NOKIA

Nokia ONT

G-2426G-B Product Guide

3FE-49441-ABAA-TCZZA

Issue 1

June 2021

Legal notice

Nokia is committed to diversity and inclusion. We are continuously reviewing our customer documentation and consulting with standards bodies to ensure that terminology is inclusive and aligned with the industry. Our future customer documentation will be updated accordingly.

This document is intended for use by Nokia's customers ("You"/"Your") in connection with a product purchased or licensed from any company within Nokia Group of Companies. Use this document as agreed. You agree to notify Nokia of any errors you may find in this document; however, should you elect to use this document for any purpose(s) for which it is not intended, You understand and warrant that any determinations You may make or actions You may take will be based upon Your independent judgment and analysis of the content of this document.

Nokia reserves the right to make changes to this document without notice. At all times, the controlling version is the one available on Nokia's site.

No part of this document may be modified.

NO WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF AVAILABILITY, ACCURACY, RELIABILITY, TITLE, NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS MADE IN RELATION TO THE CONTENT OF THIS DOCUMENT. IN NO EVENT WILL NOKIA BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO SPECIAL, DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL OR ANY LOSSES, SUCH AS BUT NOT LIMITED TO LOSS OF PROFIT, REVENUE, BUSINESS INTERRUPTION, BUSINESS OPPORTUNITY OR DATA THAT MAY ARISE FROM THE USE OF THIS DOCUMENT OR THE INFORMATION IN IT, EVEN IN THE CASE OF ERRORS IN OR OMISSIONS FROM THIS DOCUMENT OR ITS CONTENT.

Copyright and trademark: Nokia is a registered trademark of Nokia Corporation. Other product names mentioned in this document may be trademarks of their respective owners.

© 2021 Nokia.

Contents

About this document **15**

1 What's new **21**
1.1 Overview **21**
1.2 What's new in BBD Release 21.02 ..... **21**

2 ETSI ONT safety guidelines **23**
2.1 Safety instructions **23**
2.2 Safety standards compliance **25**
2.3 Electrical safety guidelines **26**
2.4 ESD safety guidelines **26**
2.5 Laser safety guidelines **27**
2.6 Environmental requirements **30**

3 ETSI environmental and CRoHS guidelines **31**
3.1 Environmental labels **31**
3.2 Hazardous Substances Table (HST) **33**
3.3 Other environmental requirements **33**

4 ANSI ONT safety guidelines **35**
4.1 Safety instructions **35**
4.2 Safety standards compliance **37**
4.3 Laser safety guidelines **39**
4.4 Electrical safety guidelines **42**
4.5 ESD safety guidelines **43**
4.6 Environmental requirements **43**

5 G-2426G-B unit data sheet **45**
5.1 Overview **45**
5.2 G-2426G-B part numbers and identification **45**
5.3 G-2426G-B general description **47**
5.4 G-2426G-B software and installation feature support **54**
5.5 G-2426G-B interfaces and interface capacity **54**
5.6 G-2426G-B LEDs **58**
5.7 G-2426G-B detailed specifications **61**
5.8 G-2426G-B GEM ports and T-CONTs **62**
5.9 G-2426G-B performance monitoring statistics **62**

5.10 G-2426G-B functional blocks 64
5.11 G-2426G-B standards compliance 65
5.12 G-2426G-B special considerations 67

6 Install a G-2426G-B indoor ONT 69
6.1 Overview 69
6.2 Purpose 69
6.3 General 69
6.4 Prerequisites 69
6.5 Recommended tools 69
6.6 Safety information 70
6.7 Procedure 71
6.8 Wall mount an G-2426G-B indoor ONT 73
6.9 Connect a UPS to a G-2426G-B ONT 78

7 Replace a G-2426G-B indoor ONT 87
7.1 Overview 87
7.2 Purpose 87
7.3 General 87
7.4 Prerequisites 87
7.5 Recommended tools 87
7.6 Safety information 88
7.7 Procedure 88

8 Configure a G-2426G-B indoor ONT 93
8.1 Overview 93
GUI configuration 96
8.2 General configuration 96
8.3 HGU mode GUI configuration 96
8.4 Log in to web-based GUI 96
Viewing device information and connection status 98
8.5 Overview 98
8.6 Viewing device information 98
8.7 Viewing LAN status 100
8.8 Viewing WAN status 102
8.9 Viewing WAN IPv6 status 104
8.10 Viewing STA information 106
8.11 Viewing Neighboring Access Points 108
8.12 Viewing home networking information 109

8.13 Viewing optics module status 111
8.14 Viewing statistics 112
8.15 Viewing voice information 115
Network configuration 118
8.16 Overview 118
8.17 Configuring LAN 118
8.18 Configuring LAN IPv6 121
8.19 Configuring WAN 122
8.20 Configuring WAN DHCP 125
8.21 Configuring Wireless 2.4GHz 127
8.22 Configuring Wireless 5GHz 131
8.23 Configuring wireless scheduling 134
8.24 Configuring IP routing 136
8.25 Configuring DNS 137
8.26 Configuring TR-069 139
8.27 Configuring GRE tunnel 140
8.28 Configuring Upstream (US) Classifier 141
8.29 Configuring QoS 146
8.30 Configuring Mesh 148
Security configuration 151
8.31 Overview 151
8.32 Configuring the firewall 151
8.33 Configuring the MAC filter 152
8.34 Configuring the IP filter 154
8.35 Configuring the URL filter 155
8.36 Configuring parental control 156
8.37 Configuring DMZ and ALG 165
8.38 Configuring access control 167
Configuring the Application 169
8.39 Overview 169
8.40 Configuring port forwarding 169
8.41 Configuring port triggering 171
8.42 Configuring DDNS 172
8.43 Configuring NTP 173
8.44 Configuring USB 175
8.45 Configuring UPnP and DLNA 176
8.46 Configuring voice 177

Maintenance **180**
8.47 Overview **180**
8.48 Configuring the password **180**
8.49 Configuring LOID **182**
8.50 Configuring SLID **183**
8.51 Managing the device **184**
8.52 Backing up the configuration **185**
8.53 Restoring the configuration **185**
8.54 Upgrading firmware **186**
8.55 Rebooting the device **187**
8.56 Resetting to factory defaults **188**
8.57 Diagnosing WAN connections **189**
8.58 Viewing log files **191**
RG Troubleshooting Counters **193**
8.59 Overview **193**
8.60 Viewing Residential Gateway (RG) troubleshooting counters **193**

9 ONT configuration file over OMCI **197**
9.1 Overview **197**
9.2 Purpose **197**
9.3 Supported configuration file types **197**
9.4 ONT configuration file over OMCI **199**

List of tables

Table 2-1 Safety labels....24
Table 4-1 Safety labels....36
Table 5-1 Identification of G-2426G-B indoor ONTs....45
Table 5-2 G-2426G-B power supply ordering information....46
Table 5-3 G-2426G-B UPS ordering information....47
Table 5-4 Hardware parts required for G-2426G-B installations....47
Table 5-5 G-2426G-B indoor ONT interface connection capacity....55
Table 5-6 G-2426G-B indoor ONT physical connections....57
Table 5-7 G-2426G-B indoor ONT LED descriptions....59
Table 5-8 G-2426G-B indoor ONT physical specifications....61
Table 5-9 G-2426G-B indoor ONT power consumption specifications....61
Table 5-10 G-2426G-B indoor ONT environmental specifications....61
Table 5-11 G-2426G-B, dimension data specifications....61
Table 5-12 G-2426G-B indoor ONT capacity for GEM ports and T-CONTs....62
Table 5-13 Package S ONTs ONTENET performance monitoring statistics....63
Table 5-14 Package S ONTs ONTL2UNI performance monitoring statistics....63
Table 5-15 Package S ONTs PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCCES, PONONTTCFLOW, PONONTTCVOIP performance monitoring statistics....63
Table 5-16 Package S ONTs PONONTTC aggregate performance monitoring statistics....64
Table 5-17 G-2426G-B ONT considerations and limitations....68
Table 8-1 Device Information parameters....99
Table 8-2 LAN Status parameters....101
Table 8-3 WAN Status parameters....103
Table 8-4 WAN Status IPv6 parameters....105
Table 8-5 STA information parameters....107
Table 8-6 Neighboring AP parameters....108
Table 8-7 Home Networking parameters....110
Table 8-8 Optics Module Status parameters....112
Table 8-9 Voice Information parameters....116
Table 8-10 LAN parameters....120
Table 8-11 Static DHCP parameters....120
Table 8-12 LAN IPv6 parameters....121

Table 8-13 WAN parameters - Route mode 123
Table 8-14 WAN network parameters—Bridge Mode 125
Table 8-15 WAN DHCP parameters 126
Table 8-16 Wireless (2.4GHz) parameters 129
Table 8-17 Wireless (5GHz) parameters 133
Table 8-18 IP Routing parameters 137
Table 8-19 DNS parameters 138
Table 8-20 TR-069 parameters 139
Table 8-21 GRE Tunnel parameters 141
Table 8-22 US Classifier Policy parameters 142
Table 8-23 US Classifier parameters 143
Table 8-24 US Classifier Rules parameters 145
Table 8-25 QoS Config parameters 148
Table 8-26 Mesh parameters 149
Table 8-27 Firewall parameters 152
Table 8-28 MAC Filter parameters 153
Table 8-29 IP Filter parameters 155
Table 8-30 URL Filter parameters 156
Table 8-31 Parental control parameters 164
Table 8-32 ALG parameters 166
Table 8-33 DMZ parameters 166
Table 8-34 Access Control parameters 168
Table 8-35 Trusted Network parameters 168
Table 8-36 Port Forwarding parameters 170
Table 8-37 Port Triggering parameters 172
Table 8-38 DDNS parameters 173
Table 8-39 NTP parameters 174
Table 8-40 USB parameters 176
Table 8-41 Voice Setting parameters 178
Table 8-42 Password parameters 181
Table 8-43 LOID Configuration parameters 182
Table 8-44 SLID Configuration parameters 183
Table 8-45 Device Management parameters 184

Table 8-46 RG Troubleshooting Counters parameters **194**
Table 9-1 Supported configuration files..... **198**
Table 9-2 Download configuration files **199**

List of figures

Figure 2-1 VCCI warning 24
Figure 2-2 Laser product label 28
Figure 2-3 Laser classification label 28
Figure 2-4 Laser warning labels 29
Figure 3-1 Products below MCV value label 32
Figure 3-2 Products above MCV value label 32
Figure 3-3 Recycling/take back/disposal of product symbol 34
Figure 4-1 Sample safety label on the ONT equipment 37
Figure 4-2 Sample laser product label showing CDRH 21 CFR compliance 39
Figure 4-3 Laser product label 40
Figure 4-4 Laser classification label 40
Figure 4-5 Laser warning labels 41
Figure 4-6 CDRH & CFR label 42
Figure 5-1 G-2426G-B ONT 48
Figure 5-2 G-2426G-B ONT for NAR variant 49
Figure 5-3 G-2426G-B indoor ONT physical connections (back) NAR 55
Figure 5-4 G-2426G-B indoor ONT physical connections (back) 56
Figure 5-5 G-2426G-B indoor ONT with fiber optic connector 57
Figure 5-6 G-2426G-B indoor ONT LEDs 58
Figure 5-7 G-2426G-B indoor ONT LEDs for NAR variant 59
Figure 5-8 G-2426G-B ONT functional block 65
Figure 6-1 G-2426G-B ONT connections 71
Figure 6-2 G-2426G-B ONT connections for NAR variant 72
Figure 6-3 G-2426G-B ONT in wall mounting bracket 74
Figure 6-4 G-2426G-B wall mount bracket 75
Figure 6-5 Wall mount bracket power cord placement 76
Figure 6-6 ONT in wall mount bracket—facing the room 77
Figure 6-7 ONT in wall mount bracket—facing the room / facing the wall 78
Figure 6-8 G-2426G-B ONT and UPS 79
Figure 6-9 Molex 7-pin DC cable 80
Figure 6-10 Installation of 3EM24378AB cable (7-pin) in Phoenix connector—3MV00807AA UPS 36W 80

Figure 6-11 Connecting the AC cord to the wall outlet 81
Figure 6-12 Attaching the cable retainer 82
Figure 6-13 G-2426G-B ONT and PSI UPS 83
Figure 6-14 Battery pack onto Power Supply/Charger 84
Figure 7-1 G-2426G-B indoor ONT connections 89
Figure 8-1 Web login page 97
Figure 8-2 Device Information page 99
Figure 8-3 LAN Status page 101
Figure 8-4 WAN Status page 103
Figure 8-5 WAN Status IPv6 page 105
Figure 8-6 STA Information page 107
Figure 8-7 Neighboring AP page 108
Figure 8-8 Home Networking page 110
Figure 8-9 Optics Module Status page 111
Figure 8-10 LAN Statistics page 113
Figure 8-11 WAN Statistics page 114
Figure 8-12 WLAN Statistics page 115
Figure 8-13 Voice Information page 116
Figure 8-14 LAN page 119
Figure 8-15 LAN IPv6 page 121
Figure 8-16 WAN page - Route Mode 123
Figure 8-17 WAN page - Bridge Mode 124
Figure 8-18 WAN DHCP page 126
Figure 8-19 Wireless (2.4GHz) page 128
Figure 8-20 Wireless (5GHz) page 132
Figure 8-21 Wireless Schedule page 135
Figure 8-22 IP Routing page 136
Figure 8-23 DNS page 138
Figure 8-24 TR-069 page 139
Figure 8-25 GRE Tunnel page 140
Figure 8-26 US Classifier Policy page 142
Figure 8-27 US Classifier page 143
Figure 8-28 US Classifier Rules page 145

Figure 8-29 QoS Config page (L2 packet sizes) 146
Figure 8-30 QoS Config page (L3 packet sizes) 147
Figure 8-31 Mesh page 149
Figure 8-32 Firewall page 151
Figure 8-33 MAC Filter page 153
Figure 8-34 IP Filter page 154
Figure 8-35 URL Filter page 156
Figure 8-36 Default Parental Control page 157
Figure 8-37 Advanced Parental control page 158
Figure 8-38 Create new group page 159
Figure 8-39 Parental control access internet page 160
Figure 8-40 Parental control device page 161
Figure 8-41 Parental control URL page 162
Figure 8-42 Parental control schedule page 163
Figure 8-43 Parental control bed time page 164
Figure 8-44 DMZ and ALG page 166
Figure 8-45 Access Control page 167
Figure 8-46 Port Forwarding page 170
Figure 8-47 Port Triggering page 171
Figure 8-48 DDNS page 173
Figure 8-49 USB page 175
Figure 8-50 UPnP and DLNA page 177
Figure 8-51 Voice Setting page 178
Figure 8-52 Password page 181
Figure 8-53 LOID Config page 182
Figure 8-54 SLID Configuration page 183
Figure 8-55 Device Management page 184
Figure 8-56 Backup and Restore page 185
Figure 8-57 Backup and Restore page 186
Figure 8-58 Firmware Upgrade page 187
Figure 8-59 Reboot Device page 188
Figure 8-60 Factory Default page 189
Figure 8-61 Diagnostics page 190

Figure 8-62 Log page 191
Figure 8-63 RG Troubleshooting Counters page 194

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

1. 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.

2. Select **Products**.

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.

7. Follow the on-screen directions to download the file.

End of steps

To access individual documents

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

1

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.

2

Select **Products**.

3

Type your product name in the **Find and select a product** field and click the search icon. 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

Choose **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 drop-down menu.

6

Click **Search**.

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

End of steps

Technical support

For details, refer to the Nokia Support portal (https://customer.nokia.com/support/s/).

For ordering information, contact your Nokia sales representative.

How to comment

To comment on this document, go to the Online Comment Form (https://documentation.nokia.com/comments/) or e-mail your comments to the Comments Hotline (mailto:comments@nokia.com).

1 What's new

1.1 Overview

1.1.1 Purpose

1.1.2 Contents

1.1 Overview	21
1.2 What's new in BBD Release 21.02	21

1.2 What's new in BBD Release 21.02

The product guide is a new guide in BBD Release 21.02, 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.

Table 2-1, “Safety labels” (p. 23) 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	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.
警告	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、混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、取扱い説明書に従ってください。

19841

2.2 Safety standards compliance

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

2.2.1 EMC, EMI, and ESD compliance

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

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

2.2.2 Equipment safety standard compliance

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

2.2.3 Environmental standard compliance

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

2.2.4 Laser product standard compliance

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

2.2.5 Resistibility requirements compliance

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

2.2.7 IC statement

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

- This device may not cause interference; and

- This device must accept any interference, including interference that may cause undesired operation of the device.

CAUTION

Service Disruption

To satisfy IC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

Les antennes installées doivent être situées de facon à ce que la population ne puisse y être exposée à une distance de moin de 20 cm. Installer les antennes de facon à ce que le personnel ne puisse approcher à 20 cm ou moins de la position centrale de l' antenne. La FCC des états-unis stipule que cet appareil doit être en tout temps éloigné d'au moins 20 cm des personnes pendant son functionnement.

