

Nokia ONT

G-1425G-B Product Guide

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About this document

Purpose

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

Intended audience

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

The reader must be familiar with general telecommunications principles.

Safety information

For your safety, this document contains safety statements. Safety statements are given at points where risks of damage to personnel, equipment, and operation may exist. Failure to follow the directions in a safety statement may result in serious consequences.

Safety Information Examples



DANGER

Hazard

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

Equipment Damage

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



CAUTION

Service Disruption

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.

Acronyms and initialisms

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

Nokia quality processes

Nokia's ONT manufacturing, testing, and inspecting 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.

Documents

Documents are available using ALED or OLCS.

To download a ZIP file package of the customer documentation

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Navigate to <http://customer.nokia.com/s/> 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.
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- 3 _____
Type your product name in the **Find and select a product** field and click the search icon.
Select a product.
- 4 _____
Click **Downloads: ALED** to go to the Electronic Delivery: Downloads page.
- 5 _____
Select **Documentation** from the list.
- 6 _____
Select a release from the list.
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Select a product.
- 4 _____
Click **Documentation: Doc Center** to go to the product page in the Doc Center.
- 5 _____
Select a release from the **Release** list and click **SEARCH**.
- 6 _____
Click on the PDF icon to open or save the file.

END OF STEPS _____

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.

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.

END OF STEPS _____

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:

- a. This is the first substep.
- b. This is the second substep.
- c. This is the third substep.

2

You must perform this step.

END OF STEPS

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.

Note:The PDF files in which you search must be in the same folder.

To search multiple PDF files for a common term

1

Open Adobe Acrobat Reader.

2

Select **Edit→Search** from the Acrobat Reader main menu. The Search PDF panel displays.

3

Enter the search criteria.

4

Select **All PDF Documents In**.

5

Select the folder in which to search using the list.

6

Click **Search**.

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

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1 What's new

1.1 Overview

1.1.1 Purpose

This chapter provides the details of features and other documentation changes updated in the product guide in each release.

1.1.2 Contents

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1.2 What's new in BBD Release 22.02

[Table 1-1, "What's new in BBD Release 22.02" \(p. 21\)](#) lists the new features and enhancements added to the G-1425G-B product guide in Issue 3.

Table 1-1 What's new in BBD Release 22.02

| Feature/enhancement | Description | See |
|----------------------------------|--|---|
| New features/enhancements | | |
| Part numbers and identification | Added new ordering kit part numbers and related power supply details for customer specific variants. | Table 5-1, "Identification of G-1425G-B indoor ONTs" (p. 45) and Table 5-2, "G-1425G-B power supply ordering information" (p. 47) |

1.3 What's new in BBD Release 22.01a

[Table 1-2, "What's new in BBD Release 22.01a" \(p. 21\)](#) lists the new features and enhancements added to the G-1425G-B product guide in Issue 2.

Table 1-2 What's new in BBD Release 22.01a

| Feature/enhancement | Description | See |
|----------------------------------|-------------|-----|
| New features/enhancements | | |

Table 1-2 What's new in BBD Release 22.01a (continued)

| Feature/enhancement | Description | See |
|---------------------------------|--|--|
| Part numbers and identification | Added the ordering kit part numbers and related power supply details for customer specific variants. | Table Table 5-1, "Identification of G-1425G-B indoor ONTs" (p. 45) |

1.4 What's new in BBD Release 22.01

The Product guide is a new guide in BBD Release 22.01, issue 1. In future releases, this chapter will provide tables of the feature and document changes applicable to this guide.

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

Hazard

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

Equipment Damage

Possibility of equipment damage.

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****Service Disruption**

Possibility of service interruption.

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.

The following table provides sample safety labels on the ONT equipment.

Table 2-1 Safety 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. |
| VCCI marking | Compliant with Japan VCCI emissions standards. |

Figure 2-1, “VCCI warning” (p. 24) shows the VCCI warning.

Figure 2-1 VCCI warning

| | |
|-------------|---|
| Warning | <p>This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.</p> |
| 警告 | <p>VCCI準拠クラスB機器（日本） この機器は、Information Technology EquipmentのVoluntary Control Council for Interference (VCCI)の規格に準拠したクラスB製品です。この機器をラジオやテレビ受信機の近くで使用した場合、誤信を発生する恐れがあります。本機器の設置および使用に際しては、取扱説明書に従ってください。</p> |

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)
- EN 301489-1 and EN 301489-17
- EN 55032: Information Technology Equipment, Immunity Characteristics, limits and methods of measurement
- EN 61000-3-2

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 over currents.

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: 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. 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

Service Disruption

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

Hazard

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

Hazard

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

2.5.1 Laser classification

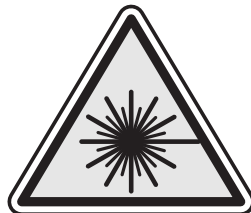
The ONT is classified as a Class 1 laser product based on its transmit optical output.

Laser warning labels

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

The following figure shows a laser product label.

Figure 2-2 Laser product label



18455

[Figure 2-3, “Laser classification label” \(p. 28\)](#) shows a laser classification label. Laser classification labels may be provided in other languages.

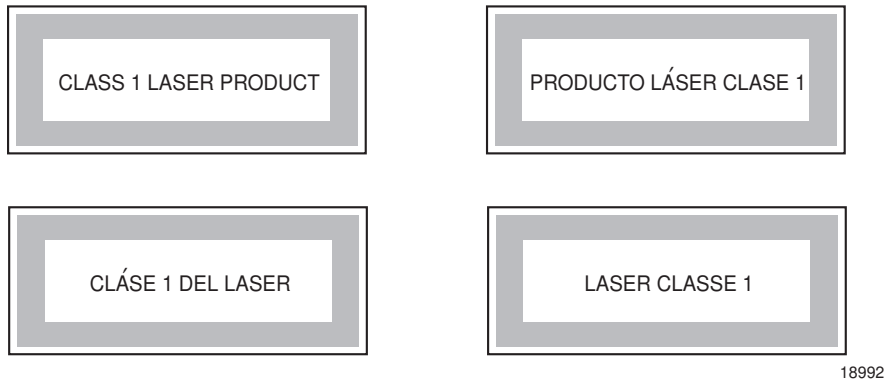
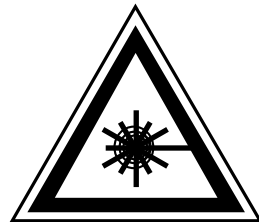
Figure 2-3 Laser classification label

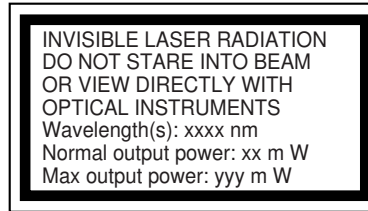
Figure 2-4, “Laser warning labels” (p. 29) shows a laser warning label and an explanatory label for laser products. Labels and warning may be provided in other languages. The explanatory label provides the following information:

- 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

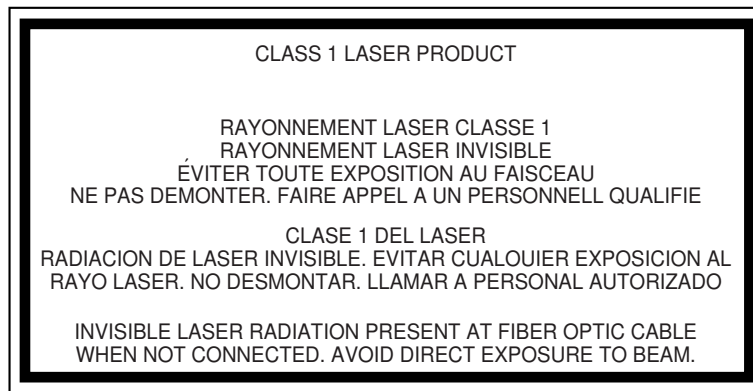
Figure 2-4 Laser warning labels



Laser Warning Label



Laser Warning Label



Laser Warning Label

18993

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

Hazard

Risk of eye damage by laser radiation.

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.

Products below Maximum Concentration Value (MCV) label

[Figure 3-1, "Products below MCV value label" \(p. 32\)](#) 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.

Figure 3-1 Products below MCV value label



18986

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

Figure 3-2, “Products above MCV value label” (p. 32) 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 3-2 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 3.2 “Hazardous Substances Table (HST)” (p. 32) 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 sub assemblies contain hazardous substances beyond the MCV value. This information is found in this user documentation where part numbers for the product and sub assemblies 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:

- <http://www.nokia-sbell.com/wwwroot/images/upload/private/1/media/ChinaRoHS.pdf>

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 ONT 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 ONT 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 ONT equipment must be in a temperature-controlled location, with no rain allowed, and with no condensation allowed.

3.3.5 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.

3.3.6 End-of-life collection and treatment

Electronic products bearing or referencing the symbol shown in [Figure 3-3, “Recycling/take back/disposal of product symbol” \(p. 33\)](#), 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 3-3 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 3-3, “Recycling/take back/disposal of product symbol” \(p. 34\)](#) 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

Hazard

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

Equipment Damage

Possibility of equipment damage.

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****Service Disruption**

Possibility of service interruption.

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.

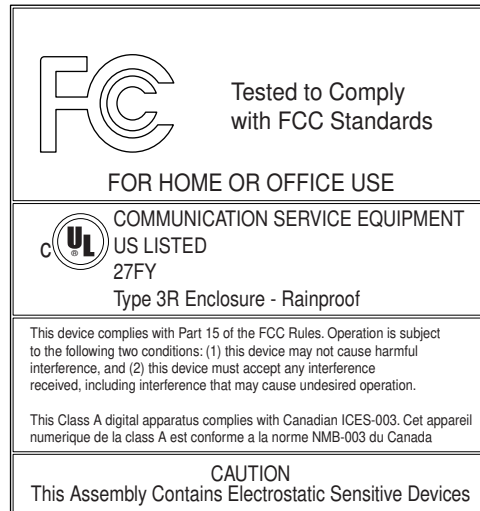
The following table provides examples of the text in the various ONT safety labels.

Table 4-1 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 |
| 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. |

The following figure shows a sample safety label on the ONT equipment.

Figure 4-1 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

Equipment Damage

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 Federal Communications Commission (FCC) CFR 47, Part 15, Subpart B, Class A requirements for OLT equipment.

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.

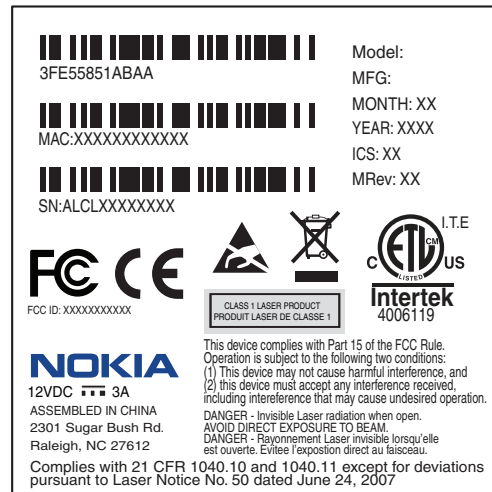
Per CDRH 21 CFR 10.40.10 (h) (1) (iv) distributors of Class 1 laser products, such as Nokia ONTs shall leave the following Laser Safety cautions with the end user.

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 4-2, “Sample laser product label showing CDRH 21 CFR compliance” \(p. 39\)](#) shows a laser product label.

Figure 4-2 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 over voltage and over currents.

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.



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.



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.

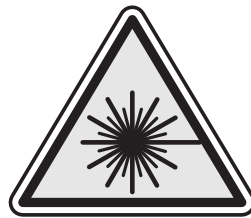
- a) "Class 1 Laser Product"
- b) "Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure."

4.3.1 Laser warning labels

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

The following figure shows a laser product label.

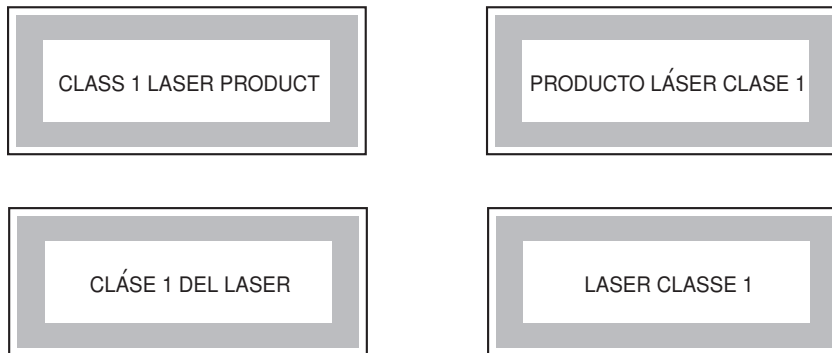
Figure 4-3 Laser product label



18455

Figure 4-4, "Laser classification label" (p. 40) shows a laser classification label. Laser classification labels may be provided in other languages.

Figure 4-4 Laser classification label



18992

Figure 4-5, "Laser warning labels" (p. 41) 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 4-5 Laser warning labels



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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 4-6, “Sample laser product safety label on the ONT equipment” (p. 42) shows a sample laser product safety label on the ONT equipment.

Figure 4-6 Sample laser product safety label on the ONT equipment



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.



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

Service Disruption

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 G-1425G-B unit data sheet

5.1 Overview

5.1.1 Purpose

5.1.2 Contents

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5.2 G-1425G-B part numbers and identification

Table 5-1, “Identification of G-1425G-B indoor ONTs” (p. 45) provides part numbers and identification information for the G-1425G-B indoor ONT.

Table 5-1 Identification of G-1425G-B indoor ONTs

| Ordering kit part number | Provisioning number | Description | CLEI Code | CPR | ECI/ Bar code |
|--------------------------|---------------------|--|-----------|-----|---------------|
| 3FE 49881 AA | 3FE 49937 AA | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 12V, 512 MB wall-mounted AC/DC power adapter with 2-pin EU input plug. External antenna with 5dBi gain for each. | — | — | — |

Table 5-1 Identification of G-1425G-B indoor ONTs (continued)

| Ordering kit part number | Provisioning number | Description | CLEI Code | CPR | ECI/ Bar code |
|--------------------------|---------------------|--|-----------|-----|---------------|
| 3FE 49881 AB | 3FE 49937 AB | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 12V, 512 MB wall-mounted AC/DC power adapter with 2-pin EU input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 AC | 3FE 49937 AC | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 12V/1.5A, 512 MB wall mounted AC/DC power adapter with 2-pin EU input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 AD | 3FE 49937 AD | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 12V/1.5A, 512 MB wall mounted AC/DC power adapter with 2-pin EU input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 AE | 3FE 49937 AE | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 12V, 512 MB wall mounted AC/DC power adapter with 2-pin EU input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 AG | 3FE 49937 AG | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 12V, 512 MB wall mounted AC/DC power adapter with 2-pin EU input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 BB | 3FE 49937 BB | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 12V/1.5A, 512 MB wall mounted AC/DC power adapter with 2-pin US input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 BD | 3FE 49937 BD | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 18 W, 12V/1.5A, 512 MB wall mounted AC/DC power adapter with 2-pin US input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 BE | 3FE 49937 BE | GPON Dual Band, 2+2 GPON ONT. Supports 1 POTS port, 4xGE, UNI, Wi-Fi 5, USB, 512MB, external antennas. Customer specific variant. No USB port. 12V/1.5A, 512 MB wall mounted AC/DC power adapter with 2-pin US input plug. External antenna with 5dBi gain for each. | — | — | — |

Table 5-1 Identification of G-1425G-B indoor ONTs (continued)

| Ordering kit part number | Provisioning number | Description | CLEI Code | CPR | ECI/ Bar code |
|--------------------------|---------------------|--|-----------|-----|---------------|
| 3FE 49881 BG | 3FE 49937 BG | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 18 W, 12V/1.5A, 512 MB wall mounted AC/DC power adapter with 2-pin US input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 CB | 3FE 49937 CB | GPON Dual Band 2+2 RGW ONT. Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, 2x2 802.11b/g/n and 2x2 802.11ac. No USB port. 512 MB wall mounted AC/DC power adapter with 2-pin AU input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 DA | 3FE 49937 DA | GPON Dual Band, 2+2, GPON ONT, Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, external antennas. Customer-specific variant. No USB port. 12V/1.5A 512 MB wall mounted AC/DC power adapter with 3-pin UK input plug. External antenna with 5dBi gain for each. | — | — | — |
| 3FE 49881 DB | 3FE 49937 DB | GPON Dual Band, 2+2, GPON ONT, Supports 1 POTS port, 4xGE UNI, Wi-Fi 5, external antennas. Customer-specific variant. No USB port. 12V/1.5A, 512 MB wall mounted AC/DC power adapter with 3-pin UK input plug. External antenna with 5dBi gain for each. | — | — | — |

Table 5-2, “G-1425G-B power supply ordering information” (p. 47) provides the power supply information for the G-1425G-B ONT. For more information on power supplies, see the **Nokia ONT Power Supply and UPS Guide**. The power consumption is less than 18 W.

Table 5-2 G-1425G-B power supply ordering information

| ONT part numbers | Power model (Model No./Manufacture Part Number) | Power information | Customer category or country compliance tested for | Notes |
|--|--|---|--|---------------------|
| Kit: 3FE 49881 AA EMA: 3FE 49937 AA | FUHUA EU: UES18LV-120150SPA/ UE200912GWZF1RI RUIDE EU: RD1201500-C55-153OG/ BS120150-EC6C-LL00 | 12 V wall mounted AC/DC power adapter, EU plug-in | Europe, CE certified | 2-pin EU input plug |
| Kit: 3FE 49881 AB EMA: 3FE 49937 AB | FUHUA EU: UES18LV-120150SPA/ UE200327GWZF1RI RUIDE EU:RD1201500-C55-198OG/ BW120150-EC6C-LL02 | 12 V wall mounted AC/DC power adapter, EU plug-in | Europe, CE certified | 2-pin EU input plug |
| Kit: 3FE 49881 AC EMA: 3FE 49937 AC | FUHUA EU: UES18LV-120150SPA/ UE200912GWZF1RI RUIDE EU: RD1201500-C55-153OG/ BS120150-EC6C-LL00 | 12 V, 1.5A wall mounted AC/DC power adapter, EU plug-in | Europe, CE certified | 2-pin EU input plug |

Table 5-2 G-1425G-B power supply ordering information (continued)

| ONT part numbers | Power model (Model No./Manufacture Part Number) | Power information | Customer category or country compliance tested for | Notes |
|--|---|---|--|------------------------|
| Kit: 3FE 49881 AD EMA: 3FE 49937 AD | FUHUA EU: UES18LV-120150SPA/ UE200912GWZF1RI RUIDE EU: RD1201500-C55-153OG/ BS120150-EC6C-LL00 | 12 V, 1.5A wall mounted AC/DC power adapter, EU plug-in | Europe, CE certified | 2-pin EU input plug |
| Kit: 3FE 49881 AE EMA: 3FE 49937 AE | FUHUA EU: UES18LV-120150SPA/ UE200327GWZF1RI RUIDE EU: RD1201500-C55-198OG/ BW120150-EC6C-LL02 | 12 V, wall mounted AC/DC power adapter, EU plug-in | Europe, CE certified | 2-pin EU input plug |
| Kit: 3FE 49881 AG EMA: 3FE 49937 AG | FUHUA EU: UES18LV-120150SPA/ UE200327GWZF1RI RUIDE EU: RD1201500-C55-198OG/ BW120150-EC6C-LL02 | 12 V, wall mounted AC/DC power adapter, EU plug-in | Europe, CE certified | 2-pin EU input plug |
| Kit: 3FE 49881 BB EMA: 3FE 49937 BB | FUHUA: UES24WU-120200SPA/ UE191025GWZF4RI MOSO: MSA-C1500CS12.0-18J-US/ SA226-U0 | 12 V, 1.5A wall mounted AC/DC power adapter, US plug-in | ANSI municipality US, UL/CB certified | 2-pin US input plug |
| Kit: 3FE 49881 BD EMA: 3FE 49937 BD | FUHUA: UES18LU-120150SPA/ UE200327GWZF2RI RUIDE: RD1201500-C55-198MG/ BW120150-UC6C-LL02 | 18 W, 12 V, 1.5A wall mounted AC/DC power adapter, US plug-in | ANSI municipality US, UL/CB certified | 2-pin US input plug |
| Kit: 3FE 49881 BE EMA: 3FE 49937 BE | FUHUA: UES24WU-120200SPA/ UE191025GWZF4RI MOSO: MSA-C1500CS12.0-18J-US/ SA226-U0 | 12 V, 1.5A wall mounted AC/DC power adapter with LED. White 6kV, US plug-in | ANSI municipality US, UL/CB certified | 2-pin US input plug |
| Kit: 3FE 49881 BG EMA: 3FE 49937 BG | FUHUA: UES18LU-120150SPA/ UE200327GWZF2RI RUIDE: RD1201500-C55-198MG/ BW120150-UC6C-LL02 | 18 W, 12 V, 1.5A wall mounted AC/DC power adapter, US plug-in | ANSI municipality US, UL/CB certified | 2-pin US input plug |
| Kit: 3FE 49881 CB EMA: 3FE 49937 CB | FUHUA AU: UES18LS-120150SPA/ UE220426DGAH2RI RUIDE: RD1201500-C55-81AG/ BK120150-FC6C-LL05 | 512 MB wall mounted, AC/DC power adapter, AU plug-in. | Australia, RCM certified | 2-pin AU input plug |
| Kit: 3FE 49881 DA EMA: 3FE 49937 DA | FUHUA: UES18LB-120150SPA/ UE211022GWZF1RI RUIDE: RD1201500-C55-153YG/ BS120150-YC6C-LL02 | 12 V, 1.5A wall mounted AC/DC power adapter, UK plug-in | UK, CE certified | 3-pin UK input plug |
| Kit: 3FE 49881 DB EMA: 3FE 49937 DB | FUHUA: UES18LB-120150SPA/ UE211022GWZF1RI RD1201500-C55-198YG/BW120150- YC6C-LL02 | 12 V, 1.5A wall mounted AC/DC power adapter, UK plug-in | UK, CE certified | 3-pin UK input plug |

The following table describes the various plug types used in the ONTs.

Table 5-3 Plug types







| Plug type | Icon |
|------------------|---|
| 2-pin EU plug |  |
| 2-pin US plug |  |
| 2-pin AU plug |  |
| 3-pin UK plug |  |
| 3-pin US plug |  |
| 3-pin India plug |  |

Table 5-4, “Hardware parts required for G-1425G-B installations” (p. 49) lists the hardware parts required for mounting an G-1425G-B ONT.

Table 5-4 Hardware parts required for G-1425G-B installations

| Part | Description |
|--------------------------------------|---|
| ONT unit | The G-1425G-B ONT |
| Wall mount bracket (3FE 49555 AA) | The wall mount bracket is fastened to a wall. The G-1425G-B ONT is seated in the wall mount bracket. |
| Mounting screws | Two screws are required to mount the wall mount bracket. The recommended screw is a M4 or #6 screw with a pan head style of screw head. |

5.3 G-1425G-B general description

G-1425G-B 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.

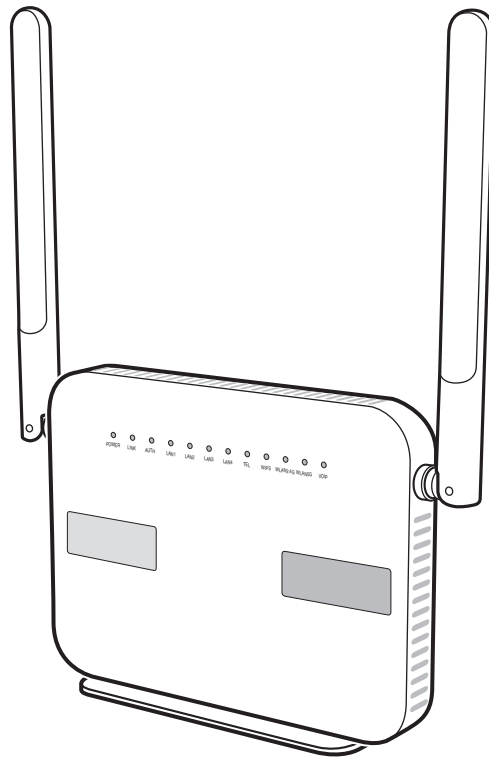
The G-1425G-B has built-in Wi-Fi 802.11 b/g/n/ac networking with triple play capability and can provide triple play services with voice, video and data.

