

7368 Intelligent Services Access Manager ONT

7368 ISAM ONT XS-240W-A XS-250WX-A Product Guide

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1 Preface

This preface provides general information about the documentation set for optical network terminals (ONTs).

1.1 Scope

This documentation set provides information about safety, features and functionality, ordering, hardware installation and maintenance, and software installation procedures for the current release.

1.2 Audience

This documentation set is intended for planners, administrators, operators, and maintenance personnel involved in installing, upgrading, or maintaining the ONTs.

1.3 Required knowledge

The reader must be familiar with general telecommunications principles.

1.4 Acronyms and initialisms

The expansions and optional descriptions of most acronyms and initialisms appear in the glossary.

1.5 Assistance and ordering phone numbers

Nokia provides global technical support through regional call centers. Phone numbers for the regional call centers are available at the following URL: <u>http://support.alcatel-lucent.com</u>.

For ordering information, contact your Nokia sales representative.

1.6 Nokia quality processes

Nokia's ONT quality practices are in compliance with TL 9000 requirements. These requirements are documented in the Fixed Networks Quality Manual 3FQ-30146-6000-QRZZA. The quality practices adequately ensure that technical requirements and customer end-point requirements are met. The customer or its representatives may be allowed to perform on-site quality surveillance audits, as agreed upon during contract negotiations

1.7 Safety information

For safety information, see the appropriate safety guidelines chapter.

1.8 Documents

Documents are available using ALED or OLCS.

Procedure 1 To download a ZIP file package of the customer documentation

- 1 Navigate to <u>http://support.alcatel-lucent.com</u> and enter your user name and password. If you are a new user and require access to this service, please contact your Nokia sales representative.
- 2 From the Technical Content for drop-down menu, choose the product.
- **3** Click on Downloads: Electronic Delivery.
- 4 Choose Documentation from the drop-down menu and click Next.
- 5 Select the image from the drop-down menu and click Next.
- 6 Follow the on-screen directions to download the file.

Procedure 2 To access individual documents

Individual PDFs of customer documents are also accessible through the Nokia Customer Support website.

- 1 Navigate to <u>http://support.alcatel-lucent.com</u> and enter your user name and password. If you are a new user and require access to this service, please contact your Nokia sales representative.
- 2 From the Technical Content for drop-down menu, choose the product.
- 3 Click on Manuals and Guides to display a list of customer documents by title and part number. You can filter this list using the Release drop-down menu.
- 4 Click on the PDF to open or save the file.

1.9 Special information

The following are examples of how special information is presented in this document.



Danger — Danger indicates that the described activity or situation may result in serious personal injury or death; for example, high voltage or electric shock hazards.



Warning — Warning indicates that the described activity or situation may, or will, cause equipment damage or serious performance problems.



Caution — Caution indicates that the described activity or situation may, or will, cause service interruption.



Note — A note provides information that is, or may be, of special interest.

1.9.1 Procedures with options or substeps

When there are options in a procedure, they are identified by letters. When there are required substeps in a procedure, they are identified by roman numerals.

Procedure 3 Example of options in a procedure

At step 1, you can choose option a or b. At step 2, you must do what the step indicates.

- 1 This step offers two options. You must choose one of the following:
 - a This is one option.
 - **b** This is another option.
- 2 You must perform this step.

Procedure 4 Example of required substeps in a procedure

At step 1, you must perform a series of substeps within a step. At step 2, you must do what the step indicates.

- 1 This step has a series of substeps that you must perform to complete the step. You must perform the following substeps:
 - i This is the first substep.
 - ii This is the second substep.
 - iii This is the third substep.
- 2 You must perform this step.

1.10 Multiple PDF document search

You can use Adobe Reader Release 6.0 and later to search multiple PDF files for a common term. Adobe Reader displays the results in a single display panel. The results are grouped by PDF file, and you can expand the entry for each file.



 $\operatorname{\textbf{Note}}$ — The PDF files in which you search must be in the same folder.

Procedure 5 To search multiple PDF files for a common term

- 1 Open Adobe Acrobat Reader.
- 2 Choose Edit-Search from the Acrobat Reader main menu. The Search PDF panel appears.
- 3 Enter the search criteria.
- 4 Click on the All PDF Documents In radio button.
- 5 Select the folder in which to search using the drop-down menu.
- 6 Click on the Search button.

Acrobat Reader displays the search results. You can expand the entries for each document by clicking on the + symbol.

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2 ETSI ONT safety guidelines

This chapter provides information about the mandatory regulations that govern the installation and operation of the optical network terminals (ONTs).

2.1 Safety instructions

This section describes the safety instructions that are provided in the ONT customer documentation and on the equipment.

2.1.1 Safety instruction boxes

The safety instruction boxes are provided in the ONT customer documentation. Observe the instructions to meet safety requirements.

The following is an example of the Danger box.



Danger — Possibility of personal injury.

The Danger box indicates that the described activity or situation may pose a threat to personal safety. It calls attention to a situation or procedure which, if not correctly performed or adhered to, may result in death or serious physical harm.

Do not proceed beyond a Danger box until the indicated conditions are fully understood and met.

The following is an example of the Warning box.



Warning 1 — Possibility of equipment damage.

Warning 2 — Possibility of data loss.

The Warning box indicates that the described activity or situation may, or will, cause equipment damage, loss of data, or serious performance problems. It identifies a possible equipment-damaging situation or provides essential information to avoid the degradation of system operations or data.

Do not proceed beyond a warning until the indicated conditions are fully understood and met.

The following is an example of the Caution box.



Caution 2 — Service interruption.

Caution 1 — Possibility of service interruption.

The Caution box indicates that the described activity or situation may, or will, cause service interruption.

Do not proceed beyond a caution until the indicated conditions are fully understood and met.

The following is an example of the Note box.



Note — Information of special interest.

The Note box provides information that assists the personnel working with ONTs. It does not provide safety-related instructions.

2.1.2 Safety-related labels

The ONT equipment is labeled with the specific safety instructions and compliance information that is related to a variant of the ONT. Observe the instructions on the safety labels.

Table 1 provides sample safety labels on the ONT equipment.

Table 1Safety labels

Description	Label text
ESD warning	Caution: This assembly contains an electrostatic sensitive device.
Laser classification	Class 1 laser product
PSE marking	These power supplies are Japan PSE certified and compliant with Japan VCCI emissions standards.

Figure 1 shows the PSE certification.

Figure 1 PSE certification

19841

2.2 Safety standards compliance

This section describes the ONT compliance with the European safety standards.

2.2.1 EMC, EMI, and ESD compliance

The ONT equipment complies with the following EMC, EMI, and ESD requirements:

- EN 300-328 v1.9.1 wide band data transmission standards for 2.4GHz bands
- EN 300-386 V1.5.1: Electromagnetic Compatibility and Radio Spectrum Matters (ERM): Telecommunications Network Equipment; Electromagnetic Compatibility (EMC) requirements; Electrostatic Discharge (ESD) requirements
- EN 55022 (2006): Class B, Information Technology Equipment, Radio Disturbance Characteristics, limits and methods of measurement
- EN 55024 (2010): Information Technology Equipment, Immunity Characteristics, limits and methods of measurement
- European Council Directive 2004/108/EC
- EN 300-386 V1.4.1: 2008
- EN 55022:2006 Class B (ONTs)

2.2.2 Equipment safety standard compliance

The ONT equipment complies with the requirements of EN 60950-1, Safety of Information Technology Equipment for use in a restricted location (per R-269).

2.2.3 Environmental standard compliance

The ONT equipment complies with the EN 300 019 European environmental standards.

2.2.4 Laser product standard compliance

For most ONTs, the ONT equipment complies with EN 60825-1 and IEC 60825-2 for laser products. If there is an exception to this compliance regulation, you can find this information in the standards compliance section of the unit data sheet in this Product Guide.

2.2.5 Resistibility requirements compliance

The ONT equipment complies with the requirements of ITU Recommendation K.21 for resistibility of telecommunication equipment installed in customer premises to over voltage and overcurrents.

2.2.6 Acoustic noise emission standard compliance

The ONT equipment complies with EN 300 753 acoustic noise emission limit and test methods.

2.3 Electrical safety guidelines

This section provides the electrical safety guidelines for the ONT equipment.



Note 1 — The ONTs comply with the U.S. National Electrical Code. However, local electrical authorities have jurisdiction when there are differences between the local and U.S. standards.

Note 2 — The ONTs comply with BS EN 61140.

2.3.1 Power supplies

The use of any non-Nokia approved power supplies or power adapters is not supported or endorsed by Nokia. Such use will void any warranty or support contract with Nokia. Such use greatly increases the danger of damage to equipment or property.

2.3.2 Cabling

The following are the guidelines regarding cables used for the ONT equipment:

- All cables must be approved by the relevant national electrical code.
- The cables for outdoor installation of ONTs must be suitable for outdoor use.
- POTS wiring run outside the subscriber premises must comply with the requirements of local electrical codes. In some markets, the maximum allowed length of the outside run is 140 feet (43 m). If the outside run is longer, NEC requires primary protection at both the exit and entry points for the wire.

2.3.3 Protective earth

Earthing and bonding of the ONTs must comply with the requirements of local electrical codes.

2.4 ESD safety guidelines

The ONT equipment is sensitive to ESD. Operations personnel must observe the following ESD instructions when they handle the ONT equipment.



Caution — This equipment is ESD sensitive. Proper ESD protections should be used when you enter the TELCO Access portion of the ONT.

During installation and maintenance, service personnel must wear wrist straps to prevent damage caused by ESD.

2.5 Laser safety guidelines

Observe the following instructions when you perform installation, operations, and maintenance tasks on the ONT equipment.

Only qualified service personnel who are extremely familiar with laser radiation hazards should install or remove the fiber optic cables and units in this system.



Danger — There may be invisible laser radiation at the fiber optic cable when the cable is removed from the connector. Avoid direct exposure to the laser beam.

Observe the following danger for laser hazard. Eyes can be damaged when they are exposed to a laser beam. Take necessary precautions before you plug in the optical modules.



Danger — Possibility of equipment damage. Risk of eye damage by laser radiation.

2.5.1 Laser classification

The ONT is classified as a Class 1 laser product based on its transmit optical output.

2.5.1.1 Laser warning labels

The following figures show the labels related to laser product, classification and warning.

Figure 2 shows a laser product label.

Figure 2 Laser product label



18455

Figure 3 shows a laser classification label. Laser classification labels may be provided in other languages.

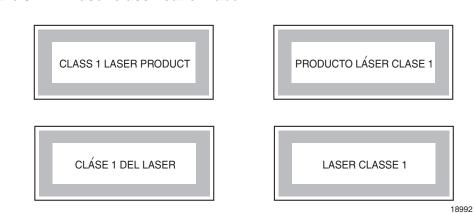


Figure 3 Laser classification label

Figure 4 shows a laser warning label and an explanatory label for laser products. Labels and warning may be provided in other languages. The explanatory label provides the following information:

- a warning that calls attention to the invisible laser radiation
- an instruction against staring into the beam or viewing directly with optical instruments
- wavelength
- normal output power
- maximum output power



Figure 4 Laser warning labels

2.5.2 Transmit optical output

The maximum transmit optical output of an ONT is +5 dBm.

2.5.3 Normal laser operation

In normal operation, fiber cable laser radiation is always off until it receives signal from the line terminal card.

Eyes can be damaged when they exposed to a laser beam. Operating personnel must observe the instructions on the laser explanatory label before plugging in the optical module.



Danger — Risk of eye damage by laser radiation.

18993

2.5.4 Location class

Use cable supports and guides to protect the receptacles from strain.

2.6 Environmental requirements

See the ONT technical specification documentation for more information about temperature ranges.

During operation in the supported temperature range, condensation inside the ONT caused by humidity is not an issue. To avoid condensation caused by rapid changes in temperature and humidity, Nokia recommends:

- The door of the ONT not be opened until temperature inside and outside the enclosure has stabilized.
- If the door of the ONT must be opened after a rapid change in temperature or humidity, use a dry cloth to wipe down the metal interior to prevent the risk of condensation.
- When high humidity is present, installation of a cover or tent over the ONT helps prevent condensation when the door is opened.

3 ETSI environmental and CRoHS guidelines

This chapter provides information about the ETSI environmental China Restriction of Hazardous Substances (CRoHS) regulations that govern the installation and operation of the optical line termination (OLT) and optical network termination (ONT) systems. This chapter also includes environmental operation parameters of general interest.

3.1 Environmental labels

This section describes the environmental instructions that are provided with the customer documentation, equipment, and location where the equipment resides.

3.1.1 Overview

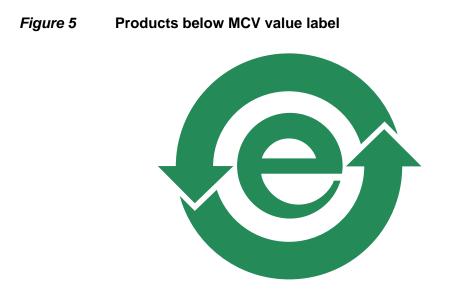
CRoHS is applicable to Electronic Information Products (EIP) manufactured or sold and imported in the territory of the mainland of the People's Republic of China. EIP refers to products and their accessories manufactured by using electronic information technology, including electronic communications products and such subcomponents as batteries and cables.

3.1.2 Environmental related labels

Environmental labels are located on appropriate equipment. The following are sample labels.

3.1.2.1 Products below Maximum Concentration Value (MCV) label

Figure 5 shows the label that indicates a product is below the maximum concentration value, as defined by standard SJ/T11363-2006 (Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products). Products with this label are recyclable. The label may be found in this documentation or on the product.



18986

3.1.2.2 Products containing hazardous substances above Maximum Concentration Value (MCV) label

Figure 6 shows the label that indicates a product is above the maximum concentration value, as defined by standard SJ/T11363-2006 (Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products). The number contained inside the label indicates the Environment-Friendly User Period (EFUP) value. The label may be found in this documentation or on the product.

Figure 6 **Products above MCV value label**



Together with major international telecommunications equipment companies, Nokia has determined it is appropriate to use an EFUP of 50 years for network infrastructure equipment and an EFUP of 20 years for handsets and accessories. These values are based on manufacturers' extensive practical experience of the design, manufacturing, maintenance, usage conditions, operating environments, and physical condition of infrastructure and handsets after years of service. The values reflect minimum values and refer to products operated according to the intended use conditions. See "Hazardous Substances Table (HST)" for more information.

3.2 Hazardous Substances Table (HST)

This section describes the compliance of the OLT and ONT equipment to the CRoHS standard when the product and subassemblies contain hazardous substances beyond the MCV value. This information is found in this user documentation where part numbers for the product and subassemblies are listed. It may be referenced in other OLT and ONT documentation.

In accordance with the People's Republic of China Electronic Industry Standard Marking for the Control of Pollution Caused by Electronic Information Products (SJ/T11364-2006), customers may access the Nokia Hazardous Substance Table, in Chinese, from the following location:

 <u>http://www.alcatel-sbell.com.cn/wwwroot/images/upload/private/1/media/ChinaRo</u> <u>HS.pdf</u>

3.3 Other environmental requirements

Observe the following environmental requirements when handling the P-OLT or ONT equipment.

3.3.1 ONT environmental requirements

See the ONT technical specification documentation for more information about temperature ranges.

3.3.2 Storage

According to ETS 300-019-1-1 - Class 1.1, storage of OLT equipment must be in Class 1.1, weather-protected, temperature-controlled locations.

3.3.3 Transportation

According to EN 300-019-1-2 - Class 2.3, transportation of the OLT equipment must be in packed, public transportation with no rain on packing allowed.

3.3.4 Stationary use

According to EN 300-019-1-3 - Class 3.1/3.2/3.E, stationary use of OLT equipment must be in a temperature-controlled location, with no rain allowed, and with no condensation allowed.

3.3.5 Thermal limitations

When the OLT is installed in the CO or CEV, install air filters on the P-OLT. The thermal limitations for OLT operation in a CO or CEV are:

- operating temperature: 5°C to 40°C (41°F to 104°F)
- short-term temperature: -5°C to 50°C (23°F to 122°F)
- operating relative humidity: 5% to 85%
- short-term relative humidity: 5% to 95%, but not to exceed 0.024 kg of water/kg

3.3.6 Material content compliance

European Union (EU) Directive 2002/95/EC, "Restriction of the use of certain Hazardous Substances" (RoHS), restricts the use of lead, mercury, cadmium, hexavalent chromium, and certain flame retardants in electrical and electronic equipment. This Directive applies to electrical and electronic products placed on the EU market after 1 July 2006, with various exemptions, including an exemption for lead solder in network infrastructure equipment. Nokia products shipped to the EU after 1 July 2006 comply with the EU RoHS Directive.

Nokia has implemented a material/substance content management process. The process is described in: Nokia process for ensuring RoHS Compliance (1AA002660031ASZZA). This ensures compliance with the European Union Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS2). With the process equipment is assessed in accordance with the Harmonised Standard EN50581:2012 (CENELEC) on Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

3.3.7 End-of-life collection and treatment

Electronic products bearing or referencing the symbol shown in Figure 7, when put on the market within the European Union (EU), shall be collected and treated at the end of their useful life, in compliance with applicable EU and local legislation. They shall not be disposed of as part of unsorted municipal waste. Due to materials that may be contained in the product, such as heavy metals or batteries, the environment and human health may be negatively impacted as a result of inappropriate disposal.



Note — In the European Union, a solid bar under the symbol for a crossed-out wheeled bin indicates that the product was put on the market after 13 August 2005.

Figure 7 Recycling/take back/disposal of product symbol



At the end of their life, the OLT and ONT products are subject to the applicable local legislations that implement the European Directive 2012/19EU on waste electrical and electronic equipment (WEEE).

There can be different requirements for collection and treatment in different member states of the European Union.

In compliance with legal requirements and contractual agreements, where applicable, Nokia will offer to provide for the collection and treatment of Nokia products bearing the logo shown in Figure 7 at the end of their useful life, or products displaced by Nokia equipment offers. For information regarding take-back of equipment by Nokia, or for more information regarding the requirements for recycling/disposal of product, contact your Nokia account manager or Nokia take back support at sustainability.global@nokia.com.

4 ANSI ONT safety guidelines

This chapter provides information about the mandatory regulations that govern the installation and operation of the optical network terminals or units (ONTs or ONUs) in the North American or ANSI market.

