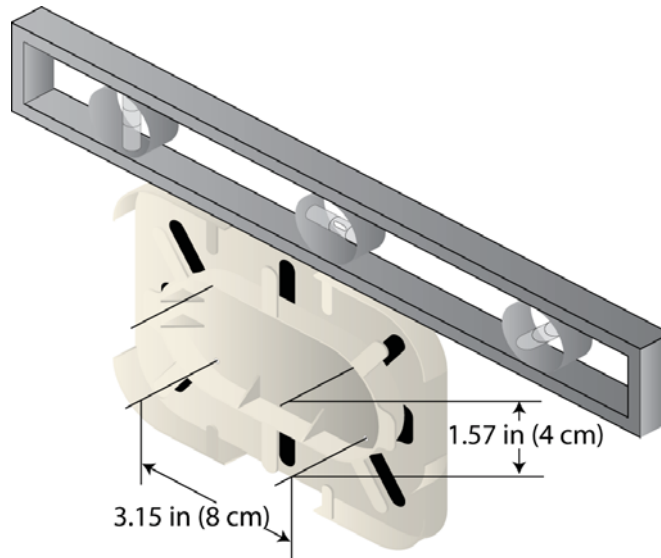
Figure 8: Installing the fiber tray on a wall



- 1 Prepare the surface for mounting.

- 2 Hold the bracket level in the desired location and mark the hole positions.

The holes for the fiber tray are 8 cm apart (about 3.15 inches or a little less than 3 and 3/16 inches) on the horizontal axis and 4 cm apart (about 1.57 inches or about 1 and 9/16 inches) on the vertical axis.



- 3 Drill the holes.
- 4 Line up the fiber tray with the screw holes and attach the screws.  
Use attaching hardware appropriate for the type of surface to which the unit is mounted (i.e. wood, brick, CB, etc.).  
Use shims when necessary to keep the zNID vertical.
- 5 Wind the fiber in the tray.  
See *Optical fiber cable placement in the zNID fiber tray* on page 45
- 6 Put the zNID on the fiber tray.  
The wall mount sockets on the zNID fit the two nubs which stick out from the fiber spool on the fiber tray.



## Wall mount without fiber tray



**Caution:** To prevent damage to the enclosure, use screws appropriate to the mounting surface.

**Précaution :** Afin d'éviter d'endommager l'enceinte, utilisez des vis adaptées à la surface de montage.

---



**Caution:** Install the zNID fiber tray a proper height from the floor.

**Précaution :** Installez le plateau de fibres zNID à une hauteur correcte par rapport au sol.

---



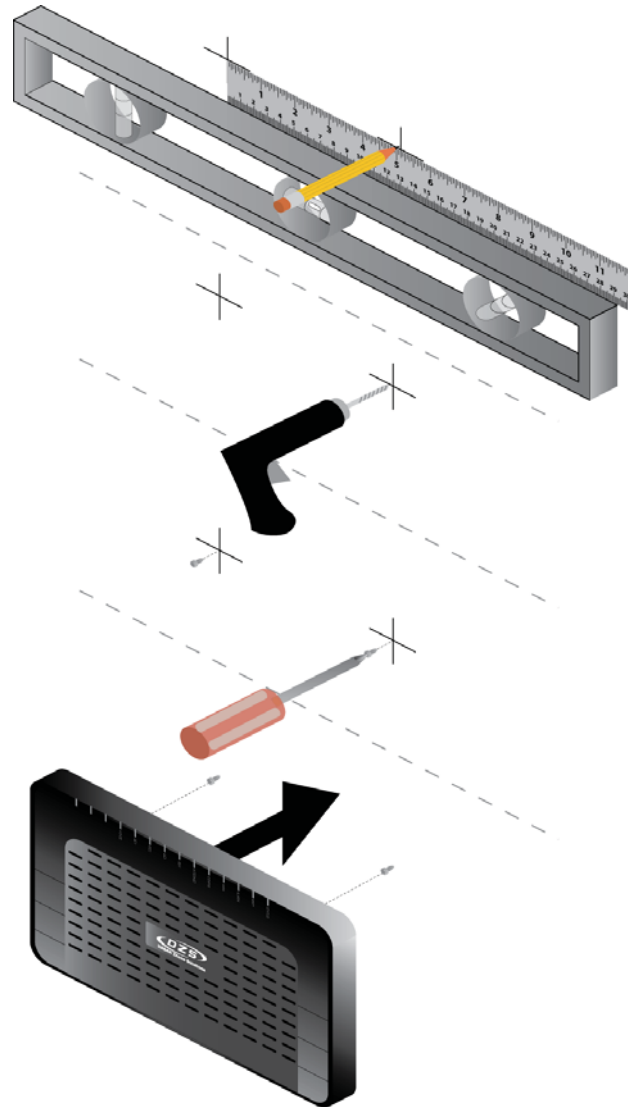
**Caution:** The zNID should always be mounted in a vertical orientation.