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).

The ONT can be placed on a flat surface, such as a desk or shelf.

Figure 5-1, “G-1425G-B ONT (external antenna)” (p. 49) shows the G-1425G-B ONT.

Figure 5-1 G-1425G-B ONT (external antenna)



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G-1425G-B indoor ONTs provide the following functions:

- Dual-band concurrent 2x2 IEEE 802.11b/g/n 2.4 GHz and 802.11ac MIMO 5 GHz
- Supports 802.11 b/g/n 2x2 Wireless 2.4 GHz MIMO; Channel bandwidth 20, 40, 20/40 MHz
- Supports 802.11ac 2x2 Wireless 5 GHz Mu-MIMO; Channel bandwidth 20, 40, 80 MHz

- Four Gigabit standard RJ-45 1000/100/10 Mbps, auto negotiating Ethernet ports and MDI/MDIX auto sensing
- One POTS ports with R-J11 connectors
- GPON uplink: G.984 and G.988 series standard compliant
- 256MB NAND Flash with bad block management, 512MB DDR3 RAM, pin2pin compatible design for possible upgrade of RAM/Flash
- WLAN on/off push button
- WPS on/off push button
- LEDs on/off push button
- Reset button
- Triple-Play services, including voice, video and high speed Internet access
- Support for fax services
- Built-in layer 2 switch; Line Rate L2 traffic
- IP video distribution
- Wavelength: 1490 nm downstream; 1310 nm upstream
- Supports WBF filter. The GPON ONTs can co-exist with XGSPON ONTs in the same PON
- PHY rate: 300 Mbps for 2.4 G and 867 Mbps for 5 G
- External antennas with 5dBi gain for each
- Optics that support received signal strength indication (RSSI)
- 64/128 WEP encryption
- WPA, WPA-PSK/TKIP
- WPA2, WPA2-PSK/AES
- VLAN tagging/detagging and marking/remarking of IEEE 802.1p per Ethernet port.
- Dying gasp support
- Voice Services via Session Initiation Protocol (SIP)
- Multiple voice Code
- DTMF dialing
- Echo cancellation (G.168)
- Fax mode configuration (T.30/T.38)
- Caller ID, call waiting, call hold, 3-way calling, call transfer, message waiting
- Forward Error Correction (FEC)
- Support for multiple SSIDs (private and public instances); contact your Nokia representative for further details.
- Conductive power: 200 mW/23 dBm (2.4 GHz); 200 mW/23 dBm (5GHz)
- Maximum effective isotropic radiated power (EIRP):
 - 5 dBi external antenna: 630 mW/28 dBm (2.4GHz); 630 mW/28 dBm (5GHz)
- Bridged mode or routed mode per LAN port
- TR-069 support

- Ethernet-based Point-to-Point (PPPoE)
- DHCP client/server
- DNS server/client
- DDNS
- Port forwarding
- Network Address Translation (NAT)
- Network Address Port Translation (NAPT)
- UPnP IGD2.0 support
- ALG
- IGMP snooping and proxy (v2/v3)
- Traffic classification and QoS capability
- OMCI/TR-069 Web GUI configuration
- Performance monitoring and alarm reporting
- Remote software image downloading and activation
- IP/MAC/URL filter
- Multi-level firewall and ACL
- Econet ONT in mainstream
- SoftGRE support
- OOKLA Speed Test support
- TR181 support

5.3.1 TR-069 parameter support

The G-1425G-B ONT supports the following TR-069 features:

- Host object
- Port forwarding
- Optical parameters
- Object support for optical parameters
- Statistics and troubleshooting
- Diagnostic parameter
- Component parameter

Host object support

The ONT provides host object support for: InternetGatewayDevice.LANDevice.Hosts.Host.

Port forwarding support

The ONT supports the port forwarding of objects via TR-069:

- Application Name
- WAN Port

- LAN Port
- Internal Client
- Protocol
- Enable Mapping
- WAN Connection List

These are the same port forwarding parameters supported in the GUI. For more information, see [Table 7-36, “Port Forwarding parameters”](#) (p. 163) in [Chapter 7, “Configure a G-1425G-B indoor ONT”](#).

Optical parameters support

The ONT supports the reading of optical parameters via TR-069:

- Laser bias current
- Voltage
- Temperature
- Received signal levels
- Lower thresholds

These are the same optical parameters supported in the GUI. For more information, see [Table 7-9, “Optics Module Status parameters”](#) (p. 107) in [Chapter 7, “Configure a G-1425G-B indoor ONT”](#).

Object support for Wi-Fi parameters

The ONT supports the status retrieval and configuration of the following Wi-Fi parameters via TR-069:

- Channel
- SSID
- Password for WPA and WEP
- Tx power (transmission rate in percentage of maximum transmit power)
- WPS

These are the same TR-069 object parameters that are supported in the GUI. For more information, see [Table 7-16, “Wireless \(2.4GHz\) parameters”](#) (p. 121) and [Table 7-17, “Wireless \(5GHz\) parameters”](#) (p. 123) in [Chapter 7, “Configure a G-1425G-B indoor ONT”](#).

Statistics and troubleshooting support

The ONT supports TR-069 statistics and troubleshooting for LAN, WAN, and Wi-Fi.

Diagnostic parameter support

The ONT supports the following TR-069 diagnostic parameters:

- TR-143
- IP ping
- Traceroute

These are the same diagnostic parameters supported in the GUI. For more information, see [7.57 “Diagnosing WAN connections” \(p. 180\)](#) in [Chapter 7, “Configure a G-1425G-B indoor ONT”](#).

5.3.2 TR69 authentication using TLS and CA certificates

G-1425G-B ONTs support TLS, as well as ACS authentication using SHA-256 pre-installed certificates.

If the URL is set to the https://... format, by default, the connection will use TLS without authentication mode. The ONT can also authenticate the ACS using a pre-installed CA certificate.

The G-1425G-B ONTs support TLSv1.3 for TR069. The ONT supports download certification from ACS.

5.3.3 TR-104 parameter extension support for voice service

A vendor specific attribute has been added to the TR-104 Voice Service object structure to enable the ACS to configure the name of the embedded GSIP XML file to be selected.

The TR-104 Voice Service Object is:

InternetGatewayDevice.Services.VoiceService.{i}.Capabilities.SIP.

The vendor specific attribute is: X_ALU-COM_XML_File_Name_Path.

5.3.4 TR-104 voice-related alarms

The G-1425G-B ONT supports the following four TR-104 voice-related alarms on a per FXS port basis.

These alarms all represent SIP registration failures with an alarm level of MAJOR.

- SIPREGDNS: domain name could not be resolved
- SIPREGAUTH: authentication failed
- SIPREGTO: re-transmissions timed out
- SIPREGERR: error response from the registration server

5.3.5 TR-104 parameters for FX line testing

New attributes have been added to the TR-104 Voice Service object structure to enable the ACS to perform line tests. The ONT supports the following electrical line tests:

- Hazardous potential
- Foreign electrical motive force
- Resistive faults
- Receiver off-hook test
- Ringers test

5.3.6 TR-111 support

The G-1425G-B ONT supports TR-111, which extends the WAN Management Protocol defined in TR-069 to enhance the ability to remotely manage LAN devices.

The device-gateway association enables an ACS to identify the associated gateway through which a device is connected.

A connect request via the NAT gateway enables an ACS to initiate a TR-069 session with a device that is operating behind a NAT gateway.

5.3.7 TR-181 parameter support

TR-181 parameter support has been introduced or enhanced for the parameter categories and functions listed in [Table 5-5, “Support for TR-181 parameter categories” \(p. 54\)](#).

TR-181 can be enabled (instead of TR-098) by defining the associated TR-181 parameter in a customer specific pre-configuration file downloadable into the ONT.

For details about which parameters are supported, see your Nokia representative.

Table 5-5 Support for TR-181 parameter categories

| Parameter category | Functionality |
|----------------------------|----------------------|
| Device info and statistics | Device information |
| | Optical statistics |
| | Ethernet statistics |
| | Wi-Fi statistics |
| | Bridge statistics |
| | PPP statistics |
| | IP statistics |
| | Periodic statistics |
| | Voice statistics |
| | |
| Diagnostics | Wi-Fi diagnostic |
| | Ping |
| | Trace route |
| | TR143 Speed test |
| | Self test |
| | Voice diagnostics |
| | NSLookup diagnostics |
| | |
| Optical configuration | |

Table 5-5 Support for TR-181 parameter categories (continued)

| Parameter category | Functionality |
|---------------------------|---------------------------|
| Forwarding configuration | Ethernet |
| | Bridge |
| | PPP |
| | IP |
| | Routing |
| | QoS |
| | DSLite |
| | NAT |
| | Neighbor Discovery |
| Hosts configuration | |
| Wi-Fi configuration | |
| Service configuration | Voice service |
| | DDNS |
| | DNS |
| | DHCP |
| | GRE |
| | IGMP |
| | NTP timing |
| Firewall | |
| WebGUI configuration | |
| Nokia Wi-Fi configuration | Nokia Wi-Fi cloud service |

5.4 G-1425G-B software and installation feature support

For information on installing or replacing the G-1425G-B see [Chapter 6, “Install or replace a G-1425G-B indoor ONT”](#).

For information on the following topics, see the **Nokia 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

5.5 G-1425G-B interfaces and interface capacity

Table 5-6, “G-1425G-B indoor ONT interface connection capacity” (p. 56) describes the supported interfaces and interface capacity for G-1425G-B indoor ONTs.

Table 5-6 G-1425G-B indoor ONT interface connection capacity

| ONT type and model | Maximum capacity | | | | | | | | |
|------------------------|------------------|---------------|--------------------|-----------------|------|-------|-------|-------------|-------------|
| | POTS | 100/10 BASE-T | 1000/100/10 BASE-T | RF video (CATV) | MoCA | VDSL2 | E1/T1 | Local craft | GPON SC/APC |
| G-1425G-B ¹ | 1 | — | 4 | — | — | — | — | — | 1 |

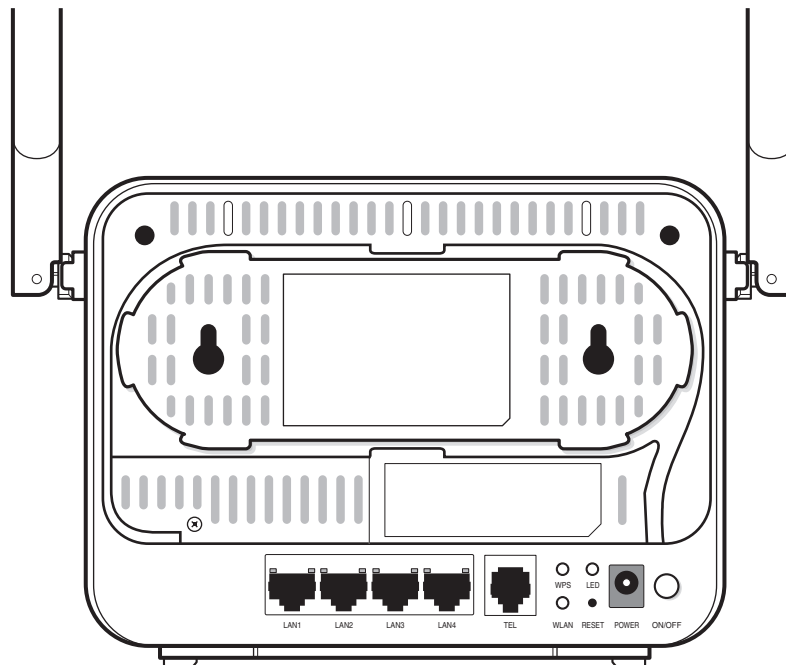
Notes:

1. The G-1425G-B ONTs provide Wi-Fi service that is enabled and disabled using a Wi-Fi on/off switch.

5.5.1 G-1425G-B connections and components

The following figure shows the physical connections for G-1425G-B indoor ONTs.

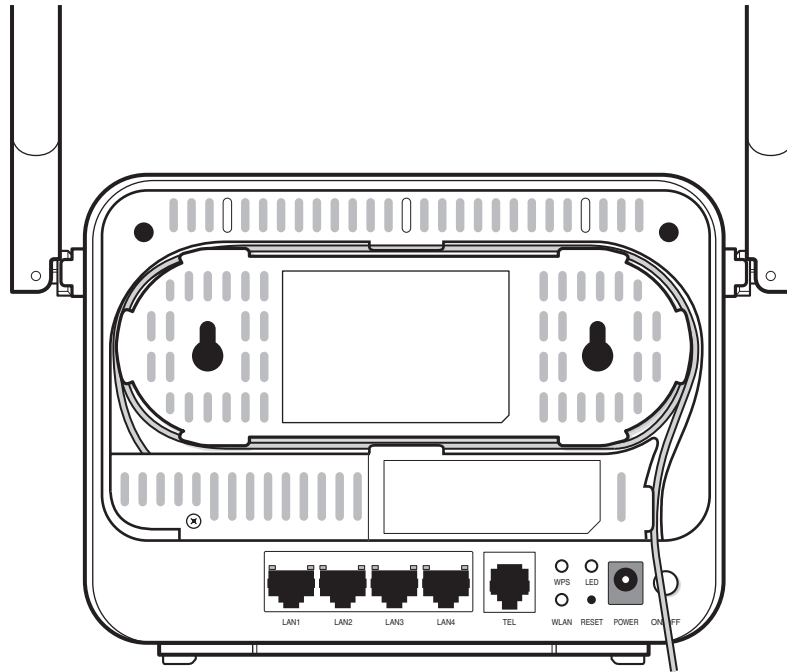
Figure 5-2 G-1425G-B indoor ONT physical connections (back)



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Figure 5-3, “G-1425G-B indoor ONT with fiber optic connector” (p. 57) shows the G-1425G-B indoor ONT with a fiber optic connector.

Figure 5-3 G-1425G-B indoor ONT with fiber optic connector



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Table 5-7, “G-1425G-B indoor ONT physical connections” (p. 58) describes the physical connections for G-1425G-B indoor ONTs.

Table 5-7 G-1425G-B indoor ONT physical connections

| Connection ¹ | Print Letters | Description |
|-------------------------|---------------|---|
| POTS port | TEL | This connection is provided through an RJ-11 port. One POTS connection is supported. The POTS port supports voice services. |
| Ethernet ports | LAN1 to LAN4 | This connection is provided through Ethernet RJ-45 connectors. Up to four 1000/100/10 Base-T Ethernet interfaces are supported. The Ethernet ports can support both data and in-band video services on all four interfaces. |
| Power input | POWER | This connection is provided through the power connector. A power cable fitted with a barrel connector is used to make the connection. |
| Reset button | RESET | 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. Accessible through a 2mm pin hole. |
| WLAN button | WLAN | Wi-Fi service is compliant with IEEE 802.11 standards and is enabled and disabled using the WLAN button. |

Table 5-7 G-1425G-B indoor ONT physical connections (continued)

| Connection ¹ | Print Letters | Description |
|-------------------------|---------------|--|
| WPS button | WPS | The Wi-Fi Protected Setup (WPS) button enables and disables the WPS for 2.4GHz and 5GHz. |
| LED button | LED | The LED button turns the LED indicators on or off. |
| On/Off button | ON/OFF | This button turns the ONT on or off. |
| Fiber optic port | - | The SC/APC fiber optic port is located at the back of the ONT and provides the connection for the fiber optic cable. |

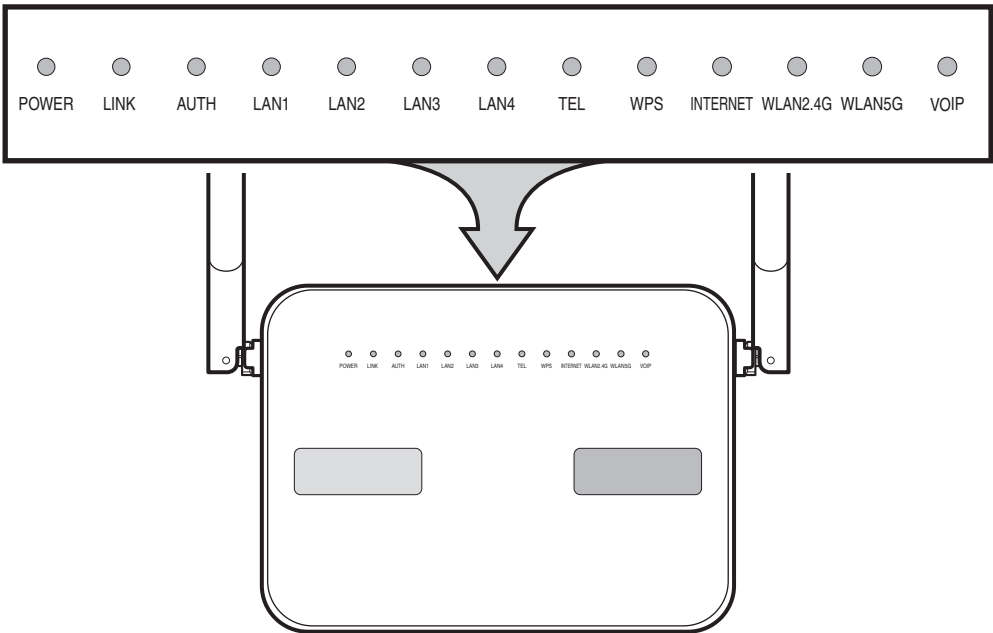
Notes:

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

5.6 G-1425G-B LEDs

Figure 5-4, “G-1425G-B indoor ONT LEDs” (p. 59) shows the G-1425G-B indoor ONT LEDs.

Figure 5-4 G-1425G-B indoor ONT LEDs



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Table 5-8, “G-1425G-B indoor ONT LED descriptions” (p. 60) provides LED descriptions for G-1425G-B indoor ONTs.

Table 5-8 G-1425G-B indoor ONT LED descriptions

| Indicator | LED color and behavior | LED behavior description |
|--------------|------------------------|---|
| POWER | Green solid | Power on |
| | Green flashing | Light failed on startup (for example corrupt flash), or selftest failed on startup, or selftest failed during regular operation or when executed over OMCI |
| | Off | Power off |
| LINK | Green solid | GPON link between ONT and OLT is operating normally |
| | Off | GPON link is down or no link is connected |
| AUTH | Off | Fiber is not connected or no power is received to the ONT |
| | Green solid | ONT is configured on the OLT and is in service (UP) |
| | Green flashing | ONT is in the process of ranging or synchronizing over the OLT |
| LAN 1 to 4 | Off | ONT power is off or Ethernet is not connected |
| | Green solid | ONT is connected to the associated LAN port (includes devices with wake-on-LAN capability where a slight voltage is supplied to an Ethernet connection) |
| TEL | Green solid | Phone is off hook. |
| | Green flashing | Phone is in 'call in' or 'talking' condition |
| | Off | All phones are 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 | Wi-Fi protected setup link is up (negotiation and auto-configuration successful) |
| | Green flashing | Wi-Fi protected setup link activity (negotiation and auto-configuration ongoing) |
| | Off | Wi-Fi protected setup link down or no link connected (negotiation has not started or has failed). Wi-Fi protected setup processing exception or multiple peers using WPS simultaneously |
| WLAN 2.4 GHz | Green solid | WLAN link is enabled in 2.4 GHz |
| | Green flashing | Traffic is passing through the WLAN link |
| | Off | WLAN link is disabled or no link is connected |
| WLAN 5 GHz | Green solid | WLAN link is enabled in 5 GHz |
| | Green flashing | Traffic is passing through the WLAN link |
| | Off | WLAN link is disabled or no link is connected |
| INTERNET | Green solid | IP connected (the device has a WAN IP address from IPCP/DHCP/Static and Broadband link is up) and no traffic detected. If the IP or PPPoE session is dropped due to an idle timeout, the light will remain green if PON link is still present. If the session is dropped for any other reason, the light is turned off. |
| | Green flickering | PPPoE or DHCP connection is in progress. |
| | Off | Broadband physical connection power off, device in bridged mode with no IP address assigned to the device, or Broadband physical interface connection not present |

5.7 G-1425G-B detailed specifications

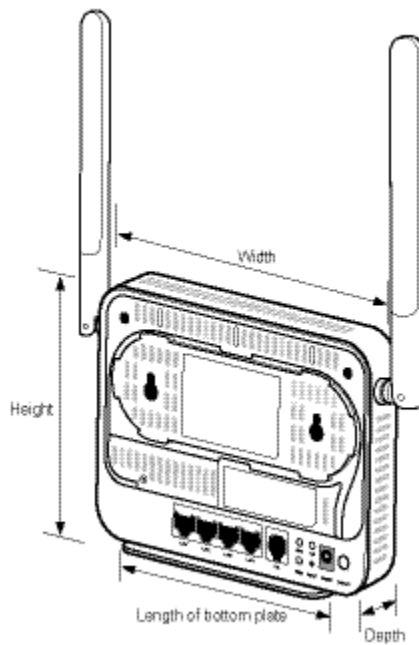
Table 5-9, “G-1425G-B indoor ONT physical specifications” (p. 60) lists the physical specifications for G-1425G-B indoor ONTs.

Table 5-9 G-1425G-B indoor ONT physical specifications

| Description | Specification |
|--|---|
| Depth (with external antenna) | 1.45 in. (36.9 mm) |
| Length and Depth of the bottom plate (with external antenna) | 1.96 in. (50 mm) |
| Width (with external antenna) | 8.82 in. (224.2 mm) |
| Height (including antenna) (without antenna) | 11.17 in. (283.9 mm) 5.37 in. (136.4 mm) |
| Weight [within ± 0.5 lb (0.23 kg)] (net weight of ONT) (with external antenna) | 0.79 lbs (362 g) |

The following figure shows an example ONT physical specifications. The physical dimension may differ for each ONT model.

Figure 5-5 ONT physical specifications



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Table 5-10, “G-1425G-B indoor ONT power consumption specifications” (p. 62) lists the power consumption specifications for G-1425G-B indoor ONT.

Table 5-10 G-1425G-B indoor ONT power consumption specifications

| Mnemonic | Maximum power (Not to exceed) | Condition | Minimum power | Condition |
|------------------------|----------------------------------|---|---------------|---|
| G-1425G-B ¹ | 13.9 W | 1 POTS off-hook, 4 1000/100/10 Base-T Ethernet, Wi-Fi operational | 4.3 W | 1 POTS on-hook, other interfaces/services not provisioned |

Notes:

- The units without USB have lower power consumption. The minimum power consumption for ONT without USB is 18W.

Table 5-11, “G-1425G-B indoor ONT environmental specifications” (p. 62) lists the environmental specifications for G-1425G-B indoor ONT.

Table 5-11 G-1425G-B indoor ONT environmental specifications

| Mounting method | Temperature range and humidity | Altitude |
|------------------|---|--|
| On desk or shelf | Operating: 23° F to 113° F (-5° C to 45° C) ambient temperature 5% to 95% relative humidity, non-condensing | Contact your Nokia technical support representative for more information |
| | Storage: -4° F to 158° F (-20° C to 70° C) | |

Table 5-12, “G-1425G-B indoor ONT Dimension data specifications” (p. 62) lists the dimension data specifications for G-1425G-B indoor ONT.

Table 5-12 G-1425G-B indoor ONT Dimension data specifications

| Dimensions | Specifications |
|---|--|
| Packet size supported | 2000 frames |
| Number of IP addresses supported (or ranges) | In LAN network, the supported range is: <ul style="list-style-type: none"> IPv4: 192.168.0.2 ~ 192.168.0.254 IPv6: no limitation |
| Number of supported Wi-Fi clients (per radio, per device, per mesh) | 64 per radio, 128 per device, 256 per mesh |
| Number of supported beacons /APs in a mesh | 3 beacons in mesh network |
| Number of supported WAN interfaces | Supports 8 WAN connections |
| Number of supported VLANs | Supports 4094 VLANs |
| Number of priority queues, and overall buffer size | 128 priority queues. Max 16MB for WAN and 4MB for LAN |
| Number of multicast groups (DAACL entries) | 1024 |

5.8 G-1425G-B GEM ports and T-CONTs

Table 5-13, “G-1425G-B indoor ONT capacity for GEM ports and T-CONTs” (p. 62) lists the maximum number of supported T-CONTs and GEM ports. See the appropriate release Customer Release Notes for the most accurate list of supported devices.