4.1 Safety instructions

This section describes the safety instructions that are provided in the ONT customer documentation and on the equipment.

4.1.1 Safety instruction boxes in customer documentation

The safety instruction boxes are provided in the ONT customer documentation. Observe the instructions to meet safety requirements.

The following is an example of the Danger box.



Danger — Possibility of personal injury.

The Danger box indicates that the described activity or situation may pose a threat to personal safety. It calls attention to a situation or procedure which, if not correctly performed or adhered to, may result in death or serious physical harm.

Do not proceed beyond a Danger box until the indicated conditions are fully understood and met.

The following is an example of the Warning box.



Warning 1 — Possibility of equipment damage.

Warning 2 — Possibility of data loss.

The Warning box indicates that the described activity or situation may, or will, cause equipment damage, loss of data, or serious performance problems. It identifies a possible equipment-damaging situation or provides essential information to avoid the degradation of system operations or data.

Do not proceed beyond a warning until the indicated conditions are fully understood and met.

The following is an example of the Caution box.



Caution 2 — Service interruption.

Caution 1 — Possibility of service interruption.

The Caution box indicates that the described activity or situation may, or will, cause service interruption.

Do not proceed beyond a caution until the indicated conditions are fully understood and met.

The following is an example of the Note box.



Note — Information of special interest.

The Note box provides information that assists the personnel working with ONTs. It does not provide safety-related instructions.

4.1.2 Safety-related labels

The ONT equipment is labeled with specific safety compliance information and instructions that are related to a variant of the ONT. Observe the instructions on the safety labels.

Table 2 provides examples of the text in the various ONT safety labels.

Description	Label text
UL compliance	Communication service equipment US listed. Type 3R enclosure - Rainproof.
TUV compliance	Type 3R enclosure - Rainproof.
ESD warning	Caution: This assembly contains electrostatic sensitive device.
Laser classification	Class 1 laser product
Laser product compliance	This laser product conforms to all applicable standards of 21 CFR 1040.10 at date of manufacture.
FCC standards compliance	Tested to comply with FCC standards for home or office use.
CDRH compliance	Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007

Table 2Safety labels

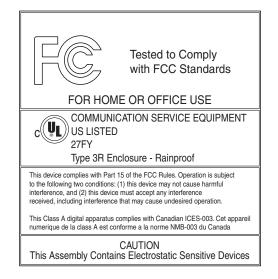
(1 of 2)

Description	Label text
Operation conditions	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.
Canadian standard compliance (modular ONT)	This Class A digital apparatus complies with Canadian ICES-003.
Canadian standard compliance (outdoor ONT)	This Class B digital apparatus complies with Canadian ICES-003.
CE marking	There are various CE symbols for CE compliance.

(2 of 2)

Figure 8 shows a sample safety label on the ONT equipment.

Figure 8 Sample safety label on the ONT equipment



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4.2 Safety standards compliance

This section describes the ONT compliance with North American safety standards.



Warning — Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

4.2.1 EMC, EMI, and ESD standards compliance

The ONT equipment complies with the following requirements:

- Federal Communications Commission (FCC) CFR 47, Part 15, Subpart B, Class A requirements for OLT equipment
- GR-1089-CORE requirements, including:
 - Section 3 Electromagnetic Interference, Emissions Radiated and Conducted
 - Section 3 Immunity, Radiated and Conducted
 - Section 2 ESD Discharge Immunity: System Level Electrostatic Discharge and EFT Immunity: Electrically Fast Transients

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 or more 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 needed.
- Consult the dealer or an experienced radio/TV technician for help.

4.2.2 Equipment safety standard compliance

The ONT equipment complies with the requirements of UL60950-1, Outdoor ONTs to "Communication Service Equipment" (CSE) and Indoor ONTs to Information Technology Equipment (ITE).

4.2.3 Environmental standards compliance

The ONT equipment complies with the following standards:

- GR-63-CORE (NEBS): requirements related to operating, storage, humidity, altitude, earthquake, office vibration, transportation and handling, fire resistance and spread, airborne contaminants, illumination, and acoustic noise
- GR-487-CORE: requirements related to rain, chemical, sand, and dust
- GR-487 R3-82: requirements related to condensation
- GR-3108: Requirements for Network Equipment in the Outside Plant (OSP)
- TP76200: Common Systems Equipment Interconnections Standards

4.2.4 Laser product standards compliance

The ONT equipment complies with 21 CFR 1040.10 and CFR 1040.11, except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007" or to 21 CFR 1040.10 U.S. Center for Devices and Radiological Health (CDRH) of the Food and Drug Administration (FDA) Laser Notice 42 for ONTs containing Class 1 Laser modules certified by original manufactures.

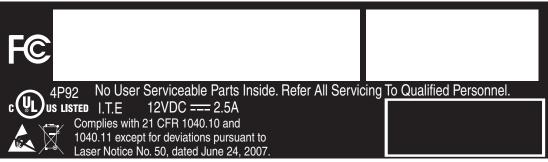
Per CDRH 21 CFR 10.40.10 (h) (1) (iv) distributors of Class 1 laser products, such as Nokia ONTs shall leave the following Laser Safety cautions with the end user.

a) "Class 1 Laser Product"

b) "Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure."

Figure 9 shows a laser product label.

Figure 9 Sample laser product label showing CDRH 21 CFR compliance



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4.2.5 Resistibility requirements compliance

The ONT equipment complies with the requirements of ITU Recommendation K.21 for resistibility of telecommunication equipment installed in customer premises to overvoltage and overcurrents.

4.3 Laser safety guidelines

Only qualified service personnel who are extremely familiar with laser radiation hazards should install or remove the fiber optic cables and units in this system.

Observe the following warnings when you perform installation, operations, and maintenance tasks on the ONT equipment.



Danger — There may be invisible laser radiation at the fiber optic cable when the cable is removed from the connector. Avoid direct exposure to beam.

Observe the following danger for a laser hazard. Eyes can be damaged when they are exposed to a laser beam. Take necessary precautions before you plug in the optical modules.



Danger — Possibility of equipment damage. Risk of eye damage by laser radiation.

Per CDRH 21 CFR 10.40.10 (h) (1) (iv) distributors of Class 1 laser products, such as Nokia ONTs shall leave the following Laser Safety cautions with the end user.

a) "Class 1 Laser Product"

b) "Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure."

4.3.1 Laser warning labels

The following figures show sample labels related to laser product, classification and warning.

Figure 10 shows a laser product label.

Figure 10



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Figure 11 shows a laser classification label. Laser classification labels may be provided in other languages.

Figure 11 Laser classification label

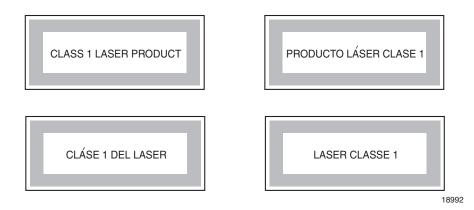


Figure 12 shows a laser warning label and an explanatory label for laser products. Explanatory labels may be provided in other languages. The explanatory label provides the following information:

- · a warning that calls attention to the invisible laser radiation
- an instruction against staring into the beam or viewing directly with optical instruments
- wavelength
- normal output power
- maximum output power



Figure 12 Laser warning labels

4.3.2 Laser classification

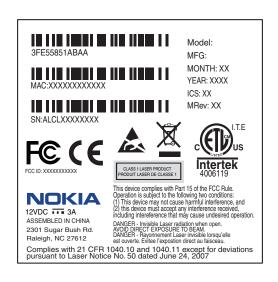
The ONT is classified as a Class 1 laser product based on its transmit optical output.

For Class 1 laser products, lasers are safe under reasonably foreseeable conditions of operation, including the use of optical instruments for intrabeam viewing.

Figure 13 shows a sample laser product safety label on the ONT equipment.

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Figure 13



Sample laser product safety label on the ONT equipment

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4.3.3 Transmit optical output

The maximum transmit optical output of an ONT is +5 dBm.

4.3.4 Normal laser operation

In normal operation, fiber cable laser radiation is always off until it receives signal from the line terminal card.

Operating personnel must observe the instructions on the laser explanatory label before plugging in the optical module.



Danger — Risk of eye damage by laser radiation.

4.3.5 Location class

Use cable supports and guides to protect the receptacles from strain.

4.4 Electrical safety guidelines

This section provides the electrical safety guidelines for the ONT equipment.



Note — The ONTs comply with the U.S. National Electrical Code. However, local electrical authorities have jurisdiction when there are differences between the local and U.S. standards.

4.4.1 Power supplies

The use of any non-Nokia approved power supplies or power adapters is not supported or endorsed by Nokia. Such use will void any warranty or support contract with Nokia. Such use greatly increases the danger of damage to equipment or property.

4.4.2 Cabling

The following are the guidelines regarding cables used for the ONT equipment:

- Use only cables approved by the relevant national electrical code.
- Use cables suitable for outdoor use for outdoor installation of ONTs.
- The ONTs have been evaluated for use with external POTS wiring without primary protection that may not exceed 140 ft (43 m) in reach. However, the power cable must not exceed 100 ft (31 m).

4.4.3 Protective earth

Earthing and bonding of the ONTs must comply with the requirements of NEC article 250 or local electrical codes.

4.5 ESD safety guidelines

The ONT equipment is sensitive to ESD. Operations personnel must observe the following ESD instructions when they handle the ONT equipment.



Caution — This equipment is ESD sensitive. Proper ESD protections should be used when entering the TELCO Access portion of the ONT.

During installation and maintenance, service personnel must wear wrist straps to prevent damage caused by ESD.

Nokia recommends that you prepare the site before you install the ONT equipment. In addition, you must control relative humidity, use static dissipating material for furniture or flooring, and restrict the use of air conditioning.

4.6 Environmental requirements

See the ONT technical specification documentation for temperature ranges for ONTs.

During operation in the supported temperature range, condensation inside the ONT caused by humidity is not an issue. To avoid condensation caused by rapid changes in temperature and humidity, Nokia recommends:

- The door of the ONT not be opened until temperature inside and outside the enclosure has stabilized.
- If the door of the ONT must be opened after a rapid change in temperature or humidity, use a dry cloth to wipe down the metal interior to prevent the risk of condensation.
- When high humidity is present, installation of a cover or tent over the ONT helps prevent condensation when the door is opened.

5 XS-240W-A and XS-250WX-A unit data sheet

- 5.1 XS-240W-A and XS-250WX-A part numbers and identification
- 5.2 XS-240W-A and XS-250WX-A general description
- 5.3 XS-240W-A and XS-250WX-A software and installation feature support
- 5.4 XS-240W-A and XS-250WX-A interfaces and interface capacity
- 5.5 XS-240W-A and XS-250WX-A LEDs
- 5.6 XS-240W-A and XS-250WX-A detailed specifications
- 5.7 XS-240W-A and XS-250WX-A GEM ports and T-CONTs
- 5.8 XS-240W-A and XS-250WX-A performance monitoring statistics
- 5.9 XS-240W-A and XS-250WX-A functional blocks
- 5.10 XS-240W-A and XS-250WX-A standards compliance
- 5.11 XS-240W-A and XS-250WX-A special considerations

5.1 XS-240W-A and XS-250WX-A part numbers and identification

Table 3 provides part numbers and identification information for the XS-240W-A indoor ONT.

Table 3Identification of XS-240W-A indoor ONTs

Ordering kit part number	Provisioning number	Description	CLEI	CPR	ECI/ Bar code
3FE 46631 AA ONT only North American Region (NAR)	3FE 46305 AC	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch. This ONT also has 2 USB 3.0 ports.	BVMF 410BRA	_	_

(1 of 2)

Ordering kit part number	Provisioning number	Description	CLEI	CPR	ECI/ Bar code
3FE 46631 AC ONT only Europe, the Middle East, and Africa region (EMEA)	3FE 46305 AC	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch. This ONT also has 2 USB 3.0 ports.	_	_	_
3FE 46626 AA (NAR)	3FE 46631 AA	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch. This ONT also has 2 USB 3.0 ports. Includes a 3-pin US power adapter. Also includes the power supply described in Table 5.	BVMF 410BRA	_	_
3FE 46626 BA (EMEA)	3FE 46631 AC	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch. This ONT also has 2 USB 3.0 ports. Includes a 3-pin EU (European) power adapter. Also includes the power supply described in Table 5.	_		_
3FE 46626 CA (EMEA)	3FE 46631 AC	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch. This ONT also has 2 USB 3.0 ports. Includes a 3-pin UK (British) power adapter. Also includes the power supply described in Table 5.	_	_	_

(2 of 2)

Table 4 provides part numbers and identification information for the XS-250WX-A indoor ONT.

Table 4 Identification of XS-250WX-A indoor ONTs

Ordering kit part number	Provisioning number	Description	CLEI	CPR	ECI/ Bar code
3FE 46307 AA ONT only North American Region (NAR)	3FE 46307 AA	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, 1 XGE UNI port, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch. This ONT also has 2 USB 3.0 ports.	BVFM 210BRA	—	_
3FE 46307 AC ONT only Europe, the Middle East, and Africa region (EMEA)	3FE 46307 AC	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, 1 XGE UNI port, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch. This ONT also has 2 USB 3.0 ports.	_		

(1 of 2)

Ordering kit part number	Provisioning number	Description	CLEI	CPR	ECI/ Bar code
3FE 46439 AA (NAR)	3FE 46307 AA	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, 1 XGE UNI port, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch.	BVFM 210BRA	_	-
		This ONT also has 2 USB 3.0 ports.			
		Includes a 3-pin US power adapter.			
		Also includes the power supply described in Table 5.			
3FE 46439 BA (EMEA)	3FE 46307 AC	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, 1 XGE UNI port, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch.	_	_	_
		This ONT also has 2 USB 3.0 ports.			
		Includes a 3-pin EU (European) power adapter.			
		Also includes the power supply described in Table 5.			
3FE 46439 CA (EMEA)	3FE 46307 AC	XGSPON HGU with 2 POTS ports, 4 10/100/1000 Base-T Ethernet interfaces, 1 XGE UNI port, and dual band 11n 3x3 and 11ac 4x4 WiFi radio with on/off switch.	_	_	-
		This ONT also has 2 USB 3.0 ports.			
		Includes a 3-pin UK (British) power adapter.			
		Also includes the power supply described in Table 5.			

(2 of 2)

Table 5 provides power supply ordering information about the XS-240W-A and XS-250WX-A ONT. For more information on power supplies, see the 7368 ISAM ONT Power Supply and UPS Guide.

Table 5 XS-240W-A and XS-250WX-A power supply

Power/UPS model	Power UPS and cabling part number information	Customer category or country compliance tested for ⁽¹⁾	Notes
Delta power adapter, ADP-66CR BC (AC power cable not included)	 Part number: 1AF29813 AA AC cable variants: 1AB076760010 (UK, Ireland, Middle East) 1AB076760071 (Europe) 1AB076760009 (Australia, New Zealand, and China) 1AB076760072 (UK, South Africa, and Middle East) 1AB076760073 (ANSI) 	ANSI municipality United States, Canada Common European Union countries	AC/DC 12V, 66W, 5.5A power, Molex DC connector

Note

⁽¹⁾ The list of detailed tests (for example, GR-1089i3 (ESD, EFT, RDE, CDE, RDI, and CDI), GR-1089i4 (LightningAC) and marks (for example, FCC Class B, UL, CE Mark Class B, and K.21) are available from your Nokia technical support representative.

Table 6 provides a summary of the similarities and differences between the XS-240W-A and the XS-250WX-A ONTs and their variants.

Feature	XS-240W-A	XS-250WX-A	
PON uplink	XGSPON	XGSPON	
10G UNI port	UNI port N/A 1 x 10G UNI port		
Optics	Integrated XGSPON optics on board	Integrated XGSPON optics on board	
LEDs	All LEDs	No 10G LED	
ANSI (NAR) variant	ETL/FCC w/o DFS / WiFi Alliance	ETL/FCC w/o DFS / WiFi Alliance	
ETSI (EMEA) variant	EC/WiFi Alliance	EC/WiFi Alliance	

Table 6XS-240W-A and XS-250WX-A comparison

5.2 XS-240W-A and XS-250WX-A general description

XS-240W-A and XS-250WX-A ONTs are designed to cater to business and residential customer requirements. These ONTs offer data and video services to the subscriber.

XS-240W-A and XS-250WX-A indoor ONTs provide the subscriber interface for the network by terminating the PON interface and converting it to user interfaces that directly connect to subscriber devices. The ONT is compatible with all existing subscriber equipment, including analog phones with both tone and rotary dial capabilities, cordless phones, modems, fax machines, and caller ID boxes (Type I, Type II, and Type III).

XS-240W-A and XS-250WX-A ONTs feature an XGSPON link. The XS-250WX-A also provides one 10GE UNI port. Both ONTs provide two POTS ports and four Ethernet interfaces.

The ONTs also feature a UPS power supply connection, on/off and reset buttons, and two USB 3.0 ports.

On/off buttons are included for LEDs, WLAN, WPS 2.4G, and WPS 5G.

Figures 14, 15, and 16 show the back and sides of the ONT.