**Précaution :** Le zNID doit toujours être monté en orientation verticale.

---

### Mounting the zNID on a wall without the fiber tray

Figure 9: Installing the fiber tray on a wall

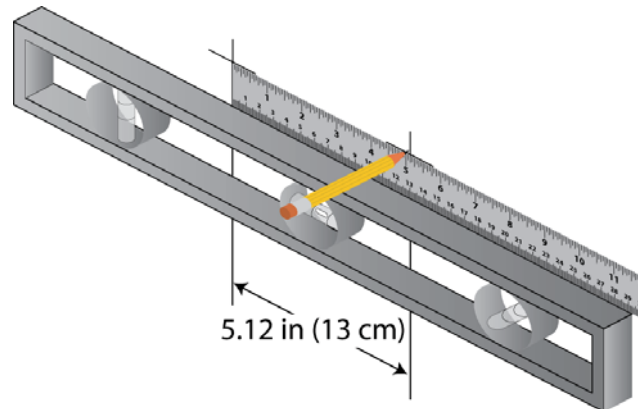


To mount the zNID directly on a wall:

- 1 Prepare the surface for mounting.

**2** Mark the hole positions.

The holes for the fiber tray are 13 cm apart (about 5.12 inches or a little less than 5 and 1/8 inches) on the horizontal axis.

**3** Drill the holes.**4** Attach the screws.

Use screws appropriate for the type of surface to which the unit is mounted (i.e. wood, brick, CB, etc.).

**5** Put the zNID on the screws.

The screws should be leave enough space from being flush with the wall for the zNID legs to hold the unit firmly against the wall.

## Desktop with fiber tray

To mount the zNID fiber tray on a wall:

**1** Prepare the surface for mounting.**2** Wind the fiber in the tray.

See [Optical fiber cable placement in the zNID fiber tray](#) on page 45

**3** Put the zNID on the fiber tray.

The wall mount sockets on the zNID fit the two nubs which stick out from the fiber spool on the fiber tray.

## Manage the optical cable

When making a fiber optic connection, avoid touching the fiber cable ends to the outside of the mating connector. Touching can contaminate the connectors.

### Fiber handling

Before making any connections, be sure that the optical cable fiber tips and components are clean and free of dust and debris.

The zNID fiber tray provides fiber spools and hooks to avoid sharp bends in the fiber cable. A minimum bend radius of 30 mm is recommended for stripped fiber and larger fiber needs a larger bend radius to guarantee the specified system performance.

 **Note:** Sharp bends in fiber cables create undesirable optical attenuation or loss.

### Testing optical power

Table 6 specifies how much laser power to expect on the fiber.

**Table 6: Optical values for the triplexer for zNID-GPON-24xx**

Parameter	1490 nm (Data Downstream)	1550 nm (RF Downstream)
Damage Level	+5 dBm	+5 dBm
Optical Overload	-8 dBm	+2 dBm
Minimal Optical Signal	-28 dBm	-8 dBm
Mid Range Optical Value	-17 dBm	-4 dBm

**Table 7: Optical values for the triplexer for zNID-GE-24xx**

Parameter	Active Ethernet
Damage Level	+5 dBm
Optical Overload	-2 dBm
Minimal Optical Signal	-23 dBm
Mid Range Optical Value	-12 dBm

## Optical fiber cable placement in the zNID fiber tray

Using a fiber tray involves routing the optical fiber around the spools, then physically to the SC connector in the zNID.