Table 5-13 G-1425G-B indoor ONT capacity for GEM ports and T-CONTs

| ONT or MDU | Maximum | Notes |
|-------------------------------------|---------|--|
| Package P ONTs | | |
| GEM ports per indoor or outdoor ONT | 256 | 256 are present; 254 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 |

5.9 G-1425G-B performance monitoring statistics

The following section identifies the supported performance monitoring statistics for G-1425G-B 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 5-14, “Package S ONTs ONTENET performance monitoring statistics” (p. 63) provides statistics for ONTENET type counters
- Table 5-15, “Package S ONTs ONTL2UNI performance monitoring statistics” (p. 64) provides statistics for ONTL2UNI type counters
- Table 5-16, “Package S ONTs PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCCES, PONONTTCFLOW, PONONTTCVOIP performance monitoring statistics” (p. 64) provides statistics for PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCCES, PONONTTCFLOW, and PONONTTCVOIP type counters
- Table 5-17, “Package S ONTs PONONTTC aggregate performance monitoring statistics” (p. 65) provides statistics for PONONTTC aggregate type counters



Note: If you have trouble accessing G-1425G-B 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.

The following table provides statistics for ONTENET type counters

Table 5-14 Package S ONTs ONTENET performance monitoring statistics

| ONT | ONTENET statistics | | | | | | | | | | | | | |
|------------------------|--------------------|----|----|-----|-----|-----|----|------|-----|----|------|----------------|-----|-----|
| | FCSE | EC | LC | RBO | SCF | MCF | DT | IMTE | CSE | AE | IMRE | FTL | TBO | SQE |
| G-1425G-B ¹ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ ² | ✓ | ✓ |

Notes:

1. A 5 second polling window limitation exists on the ONT, therefore the margin of error for each 15-min window is 5 seconds.
2. Only packets larger than 9 kB is counted.

Table 5-15 Package S ONTs ONTL2UNI performance monitoring statistics

| ONT | ONTL2UNI statistics | | | | | | | | | |
|------------------------|---------------------|-------|----------|------------|------------|----------|----------|---------|------------|------------|
| | FRAMES | BYTES | MCFRAMES | DSDRPFDRMS | USDRPFDRMS | USFRAMES | DSFRAMES | DSBYTES | USMCFRAMES | DSMCFRAMES |
| G-1425G-B ¹ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Notes:

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 5-16 Package S ONTs PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCES, PONONTTCFLOW, PONONTTCVOIP performance monitoring statistics

| ONT | PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCES, PONONTTCFLOW, PONONTTCVOIP statistics | | | | | |
|------------------------|--|---------|----------|---------|-----------|------------|
| | TXBLOCKS | TXFRAGS | RXBLOCKS | RXFRAGS | LOSTFRAGS | BADGEMHDRS |
| G-1425G-B ¹ | ✓ | ✓ | ✓ | ✓ | ✓ | — |

Notes:

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 5-17 Package S ONTs PONONTTC aggregate performance monitoring statistics

| ONT | PONONTTC (aggregate) statistics | | | | | |
|------------------------|---------------------------------|---------|----------|---------|-----------|------------|
| | TXBLOCKS | TXFRAGS | RXBLOCKS | RXFRAGS | LOSTFRAGS | BADGEMHDRS |
| G-1425G-B ¹ | ✓ | ✓ | ✓ | ✓ | ✓ | — |

Notes:

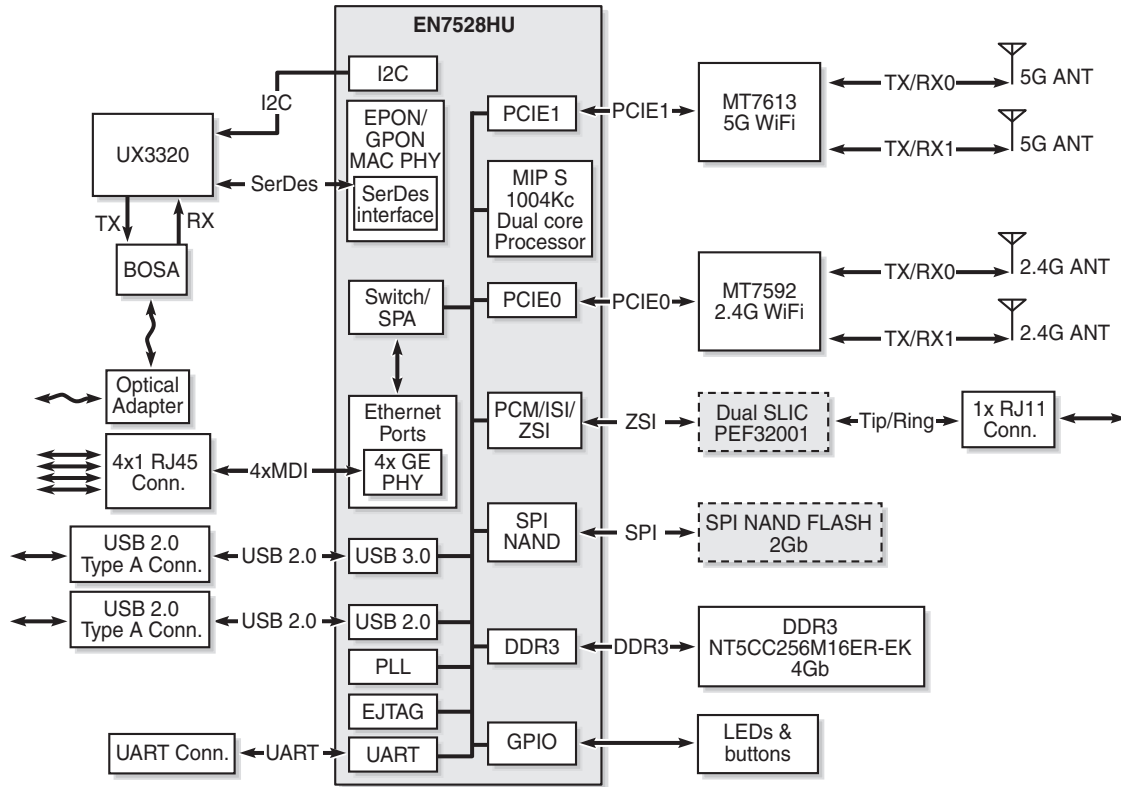
1. A 5 second polling window limitation exists on the ONT, therefore the margin of error for each 15-min window is 5 seconds.

5.10 G-1425G-B functional blocks

G-1425G-B 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 port. These ONTs also feature fiber optic, and power connectors.

The following figure shows the functional blocks for G-1425G-B indoor ONT.

Figure 5-6 G-1425G-B ONT functional block



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5.11 G-1425G-B standards compliance

G-1425G-B indoor ONTs are compliant with the following standards:

- CE marking for European standards for health, safety, and environmental protection
- EN 300-328 v1.9.1 wide band data transmission standards for 2.4GHz bands
- G.984 support GPON interface (framing)
- G.984.2 (Amd1, class B+) for GPON
- 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 dynamic bandwidth reporting
- 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
- G.984.4 and G.983.2 support for ONT management and provisioning
- IEEE 802.1p for traffic prioritization

- IEEE 802.1q for VLANs
- IEEE 802.3 (2012)
- IEEE 802.11 ac/b/g/n for Wi-Fi
- ITU-T G.711 A-law, G.711 μ -law, and G.729A and G.729B, G.723.1
- SIP RFC 3261

5.11.1 Energy-related products standby and off modes compliance

Hereby, Nokia declares that the G-1425G-B 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 G-1425G-B ONTS qualify as equipment with high network availability (HiNA) functionality. Since the main purpose of G-1425G-B 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 [5.5 “G-1425G-B interfaces and interface capacity” \(p. 57\)](#) in this chapter.

For information about power consumption, see [5.7 “G-1425G-B detailed specifications” \(p. 61\)](#) in this chapter.

5.11.2 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.

5.11.3 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
2. This device must accept any interference received, including interference that may cause undesired operation.



CAUTION

Service Disruption

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

5.12 G-1425G-B special considerations

G-1425G-B is a package P ONT.

5.12.1 Wi-Fi service

G-1425G-B 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.

Wi-Fi physical features

G-1425G-B indoor ONTs have the following physical features that assist in providing Wi-Fi service:

- 1 WLAN button for enabling and disabling Wi-Fi service
- 1 Wi-Fi Protected Setup (WPS) push button for adding WPS-enabled wireless devices
- 4 external antennas: 2 for 2.4G and 2 for 5G

Wi-Fi standards and certifications

The Wi-Fi service on G-1425G-B 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
- Certified for WPA2-enterprise

Wi-Fi GUI features

G-1425G-B indoor ONTs have HTML-based Wi-Fi configuration GUIs.

5.12.2 G-1425G-B ONT considerations and limitations

[Table 5-18, “G-1425G-B ONT considerations and limitations” \(p. 69\)](#) lists the considerations and limitations for Package P G-1425G-B ONTs.

Table 5-18 G-1425G-B ONT considerations and limitations

| Considerations and limitations |
|---|
| Call History Data collection (ONTCALLHST) is supported, except for the following parameters: RTP packets (discarded), far-end RTCP and RTCP-XR participation, RTCP average and peak round trip delay, MOS, average jitter, number of jitter-buffer over-runs and under runs. |
| Some voice features are configurable on a per ONT basis, including Call Waiting, Call Hold, 3-Way Calling, and Call Transfer. |
| The maximum value of the ringing AC voltage is 60Vrms, and the ring DC offset voltage is suggested to be 0V. |
| <p>The following voice features / GSIP parameters are configurable on a per-Client/ per-ONT basis (not per-Subscriber):</p> <ul style="list-style-type: none">• 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: CW, Call Hold and Warmline |

6 Install or replace a G-1425G-B indoor ONT

6.1 Overview

6.1.1 Purpose

This chapter provides the steps to:

- Install a G-1425G-B indoor ONT
- Replace a G-1425G-B indoor ONT
- Wall mount an G-1425G-B indoor ONT

6.1.2 Contents

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| 6.7 Wall mount an G-1425G-B indoor ONT | 78 |

6.2 Prerequisites

Ensure that you have all required cables.

6.3 Recommended tools

You need the following tools:

- #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

6.4 Safety information

Read the following safety information before installing or replacing the unit.



DANGER

Hazard

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.

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.

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



WARNING

Equipment Damage

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



CAUTION

Service Disruption

Keep indoor ONTs away from direct sunlight. Prolonged exposure to direct sunlight can damage the unit.



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

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 precedence 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 [Chapter 5, "G-1425G-B unit data sheet"](#) for the temperature ranges of these ONTs.

6.5 Install a G-1425G-B indoor ONT

1

Place the indoor ONT unit on a flat surface, such as a desk or shelf.



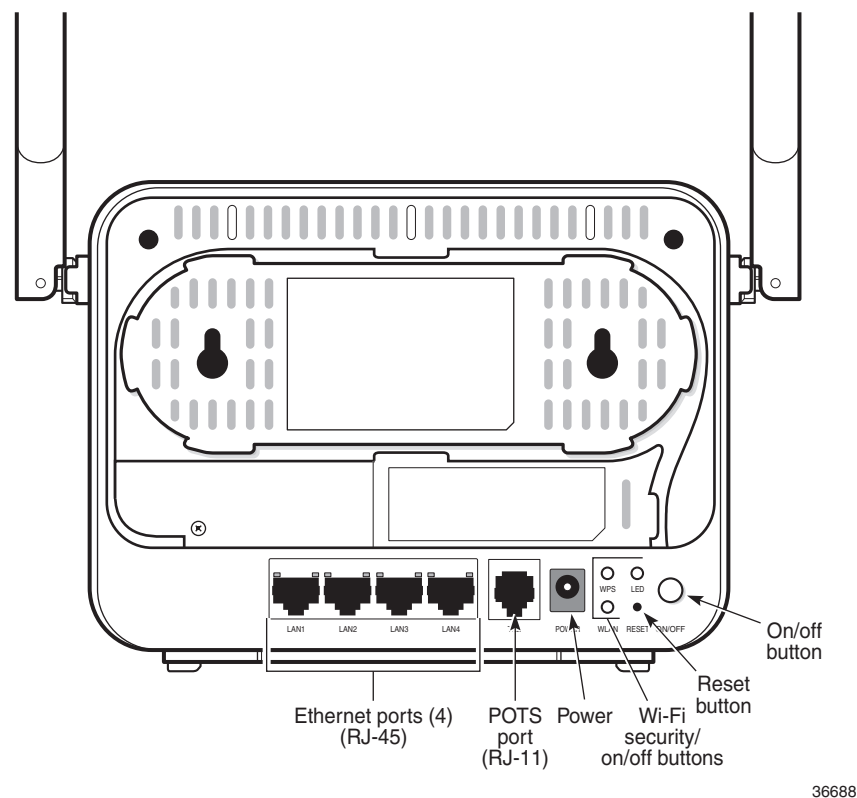
Note: The G-1425G-B cannot be stacked with another ONT or with other equipment. The ONT mounting requirements are:

- 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.

2

Review the connection locations, as shown in [Figure 6-1, “G-1425G-B ONT connections” \(p. 72\)](#).

Figure 6-1 G-1425G-B ONT connections



3

Connect the Ethernet cables to the RJ-45 ports.

4

Route the POTS cable directly to the RJ-11 port as per local practices.

5

**DANGER****Hazard**

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

**WARNING****Equipment Damage**

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

Connect the fiber optic cable with SC/APC adapter to the SC/APC connector on the bottom of the ONT.



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.

6

Connect the power cable to the power connector.

7

Power up the ONT unit by using the power switch.

8

If used, enable the Wi-Fi service.

- a. Locate the WLAN button on the ONT; see [Figure 6-1, "G-1425G-B ONT connections" \(p. 73\)](#) for location of the WLAN button.
- b. Press the WLAN button to change the status of the Wi-Fi service.

9

Verify the ONT LEDs, voltage status, and optical signal levels; see the **Nokia ONT Hardware and Cabling Installation Guide**.

10

Activate and test the services; see the **Nokia ONT Hardware and Cabling Installation Guide**.

11

If used, configure the SLID; see the **Nokia ONT Configuration, Management, and Troubleshooting Guide**.

12

If necessary, reset the ONT.

- a. Locate the Reset button on a G-1425G-B indoor ONT as shown in [Figure 6-1, “G-1425G-B ONT connections” \(p. 73\)](#).
- b. Insert the end of a straightened paper clip or other narrow object into the hole in the Reset button to reset the ONT.

END OF STEPS

6.6 Replace a G-1425G-B 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).

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

Example:

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

- b. If the ONT is in service, place the ONT in OOS state.

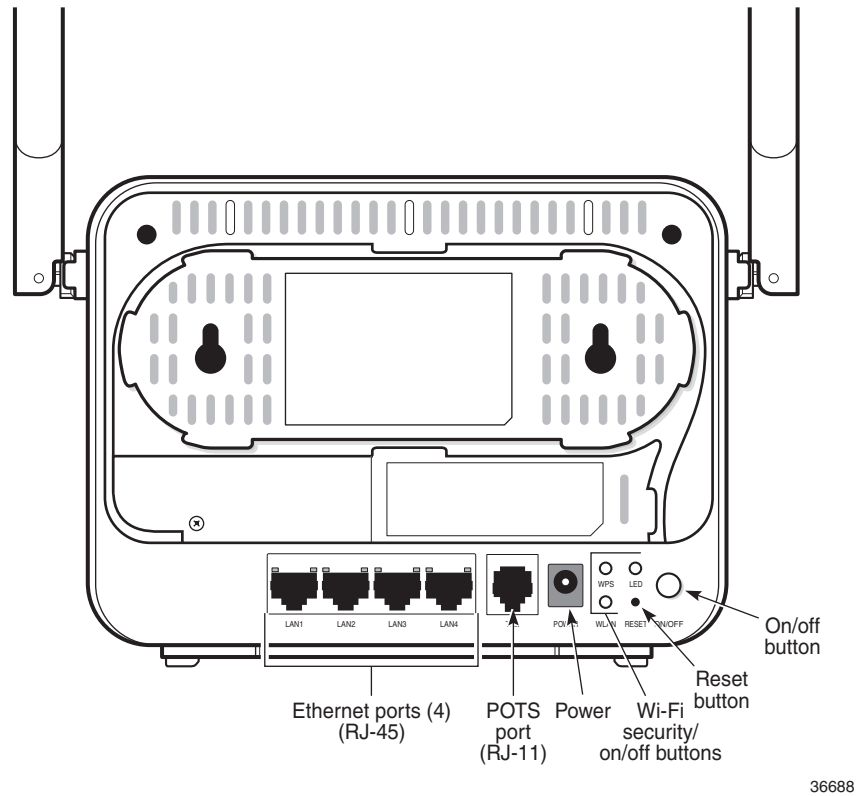
Example:

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

2

If used, disable the Wi-Fi service by pressing the WLAN button. The following figure shows the location of the WLAN button.

Figure 6-2 G-1425G-B indoor ONT connections



- 3 _____
Power down the unit by using the on/off power switch.
- 4 _____
Disconnect the POTS, Ethernet, and power cables from the ONT; see [Figure 6-2, “G-1425G-B indoor ONT connections”](#) (p. 76) for the connector locations on the G-1425G-B indoor ONT.
- 5 _____



DANGER

Hazard

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

Disconnect the fiber optic cables.

- a. Unplug the fiber optic cable with SC/APC connector from the bottom of the ONT.

b. Attach a fiber dust cover to the end of the SC/APC connector.

6

Replace the old ONT with a new ONT on a flat surface, such as a desk or shelf.

7

Connect the Ethernet cables directly to the RJ-45 ports; see [Figure 6-2, “G-1425G-B indoor ONT connections”](#) (p. 76) for the location of the RJ-45 ports.

8

Connect the POTS cable directly to the RJ-11 port as per local practices; see [Figure 6-2, “G-1425G-B indoor ONT connections”](#) (p. 76) for the location of the RJ-11 ports.

9



DANGER

Hazard

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

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

10



DANGER

Hazard

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



WARNING


Equipment Damage

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

Connect the fiber optic cable with SC/APC adapter into the SC/APC connector on the bottom of the ONT.



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.

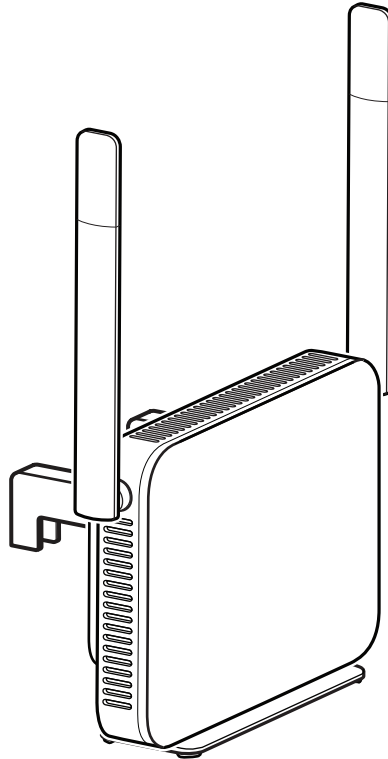
-
- 11 _____
 Connect the power cable to the power connector.
- 12 _____
 Power up the unit by using the power switch.
- 13 _____
 If used, enable the Wi-Fi service by pressing the WLAN button; see [Figure 6-2, “G-1425G-B indoor ONT connections” \(p. 76\)](#) for the location of the WLAN button.
- 14 _____
 If used, configure the SLID; see the **Nokia 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.
- 15 _____
 Verify the ONT LEDs, voltage status, and optical signal levels; see the **Nokia ONT Hardware and Cabling Installation Guide**.
- 16 _____
 Activate and test the services; see the **Nokia ONT Hardware and Cabling Installation Guide**.
- 17 _____
 If necessary, reset the ONT.
- Locate the Reset button on a G-1425G-B indoor ONT as shown in [Figure 6-2, “G-1425G-B indoor ONT connections” \(p. 76\)](#).
 - Insert the end of a straightened paper clip or other narrow object into the hole in the Reset button to reset the ONT.

END OF STEPS _____

6.7 Wall mount an G-1425G-B indoor ONT

This chapter provides the steps to mount an G-1425G-B indoor ONT on a wall using a wall mount bracket (3FE 49555 AA). The G-1425G-B indoor ONT is shipped without the wall mount bracket. The wall mount bracket (3FE 49555 AA) must be ordered separately.

Figure 6-3 G-1425G-B ONT in wall mounting bracket



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6.7.1 Recommended tools

See section [6.3 “Recommended tools”](#) (p. 71) for the recommended tools.

6.7.2 Procedure

Use this procedure to mount an G-1425G-B ONT on a wall. Two installation options are available:

- Option 1—facing the room for the LEDs to be visible
- Option 2—facing the wall for the connectors and buttons to be visible

1

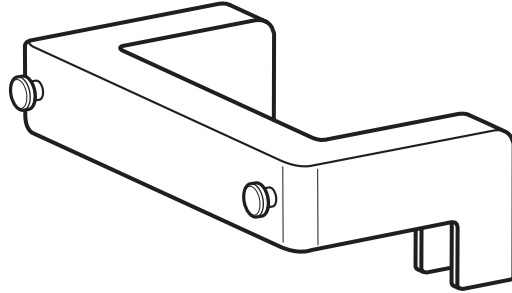
Place the indoor ONT unit:

- a. Facing the room, go to [Step 2](#). See [Figure 6-8, “ONT in wall mount bracket—facing the room”](#) (p. 84).
- b. Facing the wall, go to [Step 3](#). See [Figure 6-7, “ONT to wall mount connection”](#) (p. 83).

2

Mount the ONT on a wall facing the room using the wall mount bracket (3FE 49555 AA), as shown in [Figure 6-4, "G-1425G-B wall mount bracket" \(p. 79\)](#).

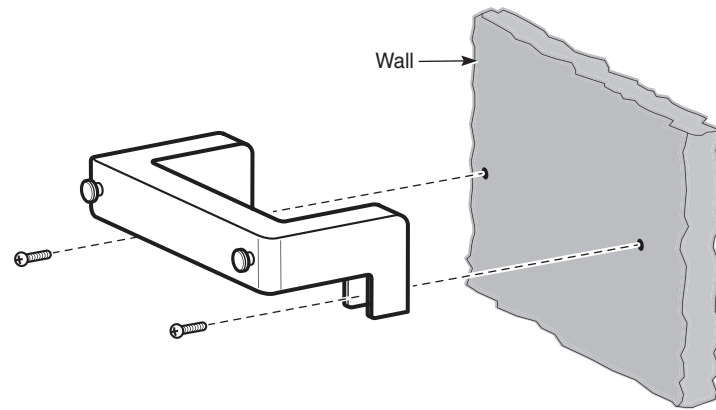
Figure 6-4 G-1425G-B wall mount bracket



36713

- a. Determine the location of the two anchor holes for the wall mount bracket. The bracket can be used as a template for marking and drilling the holes.
It is recommended to use a level to ensure that the ONT unit is installed properly.
- b. Drill two holes 35 mm (1.37 in.) depth into the wall and with the centers spaced 157 mm (6.2 in.).
- c. Insert the two mounting screws and optional anchors into the holes, leaving a 2 mm (0.078 in.) gap between the screw head and the wall.
- d. At this point, perform a test to ensure that the wall mount bracket fits securely over the screw heads. Mount the bracket flush to the wall so that it does not warp or twist.
- e. Remove the wall mount bracket from the wall.
- f. Route the power cord through the slot in the wall mount bracket. The ferrite bead on the power cord should remain on the underside of the wall mount bracket. See [Figure 6-5, "Wall mount bracket power cord placement" \(p. 81\)](#).