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

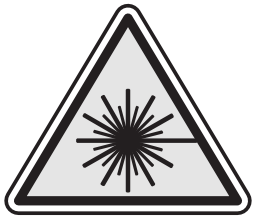
The ONT is classified as a Class 1 laser product based on its transmit optical output.

Laser warning labels

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

Figure 2-2, “Laser product label” (p. 28) shows a laser product label.

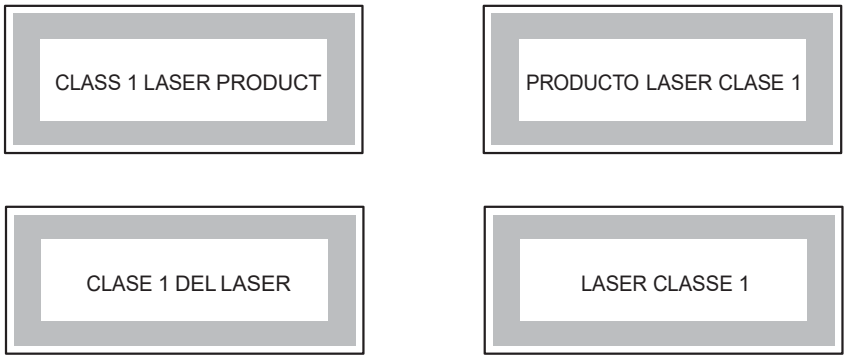
Figure 2-2 Laser product label



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



18992

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

INVISIBLE LASER RADIATION
DO NOT STARE INTO BEAM
OR VIEW DIRECTLY WITH
OPTICAL INSTRUMENTS
Wavelength(s): xxxx nm
Normal output power: xx m W
Max output power: yyy m W

Laser Warning Label

CLASS 1 LASER PRODUCT

RAYONNEMENT LASER CLASSE 1
RAYONNEMENT LASER INVISIBLE EVITER
TOUTE EXPOSITION AU FAISCEAU
NE PAS DEMONTER. FAIRE APPEL A UN PERSONNELL QUALIFIE

CLASE 1 DEL LASER
RADIACION DE LASER INVISIBLE. EVITAR CUALOUIER EXPOSICION AL
RAYO LASER. NO DESMONTAR. LLAMAR A PERSONAL AUTORIZADO

INVISIBLE LASER RADIATION PRESENT AT FIBER OPTIC CABLE
WHEN NOT CONNECTED. AVOID DIRECT EXPOSURE TO BEAM.

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

Table 4-1, “Safety labels” (p. 35) 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.

Figure 4-1, “Sample safety label on the ONT equipment” (p. 36) shows a sample safety label on the ONT equipment.

Figure 4-1 Sample safety label on the ONT equipment

18533

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 following requirements:

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

4.2.2 Equipment safety standard compliance

The ONT equipment complies with the requirements of IEC-62368-1, UL-62368-1 , 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

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.

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 beam.

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

DANGER

Hazard

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

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

a) “Class 1 Laser Product”

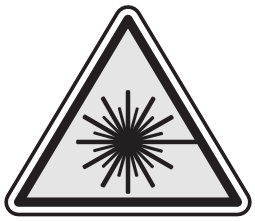
b) “Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.”

4.3.1 Laser warning labels

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

Figure 4-3, “Laser product label” (p. 39) shows a laser product label.

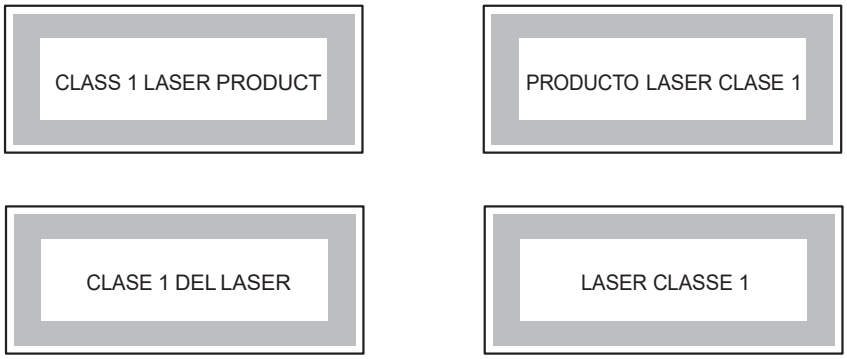
Figure 4-3 Laser product label



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

Laser Warning Label

INVISIBLE LASER RADIATION
DO NOT STARE INTO BEAM
OR VIEW DIRECTLY WITH
OPTICAL INSTRUMENTS
Wavelength(s): xxxx nm
Normal output power: xx m W
Max output power: yyy m W

Laser Warning Label

CLASS 1 LASER PRODUCT

RAYONNEMENT LASER CLASSE 1
RAYONNEMENT LASER INVISIBLE EVITER
TOUTE EXPOSITION AU FAISCEAU
NE PAS DEMONTER. FAIRE APPEL A UN PERSONNELL QUALIFIE

CLASE 1 DEL LASER
RADIACION DE LASER INVISIBLE. EVITAR CUALOUIER EXPOSICION AL
RAYO LASER. NO DESMONTAR. LLAMAR A PERSONAL AUTORIZADO

INVISIBLE LASER RADIATION PRESENT AT FIBER OPTIC CABLE
WHEN NOT CONNECTED. AVOID DIRECT EXPOSURE TO BEAM.

Laser Warning Label

18993

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, “CDRH & CFR label” (p. 42) shows a sample laser product safety label on the ONT equipment.

Figure 4-6 CDRH & CFR label

4.3.3 Transmit optical output

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

4.3.4 Normal laser operation

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

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

DANGER

Hazard

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-2426G-B unit data sheet

5.1 Overview

5.1.1 Purpose

5.1.2 Contents

5.1 Overview	45
5.2 G-2426G-B part numbers and identification	45
5.3 G-2426G-B general description	47
5.4 G-2426G-B software and installation feature support	54
5.5 G-2426G-B interfaces and interface capacity	54
5.6 G-2426G-B LEDs	58
5.7 G-2426G-B detailed specifications	61
5.8 G-2426G-B GEM ports and T-CONTs	62
5.9 G-2426G-B performance monitoring statistics	62
5.10 G-2426G-B functional blocks	64
5.11 G-2426G-B standards compliance	65
5.12 G-2426G-B special considerations	67

5.2 G-2426G-B part numbers and identification

Table 5-1, “Identification of G-2426G-B indoor ONTs” (p. 45) provides part numbers and identification information for the G-2426G-B indoor ONT.

Table 5-1 Identification of G-2426G-B indoor ONTs

Ordering kit part number	Provisioning number	Description	CLEI Code	CPR	ECI/ Bar code
3FE 49441 AA Customer Specific	3FE 49509 AA	G-2426G-B, GPON ONT (NAR) supports 2POTS, 4xGE UNI, Wi-Fi 6 4+4, Nokia Logo. Includes 12 V wall mounted AC/DC power adapter with US input plug and Molex output plug.	BVMKB00ARA	—	—
3FE 49441 AB	3FE 49509 AB	G-2426G-B, GPON ONT supports 2POTS,4xGE UNI, Wi-Fi 6 4+4,Nokia Logo Includes 12 V wall mounted AC/DC power adapter with US input plug.	—	—	—

Table 5-1 Identification of G-2426G-B indoor ONTs (continued)

Ordering kit part number	Provisioning number	Description	CLEI Code	CPR	ECI/ Bar code
3FE 49441 BA	3FE 49509 BA	G-2426G-B, GPON ONT supports 2POTS, 4xGE UNI, Wi-Fi 6 4+4,Nokia Logo. Includes 12 V wall mounted AC/DC power adapter with 2 pin EU input plug.	—	—	—
3FE 49441 CA	3FE 49509 CA	G-2426G-B, GPON ONT supports 2POTS, 4xGE UNI, Wi-Fi 6 4+4, Nokia Logo. Includes 12 V wall mounted AC/DC power adapter with 3 pin UK input plug.	—	—	—

Table 5-2, “G-2426G-B power supply ordering information” (p. 46) provides the power supply information for the G-2426G-B ONT. For more information on power supplies, see the **Nokia ONT Power Supply and UPS Guide**.

Table 5-2 G-2426G-B power supply ordering information

ONT part numbers	Power information (Model No./Manufacture Part Number)	Power information	Customer category or country compliance tested for	Notes
Kit: 3FE 49441 AA EMA: 3FE 49509 AA	FUHUA:UES36WU-120300SPA/ UE201222GWZF2RI HONOR:ADS-40FKJ-12N 12036EPCU/ 9040108111201201R	12V3A wall mounted AC/DC power adapter with 2-pin US input plug and Molex output plug.	ANSI municipality US, Canada, Mexico FCC/UL or ETL /FCC_ID	—
Kit: 3FE 49441 AB EMA: 3FE 49509 AB	FUHUA:UES36WU-120300SPA/ UE191205GWZF2RI HONOR:ADS-40FKJ-12N 12036EPCU/ 9040108111201202R	12V 3A wall mounted AC/DC power adapter with 2-pin US input plug, Barrel output plug.	ANSI municipality US, Canada, Mexico FCC/CB	2-pin US input plug
Kit: 3FE 49441 BA EMA: 3FE 49509 BA	FUHUA:UES36WV-120300SPA/ UE191205GWZF1RI HONOR:ADS-40FKJ-12N 12036EPG/ 9040108111202201R	12V 3A wall mounted AC/DC power adapter with 2-pin EU input plug, Barrel output plug.	Europe CE/CB	—
Kit: 3FE 49441 CA EMA: 3FE 49509 CA	FUHUA:UES36WB-120300SPA/ UE191205GWZF3RI HONOR:ADS-40FKJ-12N 12036EPB/ 9040108111206201R	12V 3A wall mounted AC/DC power adapter with 3-pin UK input plug, Barrel output DC plug	UK CE/CB	—

Table 5-3 G-2426G-B UPS ordering information

Power/UPS model	Power UPS and cabling part number information	Customer category or country compliance tested for	Notes
CyberPower DTC36U12V3-G	36 Watt AC/DC power adapter Recommended UPS for ANSI municipal operators and utilities: (1) Part number: 3MV00555AA UPS: 36W CyberPower UPS DTC36U12V3-G (2) Part numbers: 3EM24378AA (ONT DC power and alarms cable 8 ft) 3EM24378AB (ONT DC power and alarms cable 25 ft) (3) Part number: 1AF17581ACAA Battery: Battery, 12 V, 7.8 Ah	ANSI municipality United States, Canada	UPS provides 8 hours of support AC power cord included with UPS.
PowerTec Solutions International PSI PS36L-P7 UPS. Supports 8h of backup for emergency calls when adding 2 of the extension battery modules PS36L-EX-2 or 24h of operation when adding 4 extension battery modules	(1) 12V/36W UPS Charger order number: 3MV00885AA (PS36L-P7,UPS Charger) (2) DC Power Cord order number: 3MV00886AA (PS7P8M-ZHO-2, 4ft) (3) 5.2Ah extension Battery Pack order number: 3MV00885AB (PS36L-EX-2, order quantity 2 for 8h, quantity, 4 for 24h of reserve)	ANSI municipality United States, Canada	UPS provides 8 or 24 hours of support with different quantity of battery pack. AC power cord included with UPS.

Table 5-4, “Hardware parts required for G-2426G-B installations” (p. 47) lists the hardware parts required for mounting an G-2426G-B ONT.

Table 5-4 Hardware parts required for G-2426G-B installations

Part	Description
ONT unit	The G-2426G-B ONT
Wall mount bracket (3FE 49761 AA)	The wall mount bracket is fastened to a wall. The G-2426G-B ONT is seated in the wall mount bracket. With white color, 1 pc per box
Wall mount bracket (3FE 49761 AB)	The wall mount bracket is fastened to a wall. The G-2426G-B ONT is seated in the wall mount bracket. With white color, 18 pcs per box
Mounting screws	Two expansion screws are used to mount the wall mount bracket.

5.3 G-2426G-B general description

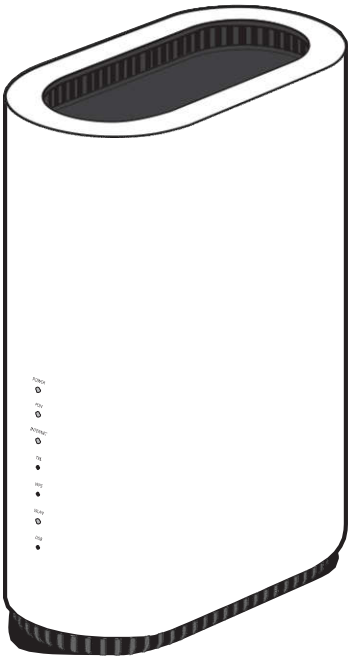
G-2426G-B indoor ONTs provide the subscriber interface for the network by terminating the PON interface and converting it to user interfaces that directly connect to subscriber devices.

The G-2426G-B has built-in Wi-Fi 802.11 b/g/n/ac/ax 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).

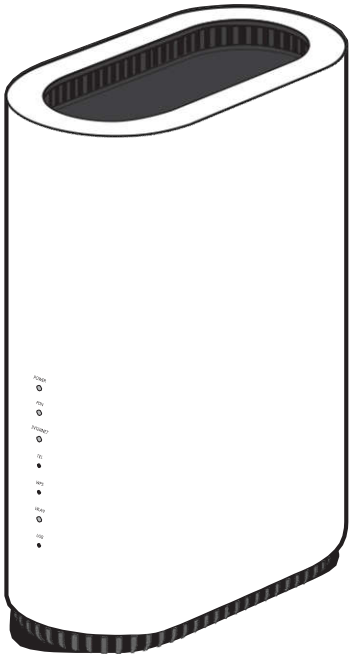
The ONT can be placed on a flat surface, such as a desk or shelf.

Figure 5-1 G-2426G-B ONT



36371

Figure 5-2 G-2426G-B ONT for NAR variant



36371

G-2426G-B indoor ONTs provide the following functions:

- Dual-band concurrent 4x4 IEEE 802.11b/g/n/ax 2.4 GHz and 802.11ac MU-MIMO 5 GHz
- Supports 802.11 b/g/n/ax 4x4 Wireless 2.4 GHz MIMO; Channel bandwidth 20, 40 MHz, auto
- Supports 802.11ac 4x4 Wireless 5 GHz Mu-MIMO; Channel bandwidth 20, 40, 80 MHz, auto
- Four Gigabit standard RJ-45 10/100/1000 Mbps, auto negotiating Ethernet ports and MDI/MDIX auto sensing
- Two POTS ports with R-J11 connectors
- One USB 3.0 port
- GPON uplink: G.984 and G.988 series standard compliant
- 256MB NAND Flash with bad block management, pin2pin compatible design for possible upgrade of RAM/Flash
- WLAN on/off push button
- WPS 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.
- Line rate: 2.488 Gb/s downstream; 1.244 Gb/s upstream
- 4 inner dual band antennas for 2.4G and 5G
- Optics that support received signal strength indication (RSSI)
- Wireless 2.4 GHz 802.11 b/g/n/ax 4x4 MIMO
- Wireless 5 GHz 802.11 n/ac/ax 4x4 MU-MIMO
- 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: 500mW/27 dBm (2.4 GHz); 1000mW/30 dBm (5GHz)
- Maximum effective isotropic radiated power (EIRP): 1000mW/30dBm (2.4GHz); 2000mW/ 33dBm (5GHz)
- Bridged mode or routed mode per LAN port
- 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/WebGUI configuration

- Performance monitoring and alarm reporting
- Remote software image downloading and activation
- IP/MAC/URL filter
- Multi-level firewall and ACL
- SoftGRE support
- TR181 supported for selected customers with dedicated Pre-Config

The following features are not supported on a mesh extending beacon and only supported in the mesh root device or when the ONT works as a standalone device:

- Domain group/isolation
- Bridge WAN
- VLAN binding
- SoftGRE
- QoS/Rate Limit per SSID and LAN port

5.3.1 TR-069 parameter support

The G-2426G-B ONT supports the following TR-069 features:

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

Host object support

The ONT provides host object support for: InternetGatewayDeviceLANDevice.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 8-36, “Port Forwarding parameters” (p. 170) in Chapter 8, “Configure a G-2426G-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 8-8, “Optics Module Status parameters” (p. 112) in Chapter 8, “Configure a G-2426G-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 8-16, “Wireless (2.4GHz) parameters” (p. 129) and Table 8-17, “Wireless (5GHz) parameters” (p. 133) in Chapter 8, “Configure a G-2426G-B indoor ONT”.

Statistics and troubleshooting support

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

For more information, see the Procedure 8.60 “Viewing Residential Gateway (RG) troubleshooting counters” (p. 193) in Chapter 8, “Configure a G-2426G-B indoor ONT”.

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 the Procedure 8.57 “Diagnosing WAN connections” (p. 189) in Chapter 8, “Configure a G-2426G-B indoor ONT”.

5.3.2 TR69 authentication using TLS and CA certificates

G-2426G-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-2426G-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-2426G-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-2426G-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-157 support

This ONT can support LXC container for third party software components on ONTs with minimal 512M memory. These software components are managed by ACS with the parameters defined in TR-157.