**Note:** Sharp bends in fiber cables create undesirable optical attenuation or loss. The zNID enclosure provides fiber spools and hooks to avoid sharp bends in the fiber cable. A minimum bend radius of 30 mm (1.2 in) is recommended for stripped fiber.

To place the fiber cable in the fiber tray:

- 1 Inspect and clean the fiber connector to ensure it is free of impurities.
- 2 Make sure the fiber segment is properly installed in the fiber tray, excess cable is wrapped around fiber reels without having improper bends leaving enough loose cable so that it will not take too sharp of a bend to connect to the zNID.

**Figure 10: Maintain the proper bend radius in the fiber**



Keep fiber loose from tray to unit to maintain the bend radius on the cable larger than the prescribed minimum bend radius.

- 3 Test the fiber cable to verify clean signals.



**Note:** It is recommended that the fiber cable be tested before finishing.

## Connect to network

### Connecting the SC connectors on fiber based models

Connect the SC connector from the electronics module to the SC connector in the zNID enclosure.

Observe the necessary precautions to decrease the risk of exposure to laser radiation.



**WARNING! Risk of eye damage. At all times when handling optical fibers, follow the safety procedures recommended by your company.**

**AVERTISSEMENT ! Risque de blessure aux yeux. Lors de la manipulation de fibres optiques, suivez en permanence les procédures de sécurité recommandées par votre société.**

Although DZS optical products have a Class I certification, hazardous exposure to laser radiation can occur when fibers are connected, disconnected or broken. Handling of optical fibers without dust caps increases the risk of exposure. Exposure to either visible or invisible laser light can damage your eyes under certain conditions.

- 1 Remove the fiber service cover by removing the fiber service screw and then sliding the fiber service cover forward (toward the connection panel of the zNID).

Using your thumb push on the raised marking on the fiber service cover to slide it off.

For a new unit the fiber service cover will be in a bag, so you will not need to do this step.

Figure 11: zNID-GPON-24xxA1 models use SC/APC connector (green)



**Figure 12: zNID-GE-24xxA1 model uses SC/UPC connector (blue)**

- 2 Remove the dust covers from the SC optical connectors.  
Clean the connector if necessary.
- 3 Plug in the fiber connector to connect the zNID to the network.



---

**Note:** To function properly the optical strength to the zNID should be between -8dBm and -27dBm for GPON and between -2dBm and -23dBm for GE units. See [Testing optical power on page 44](#) for information.

---

- 4 Reattach the fiber service cover onto the zNID including the fiber service screw.

## Connect power

The zNID is powered by 12VDC using the DC Power Supply which is shipped with the unit. An optional uninterruptable power supply may also be used.

**Figure 13:** The zNID 24xxA1 has both a DC power connector and a UPS input for power



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 **Note:** The DC power connector and UPS input must not be used at the same time.

---

For pinout information for the UPS connector, see [UPS pinouts](#) on page 56.



## Connecting phone terminals

The zNID 24xxA1 models have the ability to connect POTS via RJ-11.

### Connecting POTS

The zNID 24xxA1 models have the ability to connect POTS via RJ-11 connector.

The terminal connections are shown in [Figure 14](#).

- 1 Locate the subscriber's telephone wire pair.

**Figure 14: Connect phone lines**



- 2 If the wire pair is not terminated, follow local practices to attach an RJ-11 connector.
- 3 Plug the wire pair with RJ-11 connector into one of the zNID RJ-11 phone jacks.
- 4 Repeat steps 1-3 as needed to connect additional phone lines.

For pinout information for the POTS connector, see [POTS pinouts on page 55](#).

## Connecting Ethernet ports

The zNID-24xxA1 series models have up to 4 Gigabit Ethernet ports.

### Connect Ethernet ports

The zNID provides RJ eight pin modular jacks (RJ45) for Ethernet connections. Ethernet connections can be used to deliver any packet services including IPTV, data, and VoIP.

For Ethernet services, connect a Category 5 or a Category 6 cable to an RJ45 interface as shown in [Figure 15](#).

- 1 Locate the Ethernet LAN cable.
- 2 If the cable is not terminated, follow local practices to attach an RJ-45 connector.
- 3 Plug the Ethernet cable into the appropriate RJ-45 Ethernet port.

Figure 15: The RJ-45 Ethernet ports.