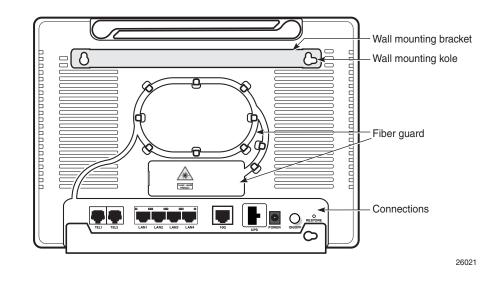
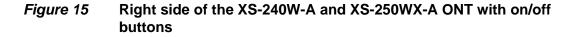
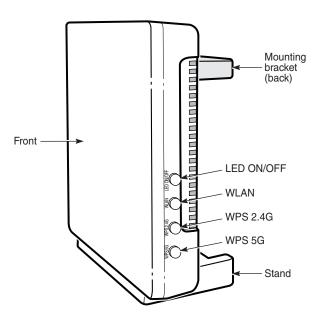


Figure 14 Back of the XS-240W-A and XS-250WX-A ONT with connections





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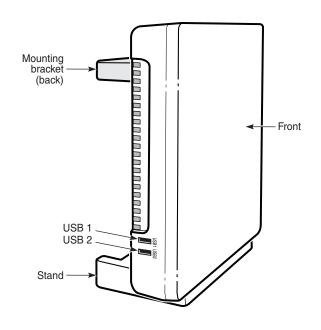


Figure 16 Left side of the XS-240W-A and XS-250WX-A ONT with USB connections

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XS-240W-A and XS-250WX-A indoor ONTs provide the following functions:

- integrated XGSPON optics on board
- one 10G UNI port on the XS-250WX-A model
- 10 Gbps interface supports 100M/1G/2.5G/5G/10Gbps auto negotiation
- network demarcation for all services
- mux and demux functions to the PON
- optical to electrical conversion
- Ethernet-based Point-to-Point (PPPoE)
- Bridged mode or routed mode per LAN port
- Optics that support received signal strength indication (RSSI)
- DHCP client/server
- WLAN on/off push button
- WPS on wireless authorization support
- WPS buttons (for 2.4G and 5G)
- 2.4GHz/5GHz dual band concurrency, both with configurable Wi-Fi tx power from 100mw, in 100mw increments.
- Concurrent 802.11n 3x3 MIMO in 2.4GHz and 802.11ac 4x4 MIMO in 5GHz
- FEC (Forward Error Correction) in both upstream and downstream connections
- FCS (Frame Check Sequence) error counter
- Network Address Translation (NAT)
- UPnP IGD2.0 support

- ALG and UPnP port forwarding
- DMZ
- IP/MAC filter
- Multi-level firewall
- DNS server
- SIP and H.248 voice support
- OMCI, TR-069, and Web GUI management support
- G988 standards compliance for ONT management and provisioning
- standards-based CMAC (OMCI/PLOAM)
- support for multiple SSIDs (private and public instances); contact your Nokia representative for further details.
- External USB HD (Hard Drive) support, accessible to all LAN devices

5.3 XS-240W-A and XS-250WX-A software and installation feature support

For information on installing or replacing the XS-240W-A and XS-250WX-A see:

- Install an XS-240W-A or XS-250WX-A indoor ONT
- Replace an XS-240W-A or XS-250WX-A indoor ONT

For information on the following topics, see the 7368 ISAM ONT Product Overview *Guide*:

- ONT and MDU general descriptions of features and functions
- Ethernet interface specifications
- POTS interface specifications
- RSSI specifications
- Wi-Fi specifications
- ONT optical budget
- SLID entry via Ethernet port
- ONT management using an ONT interface

5.4 XS-240W-A and XS-250WX-A interfaces and interface capacity

Table 7 describes the supported interfaces and interface capacity for XS-240W-A and XS-250WX-A indoor ONTs.

Table 7XS-240W-A and XS-250WX-A indoor ONT interface connection
capacity

ONT type and Maximum capacity						
model	POTS	10/ 100/ 1000 BASE-T	RF video (CATV)	МоСА	10G UNI port	GPON SC/APC
XS-240W-A ⁽¹⁾	2	4	_	_		1
XS-250WX-A (1)	2	4	_	—	1	1

Note

⁽¹⁾ The XS-240W-A and XS-250WX-A ONTs provide Wi-Fi service that is enabled and disabled using a Wi-Fi on/off switch.

5.4.1 XS-240W-A and XS-250WX-A connections and components

Figure 17 shows the physical connections for XS-240W-A and XS-250WX-A indoor ONTs,

Figure 17 XS-240W-A and XS-250WX-A indoor ONT physical connections

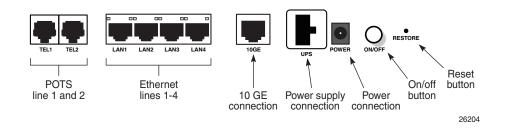


Table 8 describes the physical connections for XS-240W-A and XS-250WX-A indoor ONTs.

Table 8XS-240W-A and XS-250WX-A indoor ONT physical connections

Connection ⁽¹⁾	Description
POTS ports	This connection is provided through RJ-11 ports. Up to two POTS connections are supported. The POTS ports support voice services.
Ethernet ports	This connection is provided through Ethernet RJ-45 connectors. Up to four 10/100/1000 Base-T Ethernet interfaces are supported. The Ethernet ports can support both data and in-band video services on all four interfaces.
10GE port (XS-250WX-A only)	The 10GE link is provided through a UPC optical connector. One 10GE connection is supported.

(1 of 2)

Connection (1)	Description
UPS power supply	This connection supports the UPS power adapter described in Table 5.
Power input	This connection is provided through the power connector. A power cable fitted with a barrel connector is used to make the connection.
On/Off button	This button turns the ONT on or off.
Reset button	Pressing the Reset button for less than 10 seconds reboots the ONT; pressing the Reset button for 10 seconds resets the ONT to the factory defaults, except for the LOID and SLID.
LED button	This button turns the LEDs on or off.
WLAN button	Wi-Fi service is compliant with IEEE 802.11 standards and is enabled and disabled using the WLAN button.
WPS buttons	The Wi-Fi Protected Setup buttons are labeled WPS2.4G and WPS5G. These buttons enable and disable WLAN data encryption.
USB ports	This connection is provided through 2 USB 3.0 ports. The ONT supports external USB hard drives that can be made accessible to all LAN devices.
	The following rates apply to the USB 3.0 ports:
	Rate current: 900mA
	Maximum continuous current: 1.5A
	 Typical short-circuit current: 2.3A

(2 of 2)

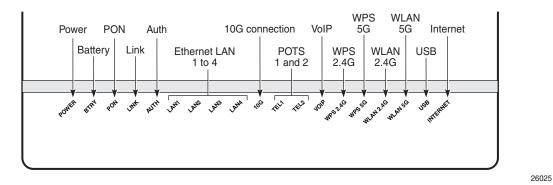
Note

⁽¹⁾ The primary path for the earth ground for these ONTs is provided by the 12V Return signal in the power connector.

5.5 XS-240W-A and XS-250WX-A LEDs

Figure 18 shows the XS-240W-A and XS-250WX-A indoor ONT LEDs.

Figure 18 XS-240W-A and XS-250WX-A indoor ONT LEDs





Note — The XS-240W-A model does not feature a 10G UNI port and therefore does not have a 10G connection LED.

Table 9 provides LED descriptions for XS-240W-A and XS-250WX-A indoor ONTs.

Table 9 XS-240W-A and XS-250WX-A indoor ONT LEDs

Indicator	LED color and behavior	LED behavior description
Power	Green solid	Power on
	Off	Power off
BTRY	Green solid	Device is operating on AC power
	Red	Device is operating on battery power
	Off	Battery alarm
PON	Green solid	GPON link between ONT and OLT is operating normally
	Green flashing	Device is attempting to link
	Off	GPON link is down or no link connected
Link	Green solid	Link between the device and the OLT is operating normally
	Off	Link is down or not connected
Auth	Green solid	ONT is authorized
	Green flashing	ONT is process of ranging or synchronizing on OMCI
	Off	ONT is not authorized
LAN 1 to 4	Green solid	Ethernet is linked
	Green flashing	LAN activity is present (in either direction)
	Off	ONT power is off or Ethernet is not connected
10G	Green solid	10G link is operating normally
(XS-250WX-A	Green flashing	10G link activity is present (in either direction)
only)	Off	10G link is not connected

(1 of 2)

Indicator	LED color and behavior	LED behavior description
TEL 1 to 2	Green solid	Phone is off hook
	Green flashing	Phone is in 'call in' or 'talking' condition
	Off	Phone is on hook
VOIP	Green solid	VOIP service is built up and can provide service
	Off	VOIP service is not built up or out of service
WPS	Green solid	WiFi protected setup link is up (negotiation and auto-configuration successful)
2.4G and 5G	Green flashing	WiFi protected setup link activity (negotiation and auto-configuration ongoing)
	Off	WiFi protected setup link down or no link connected (negotiation has not started or has failed)
WLAN 2.4G	Green solid	WLAN link is enabled
	Green flashing	Traffic is passing via WLAN link
	Off	WLAN link is disabled
WLAN 5G	Green solid	WLAN link is enabled
	Green flashing	Traffic is passing via WLAN link
	Off	WLAN link is disabled
USB	Green solid	At least one USB device is connected
	Green flashing	There is traffic activity on at least on USB device
	Off	No USB device is connected
INTERNET	Green solid	HSI WAN is connected: a) the device has an IP address assigned from IPCP, DHCP, or static, and no traffic has been detected; b) the session is dropped due to idle timeout but the PON link is still present.
	Green flashing	PPPoE or DHCP connection in progress
	Off	HSI WAN is not connected: a) there is no physical interface connection; b) the device is in bridged mode without an assigned IP address; c) the session has been dropped for reasons other than idle timeout.

(2 of 2)

5.6 XS-240W-A and XS-250WX-A detailed specifications

Table 10 lists the physical specifications for XS-240W-A and XS-250WX-A indoor ONTs.

Table 10 XS-240W-A and XS-250WX-A indoor ONT physical specifications

Description	Specification
Length	11.4 in. (290 mm)
Width	8.4 in. (213 mm)
Height	3.8 in. (96 mm)
Weight [within \pm 0.5 lb (0.23 kg)]	3.25 lb (1.48 kg)

Table 11 lists the power consumption specifications for XS-240W-A and XS-250WX-A indoor ONT.

Table 11XS-240W-A and XS-250WX-A indoor ONT power consumptionspecifications

Mnemonic	Maximum power (Not to exceed)	Condition	Minimum power	Condition
XS-240W-A and XS-250WX-A	46 W	2 POTS off-hook, 4 10/100/1000 Base-T Ethernet, Wi-Fi operational	12 W	2 POTS on-hook, other interfaces/services not provisioned

Table 12 lists the environmental specifications for XS-240W-A and XS-250WX-A indoor ONT.

Table 12 XS-240W-A and XS-250WX-A indoor ONT environmental specifications

Mounting method	Temperature range and humidity	Altitude
On desk or wall mounted	Operating: 23°F to 104°F (-5°C to 40°C) ambient temperature	Contact your Nokia technical support representative for more information
	5% to 85% relative humidity, non-condensing	

5.7 XS-240W-A and XS-250WX-A GEM ports and T-CONTs

Table 13 lists the maximum number of supported T-CONTs and GEM ports.

Table 13XS-240W-A and XS-250WX-A indoor ONT capacity for GEM portsand T-CONTs

XS-240W-A and XS-250WX-A ONT	Maximum	Notes
GEM ports per indoor or outdoor ONT	124	124 are present; 122 are available, and 2 are reserved for multicast and debugging
T-CONTs per indoor or outdoor ONT	32	32 are present; 31 are available, and 1 is reserved for OMCI

5.8 XS-240W-A and XS-250WX-A performance monitoring statistics

The following section identifies the supported performance monitoring statistics for XS-240W-A and XS-250WX-A ONTs. A check mark indicates the statistic is supported on that ONT. An empty cell indicates the statistic is not supported. The following tables are categorized by supported alarm types:

- Table 14 provides statistics for ONTENET type counters
- Table 15 provides statistics for PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCCES, PONONTTCFLOW, and PONONTTCVOIP type counters
- Table 16 provides statistics for PONONTTC aggregate type counters



Note — If you have trouble accessing XS-240W-A and XS-250WX-A ONTs performance monitoring statistics using TL1, please contact your Nokia support representative for more information about how to access and retrieve performance monitoring type counters.

Table 14 Packa	ge P ONTs ONTENE	F performance monitorir	ng statistics
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ONT	ONT	DNTENET statistics												
	FCSE	EC	ГС	RBO	SCF	MCF	DT	IMTE	CSE	AE	IMRE	FTL	тво	SQE
XS-240W-A and XS-250WX-A ⁽¹⁾	1	1	1	1	1	1	1	1	1	1	1	1	>	1

Note

⁽¹⁾ A 5 second polling window limitation exists on the ONT, therefore the margin of error for each 15-min window is 5 seconds

Table 15Package P ONTs PONONTTC, PONONTMCTC, PONONTTCHSI,
PONONTTCCES, PONONTTCFLOW, PONONTTCVOIP perfor-
mance monitoring statistics

ONT			ITMCTC, PC		SI, PONONTTCCES, ics			
	TXBLOCKS	TXFRAGS	RXBLOCKS	RXFRAGS	LOSTFRAGS	BADGEMHDRS		
XS-240W-A and XS-250WX-A ⁽¹⁾	1	1	1	1	1			

Note

⁽¹⁾ A 5 second polling window limitation exists on the ONT, therefore the margin of error for each 15-min window is 5 seconds

Table 16Package P ONTs PONONTTC aggregate performance monitor-
ing statistics

ONT	T PONONTTC (aggregate) statistics					
	TXBLOCKS	TXFRAGS	RXBLOCKS	RXFRAGS	LOSTFRAGS	BADGEMHDRS
XS-240W-A and XS-250WX-A ⁽¹⁾	1	1	1	1	1	

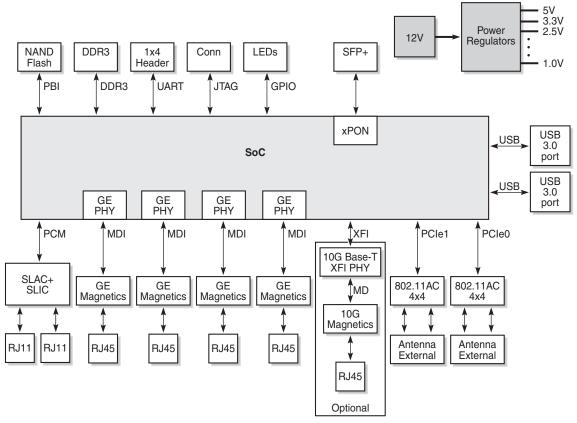
Note

⁽¹⁾ A 5 second polling window limitation exists on the ONT, therefore the margin of error for each 15-min window is 5 seconds

5.9 XS-240W-A and XS-250WX-A functional blocks

XS-240W-A and XS-250WX-A indoor ONTs are single-residence ONTs that support Wireless (Wi-Fi) service. Wi-Fi service on these ONTs is compliant with the IEEE 802.11 standard and enabled or disabled using a WLAN button. In addition to the Wi-Fi service, these ONTs transmit Ethernet packets to four RJ-45 Ethernet ports and voice traffic to two RJ-11 POTS ports. These ONTs also feature XGPON1 fiber optic, USB, and power connectors. Figure 19 shows the functional blocks for XS-240W-A and XS-250WX-A indoor ONT.





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ONT SoC technology serves as the main hardware block for these ONTs; see Figure 20.

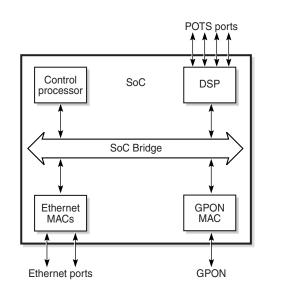


Figure 20 XS-240W-A and XS-250WX-A ONT hardware block

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ONT SoC technology consists of five key elements:

• GPON MAC

The Gigabit Passive Optical Network Media Access Control (GPON MAC) element on the SoC terminates the GPON interface using an optical diplexer. This interface supports GPON as described in G.984.3 (GPON TC Layer) ITU specification.

Ethernet MAC

The SoC provides up to four GE MACs.

DSP interface

The Digital Signal Processor (DSP) provides voice processing for 2 POTS lines with 3-way calling. The DSP has a dedicated 64 kbyte instruction cache and shares a 32 kbyte data cache with the Control Processor. It provides up to 4 network processor cores, each at 800MHz.

Control Processor

The Control Processor features an integral memory management unit that supports a dedicated 64 kbyte instruction cache and shares a single 32 kbyte data cache with the DSP. The Control Processor and DSP also include a single channel Data Management Application (DMA) controller with a 4 kbyte read ahead low-latency Dynamic Random Access Memory (DRAM) access port.

Switch matrix

The Switch matrix provides an integrated data channel between the four GE MACs, the GPON MAC, the DSP, the control processor, and the other integrated elements such as flash memory, DRAM, and the local bus controller.

These ONTs can also interact with additional hardware components to support functionality not provided by the SoC technology.

5.10 XS-240W-A and XS-250WX-A standards compliance

XS-240W-A and XS-250WX-A indoor ONTs are compliant with the following standards:

- 802.1p marking and VLAN based pbit is supported
- AINSI/FCC/UL
- China/CCC (hardware only)
- EN 300-328 v1.9.1 wide band data transmission standards for 2.4GHz bands
- ETSI/CE/CB
- G.711 support for FAX and modem connection
- G.984 support GPON interface (framing)
- G.984.2 support for Amd1, class B+
- G.984.3 support for activation and password functions
- G.984.3 support for AES with operator enable/disable on per port-ID level
- G.984.3 support for FEC in both upstream and downstream directions
- G.984.3 support for multicast using a single GEM Port-ID for all video traffic
- G984.4 and G.983.2 support for ONT management and provisioning
- G987.x support for XGPON TC layer
- IEEE 801.11 ac/n (Wi-Fi)

5.10.1 Responsible party

Table 17 lists the party in the US responsible for this ONT.

Table 17Responsible party contact information

Legal Company name	Nokia USA Inc.
Address	2301 SUGAR BUSH RD. STE 300, RALEIGH,NC 27612
Phone, Fax	+1 919 850 6127

5.10.2 Energy-related products standby and off modes compliance

Hereby, Nokia declares that the XS-240W-A and XS-250WX-A ONTs are in compliance with the essential requirements and other relevant provisions of Directive 2009/125/EC together with Commission Regulation (EC) No 1275/2008 and Commission Regulation (EC) No 801/2013.

The XS-240W-A and XS-250WX-A ONTS qualify as equipment with high network availability (HiNA) functionality. Since the main purpose of XS-240W-A and XS-250WX-A ONTs is to provide network functionality with HiNA 7 days /24 hours, the modes Off/Standby, Power Management, and Networked Standby are inappropriate.

For information about the type and number of network ports, see "XS-240W-A and XS-250WX-A interfaces and interface capacity" in this chapter.

For information about power consumption, see "XS-240W-A and XS-250WX-A detailed specifications" in this chapter.

5.10.3 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 or more 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.

5.10.4 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 provided with antenna installation instructions and consider removing the no-collocation statement.

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.



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

5.11 XS-240W-A and XS-250WX-A special considerations

XS-240W-A and XS-250WX-A are package P ONTs.