The TR-157 objects are:

- Mange each software component via SoftwareModules.DeploymentUnit.{i}
- Set software component execution environment via SoftwareModules.ExecEnv.{i}
- Run software component and get the execution status via SoftwareModules.ExecutionUnit.{i}

Note: The device reserves and limits to 64MB RAM and 32MB flash in total for all of the third party applications. The maximum CPU load created or provided to the third party application is limited to approximately 30%. Underlying non-priority processes may still use the remaining memory on a temporary basis.

Nokia can assist to review specific applications, taking into account the actual memory load of the current hardware, current and projected software evolution over time, and the projected use by a third party application of the software.

5.4 G-2426G-B software and installation feature support

For information on installing or replacing the G-2426G-B see:

- Chapter 6, “Install a G-2426G-B indoor ONT”
- Chapter 7, “Replace a G-2426G-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-2426G-B interfaces and interface capacity

Table 5-5, “G-2426G-B indoor ONT interface connection capacity” (p. 55) describes the supported interfaces and interface capacity for G-2426G-B indoor ONTs.

Table 5-5 G-2426G-B indoor ONT interface connection capacity

ONT type and model	Maximum capacity								
	POTS	10/ 100 BASE-T	10/ 100/ 1000 BASE-T	RF video (CATV)	MoCA	VDSL2	E1/T1	Local craft	GPON SC/APC
G-2426G-B [1]	2	—	4	—	—	—	—	—	1

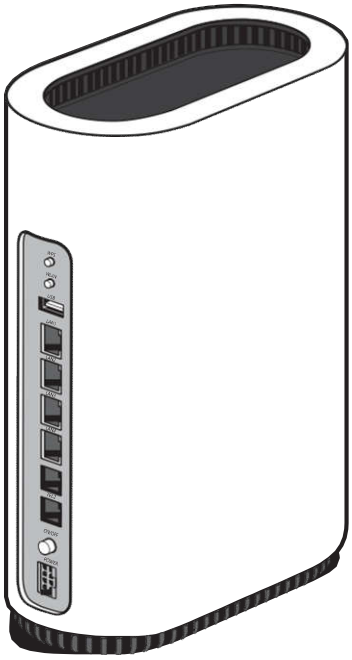
Notes:

1. The G-2426G-B ONTs provide Wi-Fi service that is enabled and disabled using a Wi-Fi on/off switch.

5.5.1 G-2426G-B connections and components

Figure 5-3, “G-2426G-B indoor ONT physical connections (back) NAR” (p. 55) shows the physical connections for G-2426G-B indoor ONTs. Two USB port is on the side of the ONT.

Figure 5-3 G-2426G-B indoor ONT physical connections (back) NAR



36372

Figure 5-4 G-2426G-B indoor ONT physical connections (back)

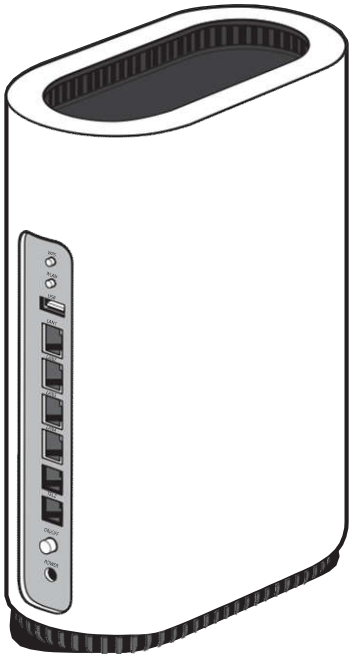
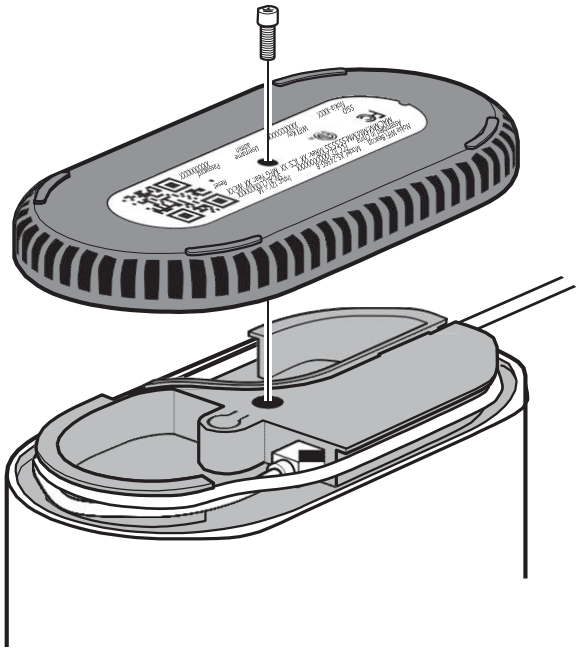


Figure 5-5, “G-2426G-B indoor ONT with fiber optic connector” (p. 57) shows the G-2426G-B indoor ONT with a fiber optic connector.

Figure 5-5 G-2426G-B indoor ONT with fiber optic connector



36734

Table 5-6, “G-2426G-B indoor ONT physical connections” (p. 57) describes the physical connections for G-2426G-B indoor ONTs.

Table 5-6 G-2426G-B indoor ONT physical connections

Connection [1]	Print Letters	Description
POTS port	TEL1 and TEL2	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 10/100/1000 Base-T Ethernet interfaces are supported.The Ethernet ports can support both data and in-band video services on all four interfaces.
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.
WLAN button	WLAN	Wi-Fi service is compliant with IEEE 802.11 standards and is enabled and disabled using the WLAN button.
WPS button	WPS	The Wi-Fi Protected Setup (WPS) button enables and disables the WPS.
On/Off button	ON/OFF	This button turns the ONT on or off.

Table 5-6 G-2426G-B indoor ONT physical connections (continued)

Connection [1]	Print Letters	Description
USB port	USB	This connection is provided through 1 USB 3.0 port on the side of the ONT. The ONT supports external USB hard drives that can be made accessible to all LAN devices.
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.

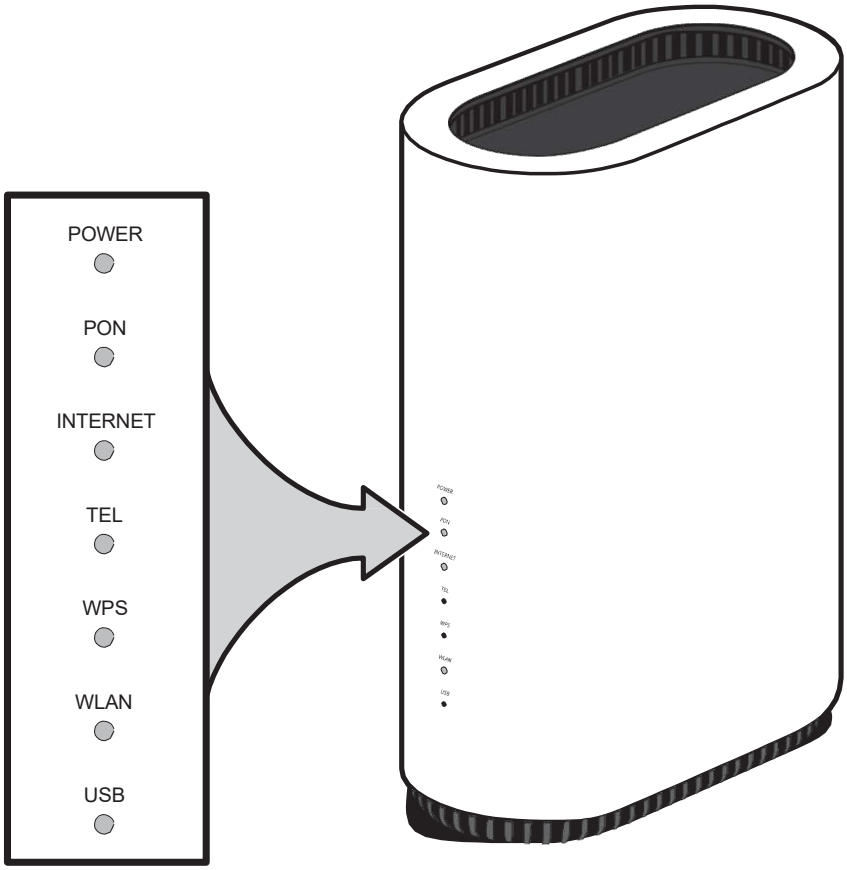
Notes:

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-2426G-B LEDs

Figure 5-6, “G-2426G-B indoor ONT LEDs” (p. 58) shows the G-2426G-B indoor ONT LEDs.

Figure 5-6 G-2426G-B indoor ONT LEDs



36735

Figure 5-7 G-2426G-B indoor ONT LEDs for NAR variant

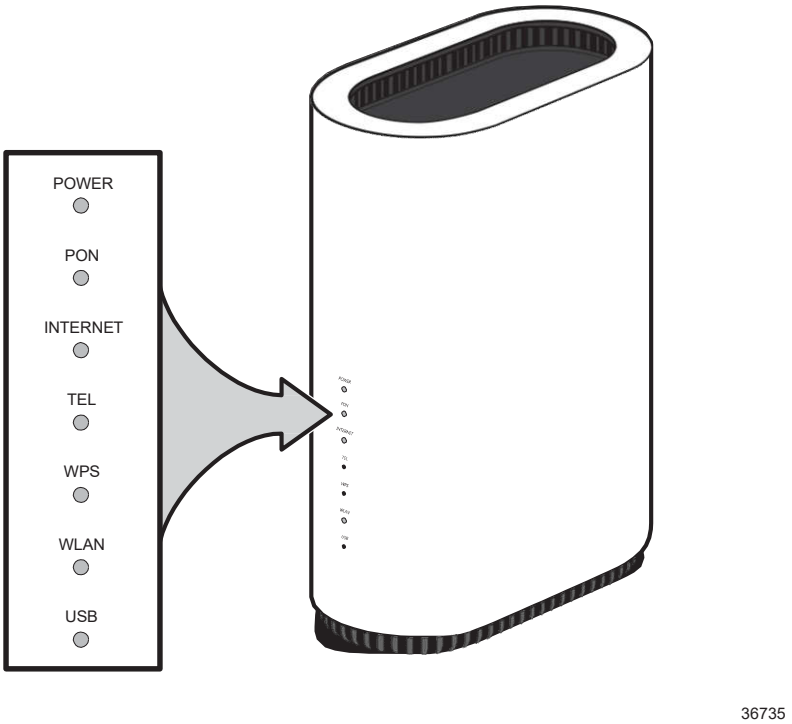


Table 5-7, “G-2426G-B indoor ONT LED descriptions” (p. 59) provides LED descriptions for G-2426G-B indoor ONTs.

Table 5-7 G-2426G-B indoor ONT LED descriptions

Indicator	LED color and behavior	LED behavior description
Power	Off	No power
	Green solid	power on out of mains supply, no battery alarms
	blinking green	SW update
	solid red	failure at startup
	blinking red	No battery, battery alarm.
	solid amber	device operating in battery.
	blinking amber	low battery.

Table 5-7 G-2426G-B indoor ONT LED descriptions (continued)

Indicator	LED color and behavior	LED behavior description
PON	Off	No fiber connected or no rx power
	Green solid	ONT has been configured on the OLT and is in service (UP)
	Flashing Green	ONT is attempting to range with OLT
	solid Red	GPON is down or no link connected.
INTERNET	Solid Green	HSI WAN is connected with the either of the two possibilities: • the device has an IP address assigned from IPCP, DHCP, or static • the session is dropped due to idle timeout but the PON link is still present, or transmit and receive traffic is ongoing
	Green Flashing	PPPoE or DHCP connection is in progress.
	Off(Dark)	HSI WAN is not connected due to the following reasons: • there is no physical interface connection • the device is inbridged mode without an assigned IP address • the session has been dropped for reasons other than idle time-out.
TEL	Solid Green	One Phone is off hook and VOIP service is built up.
	Flashing Green	Phone is in ‘call in’ or ‘talking’ condition.
	Red	VOIP service is out of service.
	Off	All phones are on hook, VOIP service is not built up.
WPS	Solid Green	Wi-Fi protected setup link is up (negotiation and auto-configuration successful)
	Flashing Green	Wi-Fi protected setup link activity (negotiation and auto-configuration ongoing)
	Red Solid	Wi-Fi protected setup processing exception or multiple peers using WPS simultaneously
	Off	Wi-Fi protected setup link down or no link connected (negotiation has not started or has failed)
WLAN	Solid Green	Wi-Fi enabled for at least 1 RF
	Off(dark)	WLAN is down
LAN /RJ45	Green	Executed on the RJ45 connectors
	Solid green	Lan link active
	OFF	LAN link if OFF or LOS
USB	Solid Green	A device is connected to the USB port .
	Off(dark)	No device connected to the USB port.
	Flashing green	Traffic activity on the USB connection

5.7 G-2426G-B detailed specifications

Table 5-8, “G-2426G-B indoor ONT physical specifications” (p. 60) lists the physical specifications for G-2426G-B indoor ONTs.

Table 5-8 G-2426G-B indoor ONT physical specifications

Description	Specification
Length	6.30 in. (160 mm)
Width	3.35 in. (85 mm)
Height	8.90 in. (226mm)
Weight [within ± 0.5 lb (0.23 kg)] (net weight of ONT)	1.81 lbs (825g)

Table 5-9, “G-2426G-B indoor ONT power consumption specifications” (p. 61) lists the power consumption specifications for G-2426G-B indoor ONT.

Table 5-9 G-2426G-B indoor ONT power consumption specifications

Mnemonic	Maximum power (Not to exceed)	Condition	Minimum power	Condition
G-2426G-B	22 W	1 POTS off-hook, 4 10/100/1000 Base-T Ethernet, Wi-Fi operational, USB operational	6.5 W	1 POTS on-hook, other interfaces/services not provisioned

Table 5-10, “G-2426G-B indoor ONT environmental specifications” (p. 61) lists the environmental specifications for G-2426G-B indoor ONT.

Table 5-10 G-2426G-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 5-11, “G-2426G-B, dimension data specifications” (p. 61) lists the dimension data specifications for G-2426G-B indoor ONT

Table 5-11 G-2426G-B, dimension data specifications

Dimension	Specification
Packet size supported	2000
number of IP addresses supported (or ranges)	254
number of supported Wi-Fi clients (per radio, per device, per mesh)	32 per radio, 64 per device, 128 per mesh

Table 5-11 G-2426G-B, dimension data specifications (continued)

Dimension	Specification
number of supported beacons /APs in a mesh	—
number of supported WAN interfaces	8
number of supported VLANs	4094
number of Tconts and GEM ports in the ONTs	32 Tconts / 256 GEM ports
number of LLIDs in the ONTs	—
number of priority queues, overall buffer size	128, Max 16MB for WAN and 4MB for LAN
number of multicast groups (DACL entries)	1024

5.8 G-2426G-B GEM ports and T-CONTs

Table 5-12, “G-2426G-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 5-12 G-2426G-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-2426G-B performance monitoring statistics

The following section identifies the supported performance monitoring statistics for G-2426G-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 5-13, “Package S ONTs ONTENET performance monitoring statistics” (p. 63) provides statistics for ONTENET type counters
- Table 5-14, “Package S ONTs ONTL2UNI performance monitoring statistics” (p. 63) provides statistics for ONTL2UNI type counters
- Table 5-15, “Package S ONTs PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCCES, PONONTTCFLOW, PONONTTCVOIP performance monitoring statistics” (p. 63) provides statistics for PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCCES, PONONTTCFLOW, and PONONTTCVOIP type counters
- Table 5-16, “Package S ONTs PONONTTC aggregate performance monitoring statistics” (p. 64) provides statistics for PONONTTC aggregate type counters

Note: If you have trouble accessing G-2426G-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.

Table 5-13 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-2426G-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 will be counted.