- 4 Repeat steps 1-3 as needed to connect additional Ethernet cables.
- For pinout information for the Gigabit Ethernet connector, see [Gigabit Ethernet pinouts](#) on page 54.

## Connecting USB port

The zNID-24xxA1 series models have a USB 2.0 port for future applications.

Figure 16: The USB port.



## Complete the zNID installation

After making the physical connections, complete the installation by checking the LEDs, the grounding for the full enclosure, closing the outer cover, sealing the entry holes, and screwing in the final screw to secure the unit.

### Checking the LEDs

Check the LEDs to verify that power is working.



See the *zNID 24xxA1 series LEDs* on page 30.

# A

## APPENDIX: PINOUTS

This appendix provides the following pinouts

- *Gigabit Ethernet pinouts* on page 54
- *POTS pinouts* on page 55
- *UPS pinouts* on page 56

## Gigabit Ethernet pinouts

Figure 17: The Gigabit Ethernet ports use an RJ45 connector

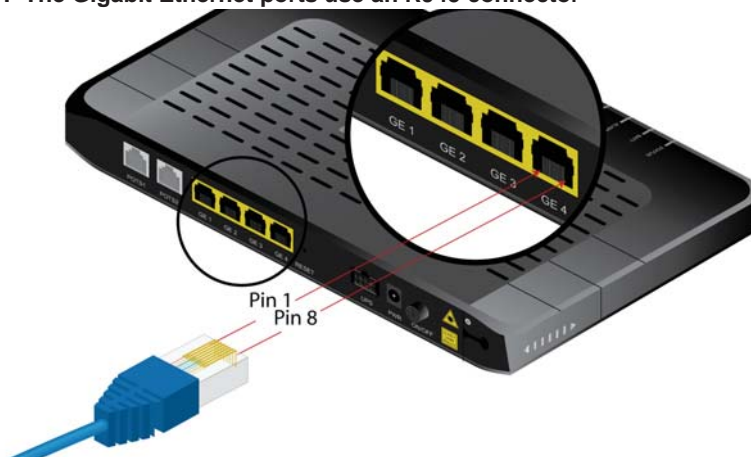


Table 8: Pinout for the GigE RJ45

Pin	Name	Description
1	TX_D1+	Transceive data +
2	TX_D1-	Transceive data -
3	RX_D2+	Recieve data +
4	BI_D3+	Bi-directional data +
5	BI_D3-	Bi-directional data -
6	RX_D2-	Receive data -
7	BI_D4+	Bi-directional data +
8	BI_D4-	Bi-directional data -

## POTS pinouts

Figure 18: The POTS ports use an RJ11 connector

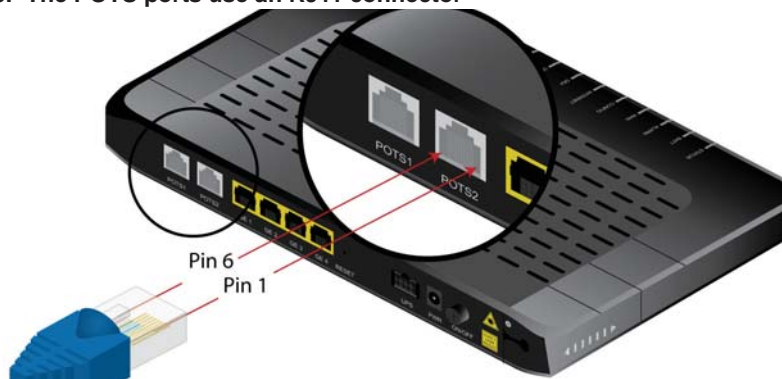


Table 9: Pinout for the POTS RJ11

Pin	Description
1	N/C
2	N/C
3	Ring
4	Tip
5	N/C
6	N/C

## UPS pinouts

Figure 19: Pin out layout for the UPS connector



Table 10: Pinout descriptions for the UPS connection

Pin	Signal	Comments
1	+12V	UPS in
2	GND	UPS return.
3	On battery	Open signal when on battery power
4	Signal return	Connected to Signal GND on ONT
5	Missing battery	Open signal when battery not detected
6	Replace battery	Open signal when battery should be replaced
7	GND	Connected to Signal GND on ONT
8	Low Battery	Open signal when battery is low



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