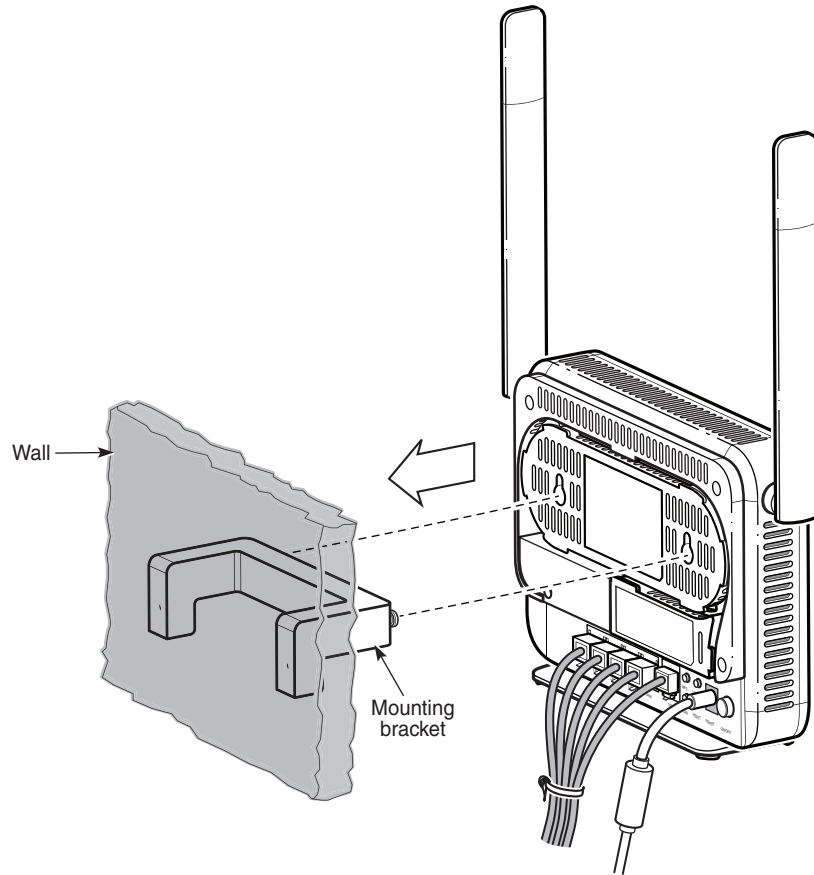
Figure 6-5 Wall mount bracket power cord placement



36714

- g. Connect the power cord to the G-1425G-B ONT. See [Figure 6-6, “Power cord to ONT connection” \(p. 82\)](#).

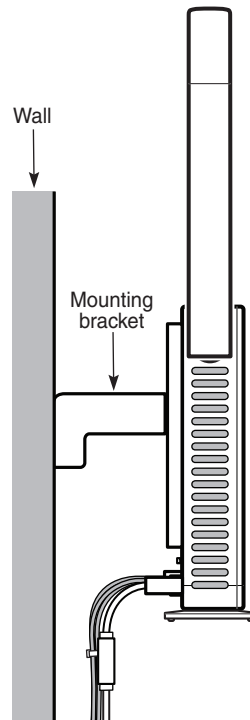
Figure 6-6 Power cord to ONT connection



36715

- h. Install the ONT into the wall mount bracket by lifting the unit above the bracket and sliding it downward onto the bottom ledge of the bracket. See [Figure 6-7, "ONT to wall mount connection" \(p. 83\)](#).

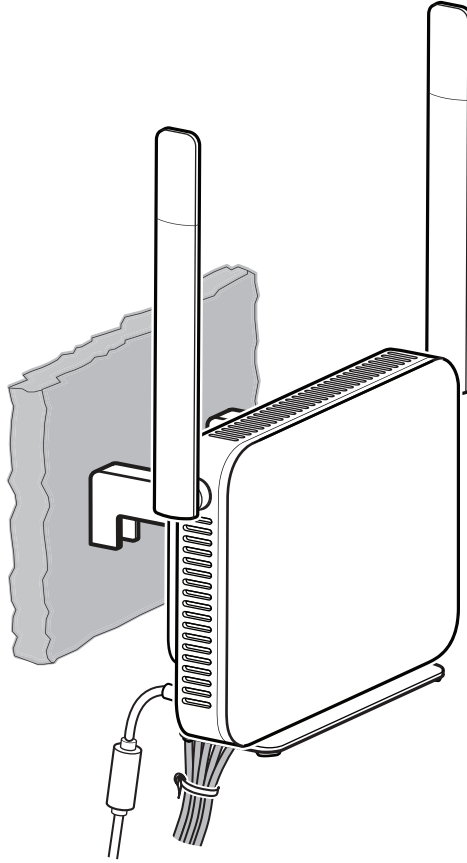
Figure 6-7 ONT to wall mount connection



36716

- i. Seat the ONT into the wall mount bracket by engaging the hooks on the base of the unit with those on the bracket; see [Figure 6-8, “ONT in wall mount bracket—facing the room” \(p. 84\)](#). Engaging the hooks ensures that the ONT stays in place while the unit is mounted onto the wall.
- j. Connect the cables.
- k. Hang the unit onto the wall. [Figure 6-8, “ONT in wall mount bracket—facing the room” \(p. 84\)](#) shows the cables routed through the wall mount bracket and the ONT facing the room.

Figure 6-8 ONT in wall mount bracket—facing the room



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3

Mount the ONT facing the wall using the wall mount bracket (3FE 49555 AA).

- a. Determine the location of the two anchor holes for the wall mount bracket. The bracket can be used as a template for marking and drilling the holes.
It is recommended to use a level to ensure that the ONT unit is installed properly.
- b. Drill two holes 35 mm (1.37 in.) depth into the wall and with the centers spaced 157 mm (6.2 in.).
- c. Insert the two mounting screws and optional anchors into the holes, leaving a 2 mm (0.078 in.) gap between the screw head and the wall.
- d. At this point, perform a test to ensure that the wall mount bracket fits securely over the screw heads. Mount the bracket flush to the wall so that it does not warp or twist.
- e. Remove the wall mount bracket from the wall.

-
- f. On a flat surface such as a desk, install the ONT into the wall mount bracket by lifting the unit above the bracket and sliding it downward onto the bottom ledge of the bracket.
 - g. Seat the ONT into the wall mount bracket by engaging the hooks on the base of the unit with those on the bracket. Engaging the hooks ensures that the ONT stays in place while the unit is mounted onto the wall.
 - h. Mount the unit onto the wall.
 - i. Connect the cables. See [Chapter 6, "Install or replace a G-1425G-B indoor ONT"](#).
[Figure 6-6, "Power cord to ONT connection" \(p. 82\)](#) shows the mounted unit facing the wall with the cables (including the fiber) installed.

END OF STEPS

7 Configure a G-1425G-B indoor ONT

7.1 Overview

7.1.1 Purpose

7.1.2 Contents

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GUI configuration

7.2 General configuration

Refer to the configuration information provided with your OLT for the software configuration procedure for a G-1425G-B ONT.

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

7.3 HGU mode GUI configuration

Use the procedures below to use the web-based GUI for the G-1425G-B 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.

The G-1425G-B ONTs support TLSv1.2 for WEBGUI (HTTPS).

7.4 Log in to the web-based GUI

Use the procedure below to login to the web-based GUI for the G-1425G-B.

1

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

The Login page displays.

The default gateway IP address must be same as the one printed on the device label. 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 default gateway subnet as the ONT.

2



CAUTION

Service Disruption

*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.*

Enter your username and password in the Login page.

The default end-user account name and the default password for this account are printed on the device label. The superadmin account is meant for the Operator and is unique per device. Contact your Nokia representative to obtain the superadmin password based on the serial number on the device.

Figure 7-1 Web login page



Note: If you forget the current username and password, press the reset button for 10 seconds and the default values for the username and password are recovered at startup.

3

Click **Login**. The Device Information page displays.



Note: To help protect the security of your Internet connection, it is recommended to modify both the Wi-Fi password and the ONT WEBGUI login password as soon as possible if you have read and edit permissions.

END OF STEPS

Viewing device information and connection status

7.5 Overview

7.5.1 Purpose

This chapter describes procedures to view device information and connection status on the G-1425G-B.

7.5.2 Contents

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7.6 Viewing overview information

1

Click **Status**→**Overview** from the left pane in the GPON Home Gateway page. The Overview page displays the following information:

Figure 7-2 Overview page

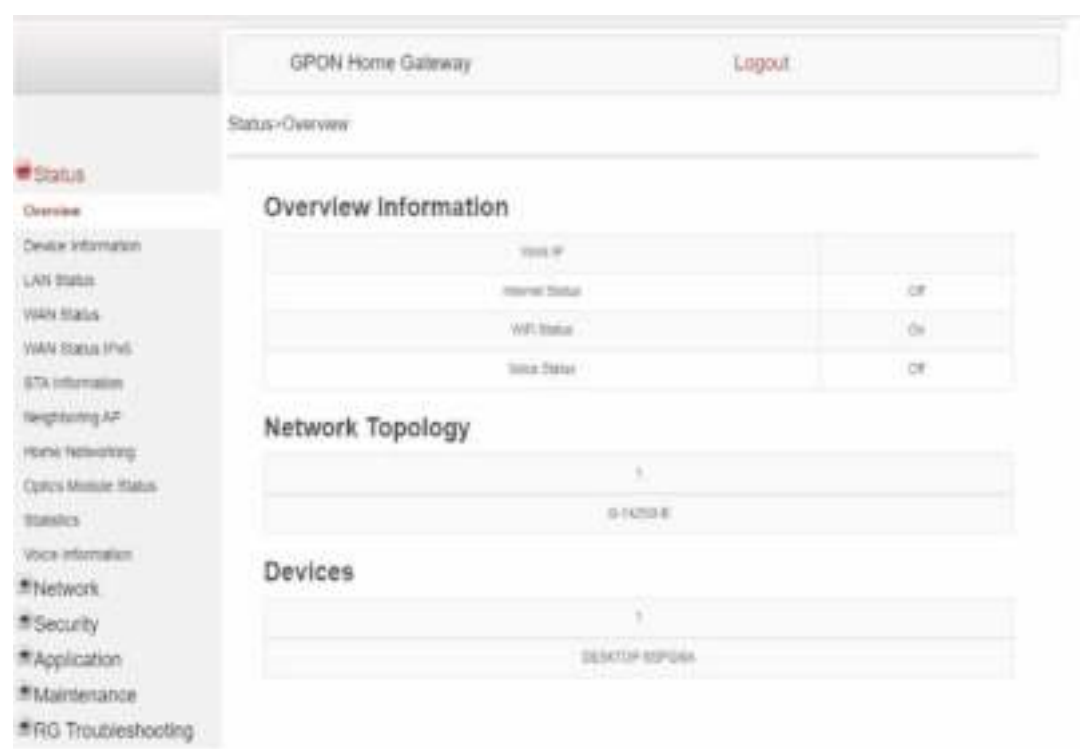


Table 7-1 Overview parameters

| Field | Description |
|---|--|
| Overview Information | |
| WAN IP | IP WAN address of the G-1425G-B. |
| Internet Status | Indicates whether or not the G-1425G-B associated with the IP WAN address is on the Internet |
| WiFi Status | Indicates whether or not the G-1425G-B associated with the IP WAN address is on WiFi |
| Voice Status | Indicates whether or not the G-1425G-B associated with the IP WAN address is on Voice |
| Network Topology | |
| Displays the port number, type, and serial number of the network topology | |
| Devices | |
| Displays the port and serial number of the devices | |

2

Ensure that you are connected to the Internet.

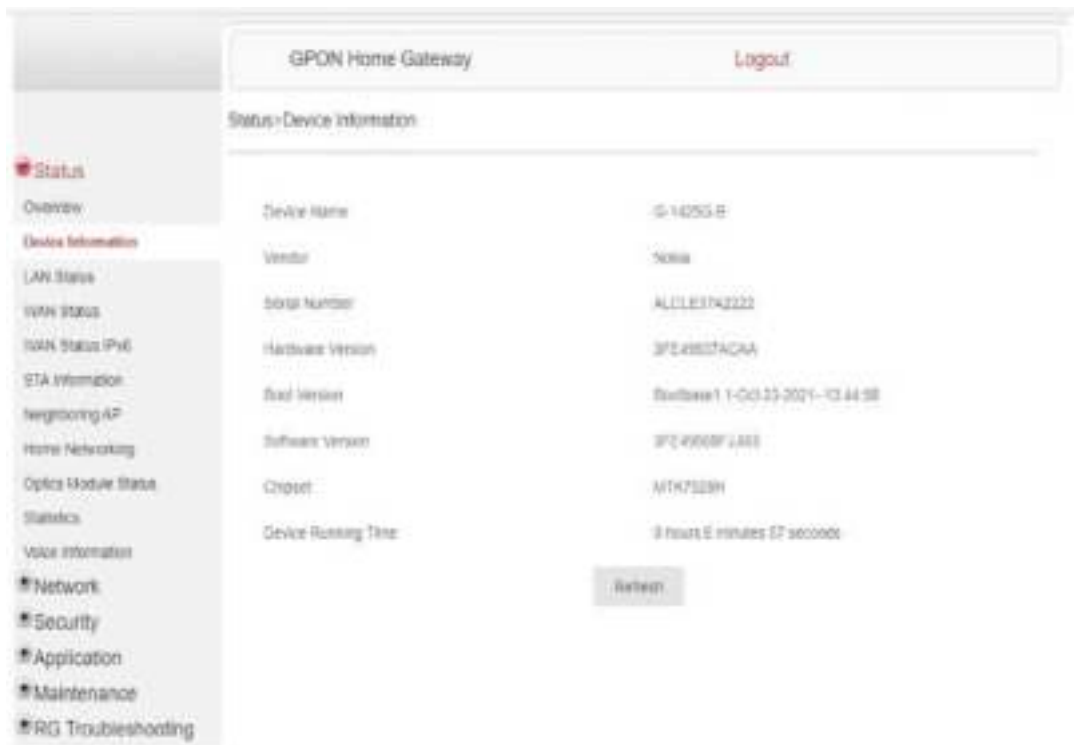
END OF STEPS

7.7 Viewing device information

1

Click **Status**→**Device Information** from the left pane in the GPON Home Gateway page. The Device Information page displays the following information:

Figure 7-3 Device Information page



Note: Upon login, the GPON Home Gateway window displays the WAN status block on the bottom left part of each window. This block shows the WAN connection ID, the WAN status, and any WAN errors.

This block is accurate upon login, but it is static.

Table 7-2 Device 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 |
| Chipset | Chipset of the ONT |
| Device Running Time | Amount of time the device has run since last reset in hours, minutes, and seconds |

Click **Refresh** to display up-to-date information.

END OF STEPS

7.8 Viewing LAN status

1

Click **Status**→**LAN Status** from the left pane in the GPON Home Gateway page. The LAN Status page displays the following information:

Figure 7-4 LAN Status page

GPON Home Gateway [Logout](#)

Status LAN Status

Wireless Information

| | |
|----------------------------|---------------|
| Wireless Status | On |
| Wireless Channel | 9 |
| SSID Name | ALPHA-0000 |
| Wireless Encryption Status | WPA2-PSK(AES) |
| Wireless Rx Rate | 0 |
| Wireless Tx Rate | 0 |
| Wireless Rx Error | 0 |
| Wireless Tx Error | 0 |
| Power Transmission(MW) | 750 |

Ethernet Information

| | |
|----------------------|---------------|
| Ethernet Status | Up |
| Ethernet IP Address | 192.168.1.200 |
| Ethernet Subnet Mask | 255.255.255.0 |
| Ethernet GW Address | 192.168.1.1 |
| Ethernet Rx Packets | 1000 |
| Ethernet Tx Packets | 1000 |
| Ethernet Rx Error | 0 |
| Ethernet Tx Error | 0 |

| Information | LAN1 | LAN2 | LAN3 | LAN4 |
|------------------|---------|---------|---------|---------|
| Status | Up | Up | Down | Up |
| Speed/Mode | 100Mbps | 100Mbps | 100Mbps | 100Mbps |
| Flow Control | On | On | Auto | On |
| Errors Received | 0 | 0 | 0 | 0 |
| Errors Sent | 0 | 0 | 0 | 0 |
| Packets Received | 100 | 100 | 0 | 100 |
| Packets Sent | 100 | 100 | 0 | 100 |
| Bytes Received | 10000 | 10000 | 0 | 10000 |
| Bytes Sent | 10000 | 10000 | 0 | 10000 |

[Refresh](#)

Table 7-3 LAN Status parameters

| Field | Description |
|-----------------------------|---|
| Wireless Information | |
| 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 |

Table 7-3 LAN Status parameters (continued)

| Field | Description |
|-----------------------------|--|
| 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 |

Click **Refresh** to display up-to-date information.

END OF STEPS

7.9 Viewing WAN status

1

Click **Status**→**WAN Status** from the left pane in the GPON Home Gateway page. The WAN Status page displays the following information:

Figure 7-5 WAN Status page

The screenshot shows the 'GPON Home Gateway' configuration page with the 'Status' tab selected. The 'Status-WAN Status' section displays the following parameters:

| Field | Description |
|---------------------|---|
| WAN Connection List | Drop-down menu listing all WAN connections. The connection shown is the connection for which WAN status is shown. |
| Connection Mode | Connection mode of the WAN connection |
| Enable/Disable | Select this checkbox to enable or disable the WAN connection |
| VLAN | VLAN ID |
| WAN Link Status | Indicates whether the WAN link is up or down |
| IPv4 Address | IP Address of the ONT |
| Netmask | Network mask |
| Gateway | Gateway address |
| Primary DNS | Primary Domain Name Server |
| Second DNS | Secondary Domain Name Server |
| Manual DNS | Manual Domain Name Server |
| PON Link Status | Indicates whether the PON link is up or down |

Table 7-4 WAN Status parameters

| Field | Description |
|---------------------|---|
| WAN Connection List | Drop-down menu listing all WAN connections. The connection shown is the connection for which WAN status is shown. |
| Connection Mode | Connection mode of the WAN connection |
| Enable/Disable | Select this checkbox to enable or disable the WAN connection |
| VLAN | VLAN ID |
| WAN Link Status | Indicates whether the WAN link is up or down |
| IPv4 Address | IP Address of the ONT |
| Netmask | Network mask |
| Gateway | Gateway address |
| Primary DNS | Primary Domain Name Server |
| Second DNS | Secondary Domain Name Server |
| Manual DNS | Manual Domain Name Server |
| PON Link Status | Indicates whether the PON link is up or down |

Table 7-4 WAN Status parameters (continued)

| Field | Description |
|-------------|--|
| 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 |

Click **Refresh** to display up-to-date information.

END OF STEPS

7.10 Viewing WAN IPv6 status

1

Click **Status**→**WAN Status IPv6** from the left pane in the GPON Home Gateway page. The WAN Status IPv6 page displays the following information:

Figure 7-6 WAN Status IPv6 page

The screenshot shows the 'GPON Home Gateway' interface with a 'Logout' button in the top right. The left sidebar contains a menu with options: Status (selected), Overview, Device Information, LAN Status, WAN Status, WAN Status IPv6 (highlighted), STA Information, neighboring AP, Home Networking, Optics Module Status, Statistics, Voice Information, *Network, *Security, *Application, *Maintenance, and *RG Troubleshooting. The main content area is titled 'Status>WAN Status IPv6'. It includes a 'WAN Connection List' dropdown menu, an 'Enable/Disable' checkbox, a 'VLAN' field, a 'WAN Link Status' field, and several IPv6 configuration fields: 'IPv6 Address', 'IPv6 Prefix', 'IPv6 Gateway', 'Primary DNS', and 'Second DNS'. Below these are statistics for 'PON Link Status' (Up), 'Tx Packets', 'Rx Packets', 'Tx Dropped', 'Rx Dropped', and 'Err Packets', each with a circular progress indicator. A 'Refresh' button is located at the bottom right of the statistics section.

Table 7-5 WAN 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 is 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 |

Table 7-5 WAN Status IPv6 parameters (continued)

| 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 |

Click **Refresh** to display up-to-date information.

END OF STEPS

7.11 Viewing STA information

1

Click **Status**→**STA Information** from the left pane in the GPON Home Gateway page. The STA Information page displays the following information.

Figure 7-7 STA Information page



Table 7-6 STA information parameters

| Field | Description |
|---------------------|--|
| MAC Address | MAC address of the Ethernet connection |
| SSID Name | Name of each SSID |
| Channel | Indicates the channel number |
| Connection Duration | Indicates the connection duration |
| Wi-Fi Mode | Indicates the Wi-Fi mode |
| RSSI (dBm) | Indicates the received signal strength |

You can click **Refresh** to display up-to-date information.

END OF STEPS

7.12 Viewing Neighboring Access Points

1

Click **Status**→**Neighboring AP** from the left pane in the GPON Home Gateway page. The Neighboring Access Points page displays the following information.

Figure 7-8 Neighboring AP page



Table 7-7 Neighboring AP parameters

| Field | Description |
|-------------|--|
| Index | Name of the index |
| SSID name | Name of each SSID |
| MAC address | MAC address of the Ethernet connection |
| Channel | Indicates the channel number |
| RSSI (dBm) | Indicates the received signal strength |

Table 7-7 Neighboring AP parameters (continued)

| Field | Description |
|---------------------|-----------------------------------|
| Authentication Mode | Indicates the authentication mode |
| Wi-Fi Mode | Indicates the Wi-Fi mode |
| Network Type | Indicates the network type |

2

Click **Scan**.

END OF STEPS

7.13 Viewing home networking information

1

Click **Status**→**Home Networking** from the left pane in the GPON Home Gateway page. The Home Networking page displays the following information:

Figure 7-9 Home Networking page

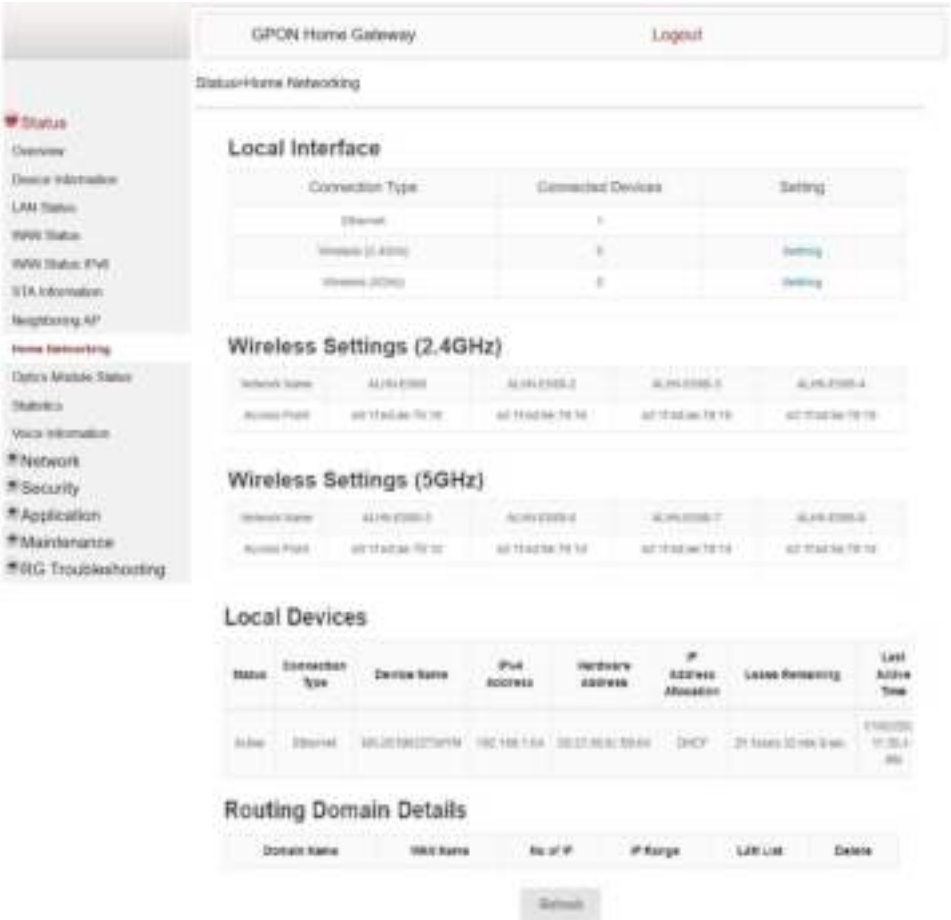


Table 7-8 Home Networking parameters

| 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 (2.4GHz and 5GHz) |
| Wireless Settings (2.4GHz and 5GHz) | |
| Network Name | Name of the wireless network |
| Access Point | Hexadecimal address of the wireless access point |
| Local Devices | |

Table 7-8 Home Networking parameters (continued)

| Field | Description |
|-------------------------------|--|
| Table entry | <p>Each entry indicates the following:</p> <ul style="list-style-type: none"> • Status (active or inactive) • Connection Type • Device Name • IP Address • Hardware Address • IP Address Allocation • Lease Remaining • Last Active Time |
| Routing Domain Details | |
| Table entry | <p>Routing Domain details shows the following:</p> <ul style="list-style-type: none"> • Domain Name • WAN Name • Number of IPs • IP Range • LAN List • Delete |

You can:

- Click **Delete** to delete a particular local device connection.
- Click **Refresh** to display up-to-date information.