Table 5-14 Package S ONTs ONTL2UNI performance monitoring statistics

ONT	ONTL2UNI statistics										
	FRAMES	BYTES	MCFRAMES	DSDRPDFRMS	USDRPDFRMS	USFRAMES	DSFRAMES	USBYTES	DSBYTES	USMCFRAMES	DSMCFRAMES
G-2426G-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 5-15 Package S ONTs PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCCES, PONONTTCFLOW, PONONTTCVOIP performance monitoring statistics

ONT	PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCCES, PONONTTCFLOW, PONONTTCVOIP statistics					
	TXBLOCKS	TXFRAGS	RXBLOCKS	RXFRAGS	LOSTFRAGS	BADGEMHDRS
G-2426G-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 aggregate performance monitoring statistics

ONT	PONONTTC (aggregate) statistics					
	TXBLOCKS	TXFRAGS	RXBLOCKS	RXFRAGS	LOSTFRAGS	BADGEMHDRS
G-2426G-B [1]	✓	✓	✓	✓	✓	—

Notes:

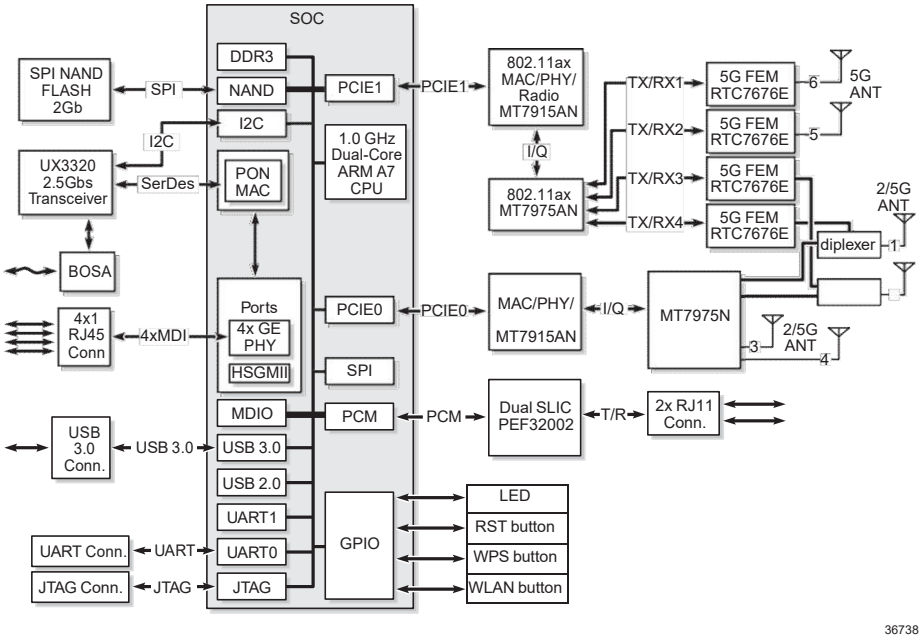
1. A 5 second polling window limitation exists on the ONT, therefore the margin of error for each 15-min window is 5 seconds

5.10 G-2426G-B functional blocks

G-2426G-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 twp RJ-11 POTS port. These ONTs also feature fiber optic, USB, and power connectors.

Figure 5-8, “G-2426G-B ONT functional block” (p. 65) shows the functional blocks for G-2426G-B indoor ONT.

Figure 5-8 G-2426G-B ONT functional block



5.11 G-2426G-B standards compliance

G-2426G-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 b/g/n/ac/ax for Wi-Fi
- ITU-T G.711, G.722, G.723, G.726, G.729
- SIP RFC 3261

5.11.1 Energy-related products standby and off modes compliance

Hereby, Nokia declares that the G-2426G-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-2426G-B ONTS qualify as equipment with high network availability (HiNA) functionality. Since the main purpose of G-2426G-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-2426G-B interfaces and interface capacity” (p. 54) in this chapter.

For information about power consumption, see 5.7 “G-2426G-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, and
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-2426G-B special considerations

G-2426G-B is a package P ONT.

5.12.1 Wi-Fi service

G-2426G-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-2426G-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
- 6 internal antennas: 2x single-band antennas for 2.4G, 2x single-band antennas for 5G, and 2x dual-band antennas for 2.4G/5G

Wi-Fi standards and certifications

The Wi-Fi service on G-2426G-B indoor ONTs supports the following IEEE standards and Wi-Fi Alliance certifications:

- Certified for IEEE 802.11 b/g/n/ac/ax standards
- WPA support including WPA-PSK
- Certified for WPA2-Personal
- Certified for WPA2-enterprise

Wi-Fi GUI features

G-2426G-B indoor ONTs have HTML-based Wi-Fi configuration GUIs.

5.12.2 G-2426G-B ONT considerations and limitations

Table 5-17, “G-2426G-B ONT considerations and limitations” (p. 68) lists the considerations and limitations for Package P G-2426G-B ONTs.

Table 5-17 G-2426G-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 except for NAR variant.
The following voice features / GSIP parameters are configurable on a per-Client/ per-ONT basis (not per-Subscriber): • Enable Caller ID and Enable Caller Name ID • Digitmap and the associated Interdigit and Critical timers and Enter key parameters • Warmline timer is enabled per subscriber, but the warmline timer value is configured per ONT and must have a lower value than the Permanent time • Miscellaneous timers: Permanent, Timed-release, Reanswer, Error-tone, and CW-alert timers • Features / functions: Message waiting mode, WMWI refresh interval, DTMF volume level • Service Codes for the following features: CW, Call Hold and Warmline
These feature items are only supported in the mesh root device or when the ONT works as a standalone device. • Domain group/isolation • Bridge WAN • VLAN binding • SoftGRE • QoS/Rate Limit per SSID and LAN port

6 Install a G-2426G-B indoor ONT

6.1 Overview

6.1.1 Purpose

6.1.2 Contents

6.1 Overview	69
6.2 Purpose	69
6.3 General	69
6.4 Prerequisites	69
6.5 Recommended tools	69
6.6 Safety information	70
6.7 Procedure	71
6.8 Wall mount an G-2426G-B indoor ONT	73
6.9 Connect a UPS to a G-2426G-B ONT	78

6.2 Purpose

This chapter provides the steps to install a G-2426G-B indoor ONT.

6.3 General

The steps listed in this chapter describe mounting and cabling for a G-2426G-B indoor ONT.

6.4 Prerequisites

You need the following items before beginning the installation:

- all required cables

6.5 Recommended tools

You need the following tools for the installation:

- #2 Phillips screwdriver
- 1/4 in. (6 mm) flat blade screwdriver
- wire strippers
- fiber optic splicing tools
- RJ-45 cable plug crimp tool

- voltmeter or multimeter
- optical power meter
- drill and drill bits
- paper clip

6.6 Safety information

Read the following safety information before installing 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 out of 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 precedent when there is conflict between the local standard and the NEC or CEC.
- The indoor ONT must be installed by qualified service personnel.
- Indoor ONTs must be installed with cables that are suitably rated and listed for indoor use.
- See the detailed specifications in the Chapter 5, “G-2426G-B unit data sheet” for the temperature ranges of these ONTs.

6.7 Procedure

Use this procedure to install a G-2426G-B indoor ONT.

1

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

Note: The G-2426G-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-2426G-B ONT connections” (p. 70).

Figure 6-1 G-2426G-B ONT connections

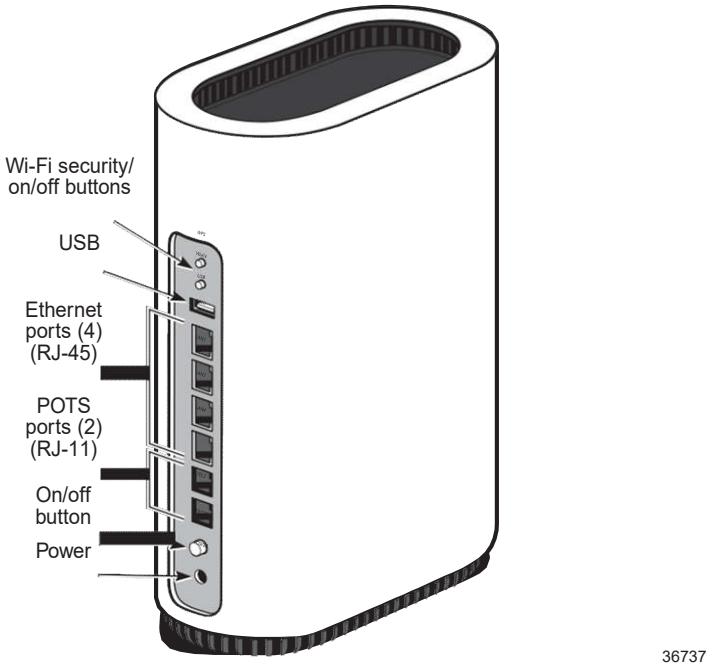
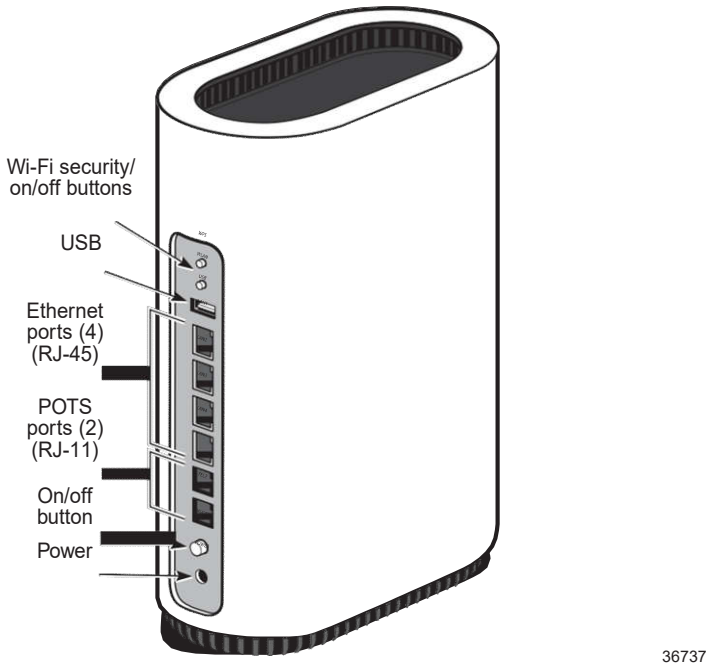


Figure 6-2 G-2426G-B ONT connections for NAR variant



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. Too small of a 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-2426G-B ONT connections” (p. 71) for location of the WLAN button.

b. Press the WLAN (Wi-Fi) 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-2426G-B indoor ONT as shown in Figure 5-5, “G-2426G-B indoor ONT with fiber optic connector” (p. 57).

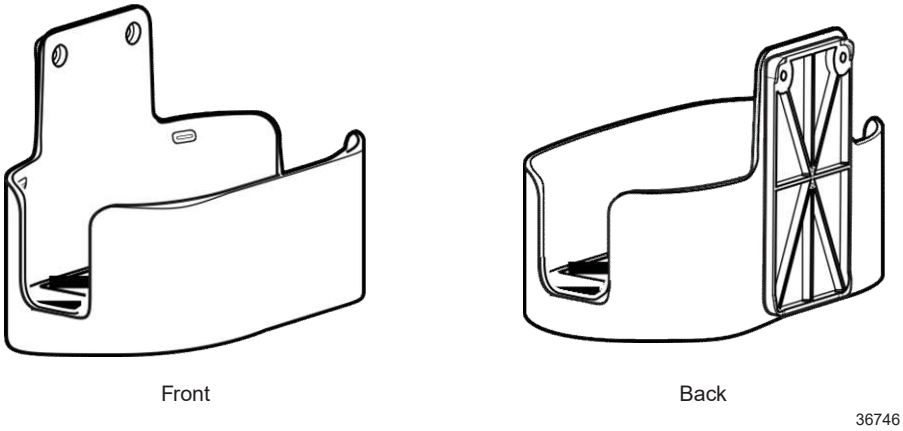
b. Insert the end of a straightened paper clip or other narrow object into the hole in the Reset button to reset the ONT.

END OF STEPS

6.8 Wall mount an G-2426G-B indoor ONT

This chapter provides the steps to mount an G-2426G-B indoor ONT on a wall using a wall mount bracket (3FE 49761 AA). The G-2426G-B indoor ONT is shipped without the wall mount bracket. The wall mount bracket (3FE 49761 AA) must be ordered separately.

Figure 6-3 G-2426G-B ONT in wall mounting bracket



6.8.1 Recommended tools

See section 6.5 “Recommended tools” (p. 69) for the recommended tools.

6.8.2 Procedure

Use this procedure to mount an G-2426G-B ONT on a wall.

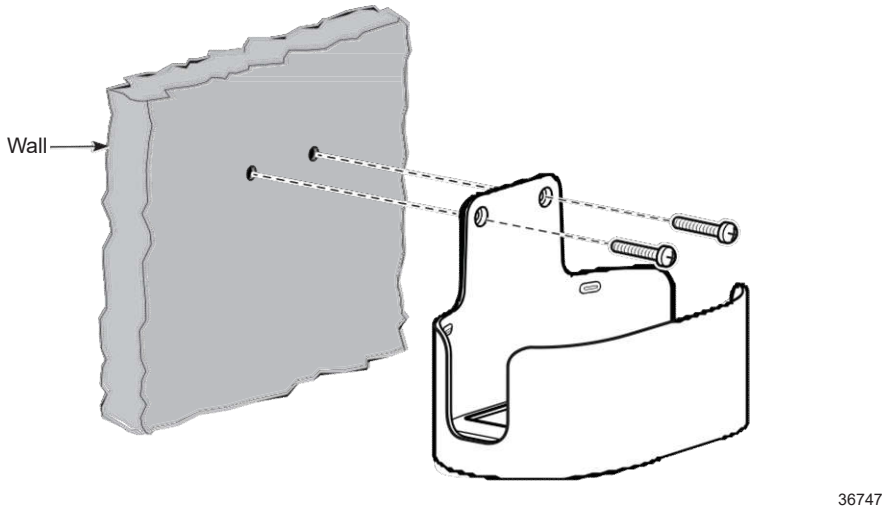
1

Place the indoor ONT unit. Facing the room, go to Step 2. See Figure 6-6, “ONT in wall mount bracket—facing the room” (p. 77).

2

Mount the ONT on a wall facing the room using the wall mount bracket (3FE 49761 AA), as shown in Figure 6-4, “G-2426G-B wall mount bracket” (p. 75).

Figure 6-4 G-2426G-B wall mount bracket



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.).

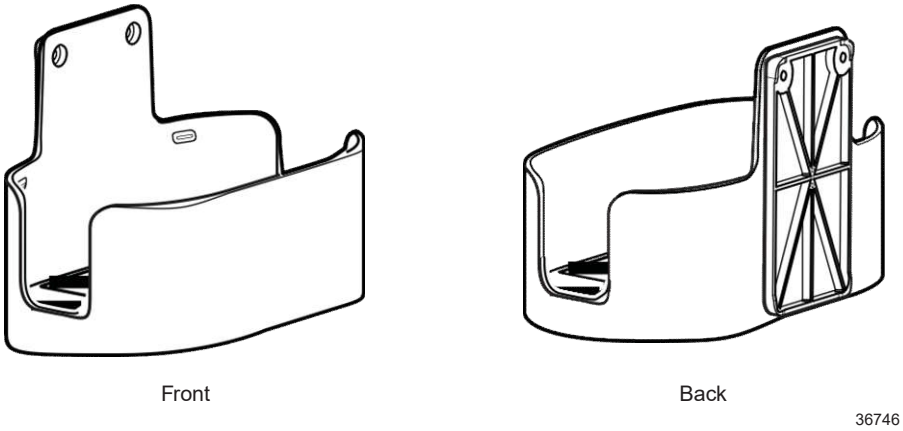
c. Insert the two mounting screws and optional anchors into the holes, leaving a 2 mm (0.078 in.) gap between the screw head and the wall.

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. 76).

Figure 6-5 Wall mount bracket power cord placement

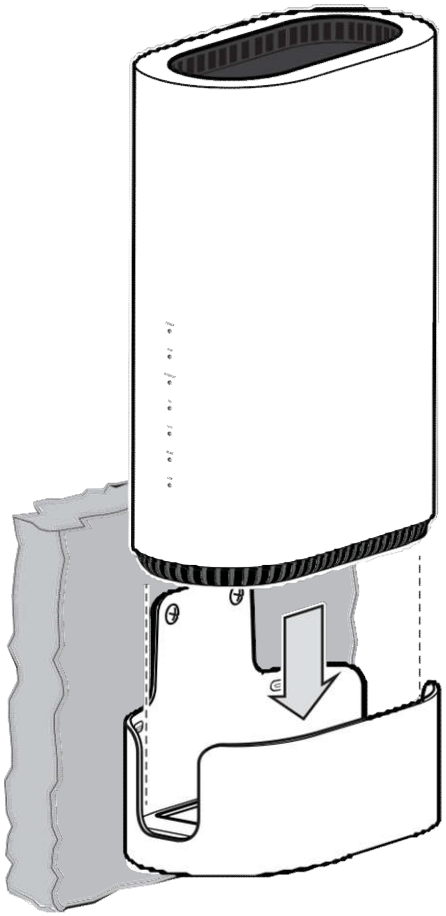


g. Connect the power cord to the G-2426G-B ONT.

h. Connect the cables.

i. Hang the unit onto the wall. Figure 6-6, “ONT in wall mount bracket—facing the room” (p. 77) shows the cables routed through the wall mount bracket and the ONT facing the room.

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



36748

3

Mount the ONT facing the wall using the wall mount bracket.

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.