5.11.1 Wi-Fi service

XS-240W-A and XS-250WX-A indoor ONTs feature Wi-Fi service as well as voice and data services. Wi-Fi is a wireless networking technology that uses radio waves to provide wireless HSI and network connections. This ONT complies with the IEEE 802.11 standards, which the Wi-Fi Alliance defines as the basis for Wi-Fi technology.

5.11.1.1 Wi-Fi physical features

XS-240W-A and XS-250WX-A indoor ONTs have the following physical features that assist in providing Wi-Fi service:

- WLAN button for enabling and disabling Wi-Fi service
- 7 internal antennae: 3 for 2.4G and 4 for 5G
- two Wi-Fi Protected Setup (WPS) push buttons (one each for 2.4G and 5G) for adding WPS-enabled wireless devices

5.11.1.2 Wi-Fi standards and certifications

The Wi-Fi service on XS-240W-A and XS-250WX-A indoor ONTs supports the following IEEE standards and Wi-Fi Alliance certifications:

- certified for IEEE 802.11ac/b/g/n standards
- WPA support including WPA-PSK
- certified for WPA2-Personal and WPA2-Enterprise

5.11.1.3 Wi-Fi GUI features

XS-240W-A and XS-250WX-A indoor ONTs have HTML-based Wi-Fi configuration GUIs.

5.11.2 XS-240W-A and XS-250WX-A ONT considerations and limitations

Table 18 lists the considerations and limitations for Package P XS-240W-A and XS-250WX-A ONTs.

Table 18XS-240W-A and XS-250WX-A ONT considerations and limita-
tions

Considerations and limitations
Some voice features are configurable on a per ONT basis, including Call Waiting, Call Hold, 3-Way Calling, a Call Transfer.
The following voice features / GSIP parameters are configurable on a per-Client/ per-ONT basis (not per-Subscriber):
Enable Caller ID and Enable Caller Name ID
 Digitmap and the associated Interdigit and Critical timers and Enter key parameters
 Warmline timer is enabled per subscriber, but the warmline timer value is configured per ONT and must have a lower value than the Permanent time
• Miscellaneous timers: Permanent, Timed-release, Reanswer, Error-tone, and CW-alert timers
 Features / functions: Message waiting mode, WMWI refresh interval, DTMF volume level
 Service Codes for the following features: CCW, Call Hold and Warmline

restrictions), and policy-based forwarding (in IP routing and QoS configuration).

6 Install an XS-240W-A or XS-250WX-A indoor ONT

- 6.1 Purpose
- 6.2 General
- 6.3 Prerequisites
- 6.4 Recommended tools
- 6.5 Safety information
- 6.6 Procedure

6.1 Purpose

This chapter provides the steps to install an XS-240W-A or XS-250WX-A indoor ONT.

6.2 General

The steps listed in this chapter describe mounting and cabling for XS-240W-A or XS-250WX-A indoor ONTs.

6.3 Prerequisites

You need the following items before beginning the installation:

• all required cables

6.4 Recommended tools

You need the following tools for the installation:

- #2 Phillips screwdriver
- 1/4 in. (6 mm) flat blade screwdriver
- wire strippers
- fiber optic splicing tools

- RJ-45 cable plug crimp tool
- voltmeter or multimeter
- optical power meter
- drill and drill bits
- paper clip

6.5 Safety information

Read the following safety information before installing the unit.



Danger 1 — Hazardous electrical voltages and currents can cause serious physical harm or death. Always use insulated tools and follow proper safety precautions when connecting or disconnecting power circuits.

Danger 2 — Make sure all sources of power are turned off and have no live voltages present on feed lines or terminals. Use a voltmeter to measure for voltage before proceeding.

Danger 3 — Always contact the local utility company before connecting the enclosure to the utilities.



Warning — This equipment is ESD sensitive. Proper ESD protections should be used when removing the fiber access cover of the indoor ONT.



Caution — Keep indoor ONTs out of direct sunlight. Prolonged exposure to direct sunlight can damage the unit.



Note 1 — Observe the local and national laws and regulations that may be applicable to this installation.

Note 2 — Observe the following:

- The indoor ONT should be installed in accordance with the applicable requirements of the NEC or CEC. Local authorities and practices take precedent when there is conflict between the local standard and the NEC or CEC.
- The indoor ONT must be installed by qualified service personnel.
- Indoor ONTs must be installed with cables that are suitably rated and listed for indoor use.
- See the detailed specifications in the XS-240W-A and XS-250WX-A unit data sheet for the temperature ranges for these ONTs.

6.6 Procedure

Use this procedure to install an XS-240W-A or XS-250WX-A indoor ONT.

- 1 Place the indoor ONT unit:
 - **a** On the flat surface, such as a desk; go to step 3.



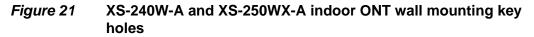
Note — The XS-240W-A or XS-250WX-A cannot be stacked with another ONT or with other equipment. The ONT mounting requirements are:

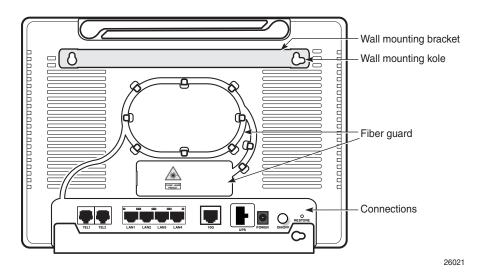
- allow a minimum 100 mm clearance above the top cover
- allow a minimum 50 mm clearance from the side vents
- do not place any heat source directly above the top cover or below the bottom cover
- **b** On a wall, go to step 2.

2 Mount the XS-240W-A or XS-250WX-A indoor ONT on a wall.

The XS-240W-A or XS-250WX-A indoor ONT must be mounted in a horizontal position, as indicated by the wall mounting key holes in Figure 21. If possible, mount the ONT on a wall stud.

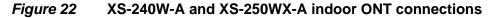
i Attach the wall mount adapter bracket (shipped wit h the ONT) to the two wall mounting keyholes on the ONT.

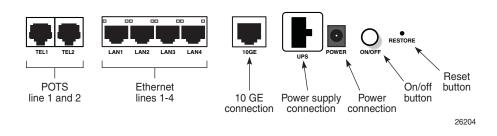




ii Attach the ONT to the wall.

3 Review the connection locations as shown in Figures 22.





Note that the 10 GE UNI port is only featured on the XS-250WX-A.

4 Connect the Ethernet cables to the RJ-45 ports; see Figure 22 for the location of the RJ-45 ports.

5 Route the POTS cables directly to the RJ-11 ports as per local practices.

The POTS port to the left is labeled TEL1 for Line 1 while the port on the right is labeled TEL2 for Line 2, as shown in Figure 22.

6 Connect the fiber optic cable with UPC adapter into the 10GE connector; see Figure 22 for the location of the 10GE connector.



Danger — Fiber cables transmit invisible laser light. To avoid eye damage or blindness, never look directly into fibers, connectors, or adapters.



Warning — Be careful to maintain a bend radius of no less than 1.5 in. (3.8 cm) when connecting the fiber optic cable. Too small of a bend radius in the cable can result in damage to the optic fiber.



Note — Fiber cable preparation varies depending on the type and size of the inside or outside plant fiber cable being spliced to the SC/APC fiber optic pigtail cable.

7 Install the power supply according to manufacturer specifications.

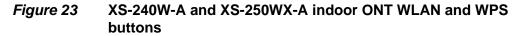


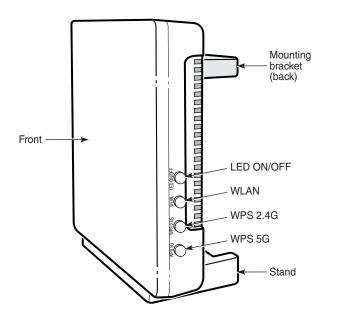
Note — Observe the following:

- Units must be powered by a Listed or CE approved and marked limited power source power supply with a minimum output rate of 12VDC, 3A.
- 8 Connect the power cable to the power connector.

9 Power up the ONT unit by using the power switch.

- 10 If used, enable the Wi-Fi service.
 - i Locate the WLAN button on the ONT; see Figure 23 for location of the WLAN button.





- ii Press the WLAN button to change the status of the Wi-Fi service.
- 11 If used, enable the WPS service.
 - i Locate the WPS buttons on the ONT; see Figure 23 for location of the WPS buttons for 2.4G and 5G Wi-Fi.
 - ii Press the WPS buttons to change the status of the Wi-Fi Protected Service.
- **12** Verify the ONT LEDs, voltage status, and optical signal levels; see the 7368 Hardware and Cabling Installation Guide.
- 13 Activate and test the services; see the 7368 Hardware and Cabling Installation Guide.
- **14** If used, configure the SLID; see the 7368 *ISAM ONT Configuration, Management, and Troubleshooting Guide.*

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- **15** If necessary, reset the ONT.
 - i Locate the Reset button on a XS-240W-A or XS-250WX-A indoor ONT as shown in Figure 22.
 - **ii** Insert the end of a straightened paper clip or other narrow object into the hole in the Reset button to reset the ONT.
- **16** STOP. This procedure is complete.

7 Replace an XS-240W-A or XS-250WX-A indoor ONT

- 7.1 Purpose
- 7.2 General
- 7.3 Prerequisites
- 7.4 Recommended tools
- 7.5 Safety information
- 7.6 Procedure

7.1 Purpose

This chapter provides the steps to replace XS-240W-A or XS-250WX-A indoor ONTs.

7.2 General

The steps listed in this chapter describe mounting and cabling for XS-240W-A or XS-250WX-A indoor ONTs.

7.3 Prerequisites

You need the following items before beginning the installation:

• all required cables

7.4 Recommended tools

You need the following tools for replacing the ONT:

- #2 Phillips screwdriver
- 1/4 in. (6 mm) flat blade screwdriver
- wire strippers
- fiber optic splicing tools

- RJ-45 cable plug crimp tool
- voltmeter or multimeter
- optical power meter
- drill and drill bits

7.5 Safety information

Read the following safety information before replacing the unit.



Danger 1 — Hazardous electrical voltages and currents can cause serious physical harm or death. Always use insulated tools and follow proper safety precautions when connecting or disconnecting power circuits.

Danger 2 — Make sure all sources of power are turned off and have no live voltages present on feed lines or terminals. Use a voltmeter to measure for voltage before proceeding.

Danger 3 — Always contact the local utility company before connecting the enclosure to the utilities.



Warning — This equipment is ESD sensitive. Proper ESD protections should be used when removing the fiber access cover of the indoor ONT.



Caution — Keep indoor ONTs out of direct sunlight. Prolonged exposure to direct sunlight can damage the unit.



Note 1 — Observe the local and national laws and regulations that may be applicable to this installation.

Note 2 — Observe the following:

- The indoor ONT should be installed in accordance with the applicable requirements of the NEC or CEC. Local authorities and practices take precedent when there is conflict between the local standard and the NEC or CEC.
- The indoor ONT must be installed by qualified service personnel.
- Indoor ONTs must be installed with cables that are suitably rated and listed for indoor use.
- See the detailed specifications in the XS-240W-A and XS-250WX-A unit data sheet for the ONT temperature ranges for these ONTs.

7.6 Procedure

Use this procedure to replace an XS-240W-A or XS-250WX-A indoor ONT.

1 Deactivate the ONT services at the P-OLT.

If you are using the SLID feature, this step is not required. The ONT and the services can remain in service (IS).

i Use the RTRV-ONT command to verify the ONT status and th associated services. Record the serial number or the SLID of the ONT displayed in the command output.

Example:

RTRV-ONT::ONT-1-1-1-1;

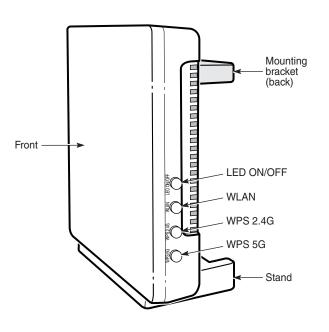
ii If the ONT is in service, place the ONT in OOS state.

Example:

ED-ONT::ONT-1-1-1-1;

2 If used, disable the Wi-Fi service by pressing the WLAN button; see Figure 24 for the location of the WLAN button.

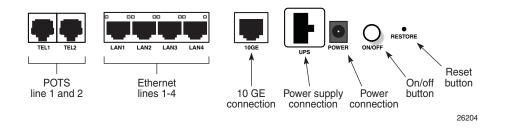
Figure 24 XS-240W-A and XS-250WX-A indoor ONT WLAN and WPS buttons



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3 Power down the unit by using the on/off power switch; see Figure 25 for the on/off switch.

Figure 25 XS-240W-A and XS-250WX-A indoor ONT connections



Note that the 10 GE UNI port is only featured on the XS-250WX-A.

- 4 Disconnect the POTS, Ethernet, and power cables from the ONT; see Figure 25 for the connector locations on the XS-240W-A and XS-250WX-A indoor ONT.
- 5 Unplug the fiber optic cable with UPC connector from the ONT; see Figure 25 for the location of the fiber optic port.



Danger — Fiber cables transmit invisible laser light. To avoid eye damage or blindness, never look directly into fibers, connectors, or adapters.

- 6 Replace the ONT with a new unit:
 - **a** On a flat surface, such as a desk, substitute the new ONT for the old ONT on a flat surface, horizontally resting it in its stand.
 - **b** On a wall.
 - i Remove the old ONT from the wall.
 - ii Attach the wall mount adapter bracket (shipped with the ONT) to the two wall mounting key holes on the new ONT.
 - iii Attach the new ONT to the wall.
- 7 Connect the Ethernet cables directly to the RJ-45 ports; see Figure 25 for the location of the RJ-45 ports.
- 8 Connect the POTS cables directly to the RJ-11 ports as per local practices; see Figure 25 for the location of the RJ-11 ports.

The RJ-11 port to the left is labeled TEL1 for Line 1 while the port on the right is labeled TEL2 for Line 2.

9 If required, have approved service personnel who are trained to work with optic fiber clean the fiber optic connection. See the *7368 ISAM ONT Configuration, Management, and Troubleshooting Guide* for more information about fiber optic handling, inspection, and cleaning.



Danger — Fiber optic cables transmit invisible laser light. To avoid eye damage or blindness, never look directly into fibers, connectors, or adapters.

10 Connect the fiber optic cable with UPC adapter into the UPC connector. Figure 25 shows the location of the UPC connector.



Danger — Fiber cables transmit invisible laser light. To avoid eye damage or blindness, never look directly into fibers, connectors, or adapters.



Warning — Be careful to maintain a bend radius of no less than 1.5 in. (3.8 cm) when connecting the fiber optic cable. Too small of a bend radius in the cable can result in damage to the optic fiber.



Note — Fiber cable preparation varies depending on the type and size of the inside or outside plant fiber cable being spliced to the SC/APC fiber optic pigtail cable.

11 Install the power supply according to manufacturer specifications.



Note — Observe the following:

- Units must be powered by a Listed or CE approved and marked limited power source power supply with a minimum output rate of 12VDC, 3A.
- **12** Connect the power cable to the power connector.
- **13** Power up the unit by using the power on/off switch.
- 14 If used, enable the Wi-Fi service by pressing the WLAN button; see Figure 24 for the location of the WLAN button.

- **15** If used, enable the WPS service.
 - i Locate the WPS buttons on the ONT; see Figure 24 for location of the WPS buttons for 2.4G and 5G Wi-Fi.
 - ii Press the WPS buttons to change the status of the Wi-Fi Protected Service.
- **16** If used, configure the SLID; see the 7368 ISAM ONT Configuration, Management, and *Troubleshooting Guide* for more information.



Note — A new SLID or the old SLID may be used with the replacement ONT. If a new SLID is used, the new SLID must also be programmed at the P-OLT using TL1 or a network manager. If the old SLID is used, no changes need to be made at the P-OLT; see the operations and maintenance documentation for the OLT for more details.

- 17 Verify the ONT LEDs, voltage status, and optical signal levels; see the 7368 Hardware and Cabling Installation Guide.
- 18 Activate and test the services; see the 7368 Hardware and Cabling Installation Guide.
- **19** If necessary, reset the ONT.
 - i Locate the Reset button on a XS-240W-A or XS-250WX-A indoor ONT as shown in Figure 25.
 - **ii** Insert the end of a straightened paper clip or other narrow object into the hole in the Reset button to reset the ONT.
- **20** STOP. This procedure is complete.

8 Configure an XS-240W-A or XS-250WX-A indoor ONT

8.1 General

8.2 HGU mode GUI configuration

8.1 General

Please refer to the configuration information provided with your OLT for the software configuration procedure for an XS-240W-A or XS-250WX-A ONT.

For HTTP configuration procedures, please refer to the 7368 ISAM ONT Configuration, Management, and Troubleshooting Guide.

8.2 HGU mode GUI configuration

Use the procedures below to use the web-based GUI for the XS-240W-A or XS-250WX-A in HGU mode. This mode is preset at delivery.

A home gateway unit (HGU) is a home networking device, used as a gateway to connect devices in the home through fiber to the Internet. An HGU provides a variety of features for the home network including routing and firewall capability. By using the HGU, users can connect all smart equipment in their home, including personal computers, set-top boxes, mobile phones, and other consumer electronics devices, to the Internet.

8.2.1 Login

Use the procedure below to login to the web-based GUI for the XS-240W-A or XS-250WX-A.

Procedure 6 Login to web-based GUI

1 Open a web browser and enter the IP address of the ONT in the address bar.

The login window appears.

The default gateway IP address is http://192.168.1.254. You can connect to this IP address using your web browser after connecting your PC to one of Ethernet ports of the ONT. The static IP address of your PC must be in the same 192.168.1.x subnet as the ONT.

2 Enter your username and password in the Log in window, as shown in Figure 26.

The default user name is AdminGPON. The default password for OPID ALCL is ALC#FGU.

Figure 26 Web login window

Username	
Password	
Login	Reset



Caution — Pressing the Reset button for less than 10 seconds reboots the ONT; pressing the Reset button for 10 seconds resets the ONT to the factory defaults, except for the LOID and SLID.



Note — If you forget the current username and password, press the reset button for 5 s and the default values for the username and password will be recovered at startup.

3 Click Login. The Device Information screen appears.



Note — To help protect the security of your Internet connection, the application displays a pop-up reminder to change both the Wi-Fi password and the ONT password.

To increase password security, use a minimum of 10 characters, consisting of a mix of numbers and upper and lower case letters.