END OF STEPS

7.14 Viewing Optics module status

1

Click **Status**→**Optics Module Status** from the left pane in the GPON Home Gateway page.
 The Optics Module Status page displays the following information:

Figure 7-10 Optics Module Status page



Table 7-9 Optics Module Status parameters

| 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 |

Click **Refresh** to display up-to-date information.

END OF STEPS

7.15 Viewing statistics

1

Click **Status**→**Statistics** from the left pane in the GPON Home Gateway page. The Statistics page displays.

Select the **LAN** tab, **WAN** tab or **WLAN** tab to view the respective ports.

Figure 7-11 LAN Statistics page

GPON Home Gateway [Logout](#)

Status > Statistics

LAN WAN WLAN Refresh

| COUNTERS | LAN1 | LAN2 | LAN3 | LAN4 |
|-------------------------------------|--------|------|------|------|
| Bytes Sent | 283645 | 0 | 0 | 0 |
| Bytes Received | 52112 | 0 | 0 | 0 |
| Packets Sent | 254 | 0 | 0 | 0 |
| Packets Received | 875 | 0 | 0 | 0 |
| Errors Sent | 0 | 0 | 0 | 0 |
| Unicast Packets Sent | 840 | 0 | 0 | 0 |
| Unicast Packets Received | 245 | 0 | 0 | 0 |
| Discard Packets Sent | 0 | 0 | 0 | 0 |
| Discard Packets Received | 0 | 0 | 0 | 0 |
| Multicast Packets Sent | 2 | 0 | 0 | 0 |
| Multicast Packets Received | 140 | 0 | 0 | 0 |
| Broadcast Packets Sent | 1 | 0 | 0 | 0 |
| Broadcast Packets Received | 42 | 0 | 0 | 0 |
| Interface Priority Packets Received | 0 | 0 | 0 | 0 |
| CEC Error Received | 0 | 0 | 0 | 0 |

Figure 7-12 WAN Statistics page

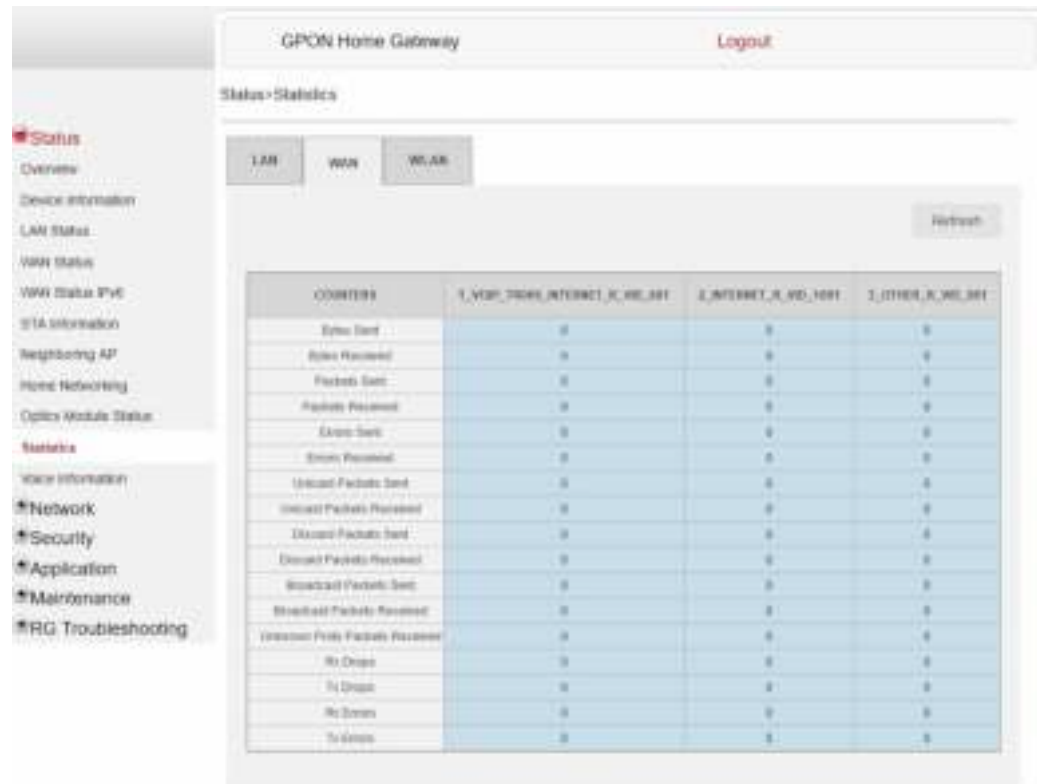


Figure 7-13 WLAN Statistics page

| COUNTERS | 2.4GHz ALGN E094 | 5GHz ALGN E094-5 |
|------------------|---------------------|---------------------|
| Bytes Sent | 0 | 0 |
| Bytes Received | 0 | 0 |
| Packets Sent | 0 | 0 |
| Packets Received | 0 | 0 |

You can click **Refresh** to display up-to-date information.

END OF STEPS

7.16 Viewing voice information

1

Click **Status**→**Voice Information** from the left pane in the GPON Home Gateway page. The Voice Information page displays the following information:

Figure 7-14 Voice Information page

Table 7-10 Voice Information parameters

| Field | Description |
|-----------------------|---|
| Line | Select a line from the list. The default is Line 1 |
| Line Status | Depending on the line chosen, the line options are: <ul style="list-style-type: none"> • Up • Initializing • Registering • Unregistering • Error • Testing • Quiescent • Disabled The default is Disabled |
| Soft Switch | Proxy IP address; blank if the line is not registered |
| Phone number | Phone number configured for a telephone line 1; For example, +13290611266 |
| Register Status | The default is Registered Blank if no voice service is provisioned |
| Register Error Code | SIP standard error code for the register status; for example, 401, 403, 503 This field is blank if the register is set to OK |
| Register Error Reason | SIP standard error reason for the register status This field is blank if the register is set to OK |

Table 7-10 Voice Information parameters (continued)

| Field | Description |
|---------------|---|
| User Agent IP | IP address of the user agent ExternalIPAddress in WANIPConnection or WANPPPOConnection |

Click **Refresh** to display up-to-date information.

END OF STEPS

Network configuration

7.17 Overview

7.17.1 Purpose

This chapter describes the network configuration tasks supported by G-1425G-B ONTs.

7.17.2 Contents

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7.18 Configuring LAN

1

Click **Network**→**LAN** from the left pane in the GPON Home Gateway page. The LAN page displays.

Figure 7-15 LAN page

2

Configure the following LAN parameters:

Table 7-11 LAN parameters

| Field | Description |
|--------------------------|--|
| Port Mode | |
| All Ports to Bridge Mode | Select this checkbox to set all ports to bridge mode. |
| Port 1 - 4 | Select the port mode for each port and click Save : <ul style="list-style-type: none"> • Route Mode • Bridge Mode |
| IPv4 Address | Enter the IP address of the ONT. |

Table 7-11 LAN parameters (continued)

| Field | Description |
|-----------------------|--------------------------------------|
| Subnet Mask | Enter the subnet mask of the ONT. |
| DHCP enable | Select this checkbox to enable DHCP. |
| DHCP Start IP Address | Enter the starting DHCP IP address. |
| DHCP End IP Address | Enter the ending DHCP IP address. |
| DHCP Lease Time | Enter the DHCP lease time (in min). |
| Primary DNS | Enter the primary DNS identifier. |
| Secondary DNS | Enter the secondary DNS identifier. |

3

Click **Save**.

You can click **Refresh** to display up-to-date information.

4

Configure the Static DHCP parameters:

Table 7-12 Static DHCP parameters

| Field | Description |
|--------------------------|---|
| Static DHCP Entry | |
| MAC Address | Enter the MAC address for the static DHCP. |
| IPv4 Address | Enter the IPv4 address for the static DHCP. |

5

Click **Add**.

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

END OF STEPS

7.19 Configuring LAN IPv6

1

Click **Network**→**LAN_IPv6** from the left pane in the GPON Home Gateway page. The LAN_IPv6 page displays.

Figure 7-16 LAN IPv6 page

2

Configure the following parameters:

Table 7-13 LAN IPv6 parameters

| Field | Description |
|---------------------------------------|--|
| IPv6 LAN Host Configuration | |
| DNS Server | Select a DNS server from the list. |
| Prefix Config | Select a prefix config option from the list, either WANConnection (prefix is obtained from the WAN) or Static (enables you to enter the prefix). |
| Interface | This field appears if you selected the Wan Connection option for the "prefix config" field. Select a WAN connection interface from the list. |
| DHCPv6 Server Pool | |
| 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 DHCP | Select this checkbox to enable address information retrieval through DHCP. |

Table 7-13 LAN IPv6 parameters (continued)

| Field | Description |
|---|---|
| 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. |

3

Click **Save/Apply**.

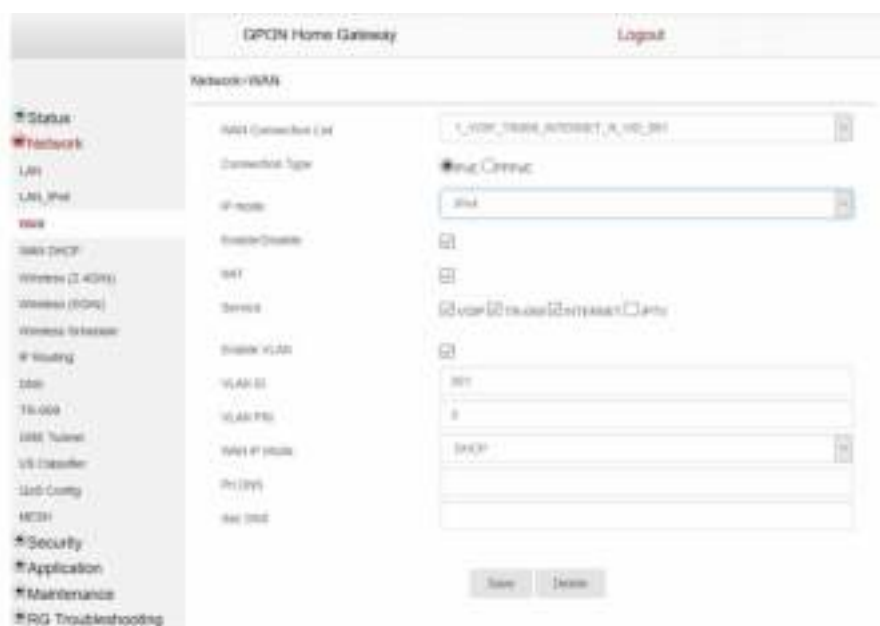
END OF STEPS

7.20 Configuring WAN

1

Click **Network**→**WAN** from the left pane in the GPON Home Gateway page. The WAN page displays.

Figure 7-17 WAN page



2

Configure the following parameters:

Table 7-14 WAN parameters

| Field | Description |
|---------------------|---|
| WAN Connection List | Select a WAN connection from the list to set the connection parameters. |
| Connection Type | Select a connection type: IPoE or PPPoE. |
| IP mode | Select an IP mode from the list: 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. |
| WAN IP Mode | Select an IP mode from the list. |
| Pri DNS | Primary Domain Name Server. |
| Sec DNS | Secondary Domain Name Server. |

3

Click **Save**.

Click **Delete** to delete the entries.

END OF STEPS

7.21 Configuring WAN DHCP

1

Click **Network**→**WAN DHCP** from the left pane in the GPON Home Gateway page. The WAN DHCP page displays.

| OPON Home Gateway | | Logout |
|----------------------------|--|--------|
| Status | | |
| Network | | |
| LAN | | |
| LAN IPv6 | | |
| WiFi | | |
| WAN DHCP | | |
| Internet ID (SSID) | | |
| Internet ID (BSSID) | | |
| Internet Schedule | | |
| # Routing | | |
| DNS | | |
| TLS SRV | | |
| IGMP Tunnel | | |
| MN Classifier | | |
| Link Control | | |
| ACL/M | | |
| Security | | |
| Application | | |
| Maintenance | | |
| (W) Troubleshooting | | |

| Network-WAN DHCP | |
|--|---------------------------------------|
| WAN Connection List | 1_WAN_TELNET_INTERNET_0_0_0_0_0_0 [v] |
| DHCP Option 60 Password | <input type="checkbox"/> |
| Enable DHCP Option 60 | <input type="checkbox"/> |
| Enable DHCP Option 61 | <input type="checkbox"/> |
| Enable DHCP Option 77 | <input type="checkbox"/> |
| Enable DHCP Option 80 | <input type="checkbox"/> |
| <input type="button" value="Save"/> <input type="button" value="Refresh"/> | |

Configure the following parameters:

| Field | Description |
|---------------------------|--|
| WAN Connection List | Select a WAN connection from the list. |
| DHCP Option 50 Persistent | Select this checkbox to enable DHCP Option 50 persistent. |
| Enable DHCP Option 60 | Select this checkbox to enable DHCP Option 60 (vendor class identifier). |
| Enable DHCP Option 61 | Select this checkbox to enable DHCP Option 61 (client identifier). |
| Enable DHCP Option 77 | Select this checkbox to enable DHCP Option 77. |
| Enable DHCP Option 90 | Select this checkbox to enable DHCP Option 90. |

Click **Save**.

Click **Refresh** to display up-to-date information.

Table 7-16 Wireless (2.4GHz) parameters

| Field | Description |
|---------------------------|---|
| Enable | Select this checkbox to enable Wi-Fi. |
| Mode | Select a Wi-Fi mode from the list: <ul style="list-style-type: none"> • auto (b/g/n) • b • g • n • b/g • g/n |
| Bandwidth | Select from: <ul style="list-style-type: none"> • 20 MHz • 40 MHz • 20/40 MHz |
| Channel | Select a channel from the list or select Auto to have the channel automatically assigned. |
| Transmitting Power | Select a percentage for the transmitting power from the list: <ul style="list-style-type: none"> • Low (25%) • Medium (50%) • High (75%) • Maximum (100%) |
| WMM | Select Enable or Disable from the list to enable or disable WiFi multimedia. |
| Total MAX Users | Enter the number of total MAX users. The maximum number of users is 64. |
| SSID Configuration | |
| SSID Select ¹ | Select the SSID from the list. |
| SSID Name | Enter the SSID name. |
| Enable SSID | Enable or disable SSID from this list. |
| SSID Broadcast | Enable or disable SSID broadcast from this list. |
| Port Mode | Select a port mode from the list. Route is the default. |
| Isolation | Enable or disable isolation from this list. |
| MAX Users | Enter the number of MAX users. |
| Encryption Mode | Select an encryption mode from the list: <ul style="list-style-type: none"> • WPA/WPA2 Personal • WPA/WPA2 Enterprise • WEP • OPEN |

Table 7-16 Wireless (2.4GHz) parameters (continued)

| Field | Description |
|---------------------|---|
| WPA Version | Select a WPA version from the list: <ul style="list-style-type: none"> • WPA2 • WPA/WPA2 |
| WPA Encryption Mode | Select a WPA encryption mode from the list: <ul style="list-style-type: none"> • AES • TKIP/AES |
| WPA Key | Enter the WPA key. |
| Enable WPS | Select Enable or Disable from this list. |
| WPS Mode | Select a WPS mode from the list: PBC (Push Button Connect) or PIN (Personal Identification Number) or AP PIN |
| Domain Grouping | Select this checkbox to enable domain grouping. When enabled the fields Domain Name, WAN Interface, Number of IP, and LAN List become visible. To know more about configuring the fields, refer to the Domain Grouping section of Table 7-17, "Wireless (5GHz) parameters" (p. 123) . |

Notes:

1. When the SSID select, SSID name, password and encryption mode is configured same between 2.4GHz and 5GHz network, the band steering feature is enabled.

3

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

4

Click **Save**.

Click **Refresh** to display up-to-date information.

END OF STEPS

7.23 Configuring Wireless 5GHz

1

Click **Network**→**Wireless (5GHz)** from the left pane in the GPON Home Gateway page. The Wireless (5GHz) page displays.

| GPCN Home Gateway | | Logout |
|--|--|--------|
| # Status | | |
| # Network | | |
| LAN | | |
| LAN_Pub | | |
| WAN | | |
| WAN DHCP | | |
| Wireless (2 SSIDs) | | |
| Wireless (WLAN) | | |
| Wireless Schedule | | |
| IP Routing | | |
| DNS | | |
| IPv6v6 | | |
| SSH Tunnel | | |
| SS Client | | |
| QoS Config | | |
| Admin | | |
| # Security | | |
| # Application | | |
| # Maintenance | | |
| # RG Troubleshooting | | |
| Network-Wireless (SSID) | | |
| Enable | <input checked="" type="checkbox"/> | |
| Name(EN) | SSID1 | |
| Channel | Auto | |
| Transmitting Power | 100% | |
| WMM | Enable | |
| Max TX MCS | Disable | |
| Total WLAN Users | 0 | |
| SSID Configuration | | |
| SSID Name | SSID1 | |
| SSID Mode | AP+WDS+P2P | |
| WPA-PSK | Enable | |
| SSID Broadcast | Enable | |
| Auth Mode | WPA2 | |
| Isolation | Disable | |
| MUX Mode | Off | |
| Encryption Mode | WPA2-PSK | |
| WPA Key | ***** | |
| | <input type="button" value="Show password"/> | |
| Enable WPS | Enable | |
| WiFi Mode | PBC | |
| <input type="button" value="WPS Cancel"/> | | |
| Domain Grouping | <input type="button" value="Cancel"/> | |
| <input type="button" value="Save"/> <input type="button" value="Refresh"/> | | |

Configure the following parameters:

| Field | Description |
|-----------|--|
| Enable | Select this checkbox to enable WiFi. |
| Bandwidth | Select from: <ul style="list-style-type: none"> • 20 MHz • 40 MHz • 80 MHz |

Table 7-17 Wireless (5GHz) parameters (continued)

| Field | Description |
|---------------------------|---|
| Channel | Select a channel from the list or select Auto to have the channel automatically assigned. |
| Transmitting Power | Select a percentage for the transmitting power from the list: <ul style="list-style-type: none"> • Low (25%) • Medium (50%) • High (75%) • Maximum (100%) |
| WMM | Select Enable or Disable from the list to enable or disable WiFi multimedia. |
| Enable MU-MIMO | Select Enable or Disable from the list to enable or disable MU-MIMO. |
| Total MAX Users | Enter the total number of MAX users. The maximum number of users is 64. |
| SSID Configuration | |
| SSID Select ¹ | Select the SSID from the list. |
| SSID Name | Change the name of the selected SSID. |
| Enable SSID | Select Enable or Disable SSID from this list. |
| SSID Broadcast | Select Enable or Disable SSID broadcast from this list. |
| Port Mode | Select a port mode from the list. Route is the default. |
| Isolation | Enable or disable isolation from this list. |
| MAX Users | Enter the number of MAX users. |
| Encryption Mode | Select an encryption mode from the list: <ul style="list-style-type: none"> • WPA2-AES • WPA2+WPA • WPA/WPA2 Enterprise • NONE-OPEN |
| WPA Key | Enter the WPA key. |
| Enable WPS | Select Enable or Disable from this list. |
| WPS Mode | Select a WPS mode from the list: PBC (Push Button Connect) or PIN (Personal Identification Number) or AP PIN |
| Domain Grouping | |
| Domain Grouping | Select this checkbox to enable domain grouping. The fields Domain Name, Create One New Domain, WAN Interface, Number of IPs and List LAN are available when the Domain Grouping field is enabled. |
| Domain Name | Select a domain name from the list. |
| Create One New Domain | Select this checkbox to create a new domain. |
| WAN Interface | Select a WAN interface from the list |
| Number of IP | Select the number of IPs connected to the domain. |
| LAN List | Select one or more checkboxes. |

Notes:

1. When the SSID select, SSID name, password and encryption mode is configured same between 2.4GHz and 5GHz network, the band steering feature is enabled.

3

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

4

Click **Save**.

Click **Refresh** to display up-to-date information.

END OF STEPS

7.24 Configuring wireless scheduling

1

Click **Network**→**Wireless Schedule** from the left pane in the GPON Home Gateway page. The Wireless Schedule page displays.

Figure 7-21 Wireless Schedule page

- 2 _____
 Select the **Schedule Function** checkbox to turn the wireless signal off for the configured period.
- 3 _____
 Click the plus sign (+) to add a scheduling rule.
 A separate panel displays for configuring wireless schedule rules.
- 4 _____
 Enter a start time and end time for the period in which you want the wireless signal off.
- 5 _____
 Select **Everyday** or **Individual Days** from the list.

6

If you select **Individual Days**, select the checkboxes for the desired days.
The Recurrence Pattern shows the rules created to date.

7

If desired, click the plus sign (+) to add more rules.

8

Click **Save Changes**.

END OF STEPS

7.25 Configuring IP routing

1

Click **Network**→**IP Routing** from the left pane in the GPON Home Gateway page. The IP Routing page displays.

Figure 7-22 IP Routing page



2

Configure the following parameters:

Table 7-18 IP 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. |
| IPv4 Interface | Select a WAN connection previously created in the WAN page from the list. |
| Forwarding Policy | Select a forwarding policy from the list. |

3

Click **Add**.

Click **Refresh** to display up-to-date information.

END OF STEPS

7.26 Configuring DNS

1

Click **Network**→**DNS** from the left pane in the GPON Home Gateway page. The DNS page displays.

Figure 7-23 DNS page



2

Configure the following parameters:

Table 7-19 DNS parameters

| Field | Description |
|---------------|--|
| DNS Proxy | Select the Enabled checkbox to enable DNS proxy and click Save . |
| Domain Name | Enter the domain name. |
| IPv4 Address | Enter the domain IP address and click Add . |
| Origin Domain | Enter the origin domain name. |
| New Domain | Associate an origin domain with a new domain and click Add . |

Click **Refresh** to display up-to-date information.

END OF STEPS

7.27 Configuring TR-069

1

Click **Network**→**TR-069** from the left pane in the GPON Home Gateway page. The TR-069 page displays.

Figure 7-24 TR-069 page

2

Configure the following parameters:

Table 7-20 TR-069 parameters

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

3Click **Save**.Click **Refresh** to display up-to-date information.

END OF STEPS

7.28 Configuring GRE tunnel

1Click **Network**→**GRE Tunnel** from the left pane in the GPON Home Gateway page. The GRE Tunnel page displays.

Figure 7-25 GRE Tunnel page



2 Configure the following parameters:

Table 7-21 GRE Tunnel parameters

| Field | Description |
|---|--|
| Tunnel Name | Select Create new GRE Tunnel or select an existing tunnel from the list. The tunnel name is automatically assigned by the system. Up to 3 GRE tunnels are supported. |
| WAN Interface | Select a WAN interface from the list. GRE tunnels can only be created on HSI-enabled WAN interfaces. |
| Primary Remote End Secondary Remote End (optional) | Enter an IP address or FQDN that is unique in the system. If the primary remote endpoint is down or unreachable, the secondary remote endpoint becomes active, if configured. The secondary remote endpoint remains active until it becomes unreachable, in which case the primary remote endpoint becomes active again. Revertive mode is not supported. If both endpoints are unreachable, the GRE tunnel is declared down. |
| Connected Remote End | This field displays the current data traffic path for the GRE tunnel. |
| Connectivity check | This feature is automatically selected by the system. |
| Traffic timeout to start pings | Enter the traffic timeout in seconds (2 to 1024). |

Table 7-21 GRE Tunnel parameters (continued)

| Field | Description |
|-----------------------------------|--|
| No. of retries before unreachable | Enter the number of retries before the tunnel is declared down (0 to 100). |

3Click **Save**.Click **Delete** to delete the entries.