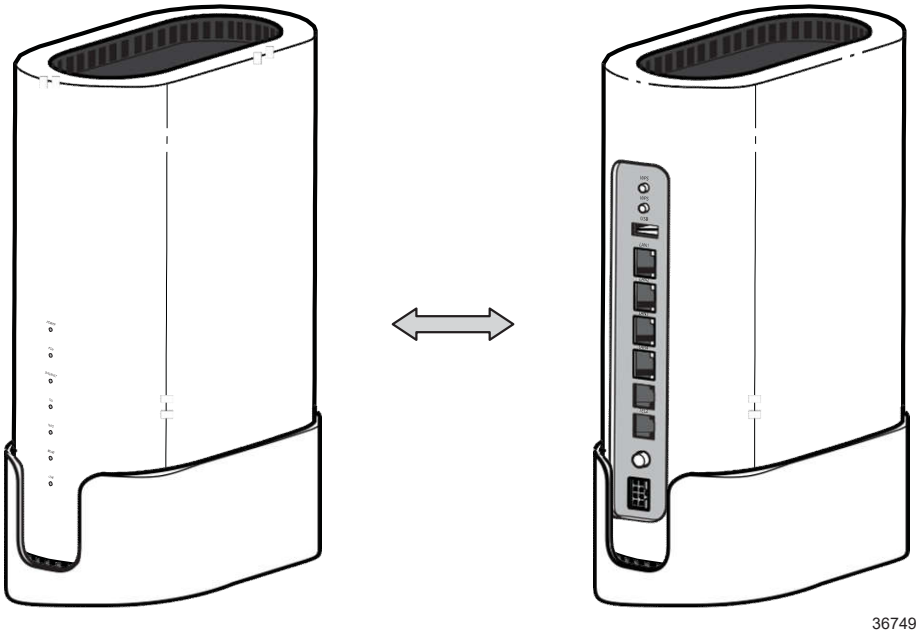
h. Mount the unit onto the wall.

i. Connect the cables

Connect the cables. See Chapter 6, “Install a G-2426G-B indoor ONT”.

Figure 6-7, “ONT in wall mount bracket—facing the room / facing the wall” (p. 77) shows the mounted unit facing the wall with the cables (including the fiber) installed.

Figure 6-7 ONT in wall mount bracket—facing the room / facing the wall



END OF STEPS

6.9 Connect a UPS to a G-2426G-B ONT

Use this procedure to connect a UPS to indoor or outdoor G-2426G-B ONTs.

See Table 5-3, “G-2426G-B UPS ordering information” (p. 47) in the Chapter 5, “G-2426G-B unit data sheet” for the supported power supplies.

6.9.1 Connect a CyberPower DTC36U12V3-G UPS

Use this procedure to connect a UPS to a G-2426G-B indoor ONT.

See Table 5-3, “G-2426G-B UPS ordering information” (p. 47) for the supported power supplies.

Before starting this procedure, ensure that the following items are available:

- Battery for the CyberPower UPS DTC36U12V3-G
- Cable to connect the UPS to the ONT
- Extended battery pack with the battery inside if 24 hours of backup for emergency calls is needed
- UPS AC power cable

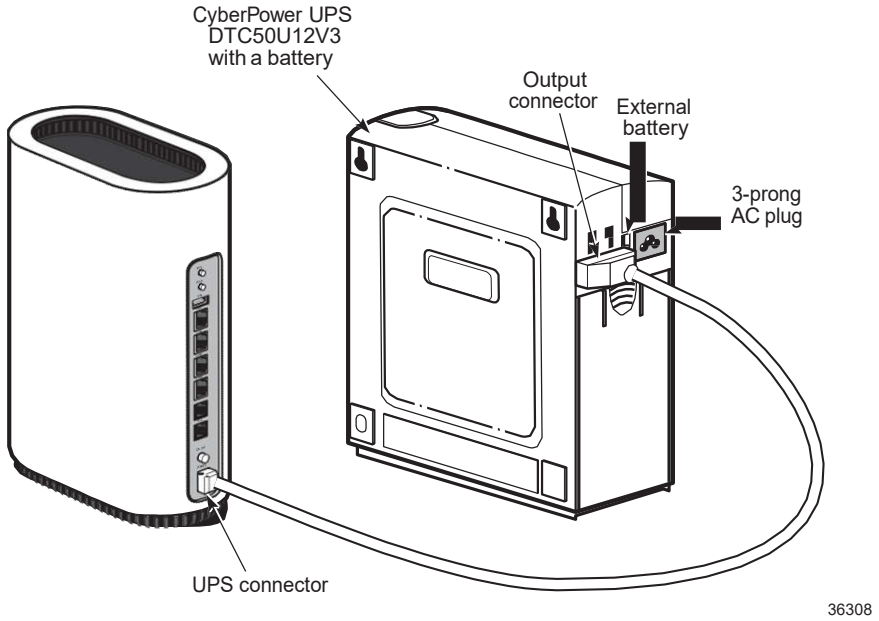
1

Place the indoor ONT unit and the UPS on a flat surface, such as a desk.

2

Plug the cable into the UPS connector on the G-2426G-B ONT and the output connector on the UPS, as shown in Figure 6-8, “G-2426G-B ONT and UPS” (p. 78). The battery is inside of the UPS.

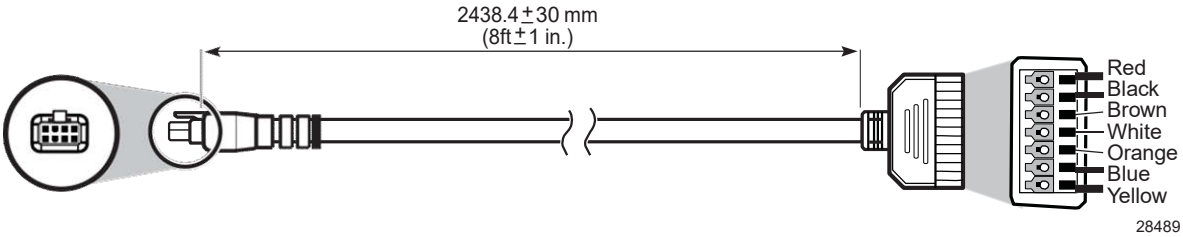
Figure 6-8 G-2426G-B ONT and UPS



The following figure shows an example ONT and UPS. The position of the connections may differ for each ONT model

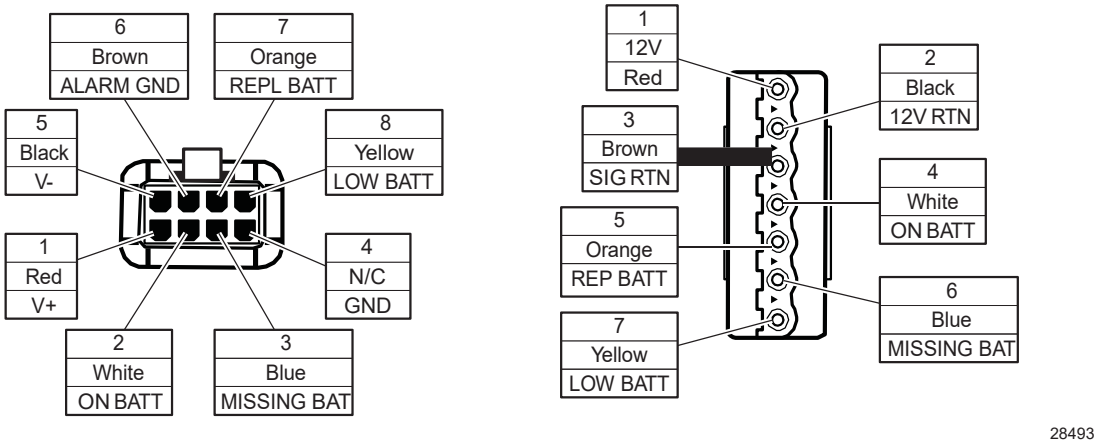
The connector for the 6 foot 3EM24378AA cable matches the socket for the 36W UPS Cyberpower DTC36U12V3-G.

Figure 6-9 Molex 7-pin DC cable



The 25 foot 3EM24378AB cable has one open end and must be terminated by the Phoenix connector provided with the UPS. Figure 6-10, “Installation of 3EM24378AB cable (7-pin) in Phoenix connector—3MV00807AA UPS 36W” (p. 80) shows the 7-pin assignments for the 36W UPS Cyberpower DTC36U12V3-G.

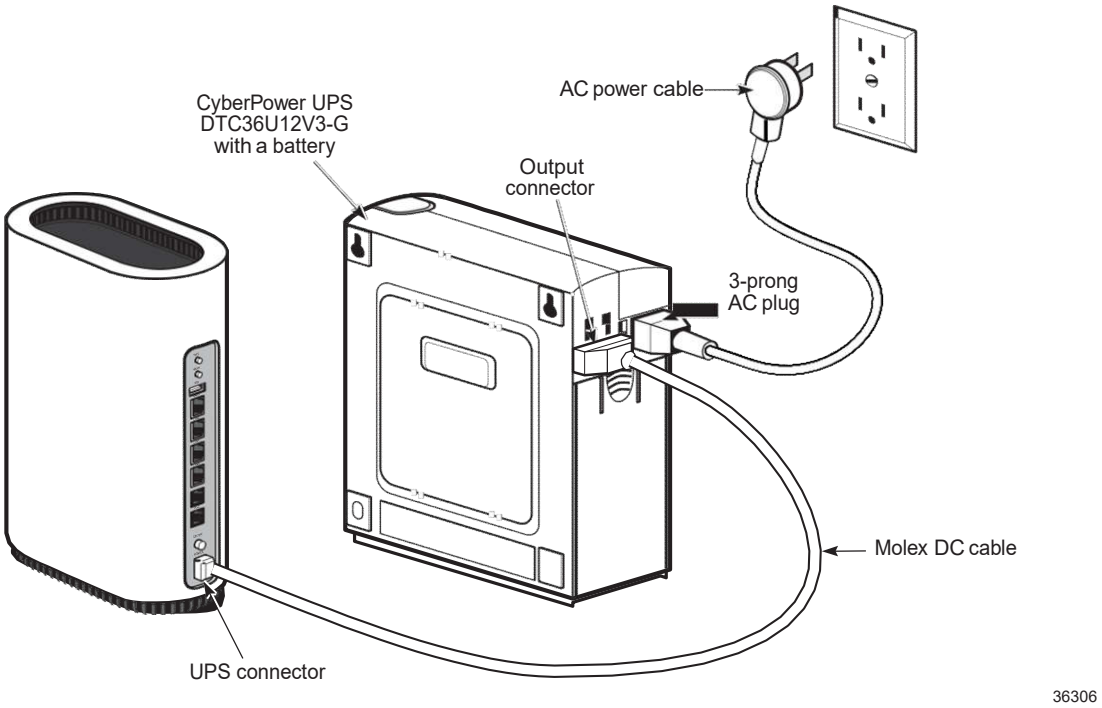
Figure 6-10 Installation of 3EM24378AB cable (7-pin) in Phoenix connector—3MV00807AA UPS 36W



a. Plug the UPS power AC cord into the UPS connector.

b. Plug the power AC cord into an AC wall outlet, as shown in Figure 6-11, “Connecting the AC cord to the wall outlet” (p. 81).

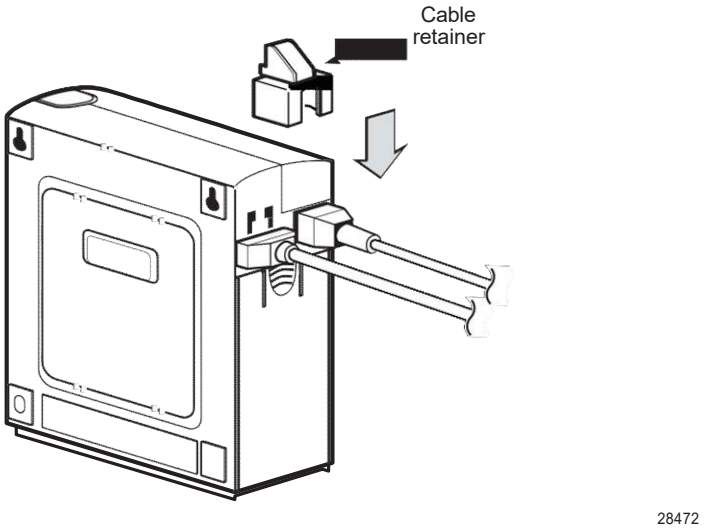
Figure 6-11 Connecting the AC cord to the wall outlet



The following figure shows an example ONT and UPS. The position of the connections may differ for each ONT model

c. Attach a cable retainer to the UPS power AC cord and the power cable, as shown in Figure 6-12, “Attaching the cable retainer” (p. 82).

Figure 6-12 Attaching the cable retainer



d. Attach the ONT to the wall.

END OF STEPS

6.9.2 Connect a PSI UPS PS36L-P7

Use this procedure to connect a PSI UPS to a G-2426G-B indoor ONT.

See Table 5-3, “G-2426G-B UPS ordering information” (p. 47) in the Chapter 5, “G-2426G-B unit data sheet” in the for information about the PSI UPS PS36L-P7 model.

Before starting this procedure, ensure that the following items are available:

- Battery for the PSI UPS PS36L-P7
- Cable to connect the UPS to the ONT
- UPS AC power cable

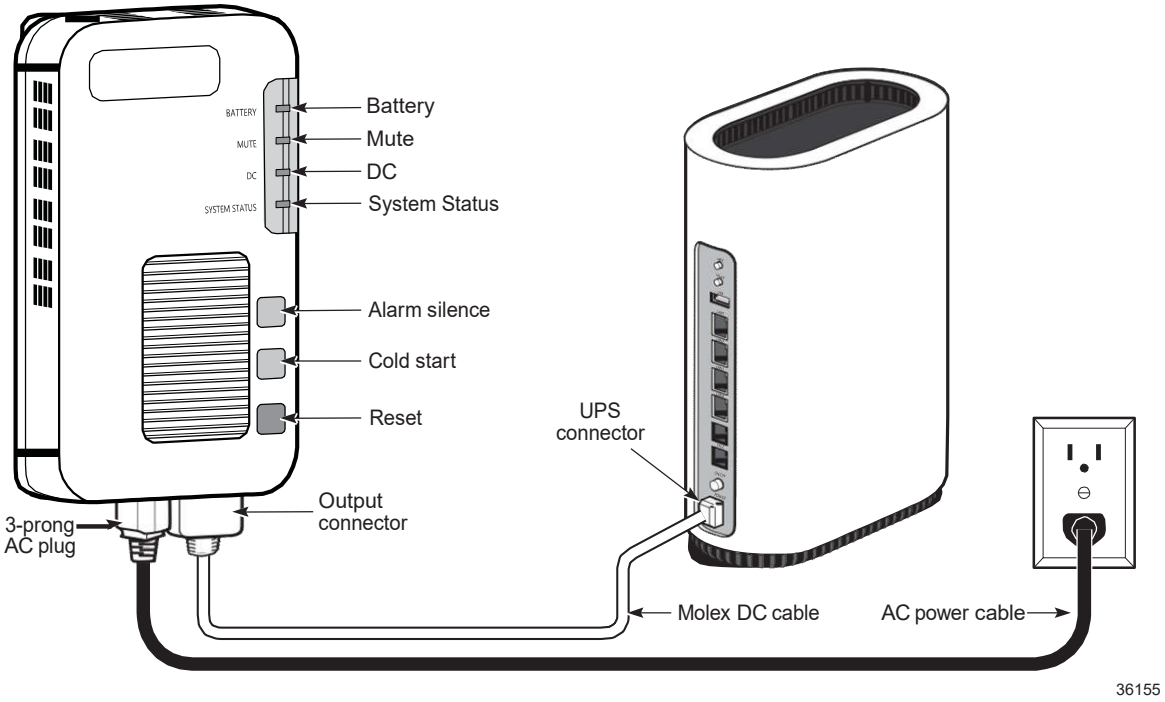
1

Place the indoor ONT unit and the UPS on a flat surface, such as a desk.

2

Plug the cable into the UPS connector on the G-2426G-B ONT and the output connector on the UPS, as shown in Figure 6-13, “G-2426G-B ONT and PSI UPS” (p. 83).

Figure 6-13 G-2426G-B ONT and PSI UPS



The following figure shows an example ONT and UPS. The position of the connections may differ for each ONT model

3

Remove the back cover to expose the battery connectors.

Slide Battery pack onto Power Supply/Charger unit until the Battery Pack becomes fully flushed with Power Supply/ Charger as shown in Figure 6-14, “Battery pack onto Power Supply/Charger” (p. 84).