4 STOP. This procedure is complete.

8.2.2 Device and connection status

XS-240W-A and XS-250WX-A ONTs support the retrieval of a variety of device and connection information, including:

- device information
- LAN status
- WAN status

- WAN status IPv6
- Home networking information
- optics module status
- statistics
- voice information

Procedure 7 Device information retrieval

1 Select Status > Device Information from the top-level menu in the 10G PON Gateway window, as shown in Figure 27.

Figure 27 Device Information window

	10G PON Home Gateway	Logout English [Espaol
	Status>Device Information	
■Status		
Device Information	Device Name	XS-250WX-A
LAN Status	Vendor	Nokia
WAN Status		
WAN Status IPv6	Serial Number	ALCL78912367
Home Networking	Hardware Version	3FE46307ACAA
Optics Module Status	Boot Version	U-Boot Jan-26-201707:12:03
Statistics		
Voice Information	Software Version	3FE46346AFGA53
Network	Chipset	BCM6858
■Security	Lot Number	Jan 01 2016
Application	Lot Number	541151 2515
Maintenance	Device Running Time	2 hours 59 minutes 56 seconds
■RG Troubleshooting		Refresh

Table 19 describes the fields in the Device Information window.

Table 19Device Information parameters

Field	Description
Device Name	Name on the ONT
Vendor	Name of the vendor
Serial Number	Serial number of the ONT
Hardware version	Hardware version of the ONT
Boot version	Boot version of the ONT
Software version	Software version of the ONT

Field	Description
Chipset	Chipset of the ONT
Lot Number	Production date of the ONT
Device Running Time	Amount of time the device has run since last reset in hours, minutes, and seconds

2 Click Refresh to update the displayed information.

3 STOP. This procedure is complete.

Procedure 8 LAN status retrieval

1 Select Status > LAN Status from the top-level menu in the 10G PON Gateway window, as shown in Figure 28.

Figure 28 LAN status window

	10G PON Home Gate	way		Log	out <u>En</u>	<u>glish Espaol</u>
	Status>LAN Status					
Status						
Device Information	Wireless Inform	ation				
LAN Status	Wireless Stat	us	on			
WAN Status	Wireless Chan	nel	1			
WAN Status IPv6	SSID1 Name	-		AL	.HN-1983	
Home Networking	Wireless Encryption			30	/PA-PSK	
Optics Module Status	Wireless Rx Pac			00	100	
Statistics						
Voice Information	Wireless T× Pac				364	
Network	Wireless R× By				40153	
Security	Wireless T× By	tes			57402	
Application Maintenance	Power Transmissio	n(mW)			100	
	Ethernet Stat	110			lle	
	Ethernet Stat	us			Up	
	Ethernet IP Ado	iress		192	Up .168.1.264	
	Ethernet IP Ado Ethernet Subnet	iress Mask		255	.168.1.254 .255.255.0	
	Ethernet IP Ado	iress Mask		255	.168.1.254	
	Ethernet IP Ado Ethernet Subnet	iress Mask idress		255 00:88	.168.1.254 .255.255.0	
	Ethernet IP Add Ethernet Subnet Ethernet MAC Add	Iress Mask Idress Krets		255 00:88	.168.1.254 .255.255.0 :99:66:44:80	
	Ethernet IP Ado Ethernet Subnet Ethernet MAC Ad Ethernet RAP Par	Mask didess kets kets		255 00:88	168.1.254 .255.255.0 .99.66:44:80 138.19	
	Ethernet IP Ado Ethernet Subnet Ethernet MAC Ao Ethernet R× Par Ethernet T× Par	Mask Mask Idress kkets kkets kkets		255 00:88 428	168.1.254 255.255.0 99.66:44:80 138.19 12036	
	Ethernet IP Add Ethernet Subnet Ethernet MAC Add Ethernet Rx Pa Ethernet Tx Pa Ethernet Tx Pa	Mask Mask Idress kkets kkets kkets	LAN2	255 00:88 428	.168.1.264 .265.265.0 .99.66.44.80 138.19 12036 	LAN5(10G)
	Ethernet IP Add Ethernet Subnet Ethernet MAC Ad Ethernet RX Pa Ethernet TX Pa Ethernet TX Pa Ethernet TX Pa	Iness Mask Mask Idress Idress Kets Kets tes Ites	LAN2 Up	255 00:88 429 429	.168.1.254 .255.255.0 .99.86.44.80 13819 12036 94967295 95067889	LAN5(10G) Down
	Ethernet IP Add Ethernet IP Add Ethernet MAC Add Ethernet MAC Add Ethernet Tx Pa Ethernet Tx By Ethernet Tx By	Ires Andrew Constraints of the second		255 00:88 429 429 420	.168.1.254 .255.255.0 .99.86.44:80 13819 12036 04967295 95067869 LAN4	
	Ethernet IP Add Ethernet IP Add Ethernet MAC Ad Ethernet MAC Ad Ethernet Tx Pa Ethernet Tx Pa Ethernet Tx By Information Status	Ires Andrew Construction of the second secon	Up	255 00:88 429 420 LAN3 Down	.169.1.254 .255.255.0 .99.86.44.80 .13819 .12038 .44967295 	Down
	Ethernet IP Add Ethernet IP Add Ethernet MAC Ad Ethernet MAC Ad Ethernet Tx Pa Ethernet Tx Pa Ethernet Tx By Information Status Duplex Mode	Iress Added Adde Added Added Adde Added Added Ad	Up Full	255 00:88 426 426 420 10000 Down Auto	188.1254 255.255.0 99.86.44.80 13819 12036 94667295 95067869 LLAN4 Up Full	Down Full
	Ethernet IP Add Ethernet IP Add Ethernet MAC Add Ethernet MAC Add Ethernet Tx Par Ethernet Tx Par Ethernet Tx By Information Status Duplex Mode Max Bit Rate	Ires And	Up Full 1000	255 00:88 426 426 LAN3 Down Auto	188.1254 255.255.0 399.86.44.80 13819 12038 94967295 94067295 9405729 9406729 9405720 9405729 9405729 9405729 9405729 9405729 9405729 9405729 9405729 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 9405720 94057200000000000000000000000000000000000	Down Full 10
	Ethernet IP Add Ethernet IP Add Ethernet Subnet Ethernet MAC Add Ethernet Tx: Par Ethernet	tress / / / / / / / / / / / / / / / / / /	Up Full 1000 0	255 00:88 426 426 426 426 426 426 426 426 426 426	188.1254 255.255.0 399.56.44.80 13819 12036 44867285 85067869 LAN4 Up Full 1000 0	Down Full 10 0

Table 20 describes the fields in the LAN status window.

Table 20 LAN status parameters

Field	Description
Wireless Information	
(4 - 5 2)	

Field	Description
Wireless Status	Indicates whether the wireless is on or off
Wireless Channel	Wireless channel number
SSID Name	Name of each SSID
Wireless Encryption Status	Encryption type used on the wireless connection
Wireless Rx Packets	Number of packets received on the wireless connection
Wireless Tx Packets	Number of packets transmitted on the wireless connection
Wireless Rx Bytes	Number of bytes received on the wireless connection
Wireless Tx Bytes	Number of bytes transmitted on the wireless connection
Power Transmission (mW)	Power of the wireless transmission, in mW
Ethernet Information	
Ethernet Status	Indicates whether the Ethernet connection is on or off
Ethernet IP Address	IP address of the Ethernet connection
Ethernet Subnet Mask	Subnet Mask of the Ethernet connection
Ethernet MAC Address	MAC address of the Ethernet connection
Ethernet Rx Packets	Number of packets received on the Ethernet connection
Ethernet Tx Packets	Number of packets transmitted on the Ethernet connection
Ethernet Rx Bytes	Number of bytes received on the Ethernet connection
Ethernet Tx Bytes	Number of bytes transmitted on the Ethernet connection
LAN 1 to 4 and LAN 5 (10G) information	This panel displays the following information for each LAN: status (up or down) duplex mode (full or auto) max bit rate errors received errors sent packets received packets sent bytes received bytes sent

- 2 Click Refresh to update the displayed information.
- **3** STOP. This procedure is complete.

Procedure 9 WAN status retrieval

1 Select Status > WAN Status from the top-level menu in the 10G PON Gateway window, as shown in Figure 29.

Figure 29 WAN status window

	10G PON Home Gateway		Logout	English Espaol	
	Status>WAN Status				
Status Device Information	WAN Connection List	1_INTERNET_R_VID_41		-	.]
LAN Status	Connection Mode	Dynamic DHCP			
WAN Status WAN Status IPv6	Enable/Disable	V			
Home Networking	VLAN	41			
Optics Module Status	WAN Link Status	Up			
Statistics Voice Information	IPv4 Address	172.12.12.9			
Network	Netmask	255.255.255.0			
Security	Gateway	172.12.12.1			
 Application Maintenance 	Primary DNS	172.12.12.1			
BRG Troubleshooting	Second DNS				
	PON Link Status	Up			
	Tx Packets	8040			
	R× Packets	9269			
	Tx Dropped	o			
	R× Dropped	1038			
	Err Packets	0			
		Refresh			

Table 21 describes the fields in the WAN status window.

Table 21WAN status parameters

Field	Description
WAN connection list	Drop-down menu listing all WAN connections. The connection shown is the connection for which WAN status will be shown.
Connection Mode	Connection mode of the WAN connection
Enable/Disable	Select this checkbox to enable the WAN connection
VLAN	VLAN ID
WAN Link Status	Whether the WAN link is up or down

Field	Description
IPv4 Address	IPv4 address
Netmask	Netmask
Gateway	IPv4 gateway address
Primary DNS	Primary Domain Name Server
Second DNS	Secondary Domain Name Server
PON Link Status	Whether the PON link is up or down
Tx Packets	Number of packets transmitted on the WAN connection
Rx Packets	Number of packets received on the WAN connection
Tx Dropped	Number of packets dropped on the transmit WAN connection
Rx Dropped	Number of packets dropped on the receive WAN connection
Err Packets	Number of errored packets on the WAN connection

- 2 Click Refresh to update the displayed information.
- **3** STOP. This procedure is complete.

Procedure 10 WAN status IPv6 retrieval

1 Select Status > WAN Status IPv6 from the top-level menu in the 10G PON Gateway window, as shown in Figure 30.

Figure 30 WAN status IPv6 window

	10G PON Home Gatew	ay	Logout	English Espaol
	Status>WAN Status IPv6			
Status	WAN Connection List			•
LAN Status WAN Status	Enable/Disable			
WAN Status	VLAN			
Home Networking	VVAN Link Status			
Optics Module Status	IPv6 address			
Statistics Voice Information	IPv6 Prefix			
Network	IPv6 Gateway			
Security	Primary DNS			
Application Maintenance	Second DNS			
RG Troubleshooting	PON Link Status			
	Tx Packets			
	Rx Packets			
	Tx Dropped			
	Rx Dropped			
	Err Packets			
		Re	fresh	

Table 22 describes the fields in the WAN status IPv6 window.

Table 22WAN status IPv6 parameters

Field	Description
WAN connection list	Drop-down menu listing all WAN connections. The connection shown is the connection for which WAN status will be shown.
Enable/Disable	Select this checkbox to enable the WAN connection
VLAN	VLAN ID
WAN Link Status	Whether the WAN link is up or down
IPv6 Address	IPv6 address that identifies the device and its location
IPv6 Prefix	IPv6 Prefix
IPv6 Gateway	IPv6 Gateway address
Primary DNS	Primary Domain Name Server

Field	Description
Second DNS	Secondary Domain Name Server
PON Link Status	Whether the PON link is up or down
Tx Packets	Number of packets transmitted on the WAN connection
Rx Packets	Number of packets received on the WAN connection
Tx Dropped	Number of packets dropped on the transmit WAN connection
Rx Dropped	Number of packets dropped on the receive WAN connection
Err Packets	Number of errored packets on the WAN connection

- 2 Click Refresh to update the displayed information.
- **3** STOP. This procedure is complete.

Procedure 11 Home networking information retrieval

1 Select Status > Home Networking from the top-level menu in the 10G PON Gateway window, as shown in Figure 31.

Figure 31 Home networking information window

	10G F	PON Ho	ime Gateway			Logout	English Esp	aol
	Status>Home	Network	king					
Status								
Device Information	Loca	l Inte	erface					
LAN Status		Cor	nnection Type		Connected D	evices	Setting	
WAN Status			Ethernet		1		Ű	
WAN Status IPv6		10/5	reless (2.4GHz)		0		0-111	
Home Networking							Setting	
Optics Module Status		10	fireless (5 GHz)		0		Setting	
Statistics								
Voice Information	Wirel	ess	Settings (2.40	GHz)				
Network	Network	Name	ALHN-1983	ALHN	l-1983-2	ALHN-1983-3	ALHN	-1983-4
Security	Access	Point	00:88:99:66:44:8a	72:88:9	9:66:44:85	72:88:99:66:44:88	72:88:99	9:66:44:89
Application								
Maintenance	Sec		Dettin me (5.0)					
RG Troubleshooting	wire	ess	Settings (5GH	1Z)				
	Network	Name	ALHN-1983-5	ALHN	1983-6	ALHN-1983-7	ALHN	-1983-8
	Access	Point	00:88:99:66:44:8e	62:88:9	9:66:44:8f	62:88:99:66:44:8c	62:88:99	9:66:44:8d
	Loca	I Dev	/ices					
	Status	Conne Typ	Deprice Na	ame	IPv4 Address	Hardware Address	IP Address Allocation	Delete
		02000	net Unknown_dc:4a:	00600.44	192.168.1.64	dc:4a:3e:8f:90:f4	DHCP	Delete

Table 23 describes the fields in the Home networking window.

Table 23Home networking parameters

Field	Description	
Local Interface		
Ethernet	Table displays the number of Ethernet connections and their settings	
Wireless	Table displays the number of wireless connections and their settings	
Wireless Settings		
Network Name	Name of the wireless network	
Access Point	Address of the wireless access point	
Local Devices		

Field	Description
Table entry	Each entry indicates the status (active or inactive), connection type, device name, IP address, hardware address, and IPv4 address allocation of each connected local device.
(2 of 2)	

- 2 Click Delete to delete a particular local device connection.
- 3 Click Refresh to update the displayed information.
- 4 STOP. This procedure is complete.

Procedure 12 Optics module status retrieval

1 Select Status > Optics Module Status from the top-level menu in the 10G PON Gateway window, as shown in Figure 32.

Figure 32	Optics module status window
-----------	-----------------------------

	10G PON Home Gateway	Logout <u>English Espaol</u>
	Status>Optics Module Status	
Status		
Device Information	Laser Bias Current (ONT ANI-ONT-Side Optical Measurements):	40500 uA
LAN Status	Optics Module Voltage (ONT ANI-ONT-Side Optical Measurements):	3294400 uV
WAN Status	Optics Module Temperature (ONT ANI-ONT-Side Optical Measurements):	54.00 °C
WAN Status IPv6	Rx Optics Signal Level at 1490 nm (ONT ANI-ONT-Side Optical	-22.84 dBm
Home Networking	Measurements):	-22.04 dbm
Optics Module Status	Tx Optics Signal Level at 1310 nm (ONT ANI-ONT-Side Optical	3.09 dBm
Statistics	Measurements):	5.05 dbm
Voice Information	Lower (ONT ANI-ONT-Side Optical Measurements-Optical Threshold):	-31.00 dBm
Network	Edwar (over Ane-over-alde optical mediaar ciriantia-optical micanola).	-01.00 dbin
Security	Upper (ONT ANI-ONT-Side Optical Measurements-Optical Threshold):	-6.00 dBm
Application	Refresh	
Maintenance		
RG Troubleshooting		

Table 24 describes the fields in the Optics module status window.

Field	Description
Laser Bias Current (ONT ANI-ONT-Side Optical Measurements)	Laser bias current, measured in uA
Optics Module Voltage (ONT ANI-ONT-Side Optical Measurements)	Optics module voltage, measured in V
Optics Module Temperature (ONT ANI-ONT-Side Optical Measurements)	Optics module temperature, measured in C
Rx Optics Signal Level at 1490 nm (ONT ANI-ONT-Side Optical Measurements)	Received optics signal level at 1490 nm, measured in dBm
Tx Optics Signal Level at 1310 nm (ONT ANI-ONT-Side Optical Measurements)	Transmitted optics signal level at 1310 nm, measured in dBm
Lower (ONT ANI-ONT-Side Optical Measurements-Optical Threshold)	Lower optical threshold, measured in dBm
Upper (ONT ANI-ONT-Side Optical Measurements-Optical Threshold)	Upper optical threshold, measured in dBm

Table 24Optics module status parameters

2 Click Refresh to update the displayed information.

3 STOP. This procedure is complete.

Procedure 13 Statistics retrieval

1 Select Status > Statistics from the top-level menu in the 10G PON Gateway window, as shown in Figure 33.

Figure 33 Statistics window

	10G PON Home Gatew	'ay	l	Logout <u>Englis</u>	sh <u>Espaol</u>
	Status>Statistics				
Status					
Device Information	LAN WAN				
LAN Status					
WAN Status					Refresh
WAN Status IPv6					
Home Networking	COUNTERS	LAN1	LAN2	LAN3	LAN4
Optics Module Status	Bytes Sent	4294967295	63954	0	64032
Statistics	Bytes Received	4294967295	0	0	0
Voice Information	Packets Sent	11858	429	0	430
Network	Packets Received	14386	0	0	0
Security	Errors Sent	0	0	0	0
Application	Unicast Packets Sent	11858	16	0	17
	Unicast Packets Received	13882	0	0	0
Maintenance	Discard Packets Sent	0	0	0	0
RG Troubleshooting	Discard Packets Received	0	0	0	0
	Multicast Packets Sent	0	236	0	236
	Multicast Packets Received	307	0	0	0
	Broadcast Packets Sent	0	177	0	177
	Broadcast Packets Received	197	0	0	0
	Unknown Proto Packets Received	0	0	0	o

The Statistics window displays the statistical details for the WAN and each LAN line, such as the bytes, packets, and errors.