END OF STEPS

7.29 Configuring Upstream (US) Classifier

The US Classifier feature is used to create policies, classifiers, and classifier rules for upstream traffic handling. This feature is available to admin users (super users) only.

A policy defines an action to be performed on a set of LAN or WAN packets. A policy can be created at any time and then subsequently assigned to one or more classifiers.

A classifier is used to select key fields for which the classifier rules are written. A classifier can be created at any time and then subsequently assigned to one or more classifier rules.

A classifier rule is used to assign actions to a group of packets based on a set of parameters. A classification rule must be created against a pre-defined classifier.

Up to 16 policies can be created, with up to 8 classifiers and 32 classifier rules.

1

Click **Network**→**US Classifier** from the left pane in the GPON Home Gateway page. The US Classifier page displays.

All classifier policies are displayed in the policy table in the page.

Figure 7-26 US Classifier Policy page

2

Configure the following parameters:

Table 7-22 US Classifier Policy parameters

| Field | Description |
|------------------|---|
| Tunnel Type | The tunnel type is set to GRE and cannot be modified. |
| Tunnel Interface | Select a tunnel interface from the list: No Tunnel, GRE Tunnel, or LAN traffic. |
| VLAN ID | Enter a VLAN ID (0-4094). |
| VLAN Tag | This field is not configurable. The VLAN tag is set to 8100 (hexadecimal). |
| VLAN Priority | Enter a VLAN priority level (0 to 7). A lower number indicates a higher priority. |
| IP TOS/DSCP | This field is not configurable. All tunnel packets are generated with a default DSCP value (usually 0). |
| Drop | Select this checkbox to drop the packets. |

3

Click **Save**.

4

To delete a policy, click **Delete** for the applicable policy in the policy table.

A policy can only be deleted if it is not associated with any classifier rules.

5

Click **Network**→**US Classifier** from the left pane in the GPON Home Gateway page and select the **Classifier** tab.

All classifiers are displayed in the classifier table in the page.

Figure 7-27 US Classifier page



6

Configure the following parameters:

At least one field must be selected to create a classifier. A maximum of four fields may be selected to create a classifier; this includes the interface field.

Table 7-23 US Classifier parameters

| Field | Description |
|-----------------|---|
| Interface | Select an interface from the list; for example, None, LAN, 2.4G SSID, or 5G SSID. |
| Source MAC | Click to enter a source MAC address. |
| Destination MAC | Click to enter a destination MAC address. |
| Source IP | Click to enter a source IP address. |
| Destination IP | Click to enter a destination IP address. |

Table 7-23 US Classifier parameters (continued)

| Field | Description |
|------------------|--|
| Source Port | Click to enter a source port. |
| Destination Port | Click to enter a destination port. |
| Protocol | Click to enter a protocol. |
| Priority | Select a priority level from 1 to 8. The lower the number, the higher the priority. No more than 1 classifier can be created with the same priority. |

7

Click **Save**.

8

To delete a classifier, click **Delete** for the applicable classifier in the classifier table.
A classifier can only be deleted if it is not associated with any classifier rules.

9

Expand **Classifier Rules**.

All classifier rules are displayed in the classifier rules table in the page.

Figure 7-28 US Classifier Rules page



10

Configure the classifier rule.

Table 7-24 US Classifier Rules parameters

| Field | Description |
|------------------|--|
| Policy | Select a policy from the list. |
| Classifier | Select a classifier from the list. |
| Interface | Select an interface from the list; for example, None, LAN, 2.4G SSID, 5G SSID. |
| Source MAC | Enter a source MAC address. |
| Destination MAC | Enter a destination MAC address. |
| Source IP | Enter a source IP address. |
| Destination IP | Enter a destination IP address. |
| Source Port | Enter a source port. |
| Destination Port | Enter a destination port. |
| IP Protocol Type | Enter a value between 0 and 254. |

11

Click **Save**.

You can click **Refresh** to display up-to-date information.

12

To delete a classifier rule, click **Delete** for the applicable classifier rule in the classifier rules table.

END OF STEPS

7.30 Configuring QoS

1

Click **Network**→**QoS Config** from the left pane in the GPON Home Gateway page. The QoS Config page displays.

Figure 7-29 QoS Config page (L2 packet sizes)

GPON Home Gateway

Logout

Network-QoS-Config

Status

Network

LAN

LAN_Ext

WAN

WAN-DSCP

Wireless (2.4GHz)

Wireless (5GHz)

Wireless-Ext

IP-Routing

DHCP

TN-Ext

QoS-Tunnel

IGMP-Filter

QoS-Config

VPN

Security

Application

Maintenance

RRG-Troubleshooting

QoS Setting

| ID | Source MAC | Source MAC Exclude | Protocol | Protocol Exclude | Source Port | Source Port Exclude | Destination Port | Destination Port Exclude |
|----|------------|--------------------|----------|------------------|-------------|---------------------|------------------|--------------------------|
|----|------------|--------------------|----------|------------------|-------------|---------------------|------------------|--------------------------|

Type

L2 Criteria

Classification Criteria

Source MAC

Exclude

Protocol

select an option

Classification Result

DSCP

800 to 1000

Range 0-63

Priority

Range 0-7

Add

Figure 7-30 QoS Config page (L3 packet sizes)

The screenshot shows the 'GPON Home Gateway' interface with a 'Logout' button. The left sidebar contains navigation links: Status, Network (selected), LAN, LAN IPSet, WAN, WAN DHCP, Wireless (2.4GHz), Wireless (5GHz), Wireless Schedule, IP Routing, DNS, TR-069, GRE Tunnel, USB Classifier, QoS Config (selected), MESH, Security, Application, Maintenance, and RG Troubleshooting.

The main content area is titled 'Network-QoS Config'. It features a 'QoS Setting' table with columns: ID, Source MAC, Source MAC Exclude, Protocol, Protocol Exclude, Source Port, Source Port Max, SEclude, Dest Port, Dest Port Max, DEclude, and Src IP. Below the table is a search bar.

The 'Type' dropdown is set to 'L3 Criteria'. Under 'Classification Criteria', the 'Protocol' dropdown is set to 'None' and 'Exclude' is unchecked. The 'Application' dropdown is set to 'Customer setting'. There are input fields for 'Source Ip', 'Dest Ip', 'Source Port', and 'Dest Port', each with a corresponding 'Exclude' checkbox. There are also input fields for '802.1p' (Range 0-7) and 'Interface' (select an option).

Under 'Classification Result', there are input fields for 'DSCP Remark' (Range 0-63), '802.1p Remark' (Range 0-7), and 'Forwarding Policy' (Range 1-7). An 'Add' button is at the bottom right.

2

Configure the following parameters:

Table 7-25 QoS Config parameters

| Field | Description |
|--------------------------------|--|
| QoS Setting | |
| Type | Select a QoS service layer type from the list: L2 or L3. |
| Classification Criteria | |
| Source MAC | Enter the source MAC address. Select the Exclude checkbox to exclude the source MAC address. |
| Interface | Select an interface from the list. |
| Classification Result | |

Table 7-25 QoS Config parameters (continued)

| Field | Description |
|---|--|
| DSCP Remark | Enter the value for the DSCP mark (range: 0-63); valid only for L3 Criteria. |
| 802.1p Remark | Enter the value for the 802.1p (range: 0-7). |
| Forwarding Policy | Enter the number for the forwarding policy (range: 1-7). |
| Additional fields for L3 | |
| Protocol | Select a protocol from the list, or select the Exclude checkbox. |
| Application | Select an application from the list. |
| 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. |

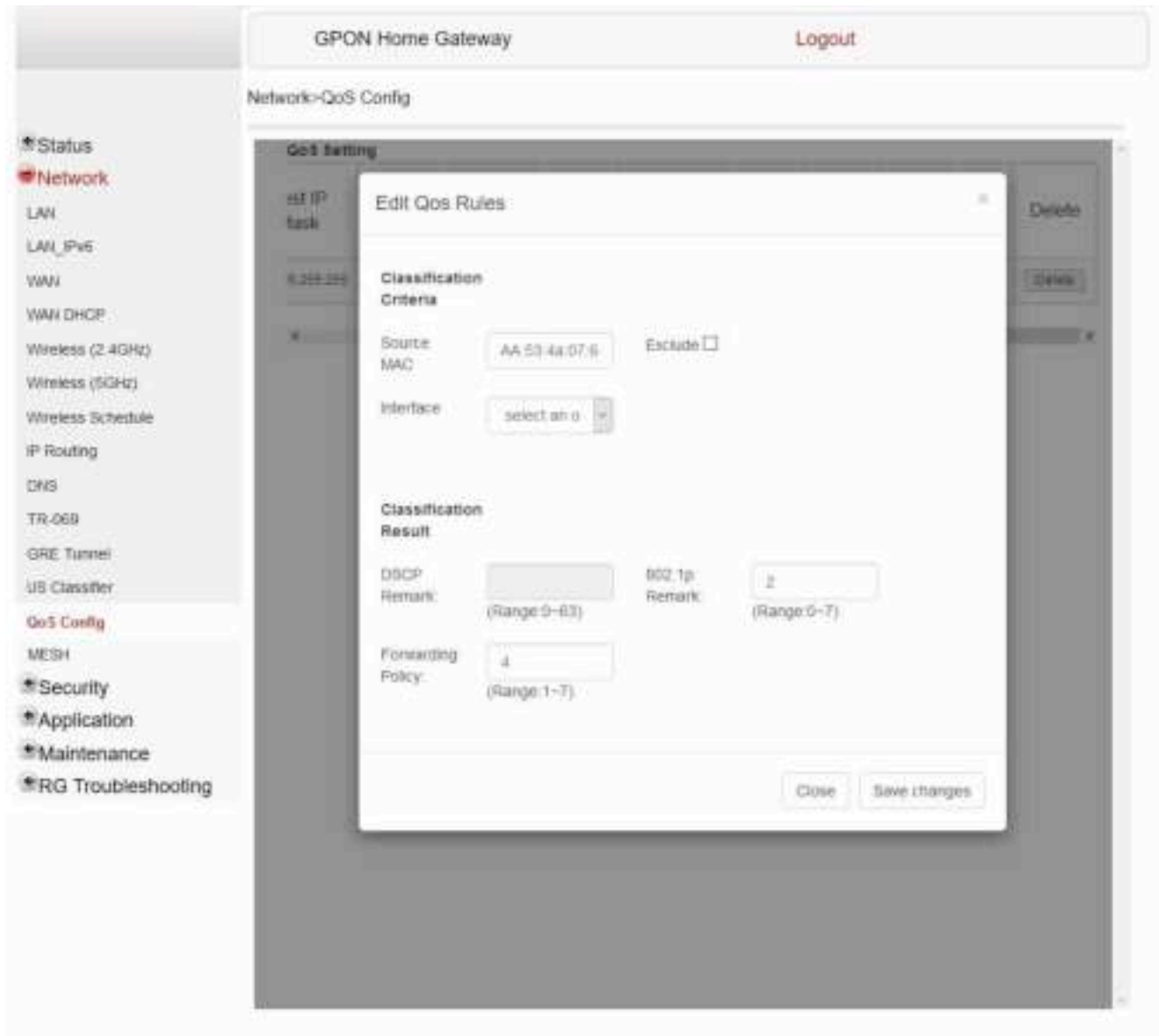
3

Click **Add** to add a QoS policy.

You can click **Edit** to edit the QoS rules or **Delete** to delete the QoS configuration.

[Figure 7-31, "QoS rules edit window" \(p. 140\)](#) shows the window for editing the QoS rules.

Figure 7-31 QoS rules edit window



You can click **Save Changes** to save the QoS rules.

You can click **Close** to close the Edit QoS Rules window.

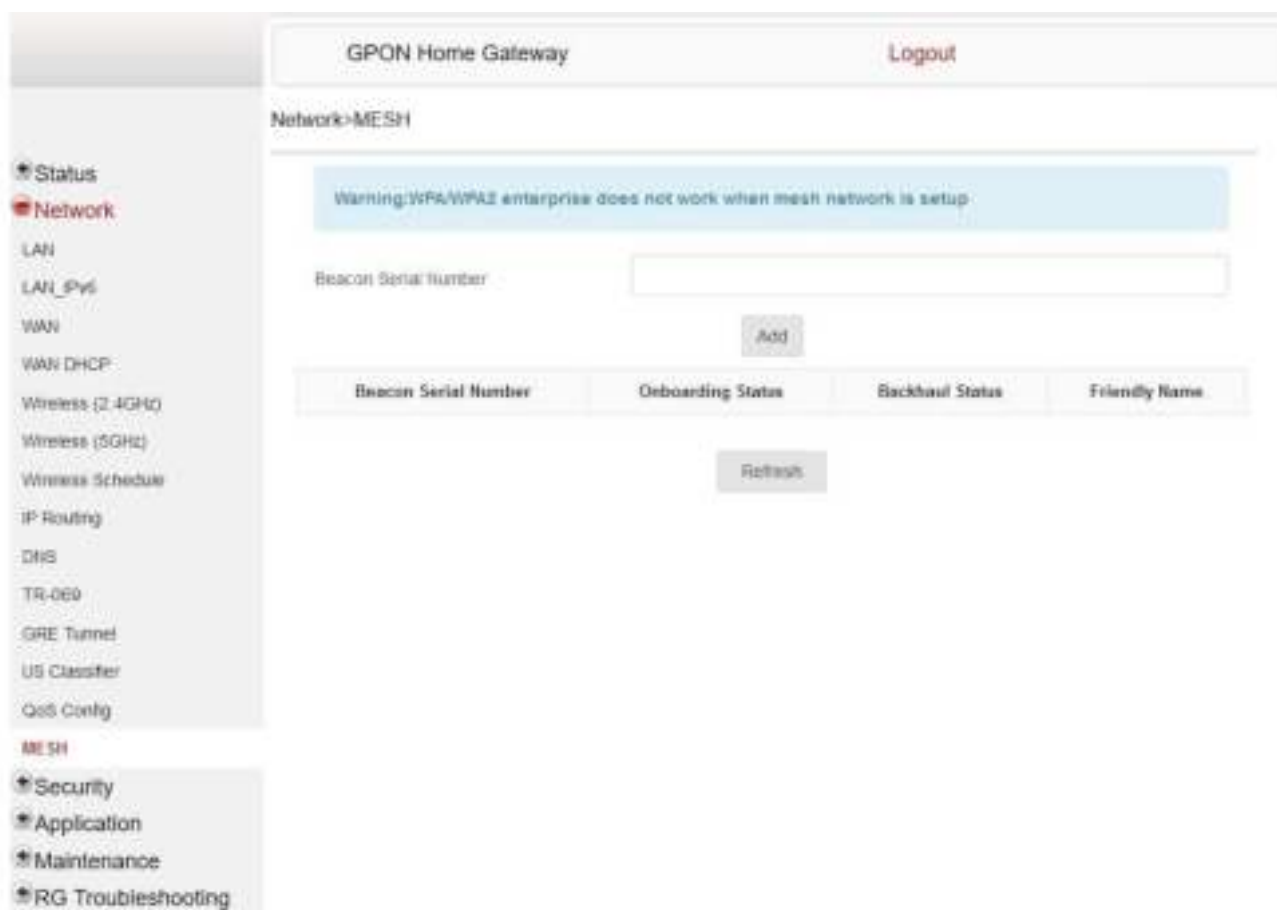
END OF STEPS

7.31 Configuring Mesh

1

Click **Network**→**MESH** from the left pane in the GPON Home Gateway page. The Mesh page displays.

Figure 7-32 Mesh page



2

Enter the Beacon serial number and click **Add**.

The following information displays:

Table 7-26 Mesh parameters

| Field | Description |
|----------------------|---|
| Beacon Serial Number | Indicates the serial number of the extender Nokia WiFi beacon device. |
| Onboarding Status | Indicates whether the extender Nokia WiFi beacon associated with the serial number is configured to the mesh or not. If it is configured then the extender beacon MAC address is added to the Root. |
| Backhaul Status | Indicates the status of the backhaul connection. It represents the backhaul status of Good, Normal, or Bad values, between the Root Access Point and the extender Access Point. |
| Friendly Name | Indicates the friendly name that is defined while on-boarding the extender Nokia WiFi beacon using the Nokia WiFi Mobile Application. |



Note: The number of the entries in the mesh parameters table depends on number of extenders in the home network. If you have two extenders, then there will be two entries in the mesh parameters table.

Click **Refresh** to display up-to-date information.

END OF STEPS

Security configuration

7.32 Overview

7.32.1 Purpose

This chapter describes the security configuration tasks supported by G-1425G-B ONTs

7.32.2 Contents

| | |
|-----------------------------------|-----|
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| 7.34 Configuring the MAC filter | 144 |
| 7.35 Configuring the IP filter | 147 |
| 7.36 Configuring the URL filter | 148 |
| 7.37 Configuring parental control | 150 |
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7.33 Configuring the firewall

1

Click **Security**→**Firewall** from the left pane in the GPON Home Gateway page. The Firewall page displays.

Figure 7-33 Firewall page



2

Configure the following parameters:

Table 7-27 Firewall parameters

| Field | Description |
|---|---|
| Security level | Select the security level from the list: High: Traffic denied inbound and minimally permit common services outbound Low: All outbound traffic and pinhole-defined inbound traffic is allowed Off: All inbound and outbound traffic is allowed |
| Attack Protect (Protection against DoS or DDoS attacks) | Select Enable or Disable from the list. The default is Enable . |

3

Click **Save**.

Click **Refresh** to display up-to-date information.

END OF STEPS

7.34 Configuring the MAC filter

1

Click **Security**→**MAC Filter** from the left pane in the GPON Home Gateway page. The MAC Filter page displays.

Figure 7-34 MAC Filter page

Status

Networks

Security

Firewall

MAC Filter

IP Filter

URL Filter

Parental Control

DNS and ALG

Access Control

Application

Maintenance

FAQ Troubleshooting

GPON Home Gateway

Logout

Security-MAC Filter

Ethernet Interface

MAC Filter Mode

Allowed

LAN Port

1

2

3

4

MAC Address

Custom settings

e.g. 18:14:2D:00:00:00

Save

MAC Address

Actions

Refresh

Wi-Fi SSID

MAC Filter Mode

Allowed

SSID Select

SSID1

Stream

☐

MAC Address

Custom settings

e.g. 18:14:2D:00:00:00

MAC Address Description

Save

Status

Index

Description

MAC Address

Type

Delete

Submit All

Clear

Refresh

2

Configure the following parameters:

Table 7-28 MAC Filter parameters

| Field | Description |
|--------------------|--|
| Ethernet Interface | |
| MAC Filter Mode | Select the MAC filter mode from the list: Blocked or Allowed. |
| LAN Port | Enter the LAN port range. |
| MAC Address | Select the MAC address from the list or enter the address in the text field. |
| Wi-Fi SSID | |

Table 7-28 MAC Filter parameters (continued)

| Field | Description |
|-------------------------|--|
| MAC Filter Mode | Select the MAC filter mode from the list: Blocked or Allowed. |
| SSID Select | Select the SSID from the list. |
| Enable | Select this checkbox to enable the MAC filter. |
| MAC Address | Select a MAC address from the list or enter the address in the text field. |
| MAC Address Description | Enter the MAC address description in the text field. |

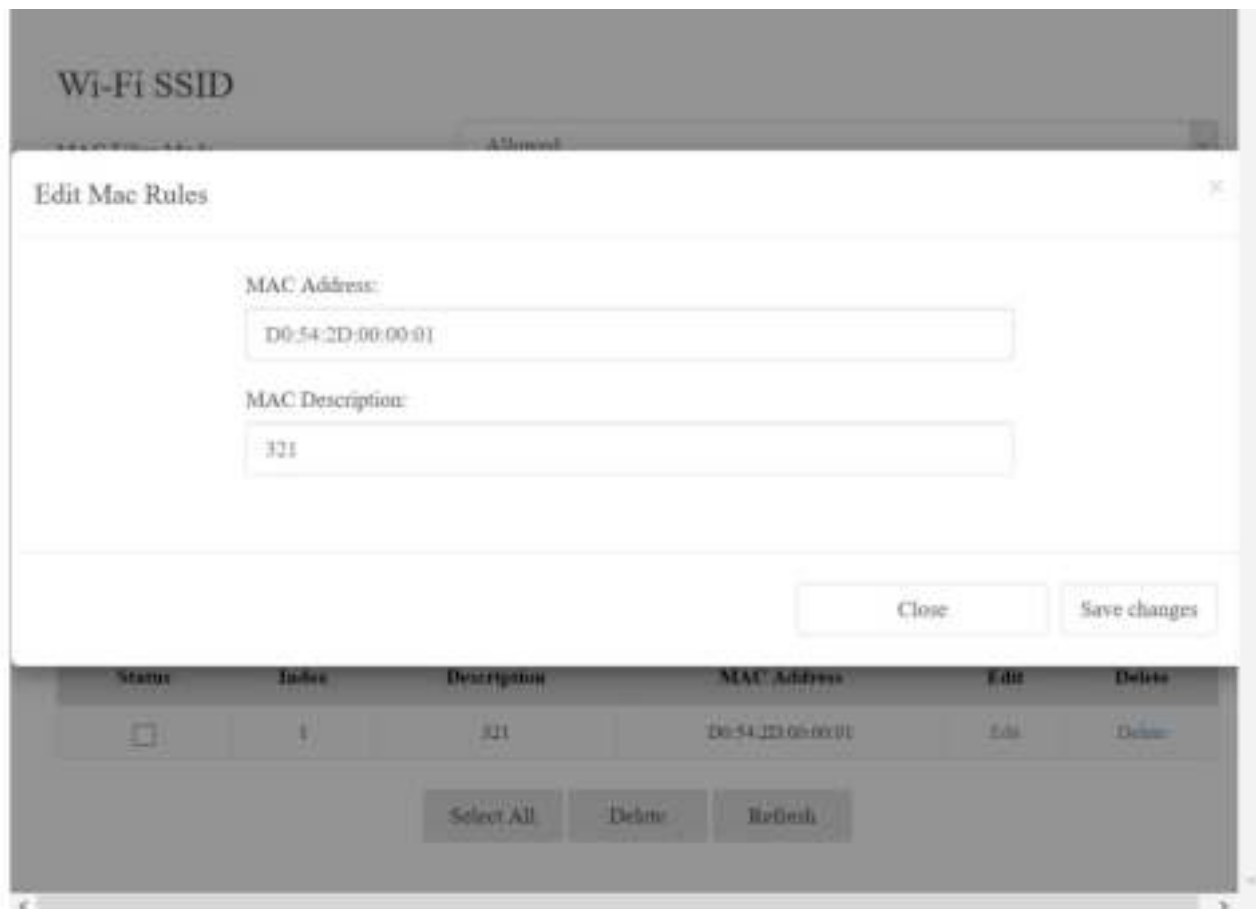
3

Click **Save**.

You can click **Edit** to edit the MAC rules or **Delete** to delete a MAC address.

[Figure 7-35, “Mac rules edit page” \(p. 146\)](#) shows the window for editing the MAC rules.

Figure 7-35 Mac rules edit page



You can click **Save changes** to save the MAC rules.

You can click **Close** to close the Edit Mac Rules window.

You can click **Refresh** to display up-to-date information.

END OF STEPS

7.35 Configuring the IP filter

- 1
- Click **Security**→**IP Filter** from the left pane in the GPON Home Gateway page. The IP Filter page displays.

Figure 7-36 IP Filter page



- 2
- Configure the following parameters:

Table 7-29 IP Filter parameters

| Field | Description |
|------------------|--|
| Enable IP Filter | Select this checkbox to enable an IP filter. |

Table 7-29 IP Filter parameters (continued)

| Field | Description |
|-------------------------|--|
| Mode | Select an IP filter mode from the list: <ul style="list-style-type: none"> • Drop for upstream • Drop for downstream • Accept for upstream • Accept for downstream |
| Internal Client | Select an internal client from the list: <ul style="list-style-type: none"> • Custom settings: uses the IP address input • IP: uses the connecting devices' IP to the ONT |
| Local IP Address | Enter the local IP address. |
| Source Subnet Mask | Enter the source subnet mask. |
| Remote IP Address | Enter the remote IP address. |
| Destination Subnet Mask | Enter the destination subnet mask. |
| Protocol | Select an application protocol or ALL from the list. |

3

Click **Save**.