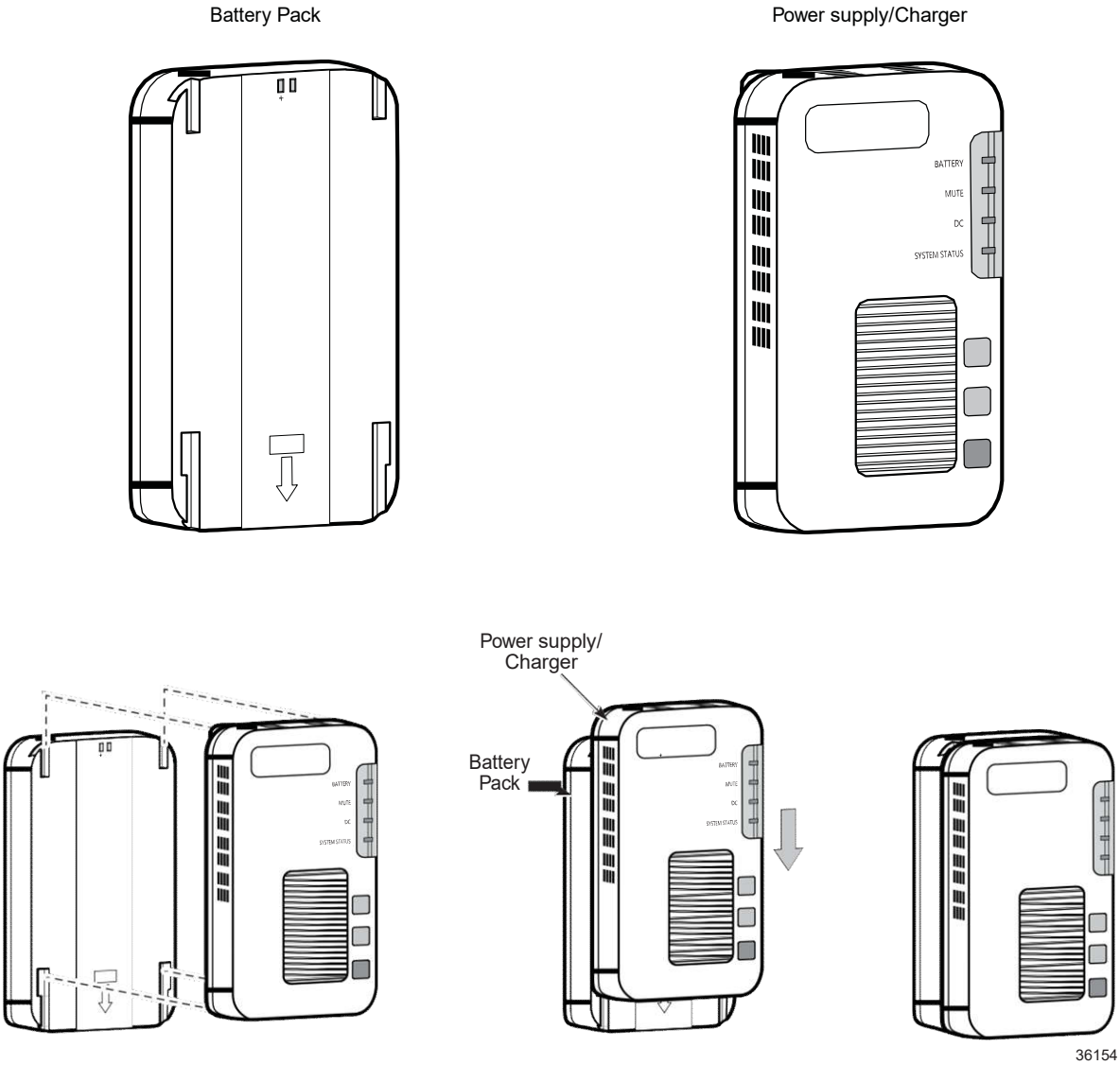
You should hear a click when battery pack is fully seated.

The UPS can remain on the desk or be placed on the floor underneath the desk.

Two battery extensions are needed for 8 hours of emergency support calls. Four battery extensions are needed for 24 hours of emergency support calls.

Install the UPS back cover in the bottom of the last battery module to protect the connectors to additional batteries.

Figure 6-14 Battery pack onto Power Supply/Charger



4

Plug the 3 prong AC power cord plug end into standard 3 prong AC receptacle rated for 3 prong AC plug on bottom of power supply/charger as shown in Figure 6-13, “G-2426G-B ONT and PSI UPS” (p. 83).

5

Plug the AC power cable to AC wall outlet as shown in Figure 6-13, “G-2426G-B ONT and PSI UPS” (p. 83).

6

Verify the “System Status” LED is “ON” with green illumination.

Ensure that the “System Status” LED is only the one in green illumination. If any other LED is illuminated recheck the battery pack is seated and ensure that all wiring from UPS to G-2426G-B ONT is installed correctly as listed by ONT specific instructions.

End of steps

7 Replace a G-2426G-B indoor ONT

7.1 Overview

7.1.1 Purpose

7.1.2 Contents

7.1 Overview	87
7.2 Purpose	87
7.3 General	87
7.4 Prerequisites	87
7.5 Recommended tools	87
7.6 Safety information	88
7.7 Procedure	88

7.2 Purpose

This chapter provides the steps to replace a G-2426G-B indoor ONT.

7.3 General

The steps listed in this chapter describe mounting and cabling for a G-2426G-B indoor ONT.

7.4 Prerequisites

You need the following items before beginning the installation:

- all required cables

7.5 Recommended tools

You need the following tools for replacing the ONT:

- #2 Phillips screwdriver
- 1/4 in. (6 mm) flat blade screwdriver
- wire strippers
- fiber optic splicing tools
- RJ-45 cable plug crimp tool
- voltmeter or multimeter
- optical power meter

- drill and drill bits

7.6 Safety information

Read the following safety information before 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 out of 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 precedent when there is conflict between the local standard and the NEC or CEC.
- The indoor ONT must be installed by qualified service personnel.
- Indoor ONTs must be installed with cables that are suitably rated and listed for indoor use.
- See the detailed specifications in the Chapter 5, “G-2426G-B unit data sheet” for the temperature ranges of these ONTs.

7.7 Procedure

Use this procedure to replace a G-2426G-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 th associated services. Record the serial number or the SLID of the ONT displayed in the command output.

   Example:

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

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

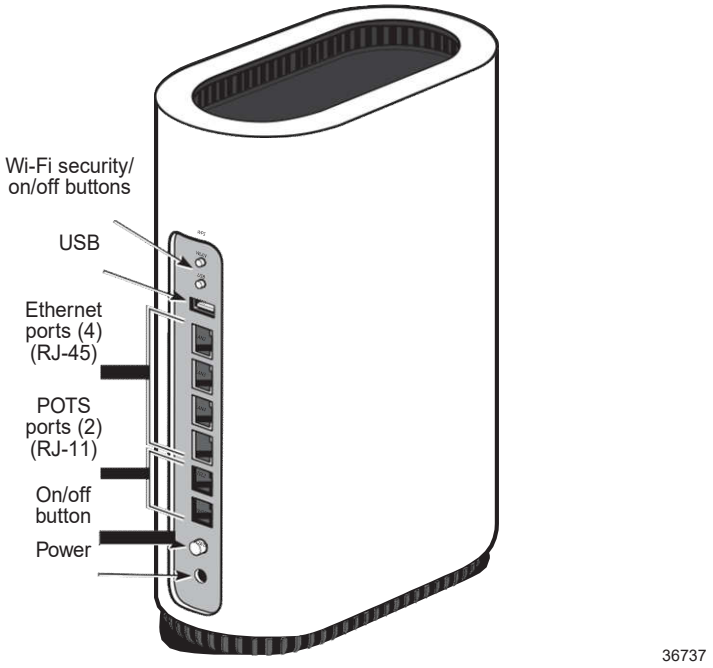
   Example:

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

2

If used, disable the Wi-Fi service by pressing the WLAN button; see Figure 7-1, “G-2426G-B indoor ONT connections” (p. 88) for the location of the WLAN button.

Figure 7-1 G-2426G-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 7-1, “G-2426G-B indoor ONT connections” (p. 89) for the connector locations on the G-2426G-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 7-1, “G-2426G-B indoor ONT connections” (p. 89) 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 7-1, “G-2426G-B indoor ONT connections” (p. 89) 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. Too small of a 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 7-1, “G-2426G-B indoor ONT connections” (p. 89) 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.

a. Locate the Reset button on a G-2426G-B indoor ONT as shown in Figure 7-1, “G-2426G-B indoor ONT connections” (p. 89).

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

8 Configure a G-2426G-B indoor ONT

8.1 Overview

8.1.1 Purpose

8.1.2 Contents

8.1 Overview	93
GUI configuration	96
8.2 General configuration	96
8.3 HGU mode GUI configuration	96
8.4 Log in to web-based GUI	96
Viewing device information and connection status	98
8.5 Overview	98
8.6 Viewing device information	98
8.7 Viewing LAN status	100
8.8 Viewing WAN status	102
8.9 Viewing WAN IPv6 status	104
8.10 Viewing STA information	106
8.11 Viewing Neighboring Access Points	108
8.12 Viewing home networking information	109
8.13 Viewing optics module status	111
8.14 Viewing statistics	112
8.15 Viewing voice information	115
Network configuration	118
8.16 Overview	118
8.17 Configuring LAN	118
8.18 Configuring LAN IPv6	121
8.19 Configuring WAN	122
8.20 Configuring WAN DHCP	125
8.21 Configuring Wireless 2.4GHz	127

8.22 Configuring Wireless 5GHz	131
8.23 Configuring wireless scheduling	134
8.24 Configuring IP routing	136
8.25 Configuring DNS	137
8.26 Configuring TR-069	139
8.27 Configuring GRE tunnel	140
8.28 Configuring Upstream (US) Classifier	141
8.29 Configuring QoS	146
8.30 Configuring Mesh	148
Security configuration	151
8.31 Overview	151
8.32 Configuring the firewall	151
8.33 Configuring the MAC filter	152
8.34 Configuring the IP filter	154
8.35 Configuring the URL filter	155
8.36 Configuring parental control	156
8.37 Configuring DMZ and ALG	165
8.38 Configuring access control	167
Configuring the Application	169
8.39 Overview	169
8.40 Configuring port forwarding	169
8.41 Configuring port triggering	171
8.42 Configuring DDNS	172
8.43 Configuring NTP	173
8.44 Configuring USB	175
8.45 Configuring UPnP and DLNA	176
8.46 Configuring voice	177
Maintenance	180
8.47 Overview	180
8.48 Configuring the password	180
8.49 Configuring LOID	182

8.50 Configuring SLID	183
8.51 Managing the device	184
8.52 Backing up the configuration	185
8.53 Restoring the configuration	185
8.54 Upgrading firmware	186
8.55 Rebooting the device	187
8.56 Resetting to factory defaults	188
8.57 Diagnosing WAN connections	189
8.58 Viewing log files	191
RG Troubleshooting Counters	193
8.59 Overview	193
8.60 Viewing Residential Gateway (RG) troubleshooting counters	193

GUI configuration

8.2 General configuration

Refer to the configuration information provided with your OLT for the software configuration procedure for a G-2426G-B ONT.

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

8.3 HGU mode GUI configuration

Use the procedures below to use the web-based GUI for the G-2426G-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-2426G-B ONTs support TLSv1.2 for WEBGUI (HTTPS).

8.4 Log in to web-based GUI

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

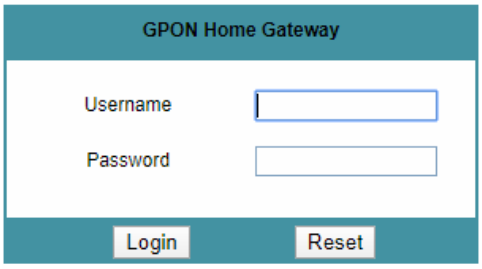
Service Disruption

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, as shown in Figure 8-1, “Web login page” (p. 97).

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 8-1 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 will be 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

8.5 Overview

8.5.1 Purpose

This chapter describes procedures to view device information and connection status on the G-2426G-B.

8.5.2 Contents

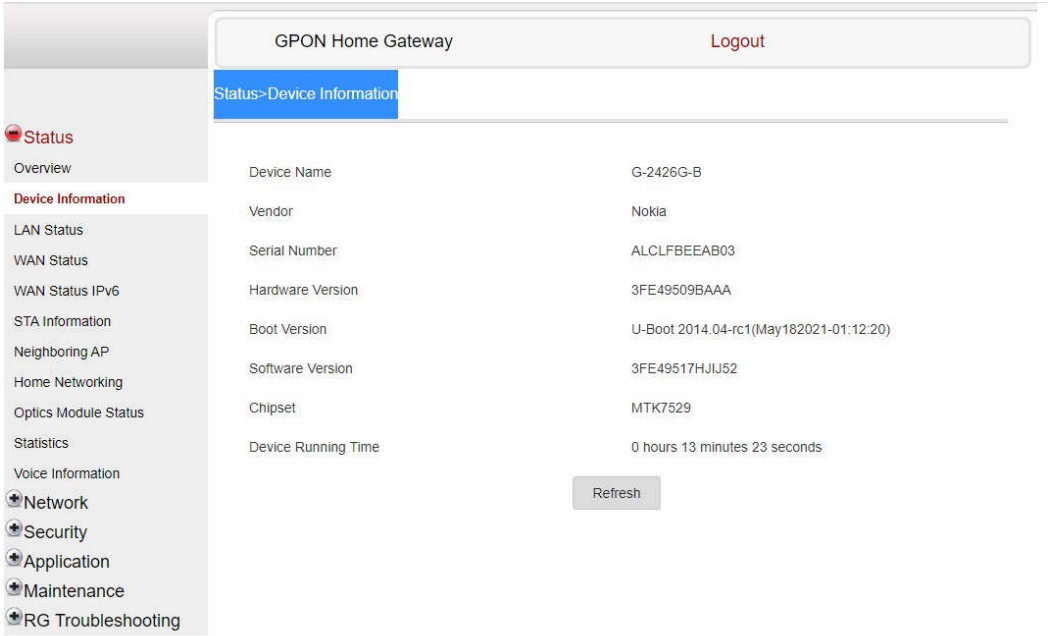
8.5 Overview	98
8.6 Viewing device information	98
8.7 Viewing LAN status	100
8.8 Viewing WAN status	102
8.9 Viewing WAN IPv6 status	104
8.10 Viewing STA information	106
8.11 Viewing Neighboring Access Points	108
8.12 Viewing home networking information	109
8.13 Viewing optics module status	111
8.14 Viewing statistics	112
8.15 Viewing voice information	115

8.6 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 8-2 Device Information page



Note: Upon login, the GPON Home Gateway page displays the WAN status block on the bottom left part of each page. 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 8-1 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

2

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

End of steps

8.7 Viewing LAN status

1

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

Figure 8-3 LAN Status page

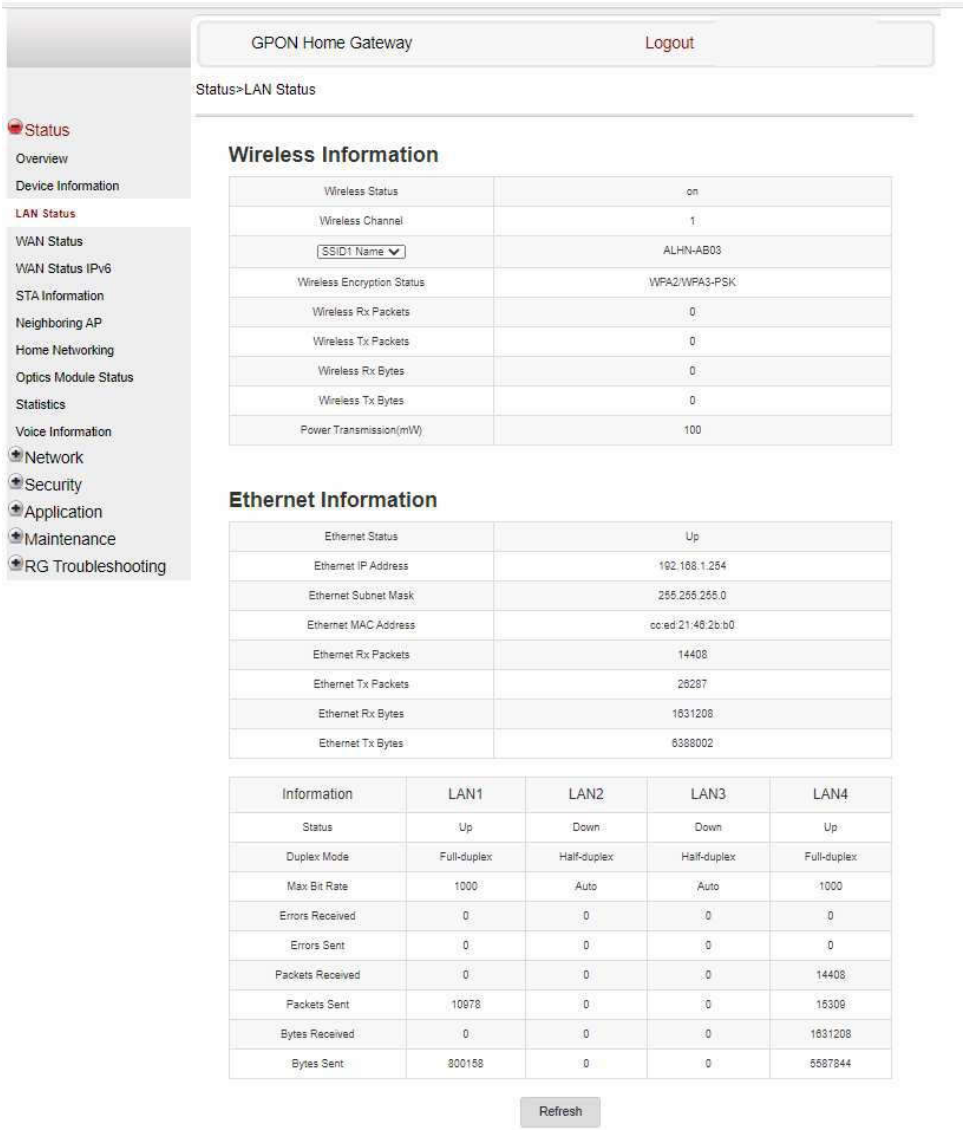


Table 8-2 LAN Status parameters

Field	Description
Wireless Information	
Wireless Status	Indicates whether the wireless is on or off
Wireless Channel	Wireless channel number