2 STOP. This procedure is complete.

Procedure 14 Voice information retrieval

1 Select Status > Voice Information from the top-level menu in the 10G PON Gateway window, as shown in Figure 34.

Figure 34 Voice Information window

	10G PON Home Gateway		Logout	English Espaol	
	Status>Voice Information				
■Status	Line	Line 1			
Device Information		Line i			
LAN Status	Line Status	Disabled			
WAN Status	Soft Switch				
WAN Status IPv6	Soft Switch				
Home Networking	Phone Number				
Optics Module Status					
Statistics					
Voice Information	Register Status				
Network	Register Error Code				
Security	Register Error Reason				
Application					
Maintenance					
RG Troubleshooting	User Agent IP				
		Refre	sh		

Table 25 describes the fields in the Voice Information window.

Table 25Voice Information parameters

Field	Description
Line	Select the POTS line: 1 or 2
Line Status	Status of the selected POTS line: IDLE, Off Hook, or On Hook
Softswitch ⁽¹⁾	Proxy IP address; blank if the line is not registered
Phone number ⁽¹⁾	Phone number configured for the selected telephone line
Register Status	Registration status of the selected POTS port: registered or unregistered
Register Error Code	Error code for the unregistered POTS port
Register Error Reason	Error reason for the unregistered POTS port

Note

⁽¹⁾ This field is only visible at the adminGPON level; it is not visible at the userAdmin level.

- 2 Click Refresh to update the displayed information.
- **3** STOP. This procedure is complete.

8.2.3 Network configuration

XS-240W-A and XS-250WX-A ONTs also support network configuration, including:

- LAN
- LAN IPv6
- WAN
- WAN DHCP
- Wireless 2.4GHz
- Wireless 5GHz
- wireless scheduling
- IP Routing
- DNS
- TR-069
- QoS

Procedure 15 LAN networking configuration

1 Select Network > LAN from the top-level menu in the 10G PON Gateway window, as shown in Figure 35.

Figure 35 LAN network window

	10G PON Home Gateway	Logout <u>Engl</u> i	ish <u>Espaol</u>
	Network>LAN		
Status Network	Port Mode		
LAN	All Dorto to Bridge Mede		
LAN_IPv6	All Ports to Bridge Mode		
WAN	Port1	Route Mode	•
WAN DHCP	Port2	Route Mode	-
Wireless (2.4GHz)	Port3		
Wireless (5GHz)		Route Mode	-
Wireless Schedule	Port4	Route Mode	-
IP Routing	Port5(10G)	Route Mode	-
DNS		Save	1000
TR-069		Sure	
QoS Config			
Security	IPv4 Address	192.168.1.254	
Application	Subnet Mask	255.255.255.0	
Maintenance			
RG Troubleshooting	DHCP Enable		
	DHCP Start IP Address	192.168.1.64	
	DHCP End IP Address	192.168.1.253	
	DHCP Lease Time		
	DHCP Lease Time	1440	
		(2~129600 mins, or 0 means 1 day)mins.	
	Primary DNS		
	Secondary DNS		
		Save Refresh	
	Static DHCP Entry		
	MAC Address		
	IPv4 Address		
	IF V4 AUUICSS		
		Add	

Table 26 describes the fields in the LAN network window.

Table 26LAN network parameters

Field	Description
All Ports to Bridge Mode	Select this checkbox to set all ports to bridge mode

Field	Description
Port Mode Port 1 - 4 and Port 5 (10G)	Drop-down port mode for each port: Route mode or bridge mode
IPv4 Address	IP Address of the ONT
Subnet Mask	Subnet mask of the ONT
DHCP enable	Select this checkbox to enable DHCP
DHCP Start IP Address	Starting DHCP IP address
DHCP End IP Address	Ending DHCP IP address
DHCP Lease Time	DHCP lease time (in min)
Primary DNS	Primary DNS identifier
Secondary DNS	Secondary DNS identifier
Static DHCP Entry MAC Address	MAC address for the static DHCP
Static DHCP Entry IPv4 Address	IPv4 address for the static DHCP

- 2 Select the mode for each port.
- 3 Click Save.
- 4 Enter the DHCP configuration information.
- 5 Click Save.
- 6 Enter the Static DHCP information.
- 7 Click Add.

You can also use this panel to delete a Static DHCP MAC address or IPv4 address.

8 STOP. This procedure is complete.

Procedure 16 LAN IPv6 networking configuration

1 Select Network > LAN_IPv6 from the top-level menu in the 10G PON Gateway window, as shown in Figure 36.

Figure 36 LAN IPv6 network window

	10G PON Home Gateway		Logout	English Espaol
1	Network>LAN_IPv6			
Status				
Network	IPv6 LAN Host Confi	iguration		
LAN	DNS Server	HGWProxy		•
LAN_IPv6				
WAN	Prefix Config	WANConnection		
WAN DHCP	Interface	none		•
Wireless (2.4GHz)				
Wireless (5GHz)	DHCPv6 Server Poc	a l		
Wireless Schedule	Differ to Server For			
IP Routing	DHCP Start IP Address	0:0:0:2		
DNS	DHCP End IP Address	0:0:0:255		
TR-069				
QoS Config				
Security	Whether the address info through DHCP			
Application	DHCF			
Maintenance	Whether the address info through DHCP			
RG Troubleshooting	DICF			
-	Maximum interval for periodic RA messages	600		
	Minimum interval for periodic RA messages	200		

Table 27 describes the fields in the LAN IPv6 network window.

Table 27 LAN IPv6 network parameters

Field	Description
DNS Server	Choose a DNS server from the drop-down menu.
prefix config	Choose a prefix config option from the drop-down menu, either WANConnection (prefix will be obtained from the WAN) or Static (enables you to enter the prefix).
prefix	This field appears if you selected the "Static" option for the "prefix config" field. Type a connection.
Interface	This field appears if you selected the Wan Connection option for the "prefix config" field. Choose a WAN connection interface from the drop-down menu.

Field	Description
DHCP Start IP Address	Enter the starting DHCP IP address.
DHCP End IP Address	Enter the ending DHCP IP address.
Whether the address info through DCHP	Select this checkbox to enable address information retrieval through DHCP.
Whether other info obtained through DHCP	Select this checkbox to enable retrieval of other information through DHCP.
Maximum interval for periodic RA messages	Enter the maximum interval (in seconds) for periodic Router Advertisement messages. The interval range is from 4 to 1800.
Minimum interval for periodic RA messages	Enter the minimum interval (in seconds) for periodic Router Advertisement messages. The interval range is from 4 to 1800.

- 2 Choose a DNS server, prefix config, and interface.
- **3** Select or enter the DHCP configuration information.
- 4 Enter the maximum and minimum intervals for RA messages.
- 5 Click Save/Apply.
- **6** STOP. This procedure is complete.

Procedure 17 WAN networking configuration

1 Select Network > WAN from the top-level menu in the 10G PON Gateway window, as shown in Figure 37.

Figure 37 WAN network window

	10G PON Home Gatewa	iy Logout <u>English Espaol</u>	
	Network>WAN		
Status	WAN Connection List	1_INTERNET_R_VID_41	
Network	WAN Connection List		
.AN	Connection Type	●IPoE ◎PPPoE	
_AN_IPv6	IP mode	IPv4	-
WAN			
VAN DHCP	Enable/Disable		
Mireless (2.4GHz)	NAT		
Vireless (5GHz)	Service		
Vireless Schedule			
^o Routing	Enable VLAN		
NS	VLAN ID	41	
R-069		-	
QoS Config	VLAN PRI	0	
Security	WAN IP Mode	DHCP	•
Application	Manual DNS		
Maintenance			
RG Troubleshooting			

Table 28 describes the fields in the WAN network window.

Table 28WAN network parameters

Field	Description
WAN Connection List	Choose a WAN connection from the drop-down menu to set the connection parameters
Connection Type	Select a connection type: IPoE or PPPoE
IP Mode	Choose an IP mode from the drop-down menu: IPv4 or IPv6
Enable/Disable	Select this checkbox to enable the WAN connection
NAT	Select this checkbox to enable NAT
Service	Select the checkboxes to enable service types for this connection
Enable VLAN	Select this checkbox to enable VLAN
VLAN ID	Enter the VLAN ID
VLAN PRI	Enter the VLAN PRI

Field	Description
WAN IP Mode	Choose an IP mode from the drop-down menu
Manual DNS	Enter a DNS

- **2** Configure a specific WAN connection.
- 3 Click Save.
- 4 STOP. This procedure is complete.

Procedure 18 WAN DHCP configuration

1 Select Network > WAN DHCP from the top-level menu in the 10G PON Gateway window, as shown in Figure 38.

Figure 38	WAN DHCP window
Figure 38	WAN DHCP window

	10G PON Home Gateway	/ Logout English Espaol
	Network>WAN DHCP	
€Status €Network LAN	WAN Connection List DHCP Option 50 Persistent	1_INTERNET_R_VID_41
LAN_IPv6 WAN	Enable DHCP Option 60 Vendor Class Identifier 60	₽ abcd1234
WAN DHCP Wireless (2.40Hz) Wireless (50Hz) Wireless Schedule IP Routing DNS TR-069 Gos Config Security Application Maintenance RG Troubleshooting	Enable DHCP Option 61	Save Refresh

Table 29 describes the fields in the WAN DHCP window.

Table 29WAN DHCP parameters

Field	Description
WAN Connection List	Choose a WAN connection from the drop-down menu
DHCP Option 50 persistent	Select this checkbox to enable DHCP Option 50
Enable DHCP Option 60	Select this checkbox to enable DHCP Option 60 (vendor class identifier)
Vendor Class Identifier 60	Enter the identifier for the vendor class
Enable DHCP Option 61	Select this checkbox to enable DHCP Option 61 (client identifier)

- 2 Configure a WAN DHCP option.
- 3 Click Save.
- 4 STOP. This procedure is complete.

Procedure 19 WiFi 2.4G networking configuration

1 Select Network > Wireless 2.4GHz from the top-level menu in the 10G PON Gateway window, as shown in Figure 39.

Figure 39 Wireless 2.4GHz network window

	10G PON Home Gateway	/ Logout English	I Espaol
	Network>Wireless (2.4GHz)		
Status	Enable		
Network	Mode	auto(b/g/n)	-
LAN	Mode		
LAN_IPv6	Bandwidth	20MHz	
WAN	Channel	Auto	•
WAN DHCP Wireless (2.4GHz)	Transmitting Power	100%	•
Wireless (5GHz) Wireless Schedule	WMM	Enable	•
IP Routing	Total MAX Users	32	
DNS TR-069	SSID Configura	tion	
QoS Config	SSID Select	SSID1	•
Security	SSID Name	ALHN-1983	
Application		Enable	
Maintenance	Enable SSID	Епаріе	
RG Troubleshooting	SSID Broadcast	Enable	•
	Port Mode	Route	-
	MAX Users	32	
	Encryption Mode	WPA,WPA2 Personal	-
	WPA Version	WPA/WPA2	-
	WPA Encryption Mode	TKIP/AES	
	WPA Key	••••••	
		Show password	
	Enable WPS	Disable	-

Table 30 describes the fields in the Wireless 2.4GHz network window.

Table 30Wireless 2.4GHz network parameters

Field	Description
Enable	Select this checkbox to enable WiFi
(4 of 2)	

Field	Description				
Mode	Choose a Wi-Fi mode from the drop-down menu: auto (b/g/n) b g n b/g 				
Bandwidth	Choose from: • 20 MHz • 40 MHz • 20/40 MHz				
Channel	Choose a channel from the drop-down menu or choose Auto to have the channel automatically assigned				
Transmitting Power	 Choose a percentage for the transmitting power from the drop-down menu: Low (25%) Medium (50%) High (75%) Maximum (100%) 				
WMM	Select this checkbox to enable or disable wireless multi media				
Total MAX Users	Enter the total number of MAX users				
SSID Select	Choose the SSID from the drop-down menu				
SSID Name	Enter the SSID name				
Enable SSID	Enable or disable SSID from this drop-down menu				
SSID Broadcast	Enable or disable SSID broadcast from this drop-down menu				
Port Mode	Choose a port mode from the drop-down menu: Route Bridge 				
MAX Users	Enter the number of MAX users				
Encryption Mode	 Choose an encryption mode from the drop-down menu: OPEN WEP WPA/WPA2 Personal WPA/WPA2 Enterprise ⁽¹⁾⁽²⁾ 				
WPA Version	Choose a WPA version from the drop-down menu: WPA1 WPA2 WPA1/WPA2				
WPA Encryption Mode	Choose a WPA encryption mode from the drop-down menu: TKIP AES TKIP/AES 				
WPA Key	Enter the WPA key				
Enable WPS	Enable or disable WPS from this drop-down menu				

Notes

- ⁽¹⁾ When Encryption Mode is set to "WPA/WPA2 Enterprise", the following options are no longer available: WPA version, WPA encryption mode, WPA key, Enable WPS, WPS mode.
- ⁽²⁾ When Encryption Mode is set to "WPA/WPA2 Enterprise", the following options become available: Primary RADIUS server, port and password; Secondary RADIUS server, port, and password; RADIUS accounting port.
- 2 Configure the wireless 2.4 GHz connection.
- 3 If you have enabled and configured WPS, click WPS connect.
- 4 Click Save.
- **5** STOP. This procedure is complete.

Procedure 20 Wireless 5GHz networking configuration

1 Select Network > Wireless 5GHz from the top-level menu in the 10G PON Gateway window, as shown in Figure 40.

Figure 40 Wireless 5GHz network window

	10G PON Home Gatev	vay Logout <u>Er</u>	nglish <u>Espaol</u>
	Network>Wireless (5GHz)		
Status	Enable		
Network			
LAN	Bandwidth	80MHz	-
LAN_IPv6	Channel	Auto	•
VVAN	Transmitting Power	100%	-
WAN DHCP	WMM	Enable	-
Wireless (2.4GHz) Wireless (5GHz)	Enable MU-MIMO	Disable	
Wireless Schedule		32	
IP Routing DNS	Total MAX Users DFS re-entry	Enable	-
TR-069 QoS Config	SSID Configu	ration	
Security	SSID Select	SSID5	-
Application	SSID Name	ALHN-1983-5	
Maintenance	Enable SSID	Enable	•
	SSID Broadcast	Enable	•
	Port Mode	Route	-
	MAX Users	32	
	Encryption Mode	WPA2-AES	•
	WPA Key	*******	
		Show password	
	Enable WPS	Disable	-

Table 31 describes the fields in the Wireless 5GHz network window.

Table 31Wireless 5GHz network parameters

Field	Description
Enable	Select this checkbox to enable WiFi
(1 of 2)	

Field	Description
Bandwidth	Choose from: • 20 MHz • 40 MHz • 80 MHz
Channel	Choose a channel from the drop-down menu or choose Auto to have the channel automatically assigned
Transmitting Power	 Choose a percentage for the transmitting power from the drop-down menu: Low (20%) Medium (40%) High (60%) Maximum (100%)
WMM	Select this checkbox to enable or disable wireless multi media
Enable MU-MIMO	Choose Enable or disable MU-MIMO from this drop-down menu The default is Enable, which enables users and wireless terminals to communicate with each other. MU-MIMO may decrease Wi-Fi performance for clients who do not support it, in which case Nokia recommends that you choose Disable.
Total MAX Users	Enter the total number of MAX users
DFS re-entry	Select this checkbox to enable or disable DFS re-entry
SSID Select	Choose the SSID from the drop-down menu
SSID Name	Change the name of the selected SSID
Enable SSID	Choose Enable or disable SSID from this drop-down menu
SSID Broadcast	Choose Enable or disable SSID broadcast from this drop-down menu
Port Mode	Choose Route or Bridge from the drop-down menu
MAX Users	Enter the number of MAX users
Encryption Mode	Choose an encryption mode from the drop-down menu: OPEN WEP WPA/WPA2 Personal WPA/WPA2 Enterprise ⁽¹⁾⁽²⁾
WPA Key	Enter the WPA key
Enable WPS	Choose Enable or disable WPS from this drop-down menu

Notes

⁽¹⁾ When Encryption Mode is set to "WPA/WPA2 Enterprise", the following options are no longer available: WPA version, WPA encryption mode, WPA key, Enable WPS, WPS mode.

⁽²⁾ When Encryption Mode is set to "WPA/WPA2 Enterprise", the following options become available: Primary RADIUS server, port and password; Secondary RADIUS server, port, and password; RADIUS accounting port.

2 Configure the wireless 5GHZ connection.

3 If you have enabled and configured WPS, click WPS connect.

- 4 Click Save.
- 5 STOP. This procedure is complete.

Procedure 21 Wireless scheduling

1 Select Network > Wireless Schedule from the top-level menu in the 10G PON Gateway window, as shown in Figure 41.

Figure 41 Wireless Schedule network window

	10G PON Home Gate	way	Logout	English Espaol
	Network>Wireless Schedule			
Status	Wireless Mode			
Network				
LAN	Schedule Function			
LAN_IPv6	Turn off the Wirele	ess signal by the t	followina rules	
WAN				
WAN DHCP	Start	End	Recurrence Patte	im
Wireless (2.4GHz)				
Wireless (5GHz)				
Wireless Schedule				+
IP Routing				
DNS				
TR-069				
QoS Config				
Security				
~				
*Security				

- 2 Select the Schedule Function checkbox to turn the wireless signal off for the configured period.
- 3 Select the Start, End, and Recurrence Pattern rules for turning the wireless signal off.
- 4 Click Save.
- 5 STOP. This procedure is complete.

Procedure 22 IP Routing configuration

Note that forwarding policy is not supported in Release 5.6.

1 Select Network > IP Routing from the top-level menu in the 10G PON Gateway window, as shown in Figure 42.

Figure 42 IP Routing network window

		PONH	lome Gatewa	ay				Log	jout	<u>English</u>	<u>Espao</u>	
	Network>IP Ro	outing										
Status												
Network	Enable Routing	V										
LAN												
LAN_IPv6	Destination IP Addres											
WAN												
WAN DHCP	Destinati Netmask											
Mireless (2.4GHz)												
Wireless (5GHz)	Gateway	0.0.0).0									
Wireless Schedule	IP∨4	1.10	ITERNET_R_VID	41	-							
IP Routing	Interface											
DNS	Forward	ing No I	olicy:-1				-	help				
TR-069	Policy	_										
QoS Config		Source MAC	MacExclude P	otocol Sourc Port		SExclude		Dest Max	DExclude	Source IP	Source IP	SExclud
Security											Mask	
Application	•			III								,
Maintenance						Add						
RG Troubleshooting												
ERG Housieshooling												

Table 32 describes the fields in the IP Routing network window.