Click **Refresh** to display up-to-date information.

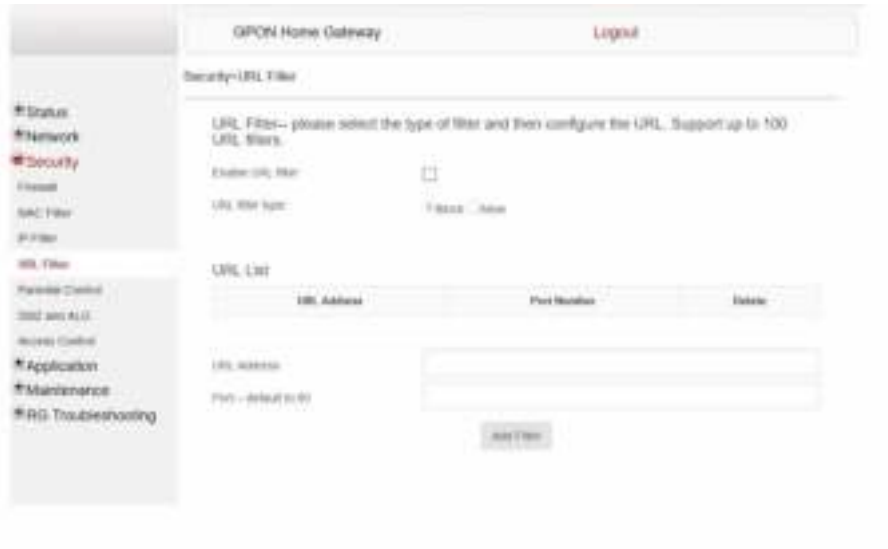
END OF STEPS

7.36 Configuring the URL filter

1

Click **Security**→**URL Filter** from the left pane in the GPON Home Gateway page. The URL Filter page displays.

Figure 7-37 URL Filter page



2 _____
Configure the following parameters:

Table 7-30 URL Filter parameters

| Field | Description |
|----------------------|--|
| Enable URL filter | Select the checkbox to enable the URL filter. |
| URL filter type | Select the option to block the URL or allow the URL. |
| URL List | |
| URL Address | Enter the URL address. |
| Port - default to 80 | Enter the port number; the default is 80. |

 **Note:** You cannot use URL filtering for HTTPS. The URL is encrypted when using HTTPS.

3 _____
Click **Add Filter**.

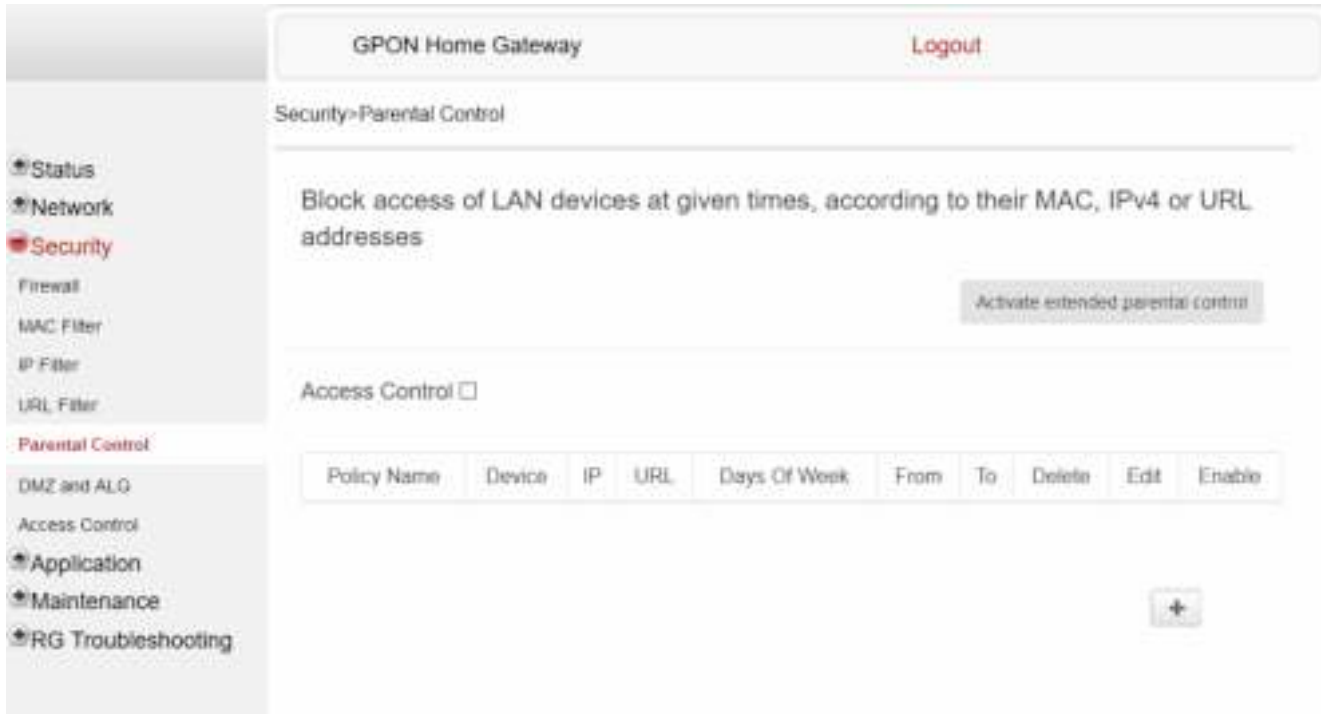
END OF STEPS _____

7.37 Configuring parental control

1

Click **Security**→**Parent Control** from the left pane in the GPON Home Gateway page. The Parental Control page displays.

Figure 7-38 Default Parental Control page



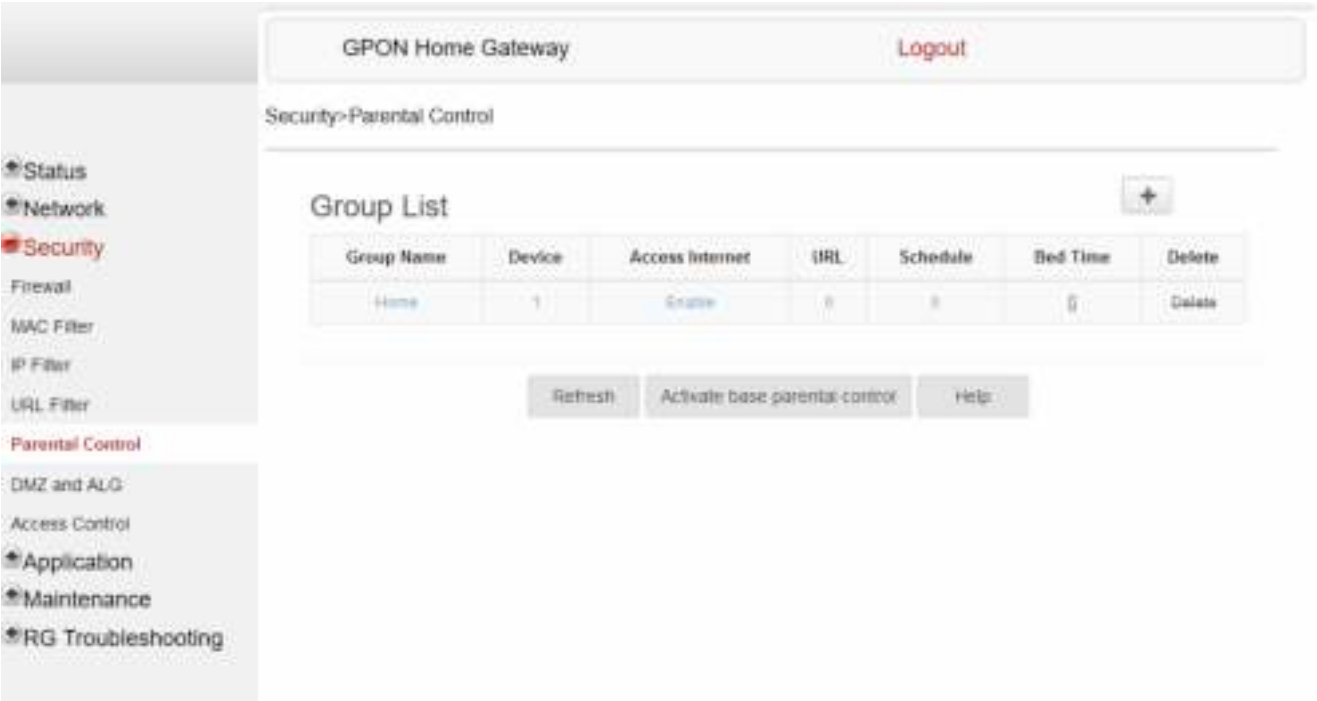
2

Click **Activate extended parental control** to activate the extended version of parental control.

3

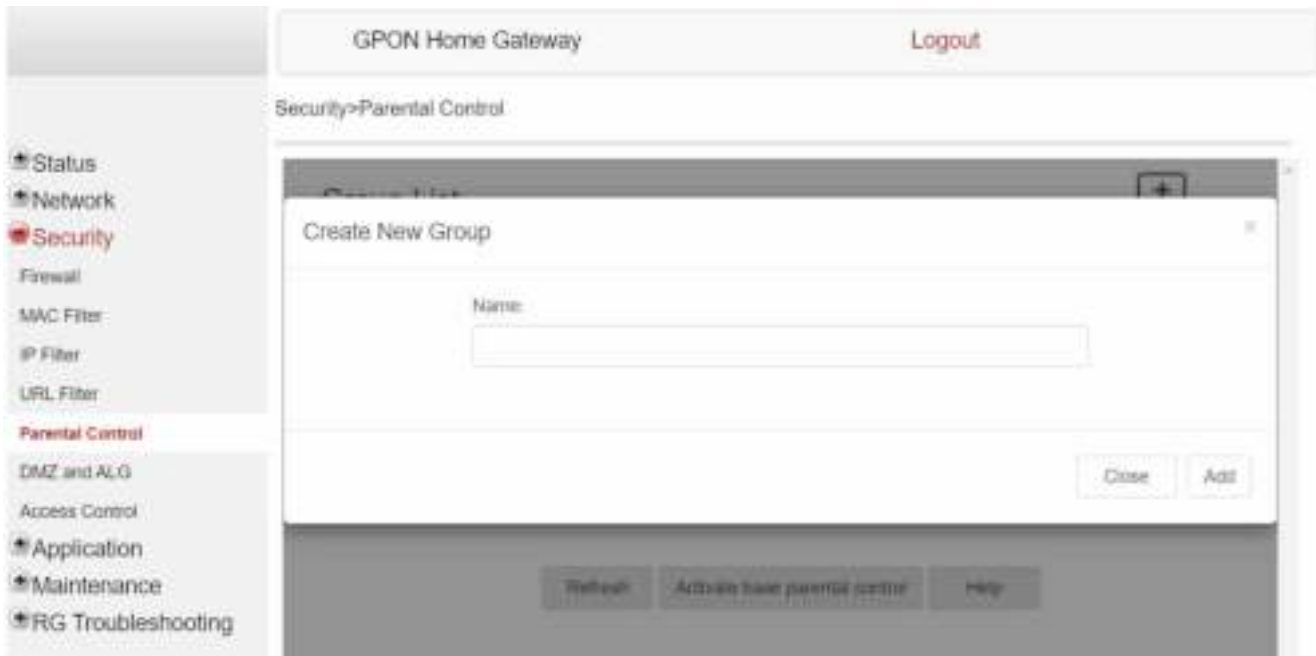
Click **OK** in the pop-up window. The advanced parental control page displays.

Figure 7-39 Advanced Parental control page



- 4 Click on the plus sign (+) to create a group. The create new group page displays

Figure 7-40 Create new group page



5

Click **Add**.

6

You can click on each field such as **Device**, **Access Internet**, **URL**, **Schedule**, and **Bed Time** to configure the related parameters.

The following page displays the parental control access internet information.

Figure 7-41 Parental control access internet page

GPON Home Gateway [Logout](#)

Security>Parental Control

Group List [+](#)

| Group Name | Device | Access Internet | URL | Schedule | Bed Time | Delete |
|------------|--------|-----------------|-----|----------|----------|--------|
| Home | 1 | Enable | 0 | 0 | 0 | Delete |

Group Name: Home

Access Internet ☒

[Refresh](#) [Activate base parental control](#) [Help](#)

The following page displays the parental control device information.

Figure 7-42 Parental control device page

GPON Home Gateway [Logout](#)

Security-Parental Control

Group List [+](#)

| Group Name | Device | Access Internet | URL | Schedule | Bed Time | Delete |
|----------------------|-------------------|------------------------|-------------------|-------------------|-------------------|------------------------|
| Home | 1 | Exists | 1 | 1 | 1 | Delete |

Group Name:

| Name | Mac | Status | Move |
|------------|-------------------|--------|----------------------|
| GUOSENZ-HF | 00:07:a9:1e:00:15 | Active | Move |

[Refresh](#) [Activate base parental control](#) [Help](#)

The following page displays the parental control URL information.

Figure 7-43 Parental control URL page

GPON Home Gateway Logout

Security>Parental Control

Group List

| Group Name | Device | Access Internet | URL | Schedule | Bed Time | Delete |
|------------|--------|-----------------|-----|----------|----------|--------|
| Home | 1 | Enable | | | | Delete |

Group Name: Home

Enable URL Filter ☐

Blocked URL Address:

Add

| Status | Address | Delete |
|--------|---------|--------|
|--------|---------|--------|

Refresh Activate base parental control Help

The following page displays the parental control schedule information.

Figure 7-44 Parental control schedule page

GPON Home Gateway [Logout](#)

Security>Parental Control

Group List

| Group Name | Device | Access Internet | URL | Schedule | Bed Time | Delete |
|------------|--------|-----------------|-----|----------|----------|--------|
| Home | 1 | Enable | 0 | 0 | 0 | Delete |

Group Name: Home

Schedule Name:

Enable Schedule ☐

When Schedule is enabled, we will automatically pause internet

☐ Sunday ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday

From: To:

| Name | Status | Start | End | Days | Action | Delete |
|------|--------|-------|-----|------|--------|--------|
|------|--------|-------|-----|------|--------|--------|

The following page displays the parental control bed time information.

Figure 7-45 Parental control bed time page

GPON Home Gateway Logout

Security-Parental Control

Group List

| Group Name | Device | Access Internet | URL | Schedule | Bed Time | Delete |
|------------|--------|-----------------|-----|----------|----------|--------|
| Home | 1 | Enable | 0 | 0 | 0 | Delete |

Group Name: Home

Bed Time Name:

Enable Bed Time: ☐

When Bed Time is enabled, we will automatically pause Internet

☐ Sunday ☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday

From: To:

| Name | Status | Start | End | Days | Action | Delete |
|------|--------|-------|-----|------|--------|--------|
|------|--------|-------|-----|------|--------|--------|

You can click **Delete** to delete the group.

7

Configure the following parameters:

Table 7-31 Parental control parameters

| Field | Description |
|------------------------|---|
| Access Internet | |
| Access Internet | Select this checkbox to enable internet |
| Group Name | Displays the selected group name |
| Device | |
| Device MAC Address | Enter the MAC address and click Add Device . |

Table 7-31 Parental control parameters (continued)

| Field | Description |
|---------------------|--|
| URL | |
| Enable URL Filter | Select this checkbox to enable URL filter |
| Blocked URL Address | Enter the URL address to be blocked and click Add |
| Schedule | |
| Schedule Name | Enter the schedule name |
| Enable Schedule | Select this checkbox to enable schedule You can choose Every Day, or Individual Days and select the checkboxes for the days of the week for which the schedule applies |
| From | Enter the time for the schedule to be in effect and click Add |
| To | |
| Bed Time | |
| Bed Time Name | Enter the bed time name |
| Enable Bed Time | Select this checkbox to enable bed time When bed time is enabled, the internet is paused. You can choose Every Day, or Individual Days and select the checkboxes for the days of the week for which the bed time applies |
| From | Enter the time for the bed time to be in effect and click Add |
| To | |

8

Click **Activate base parental control**, to go back to default parental control window.

You can click **Refresh** to update the displayed information.

You can click **Help** for more information.

END OF STEPS

7.38 Configuring DMZ and ALG

1

Click **Security**→**DMZ and ALG** from the left pane in the GPON Home Gateway page. The DMZ and ALG page displays.

Figure 7-46 DMZ and ALG page



2 Configure the following ALG parameters:

Table 7-32 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. |

3 Click **Save ALG**.

4 Configure the following DMZ parameters:

Table 7-33 DMZ parameters

| Field | Description |
|---------------------|--|
| WAN Connection List | Select a WAN connection from the list. |
| Enable DMZ | Select this checkbox to enable DMZ on the chosen WAN connection. |
| DMZ IP Address | Select Custom Settings and enter the DMZ IP address or select the IP address of a connected device from the list. |

5

Click **Save DMZ**.

END OF STEPS

7.39 Configuring access control

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



Note: ACL takes precedence over the firewall policy.

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

1

Click **Security**→**Access Control** from the left pane in the GPON Home Gateway page. The Access Control page displays.

Figure 7-47 Access Control page



2

Configure the following parameters:

Table 7-34 Access Control parameters

| Field | Description |
|--|--|
| WAN | Select a connection from the list. |
| Trusted Network Enable | Click to enable or disable trusted network. |
| ICMP, Telnet, SSH, HTTP, TR-069, HTTPS, SFTP | Select an access control level for each protocol: WAN side: Allow, Deny, or Trusted Network Only LAN side: Allow or Deny |

3

Click **Save**.

You can click **Refresh** to display up-to-date information.

4

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.

Table 7-35 Trusted Network parameters

| Field | Description |
|-----------------|--|
| 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. |

5

Click **Add**.

END OF STEPS

Configuring the Application

7.40 Overview

7.40.1 Purpose

This chapter describes the application configuration tasks supported by the G-1425G-B ONTs.

7.40.2 Contents

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7.41 Configuring port forwarding

1

Click **Application**→**Port Forwarding** from the left pane in the GPON Home Gateway page.
The Port Forwarding page displays.

Figure 7-48 Port Forwarding page

The screenshot shows the 'Application Port Forwarding' configuration page on a GPON Home Gateway. The left sidebar contains navigation links: Status, Network, Security, Application (selected), Port Forwarding, Port Triggering, DDNS, HTTP, IPsec and VPN, Voice Setting, Maintenance, and IRIG Troubleshooting. The main area has a 'Logout' button and a 'Port Forwarding' section. This section includes fields for 'Application Name' (with a dropdown menu), 'WAN Port' (range), 'LAN Port' (range), 'Internal Client' (dropdown), 'Protocol' (dropdown), 'Enable Mapping' (checkbox), and 'WAN Connection List' (dropdown). Below these fields is a 'Add' button. At the bottom, there is a table with columns: Application Name, WAN Connection, WAN Port, LAN Port, Device Name, Internal Client, Protocol, Description, Status, Configuration Source, and Date. The table currently shows one entry with 'Custom settings' as the application name and '1_1000' as the WAN port.

2 Configure the following parameters:

Table 7-36 Port Forwarding parameters

| Field | Description |
|------------------------------------|--|
| Application Name | Select an application name from the list. The default is Custom settings . |
| WAN Port | Enter the WAN port range. |
| LAN Port | Enter the LAN port range. |
| Internal Client | Select a connected device from the list and enter the associated IP address. |
| Protocol | Select the port forwarding protocol from the list: <ul style="list-style-type: none">• TCP• UDP• TCP/UDP |
| Enable Mapping | Select this checkbox to enable mapping. |
| WAN Connection List ¹ . | Select a WAN connection from the list. |

Notes:

- Only active devices are shown on this list.

3Click **Add**.**END OF STEPS**

7.42 Configuring port triggering

1

Click **Application**→**Port Triggering** from the left pane in the GPON Home Gateway page. The Port Triggering page displays.

Figure 7-49 Port Triggering page

| Application Name | NAT Connection | Open Port | Triggering Port | Expire Time | Open Protocol | Trigger Protocol | Status | Configuration Source | Delete |
|------------------|----------------|-----------|-----------------|-------------|---------------|------------------|--------|----------------------|--------|
| | | | | | | | | | |

2

Configure the following parameters:

Table 7-37 Port Triggering parameters

| Field | Description |
|----------------------------------|--|
| Application Name | Select an application name from the list. The default is Custom settings . |
| Open Port | Enter the open port range. |
| Triggering Port | Enter the triggering port range. |
| Expire Time | Enter the expiration time in seconds. |
| Open Protocol | Select the open port protocol from the list: • TCP • UDP • TCP/UDP |
| Trigger Protocol | Select the triggering port protocol from the list: • TCP • UDP • TCP/UDP |
| Enable Triggering | Select this checkbox to enable port triggering. |
| WAN Connection List ¹ | Select a WAN connection from the list. |

Notes:

- Only active devices are shown on this list.

3 _____

Click **Add**.

END OF STEPS _____

7.43 Configuring DDNS

1 _____

Click **Application**→**DDNS** from the left pane in the GPON Home Gateway page. The DDNS page displays.

Figure 7-50 DDNS page



2

Configure the following parameters:

Table 7-38 DDNS parameters

| Field | Description |
|---------------------|--|
| WAN Connection List | Select a WAN connection from the list. |
| Enable DDNS | Select this checkbox to enable DDNS on the chosen WAN connection. |
| ISP | Select an ISP from the list. |
| Domain Name | Enter the domain name. |
| Username | Enter the username. |
| Password | Enter the password. |
| DDNS Status | Displays the status of the DDNS: Synchronized, Synchronization failed, or blank if no update message has been received from the ISP. |

3

Click **Save**.

Click **Refresh** to display up-to-date information.

END OF STEPS

7.44 Configuring NTP

1

Click **Application**→**NTP** from the left pane in the GPON Home Gateway page. The NTP page displays.

Figure 7-51 NTP page

2

Configure the following parameters:

Table 7-39 NTP parameters

| Field | Description |
|-----------------------|---|
| Enable NTP Service | Select this checkbox to enable the NTP service. |
| Current Time | Enter the current local date and time. |
| Primary Time Server | Select a time server from the list or select Custom settings and enter the address of the time server. |
| Secondary Time Server | Select a time server from the list or select Custom settings and enter the address of the time server. |
| Tertiary Time Server | Select a time server from the list or select Custom settings and enter the address of the time server. |
| Interval Time | Enter the interval at which to get the time from the time server, in seconds. |
| Time Zone | Select the local time zone from the list. |

3

Click **Save**.

Click **Refresh** to display up-to-date information.

END OF STEPS

7.45 Configuring UPnP and DLNA

1

Click **Application**→**UPnP and DLNA** from the left pane in the GPON Home Gateway page. The UPnP and DLNA page displays.

Figure 7-52 UPnP and DLNA page



2

Select the **Enable UPnP/DLNA** checkbox to enable UPnP/DLNA.

3

Click **Save**.

Click **Refresh** to display up-to-date information.

END OF STEPS

1

2

Table 7-40 Voice Setting parameters

| Field | Description |
|-----------------------|--|
| Voice Setting | |
| Outbound Proxy | Enter the SIP outbound proxy. |
| Outbound Proxy Port | Enter the outbound proxy port. |
| Proxy Server | Enter the proxy server. |
| Proxy Server Port | Enter the proxy server port. |
| Registrar Server | Enter the registrar server. |
| Registrar Server Port | Enter the registrar server port. |
| UserAgentDomain | Enter the user agent domain. |
| UserAgentPort | Enter the user agent port. |
| DigitMap | A string of characters with a length limit of 1024 bytes. A dial plan can consist of several dial plan tokens. Each token is a component of the overall dial plan. |
| DTMF Mode | Select InBand , or RFC2833 from the list. |
| FaxT38 | Select False or True from the list. |
| Line Setting | |
| POTS line | Select a POTS line from the list. |
| Enable | Select Enabled or Disabled from the list. |
| Directory Number | Enter a directory number. |
| AuthUserName | Enter an authorized username. |
| AuthPassword | Enter a password for the user. |
| URI | Enter the Uniform Resource Identifier of the SIP URL. |

3

Click **Save**.

END OF STEPS

Maintenance

7.47 Overview

7.47.1 Purpose

This chapter describes the maintenance tasks supported by G-1425G-B ONTs.