Table 8-2 LAN Status parameters (continued)

Field	Description
SSID Name	Name of each SSID
Wireless Encryption Status	Encryption type used on the wireless connection Wireless
Rx Packets	Number of packets received on the wireless connection
Wireless Tx Packets	Number of packets transmitted on the wireless connection
Wireless Rx Bytes	Number of bytes received on the wireless connection
Wireless Tx Bytes	Number of bytes transmitted on the wireless connection
Power Transmission (mW)	Power of the wireless transmission, in mW
Ethernet Information	
Ethernet Status	Indicates whether the Ethernet connection is on or off
Ethernet IP Address	IP address of the Ethernet connection
Ethernet Subnet Mask	Subnet Mask of the Ethernet connection
Ethernet MAC Address	MAC address of the Ethernet connection
Ethernet Rx Packets	Number of packets received on the Ethernet connection
Ethernet Tx Packets	Number of packets transmitted on the Ethernet connection
Ethernet Rx Bytes	Number of bytes received on the Ethernet connection
Ethernet Tx Bytes	Number of bytes transmitted on the Ethernet connection

2

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

END OF STEPS

8.8 Viewing WAN status

1

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

Figure 8-4 WAN Status page

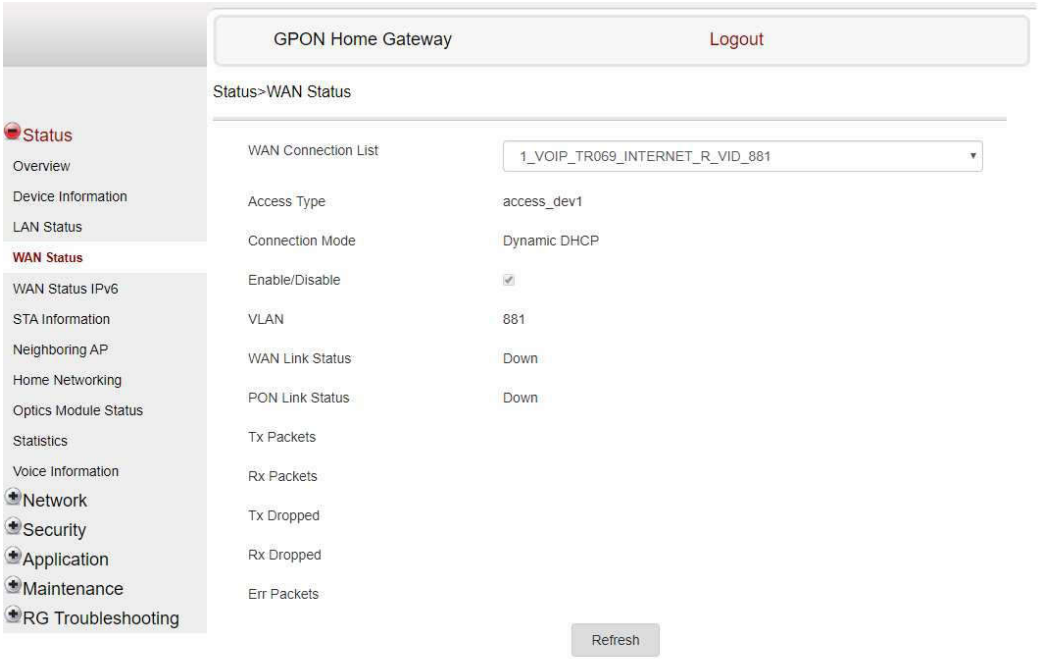


Table 8-3 WAN Status parameters

Field	Description
WAN Connection List	Drop-down menu listing all WAN connections. The connection shown is the connection for which WAN status will be shown.
MPTCP Status	Enables or disables the MPTCP status
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	Whether the PON link is up or down

Table 8-3 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

2

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

End of steps

8.9 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.

Figure 8-5 WAN Status IPv6 page

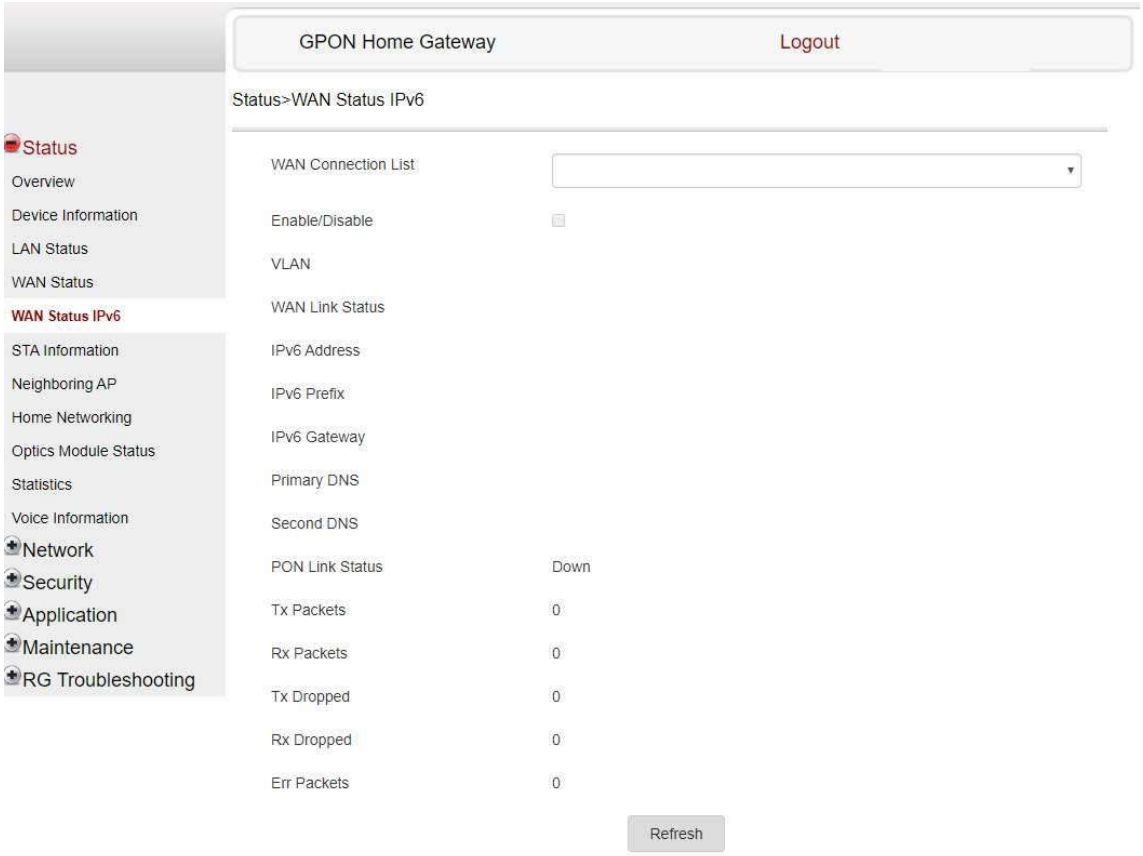


Table 8-4 WAN Status IPv6 parameters

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

Table 8-4 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

2

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

END OF STEPS

8.10 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 8-6 STA Information page

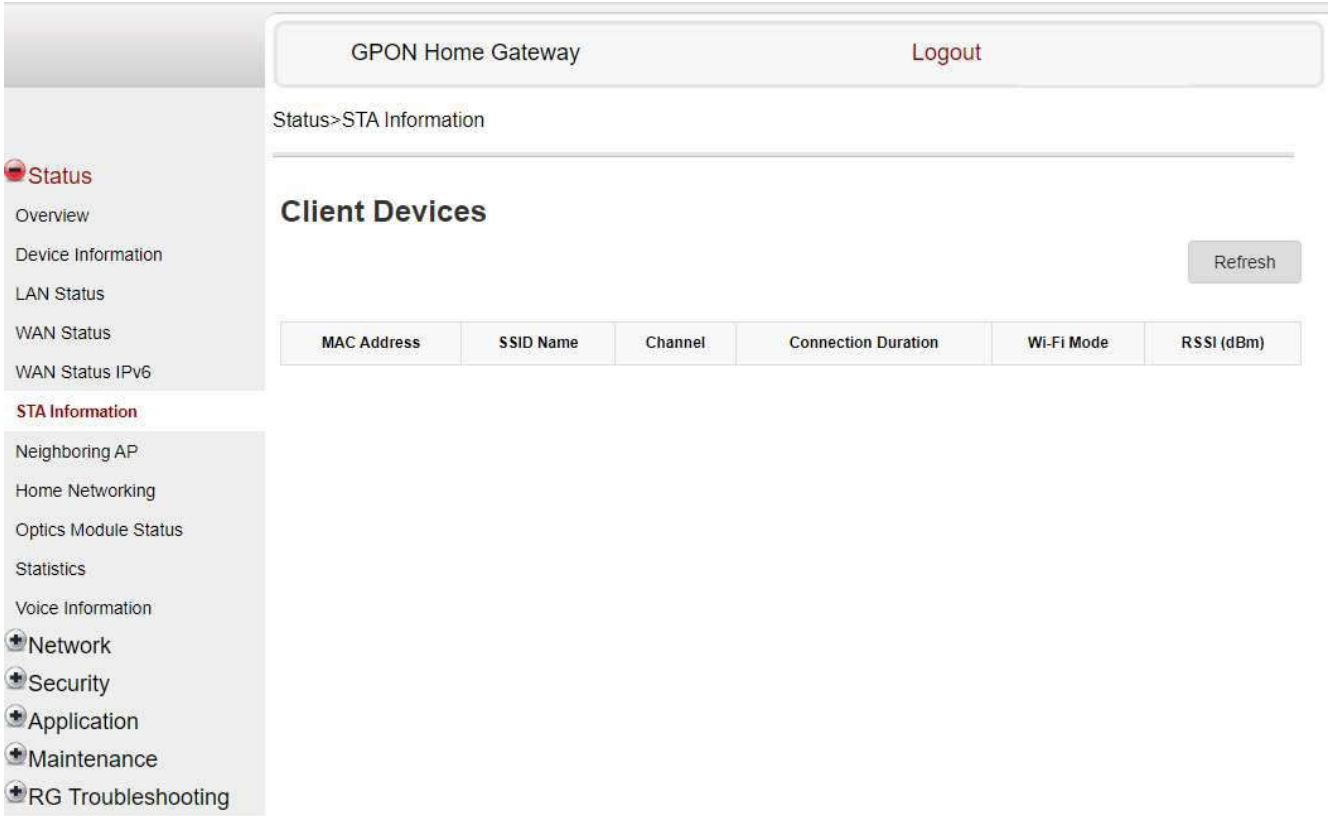


Table 8-5 STA information parameters

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

8.11 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 8-7 Neighboring AP page

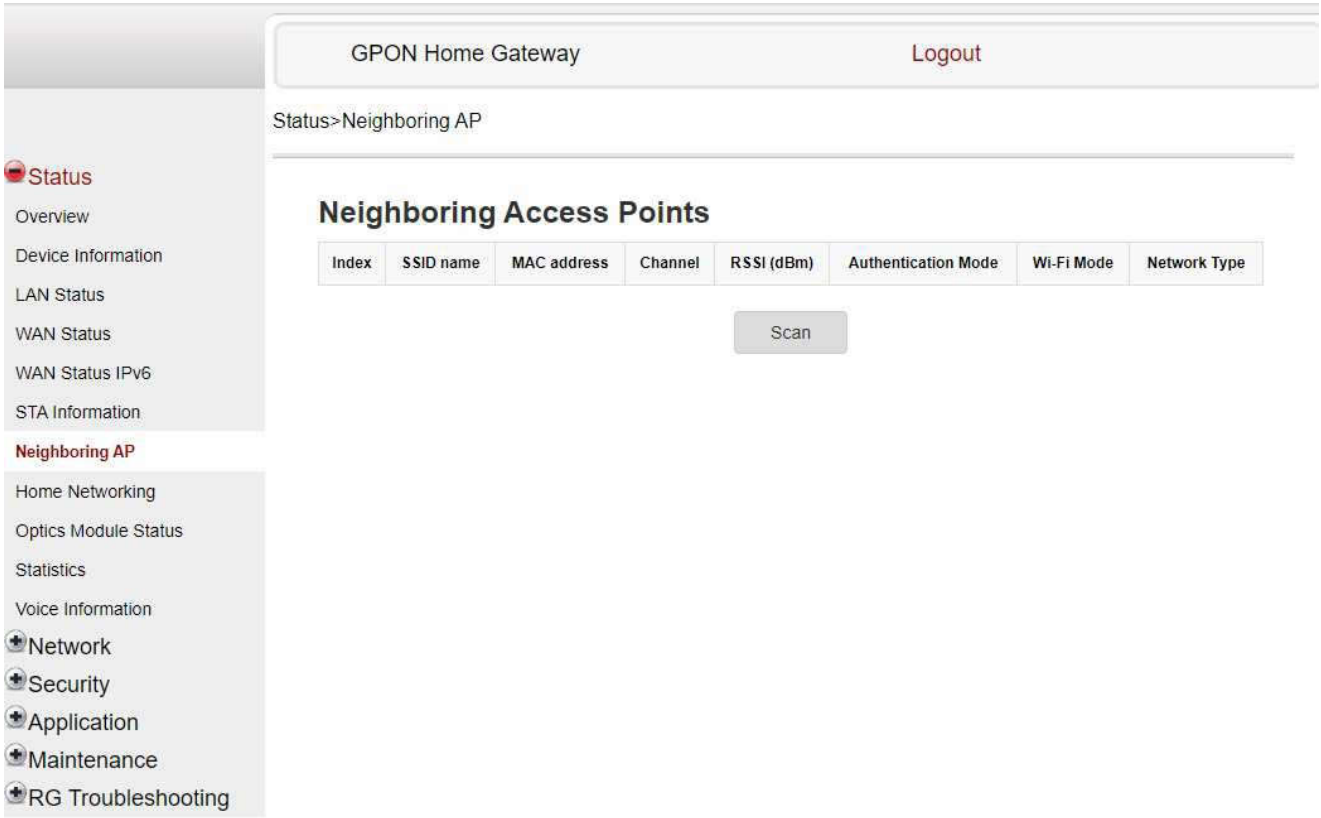


Table 8-6 Neighboring AP parameters

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
Authentication Mode	Indicates the authentication mode

Table 8-6 Neighboring AP parameters (continued)

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

2

Click **Scan**.

END OF STEPS

8.12 Viewing home networking information

1

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

Figure 8-8 Home Networking page

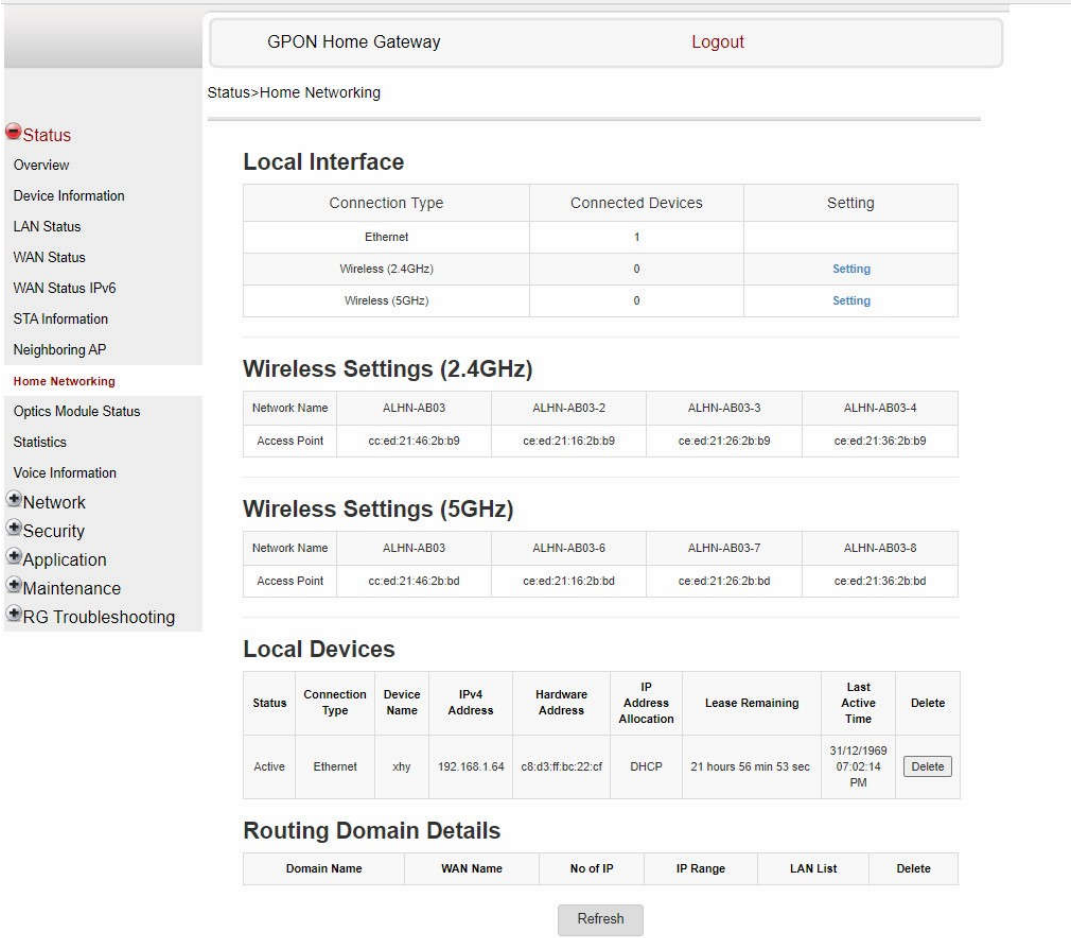


Table 8-7 Home Networking parameters

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 8-7 Home Networking parameters (continued)

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

You can:

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

END OF STEPS

8.13 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.