Table 32IP Routing network parameters

Field	Description
Enable Routing	Select this checkbox to enable routing
Destination IP Address	Enter the destination IP address
Destination Netmask	Enter the destination network mask
Gateway	Enter the gateway address

Choose a WAN connection previously created in the WAN network window from
the drop-down menu
the drop-down menu
g information.
-

4 STOP. This procedure is complete.

Procedure 23 DNS configuration

1 Select Network > DNS from the top-level menu in the 10G PON Gateway window, as shown in Figure 43.

	10G PON Home Gatewa	ау	Logout Englis	sh Espaol
1	Network>DNS			
Status	DNS Proxy	Enabled		
Network		Save		
LAN		Save		
LAN_IPv6				
WAN	Domain Name			
WAN DHCP	IPv4 Address			
Wireless (2.4GHz)		·		
Wireless (5GHz)		Add		
Wireless Schedule				
IP Routing	Origin Domain			
DNS	New Domain			
TR-069	New Domain			
QoS Config		Add		
*Security				
Application				
Maintenance	Domain Name	New Domain	IPv4 Address	Delete
RG Troubleshooting	dsldevice.lan	dsldevice.lan	192.168.1.254	Delete
	Origin Domain		New Domain	Delete
	dsldevice.lan		dsldevice.lan	Delete

Figure 43 DNS network window

Table 33 describes the fields in the DNS network window.

Field	Description
DNS Proxy Enabled	Select this checkbox to enable DNS proxy
Domain Name	Domain name
IPv4 Address	Domain IP address
Origin Domain	Origin domain name
New Domain	New domain name

Table 33DNS network parameters

- 2 Enter the domain name and IP address and click Add.
- 3 If required, associate an origin domain with a new domain, click Add.
- 4 STOP. This procedure is complete.

Procedure 24 TR-069 configuration

1 Select Network > TR-069 from the top-level menu in the 10G PON Gateway window, as shown in Figure 44.

Figure 44 TR-069 network window

	10G PON Home Gateway	Logout English Espaol
	Network>TR-069	
Status Network	Periodic Inform Enable	
LAN	Periodic Inform Interval(s)	5
LAN_IPv6	URL	https://acsgpon.alu.net
VVAN	Username	AdminGPON
WAN DHCP		
Wireless (2.4GHz)	Password	
Wireless (5GHz)	Connect Request Username	itms
Wireless Schedule	Connect Request Username	*******
IP Routing		
DNS		Save Refresh
TR-069		
QoS Config		
Security		
Application		
Maintenance		
RG Troubleshooting		

Table 34 describes the fields in the TR-069 network window.

Table 34TR-069 network parameters

Field	Description
Periodic Inform Enable	Select this checkbox to enable periodic inform updates
Periodic Inform Interval(s)	Time between periodic inform updates, in seconds
URL	URL of the auto-configuration server
Username	Username used to log in to the auto-configuration server
Password	Password used to log in to the auto-configuration server
Connect Request Username	Username used to log in to the ONT
Connect Request Password	Password used to log in to the ONT

2 Configure TR-069 by entering the required information.

- 3 Click Save.
- 4 STOP. This procedure is complete.

Procedure 25 QoS configuration

Note that forwarding policy is not supported in Release 5.6.

1 Select Network > QoS Config from the top-level menu in the 10G PON Gateway window.

Figure 45 shows the QoS Config window for QoS L2 (Layer 2 packet sizes).

The window for QoS L3 shows additional fields, as described in Table 35.

Figure 45 QoS Config window (L2)

	10G F	ON Hom	e Gateway	1		Logout			English Espaol		
	Network>QoS	Config									
■Status	QoS Sett	ing									_
Network			Source			1		-2000			
LAN	ID(Id)	Source MAC	MAC	Protocol	Source Port	Source Max	SExclude	Dest Port	Dest Max	DExclude	So
LAN_IPv6		110.10	Exclude		1 on	max		1 OIL	max		
WAN	•		111								F
WAN DHCP	Туре	_	() () () () () () () () () ()		1						
Wireless (2.4GHz)	Type		L2 QoS	-	J						
Wireless (5GHz)	Source M	AC			Exclu	ide 🔲					
Wireless Schedule											
IP Routing	Interface		select a	n optior 💌]						
DNS					J						
TR-069											
QoS Config	802.1p Ma	ark:			DSCF	Mark:					
Security			(Range:0~7)				(Range:0~	63)			
Application	Forwardir	D.C.									
Maintenance	Policy:	1175) - C	(D) (1 (T))								
RG Troubleshooting			(Range:1~7)								
						Add					

Table 35 describes the fields in the QoS Config window.

Field	Description
Туре	Choose a QoS type from the drop-down menu: L2 or L3
Source MAC	Enter the source MAC.
	Select the Exclude checkbox to exclude the source MAC
Interface	Choose an interface from the drop-down menu
802.1p Mark	Enter the value for the 802.1p (range: 0-7)
DSCP Mark	Enter the value for the DSCP mark (range: 0-63)
Additional fields for L3	
Protocol	Select a protocol from the drop-down menu, or select the Exclude checkbox
Application	Select an application from the drop-down menu
Source IP and Source IP Mask	Enter the values for the source IP and IP mask, or select the Exclude checkbox
Destination IP and Destination IP Mask	Enter the values for the destination IP and IP mask, or select the Exclude checkbox
Source Port and Source Port Max	Enter the values for the source port and port max (highest port number) or select the Exclude checkbox
Destination Port and Destination Port Max	Enter the values for the destination port and port max (highest port number), or select the Exclude checkbox

Table 35QoS Config parameters

- 2 Choose a QoS type from the drop-down menu: L2 or L3.
- 3 Configure a QoS policy.
- 4 Click Add to add a QoS policy.
- **5** STOP. This procedure is complete.

8.2.4 Security configuration

XS-240W-A and XS-250WX-A ONT also supports security configuration, including:

- firewall
- MAC filter
- IP filter
- URL filter

- DMZ and ALG
- access control

Note that parent control is not supported in Release 5.6.

Procedure 26 Firewall configuration

1 Select Security > Firewall from the top-level menu in the 10G PON Gateway window, as shown in Figure 46.

Figure 46 Firewall window

	10G PON Home Gate	eway	Logou	t <u>English Espaol</u>
	Security>Firewall			
Status Network	Security Level	Low		
Security	Attack Protection	Enable		
Firewall	High: RG provide service from V			
MAC Filter	Medium: the other types of ICMF Low: port forwarding/DMZ and		supported.	
IP Filter		Save	Refresh	
URL Filter				
Parent Control				
DMZ and ALG				
Access Control				
Application				
Maintenance				
RG Troubleshooting				

Firewall security applies only to services provided by the ONT. Internet access from the LAN side is not affected by this firewall.

Three security levels are available: Low, Medium, and High.

At the Low level, pre-routing is supported: port forwarding, DMZ, host application, and host drop. Also supported are application services: DDNS, DHCP, DNS, H248, IGMP, NTP client, SSH, Telnet, TFTP, TR-069, and VoIP.

At the Medium level, pre-routing is supported: port forwarding, DMZ, host application, and host drop. Also supported are application services: DDNS, DHCP, DNS, H248, IGMP, NTP client, TFTP, TR-069, and VoIP. The following types of ICMP messages are permitted: echo request and reply, destination unreachable, and TTL exceeded. Other types of ICMP messages are blocked. DNS proxy is supported from LAN to WAN but not from WAN to LAN.

At the High level, pre-routing and application services are not supported. UDP Port 8000 can be used to access the services, for example FTP can use 8021 and Telnet can use 8023. Regular UDP cannot be used. RG access is permitted via the LAN side but not via the WAN side.

Table 36 describes the fields in the firewall window.

Table 36Firewall parameters

Field	Description
Security level	Choose the security level from the drop-down menu: low, medium, or high
Attack Protect (Protection against DoS or DDoS attacks)	Choose enable or disable attack protect from the drop-down menu The default is disable

- 2 Configure the firewall.
- 3 Click Save.
- 4 STOP. This procedure is complete.

Procedure 27 MAC filter configuration

1 Select Security > Mac Filter from the top-level menu in the 10G PON Gateway window, as shown in Figure 47.

Figure 47 MAC filter window

	10G PON Home Gat	eway	Logout	English Espaol
	Security>MAC Filter			
Status Network	Enable MAC Filter			
Security	Mac Address	Custom settings	T	
Firewall				
MAC Filter		e.g: D0:54:2D:00:00	00	
IP Filter		Add		
URL Filter	MAC Filter Mode	Blocked		
Parent Control				
DMZ and ALG				
Access Control				
Application	Mode	Mac Address	Host Name	Delete
Maintenance				
RG Troubleshooting		Refre	sh	

Table 37 describes the fields in the MAC filter window.

Table 37MAC filter parameters

Field	Description
Enable MAC filter	Select this checkbox to enable the MAC filter
Mac Address	Select a MAC address from the drop-down menu or enter the address in the text field
Mac Filter Mode	Choose the MAC filter mode from this drop-down menu: Blocked or Allowed

- 2 Click Refresh to update the information.
- 3 Configure a MAC filter.
- 4 Click Add.
- 5 STOP. This procedure is complete.

Procedure 28 IP filter configuration

1 Select Security > IP filter from the top-level menu in the 10G PON Gateway window, as shown in Figure 48.

Figure 48 IP filter window

	10G PON Home Gateway	Logout English Espaol
:	Security>IP Filter	
Status	Enable IP Filter	E1
*Network		
Security	Mode	Drop for upstream
Firewall	Internal Client	Custom settings
MAC Filter	Local IP Address	
IP Filter	Lucar P Address	
URL Filter	Source Subnet Mask	
Parent Control	Remote IP Address	
DMZ and ALG	Destination Subnet Mask	
Access Control	Destination Subnet Mask	- L
Application	Protocol	ALL
Maintenance	Internal Loc	IP Source Remote Destination Wan Lan Port
RG Troubleshooting	Mode Client Protocol Ado	Subnet Port Delet
		Save Refresh

Table 38 describes the fields in the IP filter window.

Field	Description	
Enable IP Filter	Select this checkbox to enable an IP filter	
Mode	 Choose an IP filter mode from the drop-down menu: Drop for upstream Drop for downstream 	
Internal Client	 Choose an internal client from the drop-down menu: Customer setting - uses the IP address input below IP - uses the connecting devices' IP to the ONT 	
Local IP Address	Local IP address	
Source Subnet Mask	Source subnet mask	
Remote IP Address	Remote IP address	
Destination Subnet Mask	Destination subnet mask	
Protocol	Choose an application protocol or all from the drop-down menu	

- 2 Configure the IP filter.
- 3 Click Add.
- 4 STOP. This procedure is complete.

Procedure 29 URL filter configuration

1 Select Security > URL Filter from the top-level menu in the 10G PON Gateway window, as shown in Figure 49.

Figure 49 🛛 🔾	IRL Filter	window
---------------	-------------------	--------

	10G PON Home Gat	eway	Logout	English Espaol
	Security>URL Filter			
■ Status ■ Network ■ Security	URL Filter please se URL filters. Enable URL filter	lect the type of filter and	d then configure the UF	RL. Support up to 100
Firewall MAC Filter IP Filter	URL filter type:	Block Allow		
URL Filter	URL List			
Parent Control DMZ and ALG	URL Addres	s	Port Number	Delete
Access Control Application Maintenance	URL Address Port – default to 80			

Table 39 describes the fields in the URL Filter window.

Table 39URL Filter parameters

Field	Description
Enable URL filter	Select the checkbox to enable the URL filter
URL filter type	Select the checkbox for Exclude URL or Include URL
URL Address	Type the URL address
Port Number	Type the port number; the default is 80

- 2 Configure the URL Filter.
- 3 Click Add Filter.
- 4 STOP. This procedure is complete.

Procedure 30 DMZ and ALG configuration

1 Select Security > DMZ and ALG from the top-level menu in the 10G PON Gateway window, as shown in Figure 50.

Figure 50 DMZ and ALG window

	10G PON Home Gateway			Logout	English Espaol
	Security>DMZ and ALG				
Status		FTP 🔽	TETP 🔽	SIP 🔽	Н323 🔽
Network	ALG Config	RTSP 🔽	L2TP	IPSEC 🔽	РРТР 🔽
Security					
Firewall		0	Save ALG		
MAC Filter					
P Filter	DMZ Config				
JRL Filter					
Parent Control	WAN Connection List	1_INTERNE	T_R_VID_41		
DMZ and ALG	Enable DMZ				
Access Control	DMZ IP Address	Custom set	ttings		
Application	DM2 II Address	0.0.0.0			
Maintenance		0.0.0.0			
RG Troubleshooting		S	Save DMZ		

Table 40 describes the fields in the DMZ and ALG window.

Table 40DMZ and ALG parameters

Field	Description
ALG Config	Select the checkboxes to enable the protocols to be supported by the ALG: FTP, TFTP, SIP, H323, RTSP, L2TP, IPSEC, PPTP
DMZ Config	
WAN Connection List	Choose a WAN connection from the drop-down menu
Enable DMZ	Select this checkbox to enable DMZ on the chosen WAN connection
DMZ IP Address	Choose Customer Setting and enter the DMZ IP address or choose the IP address of a connected device from the drop-down menu

- 2 Configure ALG.
- 3 Click Save ALG.
- 4 Configure DMZ.

- 5 Click Save DMZ.
- 6 STOP. This procedure is complete.

Procedure 31 Access control configuration

This procedure describes how to configure the access control level (ACL).



Note 1 — ACL takes precedence over the firewall policy.

Note 2 — The trusted network object will be shared for all WAN connections; it is not applied individually to a WAN connection.

1 Select Security > Access Control from the top-level menu in the 10G PON Gateway window, as shown in Figure 51.

Figure 51 Access Control window

	10G PON Home	Gateway		Log	i <mark>out</mark> Engli	ish <u>Espaol</u>
	Security>Access Control					
■Status		WAN	ł	LAN		
Network		1_INTERNET_R_V	ID_41 👻			
Security	Trusted Network Enable					
Firewall	ICMP	Allow	-	Allow	•	
MAC Filter	Telnet	Deny	•	Allow	•	
IP Filter	2011	Destri		Dente		
URL Filter	SSH	Deny	•	Deny	•	
Parent Control	HTTP	Deny	+	Allow	•	
DMZ and ALG	TR-069	Allow	-	Deny	w	
Access Control	HTTPS	Depy	•	Allow	-	
Application	in it o			747000		
Maintenance		Save		Refresh		
RG Troubleshooting						
	Trusted Netwo	ork				
	Source IP Start					
	Source IP End					
				Add		
	Source IP S	Start	Sour	ce IP End	C)elete

Table 41 describes the fields in the Access Control window.

Table 41	Access control parameters
----------	---------------------------

Field	Description
WAN	Choose a connection from the drop-down menu
Trusted Network Enable	Select this checkbox to enable trusted network
ICMP, Telnet, SSH, HTTP, TR-069, HTTPS	Select an access control level for each protocol: WAN side: Allow, Deny, or Trusted Network Only LAN side: Allow or Deny
Source IP Start	Enter a start IP address for the new subnet trusted network
Source IP End	Enter an end IP address for the new subnet trusted network

- 2 Select a WAN connection from the drop-down menu.
- 3 Select the checkbox to enable Trusted Network.
- 4 Select an access control level for each of the four protocols: ICMP, SSH, HTTP, and TR-069 for both the WAN and the LAN side.
- 5 Click Save.
- 6 Optionally, add one or more subnet trusted networks.

The maximum number of entries is 32.

You can also use the Source IP fields to delete a previously created entry for a subnet trusted network.

7 STOP. This procedure is complete.

8.2.5 Application configuration

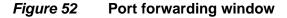
XS-240W-A and XS-250WX-A ONT also supports application configuration, including:

- port forwarding
- DDNS
- NTP
- USB storage
- UPnP and DLNA
- voice setting

Note that port triggering is not supported in release 5.6.

Procedure 32 Port forwarding configuration

1 Select Application > Port forwarding from the top-level menu in the 10G PON Gateway window, as shown in Figure 52.



	10G PON Home Gateway	Logout English Espaol
	Application>Port Forwarding	
Status		Custom settings
Network	Application Name	
Security	WAN Port	~
Application	LAN Port	~
Port Forwarding	Internal Client	Custom settings
Port Triggering		
DDNS	Protocol	TCP
NTP	Enable Mapping	
JSB Storage	WAN Connection List	1_INTERNET_R_VID_41
JPNP and DLNA		
/oice Setting		Add
Maintenance		
RG Troubleshooting		
_		
	Application Name WAN Connection	WAN Port LAN Port Device Name Internal Client Protocol Status Dele

Table 42 describes the fields in the port forwarding window.

Table 42Port forwarding parameters

Field	Description
Application Name	Choose an application name from the drop-down menu
WAN Port	WAN port range
LAN Port	LAN port range
Internal Client	Choose a connected device from the drop-down menu and enter the associated IP address
Protocol	Choose the port forwarding protocol from the drop-down menu: TCP UDP TCP/UDP
Enable Mapping	Select this checkbox to enable mapping

(1 of 2)

Field	Description			
WAN Connection List Choose a WAN connection from the drop-down menu				
	Note: only active devices are shown on this menu			
(2 of 2)				

- 3 Click Add.
- 4 STOP. This procedure is complete.

Procedure 33 DDNS configuration

1 Select Application > DDNS from the top-level menu in the 10G PON Gateway window, as shown in Figure 53.

	10G PON Home Gatewa	У	Logout	English Espaol	
	Application>DDNS				
Status Network	WAN Connection List	1_INTERNET_R_VID_41			-
■Security	Enable DDNS				
Application	ISP				•
Port Forwarding Port Triggering	Domain Name				
DDNS	Username				
NTP	Password				
USB Storage UPNP and DLNA		Save Refresh			
Voice Setting					
Maintenance					
RG Troubleshooting					

Figure 53 DDNS window

Table 43 describes the fields in the DDNS window.

Table 43DDNS parameters

Field	Description
WAN Connection List	Choose a WAN connection from the drop-down menu

(1 of 2)

Field	Description
Enable DDNS	Select this checkbox to enable DDNS on the chosen WAN connection
ISP	Choose an ISP from the drop-down menu.
Domain Name	Domain name
Username	Username
Password	Password

(2 of 2)

- 2 Configure DDNS.
- 3 Click Save.
- 4 STOP. This procedure is complete.