7.47.2 Contents

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7.48 Configuring the password

A password must adhere to the password rules, which are as follows:

- The password may consist of uppercase letters, lowercase letters, digital numbers, and the following special characters ! # + , - / @ _ : =]
- The password length must be from 8 to 24 characters
- The first character must be a digital number or a letter
- The password must contain at least two types of characters: numbers, letters, or special characters
- The same character must not appear more than 8 times in a row

When the password meets the password rules, the application displays the message "Your password has been changed successfully".

When the password does not meet the password rules, the application displays a message to indicate which password rule has not been followed, for example:

- The password is too short
- The password is too long
- The first character cannot be a special character
- There are not enough character classes

1

Click **Maintenance**→**Password** from the left pane in the GPON Home Gateway page. The Password page displays.

Figure 7-54 Password page



2

Configure the following parameters:

Table 7-41 Password parameters

| Field | Description |
|-------------------|--|
| Original Password | Enter the current password. |
| New Password | Enter the new password (must adhere to the password rules). |
| Re-enter password | Re-enter the new password (must match the new password entered above exactly). |
| Prompt message | Enter the password prompt message. |

3

Click **Save**.

Click **Refresh** to display up-to-date information.

END OF STEPS

7.49 Configuring LOID

1

Click **Maintenance**→**LOID Configuration** from the left pane in the GPON Home Gateway page. The LOID Configuration page displays.

Figure 7-55 LOID Configuration page



2

Configure the following parameters:

Table 7-42 LOID Configuration parameters

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

3

Click **Save/Apply**.

END OF STEPS

7.50 Configuring SLID

1

Click **Maintenance**→**SLID Configuration** from the left pane in the GPON Home Gateway page. The SLID Configuration page displays.

Figure 7-56 SLID Configuration page



2

Configure the following parameters:

Table 7-43 SLID Configuration parameters

| Field | Description |
|----------------|---|
| Current SLID | Displays the current SLID. |
| Enter New SLID | Enter the new SLID. |
| SLID Mode | Select a SLID mode from the list. The default is HEX Mode. |

3

Click **Save**.

Click **Refresh** to display up-to-date information.

END OF STEPS

7.51 Managing the device

1

Click **Maintenance**→**Device Management** from the left pane in the GPON Home Gateway page. The Device Management page displays.

Figure 7-57 Device Management page



2

Configure the following parameters:

Table 7-44 Device Management parameters

| Field | Description |
|------------|---------------------------------------|
| Host Name | Select a hostname from the list. |
| Host Alias | Enter an alias for the selected host. |

3

Click **Add**.

Click **Refresh** to display up-to-date information.

END OF STEPS

7.52 Backing up the configuration

1

Click **Maintenance**→**Backup and Restore** from the left pane in the GPON Home Gateway page. The Backup and Restore page displays.

Figure 7-58 Backup and Restore page



2

Click **Export** to export the current ONT configuration to a backup file.

END OF STEPS

7.53 Restoring the configuration

1

Click **Maintenance**→**Backup and Restore** from the left pane in the GPON Home Gateway page. The Backup and Restore page displays.

Figure 7-59 Backup and Restore page



2 _____
Click **Choose file** and select a backup file.

3 _____
Click **Import** to restore the ONT to the saved backup.

END OF STEPS _____

7.54 Upgrading firmware

1 _____
Click **Maintenance**→**Firmware Upgrade** from the left pane in the GPON Home Gateway page.
The Firmware Upgrade page displays.

Figure 7-60 Firmware Upgrade page



2 Click **Choose file** and select the firmware file.

3 Click **Upgrade** to upgrade the firmware.

END OF STEPS

7.55 Rebooting the device

1 Click **Maintenance**→**Reboot Device** from the left pane in the GPON Home Gateway page. The Reboot Device page displays.

Figure 7-61 Reboot Device page



2

Click **Reboot** to reboot the ONT.

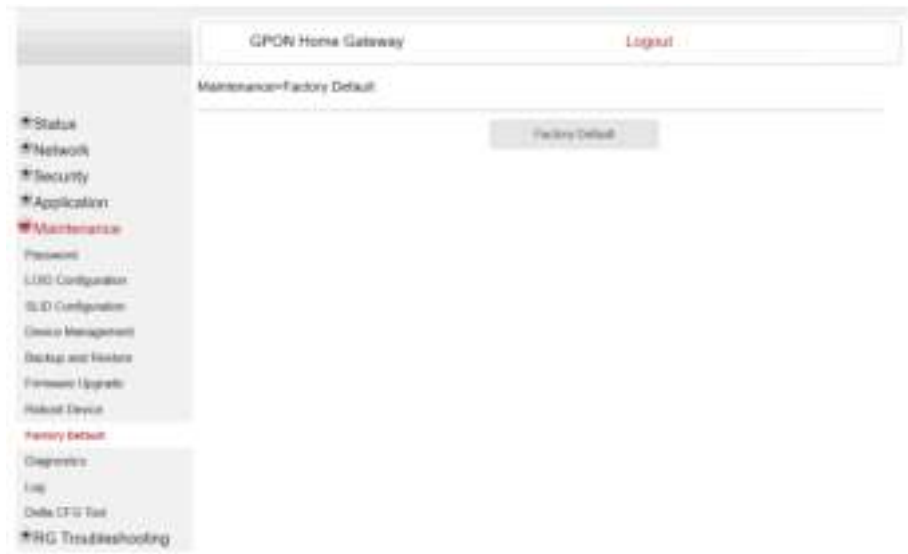
END OF STEPS

7.56 Resetting to factory defaults

1

Click **Maintenance**→**Factory Default** from the left pane in the GPON Home Gateway page. The Factory Default page displays.

Figure 7-62 Factory Default page



2

Click **Factory Default** to reset the ONT to its factory default settings.

END OF STEPS

7.57 Diagnosing WAN connections

1

Click **Maintenance→Diagnostics** from the left pane in the GPON Home Gateway page. The Diagnostics page displays.

Figure 7-63 Diagnostics page

GPON Home Gateway Logout

Maintenance > Diagnostics

Protocol: IPv4

WAN Connect List: LAN/WAN interface

IP or Domain Name: Custom settings

Test: ☐ ping ☐ traceroute

Ping Try Times(1 - 1000): 4

Packet Length(64 - 1500): 64

Max no. of trace hops(1 - 255): 30

Start Test Cancel

- 2 _____
Choose IPv4 or IPv6 to select the protocol type from the drop-down menu.
- 3 _____
Select a WAN connection to diagnose from the list.
- 4 _____
Enter the IP address or domain name.
- 5 _____
Select the test type: ping, traceroute, or both.
- 6 _____
Enter the number of ping attempts to perform (1 - 1000); the default is 4.

7

Enter a ping packet length (64-1500); the default is 64.

8

Enter the maximum number of trace hops (1-255); the default is 30.

9

Click **Start Test**. The results will be displayed at the bottom of the page.

10

Click **Cancel** to cancel the test.

END OF STEPS

7.58 Viewing log files

1

Click **Maintenance**→**Log** from the left pane in the GPON Home Gateway page. The Log page displays.

Figure 7-64 Log page



2

Select a write level from the list to determine which types of events are recorded in the log file:

- Emergency
- Alert
- Critical
- Error
- Warning
- Notice
- Informational
- Debug

3

Select a reading level from the list to determine which types of events to display from the log file:

- Emergency
- Alert
- Critical
- Error
- Warning
- Notice
- Informational
- Debug

The log file is displayed at the bottom of the page.

4

Click **Save**.

You can click **Refresh** to display up-to-date information.

You can click **Export** to export the log file to your local machine.

END OF STEPS

7.59 Generating a delta configuration file

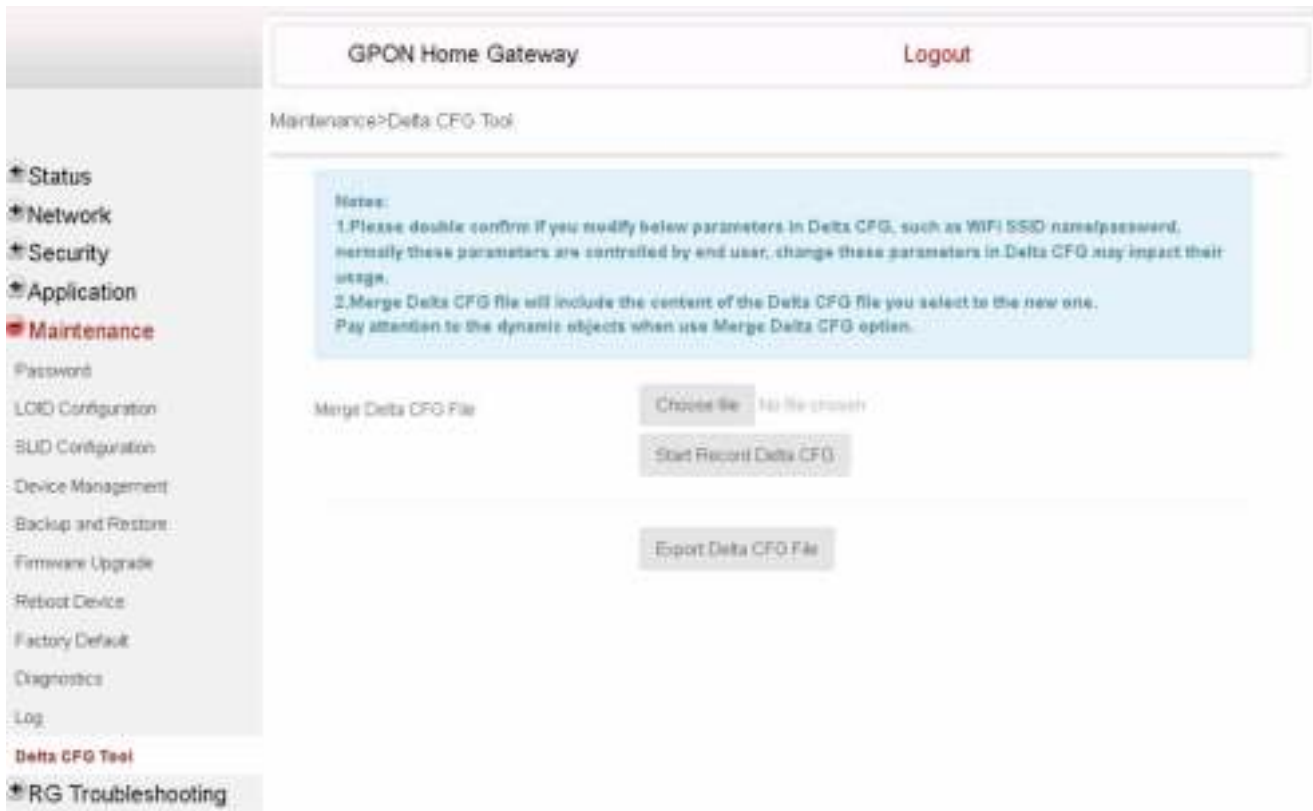
The delta CFG tool is used to generate a delta CFG file which records the parameter changes on the WebGUI. The tool also allows to merge the generated delta configuration file with a previously existing delta config file.

1

Click **Maintenance**→**Delta CFG Tool** from the left pane in the GPON Home Gateway page. The Delta CFG Tool page displays.

- To generate a delta CFG file without merging with a previous CFG file, go to [Step 2](#).
- To merge delta CFG file, go to [Step 3](#).

Figure 7-65 Delta CFG Tool page



2

Generating a delta CFG file without merging with a previous delta CFG file

- Click **Start Record Delta CFG**.
- Perform the required configuration such as adding/deleting WAN connection, changing WAN connection VLAN ID, changing ACS URL and so on. If reboot is needed after modifying a parameter, for example, changing LAN port mode from route to bridge, wait until the ONT is rebooted and continue with the configuration.
- Click **Stop Record Delta CFG** to stop recording.
- Click **Export Delta CFG File** to download the delta CFG file to the local computer. The delta CFG file is in plain text format with the filename *delta_config_result.txt*. If required, rename the file and convert the file to .tar format before downloading it to the ONT.

3

Generating a delta CFG file and merging the file with a previously generated file

This option allows a user to select a delta CFG file from the local computer which will be merged with the recorded commands. The generated delta CFG file will include the content of the selected delta CFG file and the new modifications.

- a. Click **Choose file** and select an existing delta CFG file from the local computer to merge with the recorded commands.



Note: Choose the delta CFG file before clicking **Start Record Delta CFG**. The delta CFG file chosen needs to be in plain text format and not in the .tar format.

- b. Click **Start Record Delta CFG**.
- c. Perform the required configuration such as adding/deleting WAN connection, changing WAN connection VLAN ID, changing ACS URL and so on. If reboot is needed after modifying a parameter, for example, changing LAN port mode from route to bridge, wait until the ONT is rebooted and continue with the configuration.
- d. Click **Stop Record Delta CFG** to stop recording.
- e. Click **Export Delta CFG File** to download the delta CFG file to the local computer. The delta CFG file is in plain text format with the filename *delta_config_result.txt*. If required, rename the file and convert the file to .tar format before downloading it to the ONT.

END OF STEPS

RG Troubleshooting Counters

7.60 Overview

7.60.1 Purpose

This section describes the RG troubleshooting counters GUI procedures.

7.60.2 Contents

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7.61 Viewing Residential Gateway (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.

1

Click **RG Troubleshooting**→**RG Troubleshoot Counters** from the left pane in the GPON Home Gateway page. The RG Troubleshoot Counters page displays.

Figure 7-66 RG Troubleshoot Counters page

2

Configure the following parameters:

Table 7-45 RG Troubleshooting Counters parameters

| Field | Description |
|---------------------|--|
| WAN Connection List | Select a WAN connection from the list. |
| 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 | Indicates the number of upstream packages lost. |
| DS Packet Loss | Indicates the number of downstream packages lost. |

Table 7-45 RG Troubleshooting Counters parameters (continued)

| Field | Description |
|-------------------|--|
| Internet Status | Indicates 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. |

Click **Refresh** to display up-to-date information.

END OF STEPS

8 ONT configuration file over OMCI

8.1 Overview

8.1.1 Purpose

8.1.2 Contents

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8.2 Purpose

This procedure describes how to use configuration files over OMCI to configure ONTs. Some advantages include:

- Flexibility to change the ONT default behavior by downloading configuration file
- Flexibility to update a deployed ONT by downloading updated parameters
- Ability to securely download any configuration file to an ONT
- Ability to avoid using embedded configuration files in ONT software



Note: This feature is supported for use with the 7360 ISAM FX and the 7342 ISAM FTTU.

8.3 Supported configuration file types

[Table 8-1, “Supported configuration files” \(p. 190\)](#) describes the configuration file types that are supported from Nokia ONT R05.02.00 and later.

Table 8-1 Supported configuration files

| File Index | Description | Details | Supported ONTs/DPU |
|------------|------------------------------|--|---------------------------------|
| PRE | ONT pre-configuration file | <p>The XML-based PRECONFIG file controls the working mechanics of the ONT for various services. The default behavior of different ONTs may vary based on the factory settings.</p> <p>The pre-configuration file includes the factory default value for the residential gateway.</p> <p>Note: The pre-configuration file does not work with SFU ONTs; therefore, this feature applies only to Residential Gateway ONTs.</p> <p>The pre-configuration file can be used as is, but Nokia provides its customers with the flexibility to customize the pre-configuration file.</p> <p>This pre-configuration file enables operators to change the default behavior by downloading a customized pre-configuration based on customer inputs.</p> <p>This PRE XML file includes a custom OPERID.</p> <p>The Nokia defined index for the PRECONFIG file is: "PRE"</p> | All Nokia GPON and 10 GPON ONT. |
| CFG | ONT configuration delta file | <p>The XML-based CFG file updates the configurable parameters (the PRE settings) in the existing PRE file of a deployed ONT, where required.</p> <p>This configuration file enables operators to change the deployed behavior by downloading customized updates in the CFG file.</p> <p>This file is used only to modify the parameters in the PRE file; it is not used for service provisioning.</p> <p>No OPERID is required, because the update is based on the OPERID used for the PRE file.</p> <p>The Nokia defined index for the PRECONFIG DELTA file is: "CFG"</p> | All Nokia GPON and 10GPON ONT. |
| XML | Voice XML file | <p>The Voice XML file provides an alternate method for securely downloading voice parameters from the OLT, rather than using FTP (OMCIv1/OMCIv2) or HTTPS (TR-069). Downloading this file makes the applicable changes in the voice parameters.</p> <p>This file enables operators to change the voice behavior by downloading the updated voice XML file.</p> <p>Nokia recommends using this procedure, rather than embedded voice XML files.</p> <p>The Nokia defined index for the Voice XML file is: "XML"</p> | All Nokia GPON and 10 GPON ONT. |

Table 8-1 Supported configuration files (continued)

| File Index | Description | Details | Supported ONTs/DPU |
|------------|-----------------------------------|--|--------------------|
| GFT | G.fast-related configuration file | <p>This text-based json script file controls the default behavior of the G.Fast ONT.</p> <p>This file includes the provisioning parameters of the G.fast transports layer; it does not include VLAN or QoS provisioning.</p> <p>While the ONT functions well with the default values; they can optionally be customized.</p> <p>While default values can work in VDSL mode, a download file is required for the device to function as a G.fast ONT.</p> <p>The Nokia defined index for the G.fast file is: "GFT"</p> | Nokia G.fast. |

8.3.1 Filename conventions

Nokia provides the raw configuration files, which must be saved by the operator in a TAR file to be uploaded. TAR file names must be unique.

The filenames of the raw configuration files may not adhere to the naming conventions outlined below. In this case, the files must be renamed to adhere to the naming conventions before the operator generates the TAR file. Filenames are not case-sensitive.

ABCXXXXVER

where

ABC is the file index type (PRE, CFG, XML, GFT)

XXXX is the operator ID

For PRE and CFG, a valid operator ID is required

For XML and GFT, any characters may be used

VER is the file version (from 001 to 999)



Note: You cannot update the configuration using two files with the same name.

8.3.2 Download configuration file

The following table provides the supported download options for ONT pre-configuration file and configuration file.

Table 8-2 Download configuration files

| ONT type | Legacy method download | | Zero management download | |
|--------------------------------------|------------------------|----------|--------------------------|----------|
| | PRE file | CFG file | PRE file | CFG file |
| Broadlight(eg.I240WA-3FE54869AFGA80) | — | ✓ | — | ✓ |
| Broadcom(eg.G240WB-3FE56773BFGA07) | — | ✓ | ✓ | ✓ |

Table 8-2 Download configuration files (continued)

| ONT type | Legacy method download | | Zero management download | |
|----------------|------------------------|----------|--------------------------|----------|
| | PRE file | CFG file | PRE file | CFG file |
| MTK(eg.G240WF) | — | ✓ | ✓ | ✓ |

8.4 ONT configuration file over OMCI



WARNING

Equipment Damage

Executing the following procedure will trigger the ONT to reboot, which will impact ongoing services.

Use this procedures to configure ONTs using configuration files via legacy method and OMCI.

8.4.1 Configuring an ONT using a configuration file via legacy method

1

Upload the ABCXXXXXVER TAR file to the /ONT/ directory in the OLT.
A maximum of 250 files can be kept in the OLT file system.

2

Using OLT commands, download the TAR file to the ONT.

For OLT commands, refer to the *7360 ISAM FX CLI Command Guide for 100_320Gbps FD NT and FX NT*, or the **7342 ISAM FTTU Operation and Maintenance Using TL1 and CLI**.

Please note:

- **pri-cfgfile-pland/dnload** or **sec-cfgfile-pland/dnload** can be 1 to 14 characters.
- **pri-cfgfile-pland** and **pri-cfgfile-dnload** should be the same name.

Examples



Note: X can be 1 or 2 unless specified:

- If **pland-cfgfileX= Disabled** and **dnload-cfgfileX= Disabled**,
no file is downloaded to the ONT.
- If **pland-cfgfileX=FILENAME1** and **dnload-cfgfileX= Disabled**,
FILENAME1 is downloaded and FILENAME1 is made active. An ONT reboot is required.
- If **pland-cfgfileX=Disabled** and **dnload-cfgfileX= FILENAME2**,
FILENAME2 is downloaded and FILENAME2 is made passive. An ONT reboot is not required.
- If **pland-cfgfileX=FILENAME3** and **dnload-cfgfileX= FILENAME4**, the OLT reports an error because the filenames are not the same.

- e. Configure equipment interface **pland-cfgfile1=XMLXXXXXX1** and **dnload-cfgfile1 XMLXXXXXX1**

Configure equipment interface **pland-cfgfile2=XMLXXXXXX2** and **dnload-cfgfile2 XMLXXXXXX2**

Although the OLT permits the above two steps without reporting an error, Nokia does not recommend executing them, because the ONT may exhibit unexpected behavior.

- f. If **pland-cfgfileX=Auto** and **dnload-cfgfileX= Auto**

The OLT will download the XML file from "sw-ctr-list" (**configure equipment ont sw-ctrl**)

END OF STEPS

The ONT will distribute the configuration files to the different services based on the active indication from the OLT and on the Nokia defined index.

The ONT automatically reboots to apply the configuration files. After the ONT reboots and reports the active version, the OLT completes the file download procedure.

Operators must check the committed file from the OLT to verify whether the corresponding file has been applied. If an error occurs, contact Nokia for support.

8.4.2 Configuring an ONT using a configuration file via OMCI

1

Generate the TAR file to be uploaded to the OLT.

Using the raw configuration file(s) provided by Nokia, generate the TAR file as follows:

- a. On a Linux platform, rename the raw configuration file to adhere to the naming convention, as described in section 8.3 "Supported configuration file types" (p. 189).
- b. Tar the **ABCXXXXXVER** raw configuration file:

```
tar -cf ABCXXXXXVER.tar ABCXXXXXVER
```

Where

ABCXXXXXVER

Is the name of the file created in step i.

This creates two files: **ABCXXXXXVER** and **ABCXXXXXVER.tar**.

- c. Rename **ABCXXXXXVER** to **ABCXXXXXVER.org**
- d. Remove the ".tar" extension from **ABCXXXXXVER.tar** file.

2

Upload the **ABCXXXXXVER** TAR file to the /ONT/ directory in the OLT.

A maximum of 250 files can be kept in the OLT file system.

3

Using OLT commands, download the TAR file to the ONT.

For OLT commands, refer to the *7360 ISAM FX CLI Command Guide for 100_320Gbps FD NT*

and FX NT, or the 7342 ISAM FTTU Operation and Maintenance Using TL1 and CLI.

Please note:

- **pri-cfgfile-pland/dnload** or **sec-cfgfile-pland/dnload** can be 1 to 14 characters.
- **pri-cfgfile-pland** and **pri-cfgfile-dnload** should be the same name.

Examples



Note: Note: X can be 1 or 2 unless specified:

- If **pland-cfgfileX= Disabled** and **dnload-cfgfileX= Disabled**
no file is downloaded to the ONT.
- If **pland-cfgfileX=FILENAME1** and **dnload-cfgfileX= Disabled**
FILENAME1 is downloaded and FILENAME1 is made active. An ONT reboot is required.
- If **pland-cfgfileX=Disabled** and **dnload-cfgfileX= FILENAME2**
FILENAME2 is downloaded and FILENAME2 is made passive. An ONT reboot is not required.
- If **pland-cfgfileX=FILENAME3** and **dnload-cfgfileX= FILENAME4**, the OLT reports an error because the filenames are not the same.
- Configure equipment interface **pland-cfgfile1=XMLXXXXXX1** and **dnload-cfgfile1 XMLXXXXXX1**
Configure equipment interface **pland-cfgfile2=XMLXXXXXX2** and **dnload-cfgfile2 XMLXXXXXX2**
Although the OLT permits the above two steps without reporting an error, Nokia does not recommend executing them, because the ONT may exhibit unexpected behavior.
- If **pland-cfgfileX=Auto** and **dnload-cfgfileX= Auto**
The OLT will download the XML file from "sw-ctr-list" (**configure equipment ont sw-ctrl**)

END OF STEPS

The ONT will distribute the configuration files to the different services based on the active indication from the OLT and on the Nokia defined index.

The ONT automatically reboots to apply the configuration files. After the ONT reboots and reports the active version, the OLT completes the file download procedure.

Operators must check the committed file from the OLT to verify whether the corresponding file has been applied. If an error occurs, contact Nokia for support.