Procedure 34 NTP configuration

1 Select Application > NTP from the top-level menu in the 10G PON Gateway window, as shown in Figure 54.

Figure 54 NTP window

	10G PON Home Gatev	vay			Logout	English Espao
	Application>NTP					
Status Network Security Application Port Forwarding Port Triggering	Enable NTP Service		Save	Refresh		
DDNS						
USB Storage						
UPNP and DLNA						
Voice Setting						
Maintenance						
RG Troubleshooting						

2 Select the checkbox to enable NTP service.

- 3 Click Save.
- 4 STOP. This procedure is complete.

Procedure 35 USB storage configuration

1 Select Application > USB storage from the top-level menu in the 10G PON Gateway window, as shown in Figure 55.

Figure 55 USB storage window

	10G PON Home Gate	way	Logout	English Espaol
	Application>USB Storage			
Status Network	Enable FTP Server			
Security	Username	ftpadmin		
Application	Password	*******		
Port Forwarding Port Triggering	Re-enter Password	*******		
DDNS				
NTP				
USB Storage				
UPNP and DLNA				
Voice Setting				
Maintenance				
RG Troubleshooting				

Table 44 describes the fields in the USB storage window.

Table 44USB storage parameters

Field	Description
Enable FTP server	Select this checkbox to enable using an FTP server for data storage
Username	Username for FTP server
Password	Password for FTP server
Re-enter Password	Password for FTP server

2 Configure USB storage.

- 3 Click Save.
- 4 STOP. This procedure is complete.

Procedure 36 UPnP and DLNA configuration

1 Select Application > UPnP and DLNA from the top-level menu in the 10G PON Gateway window, as shown in Figure 56.

Figure 56 UPnP and DLNA window

	10G PON Home Gatev	vay		Logout	English Espao
	Application>UPNP and DLNA				
Status					
Network	UPnP/DLNA				
Security	Enable UPnP/DLNA				
Application			Save/Apply		
Port Forwarding					
Port Triggering					
DDNS					
NTP					
USB Storage					
UPNP and DLNA					
Voice Setting					
Maintenance					
RG Troubleshooting					

- 2 Select the Enable UPnP checkbox to enable UPnP.
- 3 Click Save/Apply.
- 4 STOP. This procedure is complete.

Procedure 37 Voice setting

1 Select Application > Voice Setting from the top-level menu in the 10G PON Gateway window, as shown in Figure 57.

Figure 57 Voice setting window

	10G PON Home Gateway	Logout English Espaol
	Application>Voice Setting	
Status	Voice Setting:	
Network		
Security		
Application	OutboundProxy	
ort Forwarding	OutboundProxyPort	5060
ort Triggering		5060
DNS	Proxy Server	
ITP		
ISB Storage	Proxy Port	5060
JPNP and DLNA		
loice Setting	Register Server	
Maintenance	Register Port	
RG Troubleshooting	Register Port	5060
	UserAgentDomain	
	DigitMap	рхосососсоск гороја (ставава) россоскоскружених* [3-2] росоросредни хорорихоскоскоскоскоски горор [3-2] росојско рабина (става) (става) (става) (става) (става) [4-3] рососкоскоска (става) (става) (става) (става) (става) [4-3] у става (става) (ст
	DTMF mode	RFC2833
	FaxT38	True
	Line Setting:	
	Line	Line1
	Enable	Disabled 💌
	Directory Number	
	AuthUserName	

Table 45 describes the fields in the Voice Setting window.

Table 45Voice setting parameters

Field	Description
Outbound Proxy	Enter the SIP outbound proxy

(1 of 2)

Description
Enter the outbound proxy port
Enter the proxy server
Enter the proxy port
Enter the register server
Enter the register port
Enter the user agent domain
Choose InBand, rfc2822, Info, or Auto from the drop-down menu
Choose False or True from the drop-down menu
Choose a line from the drop-down menu
Choose Enabled or Disabled from the drop-down menu
Enter a directory number
Enter an authorized user name
Enter a password for the user

(2 of 2)

- 2 Configure voice setting.
- 3 Click Save.
- 4 STOP. This procedure is complete.

8.2.6 Maintenance

XS-240W-A and XS-250WX-A ONT also supports maintenance tasks, including:

- change password
- test WAN speed
- configure LOID
- configure SLID
- manage device
- backup and restore
- upgrade firmware
- reboot device
- restore factory defaults
- diagnose WAN connections
- view log

Procedure 38 Password configuration

1 Select Maintain > Password from the top-level menu in the 10G PON Gateway window, as shown in Figure 58.

Figure 58 Password window

	10G PON Home Gateway		Logout	English Espaol
	Maintenance>Password			
Status Network Security Application	New Password Re-enter Password Prompt Message			
Maintenance Password		Save Refresh		
Speed Test				
LOID Config				
SLID Configuration				
Device Management				
Backup and Restore				
Firmware Upgrade				
Reboot Device				
Factory Default				
Diagnostics				
Log				
RG Troubleshooting				

Table 46 describes the fields in the password window.

Table 46Password parameters

Field	Description
New Password	New password
Re-enter password	Password must match password entered above
Prompt message	Password prompt message

- 2 Configure the new password.
- 3 Click Save.
- 4 STOP. This procedure is complete.

Procedure 39 WAN speed test

1 Select Maintain > Speed Test from the top-level menu in the 10G PON Gateway window, as shown in Figure 59.

Figure 59 Speed Test window

	10G PON Home Gateway	Logout English Espaol
	Maintenance>Speed Test	
Status		
Network		
Security	Download Speed Up	pload Speed
Application		
Maintenance		
Password		0.00 Notes SC
Speed Test		MD1676 GG
LOID Config	It is recommended not to make any process of	of uploading or downloading files or make use of any device associated with
SLID Configuration	optical terminal.	
Device Management	This aims to ensure a more precise speed me	asurement.
Backup and Restore	Start Cancel	
Firmware Upgrade	click start to start speed test.	
Reboot Device	click start to start speed test.	
Factory Default		
Diagnostics		
Log		

2 Click Start to start the speed test.

Enter the URL for the test server in the pop-up window.

3 STOP. This procedure is complete.

Procedure 40 LOID configuration

1 Select Maintain > LOID Config from the top-level menu in the 10G PON Gateway window, as shown in Figure 60.

Figure 60 LOID Config window

	10G PON Home Gateway	Logout English Espaol
	Maintenance>LOID Config	
Status Network Security Application Maintenance Password Speed Test LOID Configuration Device Management	LOID Authentication	he Password (length <13 characters). If the Password is null, lea
Backup and Restore Firmware Upgrade Reboot Device Factory Default		
Diagnostics Log		
RG Troubleshooting		

Table 47 describes the fields in the LOID configuration window.

Table 47LOID configuration parameters

Field	Description
LOID	Type the LOID; the maximum number of characters is 24 If the password is null, this field may be left blank
Password	Type the password; the maximum number of characters is 12

- 2 Configure the LOID.
- 3 Click Save/Apply.
- 4 STOP. This procedure is complete.

Procedure 41 SLID configuration

1 Select Maintain > SLID Configuration from the top-level menu in the 10G PON Gateway window, as shown in Figure 61.

Figure 61 SLID configuration window

	10G PON Home Gatew	ay	Logout	English Espaol
	Maintenance>SLID Configuration			
Status Network Security	Current SLID Enter New SLID	44454641554C54	4	
Application	SLID Mode	HEX Mode		
Maintenance Password Speed Test LOID Config			d (e.g. 1234567890ABCDEF	1234)
SLID Configuration		Save	Refresh	
Device Management				
Backup and Restore				
Firmware Upgrade				
Reboot Device				
Factory Default				
Diagnostics				
Log				
RG Troubleshooting				

Table 48 describes the fields in the SLID configuration window.

Table 48SLID configuration parameters

Field	Description
Current SLID	Displays current SLID
Input new SLID	Enter new SLID
SLID Mode	Choose a SLID mode from the drop-down menu.

- 2 Configure the new SLID.
- 3 Click Save.
- 4 STOP. This procedure is complete.

Procedure 42 Device management

1 Select Maintain > Device Management from the top-level menu in the 10G PON Gateway window, as shown in Figure 62.

Figure 62 Device management window

	10G PON Home Gateway	1	Logout	English Espaol
	Maintenance>Device Management			
Status Network	Host Name	Unknown_dc:4a:3e:8f:90:f4		•
Security	Host Alias			
Application		Add		
Maintenance		Auu		
Password				
Speed Test				
LOID Config				
SLID Configuration	Host Name	Host Alias		Delete
Device Management				
Backup and Restore		Refresh		
Firmware Upgrade				
Reboot Device				
Factory Default				
Diagnostics				
Log				
RG Troubleshooting				

Table 49 describes the fields in the Device management window.

Table 49Device management parameters

Field	Description
Host name	Choose a host from the drop-down menu
Alias	Enter an alias for the chosen host

- 2 Configure an alias for a specific host.
- 3 Click Add.
- 4 STOP. This procedure is complete.

Procedure 43 Backup and restore

1 Select Maintain > Backup and Restore from the top-level menu in the 10G PON Gateway window, as shown in Figure 63.

Figure 63 Backup and Restore window

	10G PON Home Gateway	Logout <u>English Espao</u>
	Maintenance>Backup and Restore	
Status	Select File	Browse No file selected.
Network	Select File	
Security	Import Config File	Import
Application	Export Config File	Export
Maintenance		
Password		
Speed Test		
LOID Config		
SLID Configuration		
Device Management		
Backup and Restore		
Firmware Upgrade		
Reboot Device		
Factory Default		
Diagnostics		
Log		
RG Troubleshooting		

- 2 Click Select File and choose the backup file.
- 3 Click Import Config File to restore the ONT to the saved backup or click Export Config File to export the current ONT configuration to the backup file.
- 4 STOP. This procedure is complete.

Procedure 44 Upgrade firmware

1 Select Maintain > Firmware Upgrade from the top-level menu in the 10G PON Gateway window, as shown in Figure 64.

Figure 64 Firmware upgrade window

	10G PON Home Gateway	Logout English Espaol
	Maintenance>Firmware Upgrade	
Status	Select File	
Network	Select File	Browse No file selected.
Security	Upgrade	Upgrade
Application		
Maintenance		
Password		
Speed Test		
LOID Config		
SLID Configuration		
Device Management		
Backup and Restore		
Firmware Upgrade		
Reboot Device		
Factory Default		
Diagnostics		
Log		
RG Troubleshooting		

- 2 Click Select File and choose the firmware file.
- **3** Click Upgrade to upgrade the firmware.
- 4 STOP. This procedure is complete.

Procedure 45 Reboot ONT

1 Select Maintain > Reboot Device from the top-level menu in the 10G PON Gateway window, as shown in Figure 65.

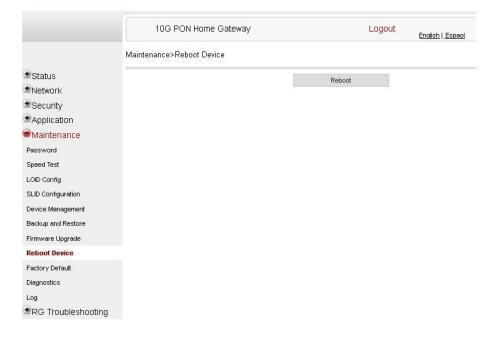


Figure 65 Reboot window

- 2 Click Reboot to reboot the ONT.
- **3** STOP. This procedure is complete.

Procedure 46 Restore factory defaults

1 Select Maintain > Factory Default from the top-level menu in the 10G PON Gateway window, as shown in Figure 66.

Figure 66 Factory default window

	10G PON Home Gateway	Logout	English Espaol
	Maintenance>Factory Default		
Status		Factory Default	
Network			
Security			
Application			
Maintenance			
Password			
Speed Test			
LOID Config			
SLID Configuration			
Device Management			
Backup and Restore			
Firmware Upgrade			
Reboot Device			
Factory Default			
Diagnostics			
Log			
RG Troubleshooting			

- 2 Click Factory Default to reset the ONT to its factory default settings.
- **3** STOP. This procedure is complete.

Procedure 47 Diagnose WAN connections

1 Select Maintain > Diagnose from the top-level menu in the 10G PON Gateway window, as shown in Figure 67.

Figure 67 Diagnose window

	10G PON Home Gateway		Logout	English Espaol
	Maintenance>Diagnostics			
Status Network Security Application Maintenance Password	WAN Connect List IP or Domain Name Test Ping Try Times(1 ~ 1000)	LANWAN Inter		
Speed Test .OID Config	Packet Length(64 ~ 1500) Max no. of trace hops(1 ~ 255)	30		
SLID Configuration Device Management Backup and Restore Firmware Upgrade Reboot Device Factory Default Diagnostics		Start Test	Cancel	
.og IRG Troubleshooting				

- 2 Choose a WAN connection to diagnose from the drop-down menu.
- 3 Enter the IP address or domain name.
- 4 Select the test type: ping, traceroute, or both.
- **5** Enter the number of ping attempts to perform (1 1000); the default is 4.
- 6 Enter a ping packet length (64-1024); the default is 64.
- 7 Enter the maximum number of trace hops (1-255); the default is 30.
- 8 Click Start Test. Results will be displayed at the bottom of the window.

- 9 Click Cancel to cancel the test.
- **10** STOP. This procedure is complete.

Procedure 48 View log files

1 Select Maintain > Log from the top-level menu in the 10G PON Gateway window, as shown in Figure 68.

Figure 68 Log window

	10G PON Home Gateway	/ Logout English Espaol
	Maintenance>Log	
Status		Error
Network	Write Level	
Security	Reading Level	Error
Application	Manufacturer: ALCL	
Maintenance	ProductClass:XG-250WX-A SerialNumber:ALCL00881983	E
Password	HWVer:3FE46305ACAA	
Speed Test	SWVer:3FE46346AFGA53 IP:192.168.1.254	
LOID Config		
SLID Configuration		P]cfg_voice_bulkdata.c:106:Dispatch object targetOid = 308 data failed Plcfq_voice_bulkdata.c:60:get object error
- Device Management	1970-01-01 00:00:50[er][CFGVOIF	P]cfg_voice_bulkdata.c:106:Dispatch object targetOid = 327 data failed
Backup and Restore		P]cfg_voice_bulkdata.c:60:get object error P]cfg_voice_bulkdata.c:106:Dispatch object targetOid = 327 data failed
Firmware Upgrade	1970-01-01 00:00:51[er][CFGVOIF	P]cfg_voice_bulkdata.c:106:Dispatch object targetOid = 282 data failed
Reboot Device		P]rts_voiceProfCTIADDiagnostics.c:52:Get RegistrarServer address failed. P]rts_voiceProfCTIADDiagnostics.c:71:Get Standby RegistrarServer address faile
Factory Default		_cvp_sip_dns_server.cpp:118:no dns sip server
	2017-01-25 16:31:05[al]Web: acc 1970-01-01-00:00:48[av][CEOVOI	ount ≪> authorization failed Pjcfg_voice_bulkdata.c:106:Dispatch object targetOid = 308 data failed
Diagnostics		Pjcfg_voice_bulkdata.c:106.Dispatch object targetOid = 308 data failed Pjcfg_voice_bulkdata.c:60:get object error
Log	1970-01-01 00:00:51[er][CFGVOIF	P]cfg_voice_bulkdata.c:106:Dispatch object targetOid = 327 data failed 🛛 👻

Save Refresh

- 2 Choose a write level from the drop-down menu to determine which types of events are recorded in the log file:
 - Emergency
 - Alert
 - Critical
 - Error
 - Warning
 - Notice
 - Informational
 - Debug
- 3 Choose a reading level from the drop-down menu to determine which types of events to display from the log file:
 - Emergency
 - Alert
 - Critical
 - Error
 - Warning
 - Notice
 - Informational
 - Debug
- 4 The log file is displayed at the bottom of the window.
- 5 STOP. This procedure is complete.

8.2.7 RG troubleshooting counters

The Troubleshooting Counters feature enables service providers and end users to monitor the performance of their broadband connection.

Tests are run to retrieve upstream and downstream throughput, latency, and DNS response time. The Troubleshooting Counters window also displays upstream and downstream packet loss and Internet status.

Note that port mirroring is not supported in Release 5.6.

Procedure 49 Retrieve Residential Gateway (RG) troubleshooting counters

1 Select RG Troubleshooting Counters from the left menu in the 10G PON Gateway window.

The RG Troubleshooting Counters window appears; see Figure 69.

Figure 69	RG Troubleshooting Counters window
-----------	------------------------------------

	10G PON Home Gatewa	ау	Logout	English Espaol
F	RG Troubleshooting>RG Troubles	noot Counters		
Status	WAN Connection List	1_INTERNET_R_	VID_41	T
Security Application Maintenance	US Throughput		US-S	peedTest
RG Troubleshooting	DS Throughput		DS-S	peedTest
	US Packet Loss			
	DS Packet Loss Internet Status	UP		
	Latency			LatencyTest
	DNS Response Time Port Mirror			DNSResponseTest
	Source Port D	estination Port	Direction	Status
	WAN 🔽	LAN1 Sav	UP 💌	Enable
				on Disable

Table 50 describes the fields in the RG Troubleshooting Counters window.

Table 50 RG Troubleshooting Counters parameters

Field	Description
WAN Connection List	Select a WAN connection from the list

(1 of 2)

Field	Description	
US Throughput	This test is used to determine the upstream throughput/speed	
	Click US Speed Test to specify the time for the upstream test	
	The default is weekly, performed at idle to a public server	
DS Throughput	This test is used to determine the downstream throughput/speed	
	Click DS Speed Test to specify the time for the downstream test	
	The default is weekly, performed at idle to a public server	
US Packet Loss	The number of upstream packages lost	
DS Packet Loss	The number of downstream packages lost	
Internet Status	Whether the broadband connections is active (UP) or not (DOWN)	
Latency	This test is used to determine the lowest round-trip time in milliseconds by pinging the target server multiple times	
	Click Latency Test to specify the time for the test	
	The default is weekly, performed at idle to a public server	
DNS Response Time	This test is used to determine the lowest round-trip time in milliseconds by sending a request to the target DNS server	
	Click DNS Response Test to specify the time for the test	
	The default is weekly, performed at idle to a public server	

(2 of 2)

- 2 Configure the test times if desired.
- 3 Click Refresh to update the data.
- 4 STOP. This procedure is complete.

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