Figure 8-9 Optics Module Status page

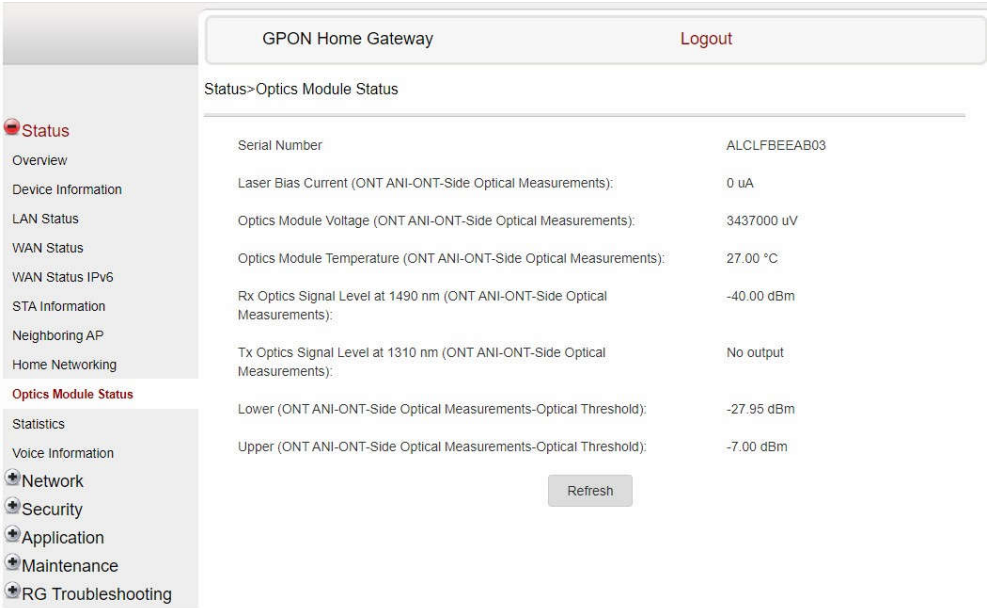


Table 8-8 Optics Module Status parameters

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

2

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

End of steps

8.14 Viewing statistics

1

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

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

Figure 8-10 LAN Statistics page

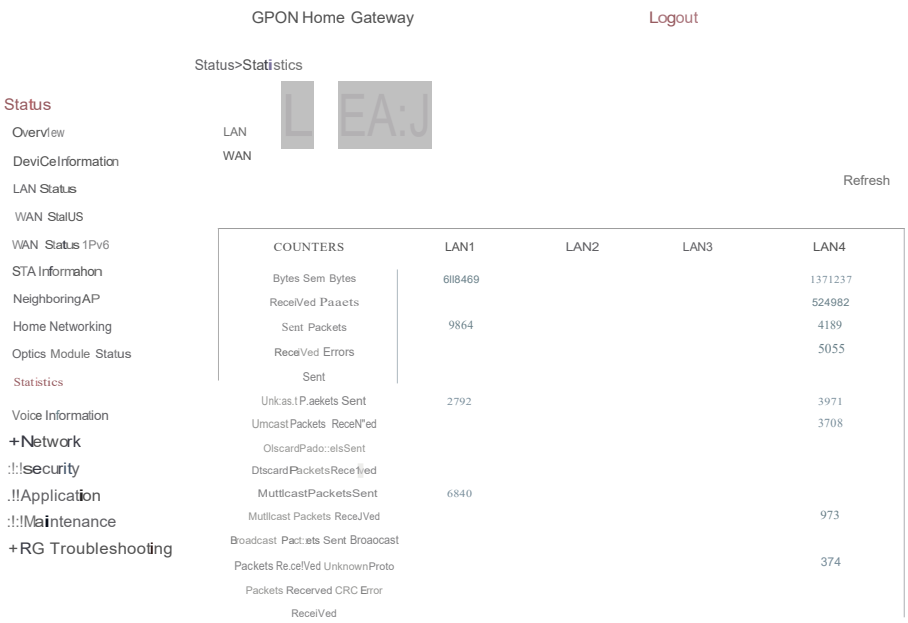


Figure 8-11 WAN Statistics page

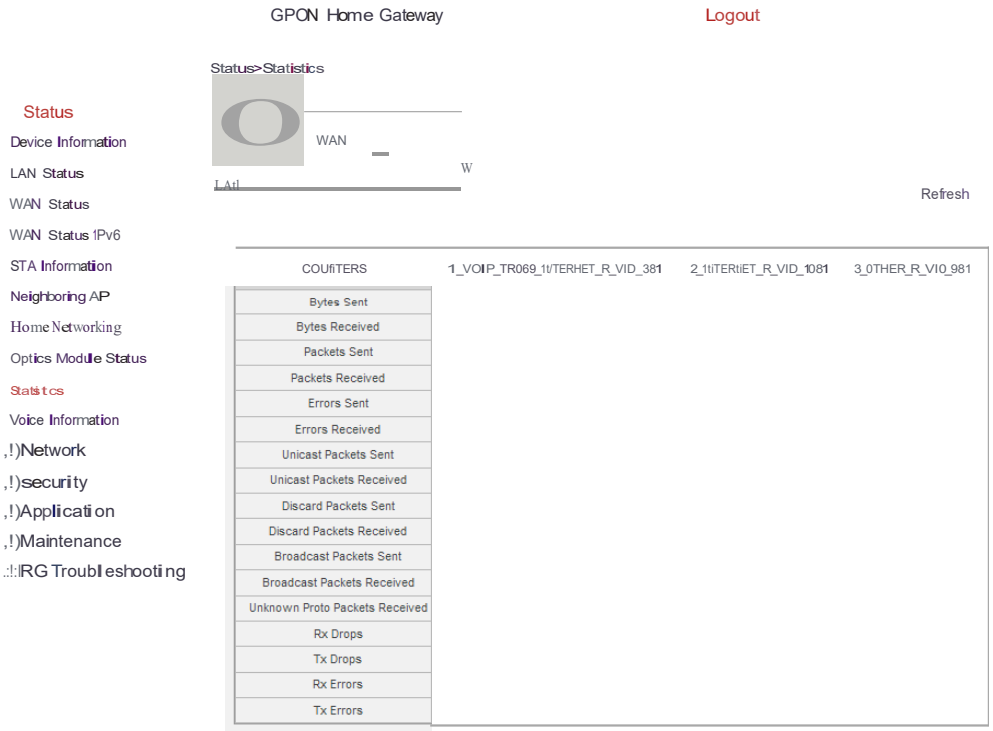
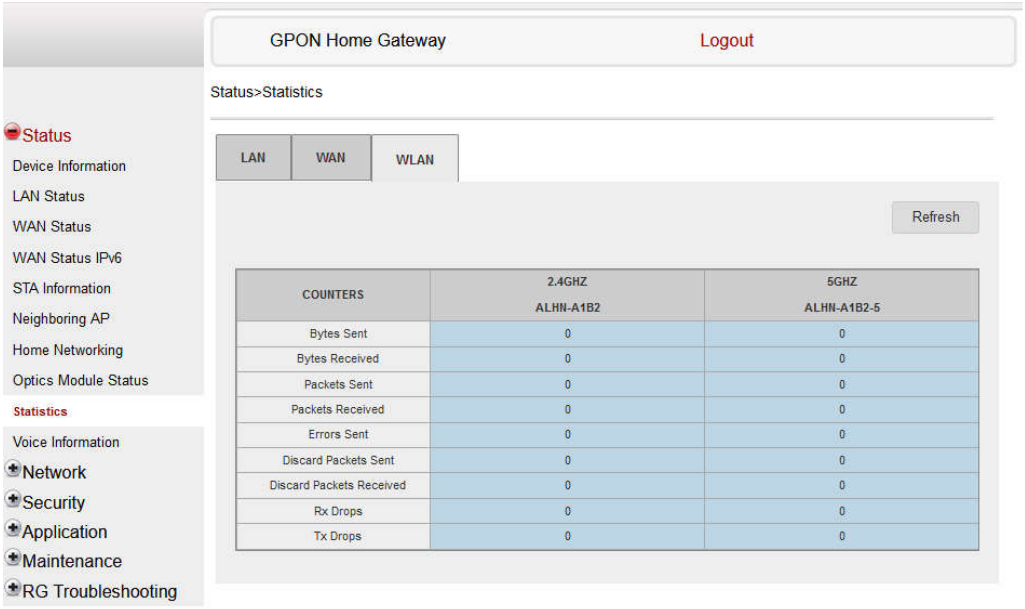


Figure 8-12 WLAN Statistics page



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

END OF STEPS

8.15 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 8-13 Voice Information page

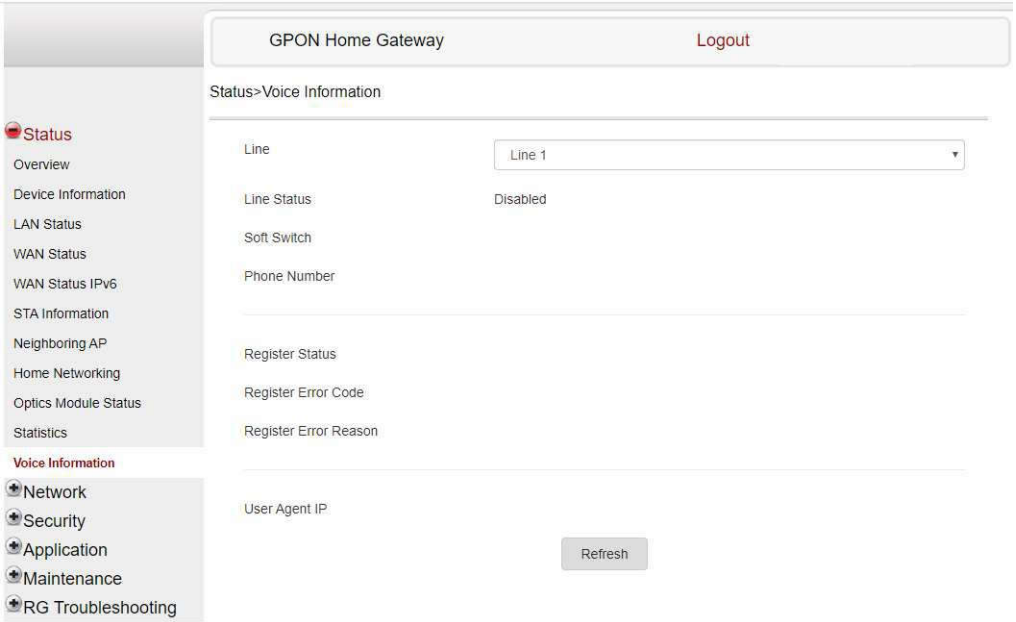


Table 8-9 Voice Information parameters

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: • 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; +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

Table 8-9 Voice Information parameters (continued)

Field	Description
Register Error Reason	SIP standard error reason for the register status This field is blank if the register is set to OK
User Agent IP	IP address of the user agent ExternalIPAddress in WANIPConnection or WANPPPConnection

2

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

End of steps

Network configuration

8.16 Overview

8.16.1 Purpose

This chapter describes the network configuration tasks supported by G-2426G-B ONTs.

8.16.2 Contents

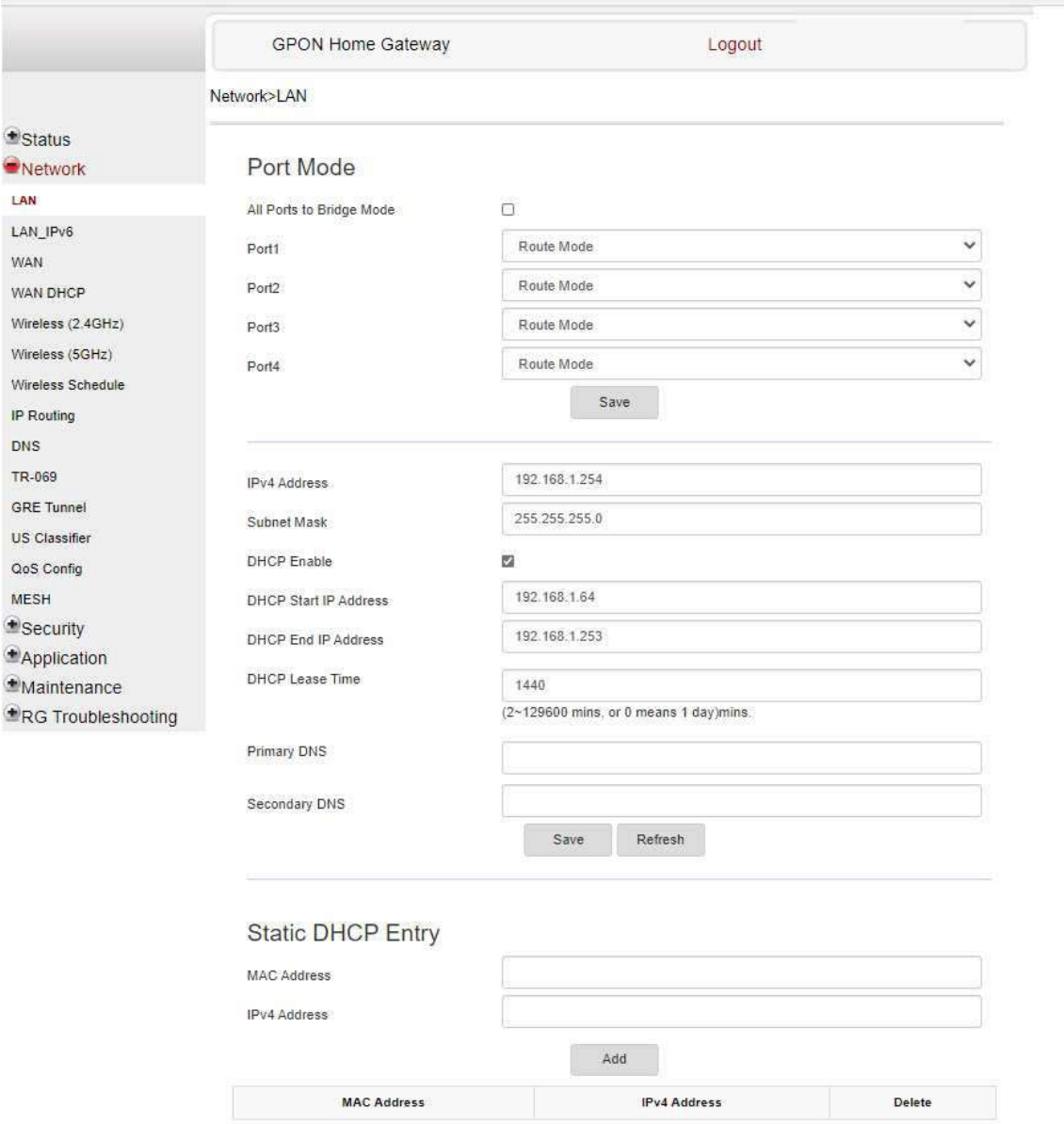
8.16 Overview	118
8.17 Configuring LAN	118
8.18 Configuring LAN IPv6	121
8.19 Configuring WAN	122
8.20 Configuring WAN DHCP	125
8.21 Configuring Wireless 2.4GHz	127
8.22 Configuring Wireless 5GHz	131
8.23 Configuring wireless scheduling	134
8.24 Configuring IP routing	136
8.25 Configuring DNS	137
8.26 Configuring TR-069	139
8.27 Configuring GRE tunnel	140
8.28 Configuring Upstream (US) Classifier	141
8.29 Configuring QoS	146
8.30 Configuring Mesh	148

8.17 Configuring LAN

1

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

Figure 8-14 LAN page



2

Configure the following LAN parameters:

Table 8-10 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**: • **Route Mode** • **Bridge Mode**
IPv4 Address	Enter the IP address of the ONT.
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**.

4

Configure the Static DHCP parameters:

Table 8-11 Static DHCP parameters

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

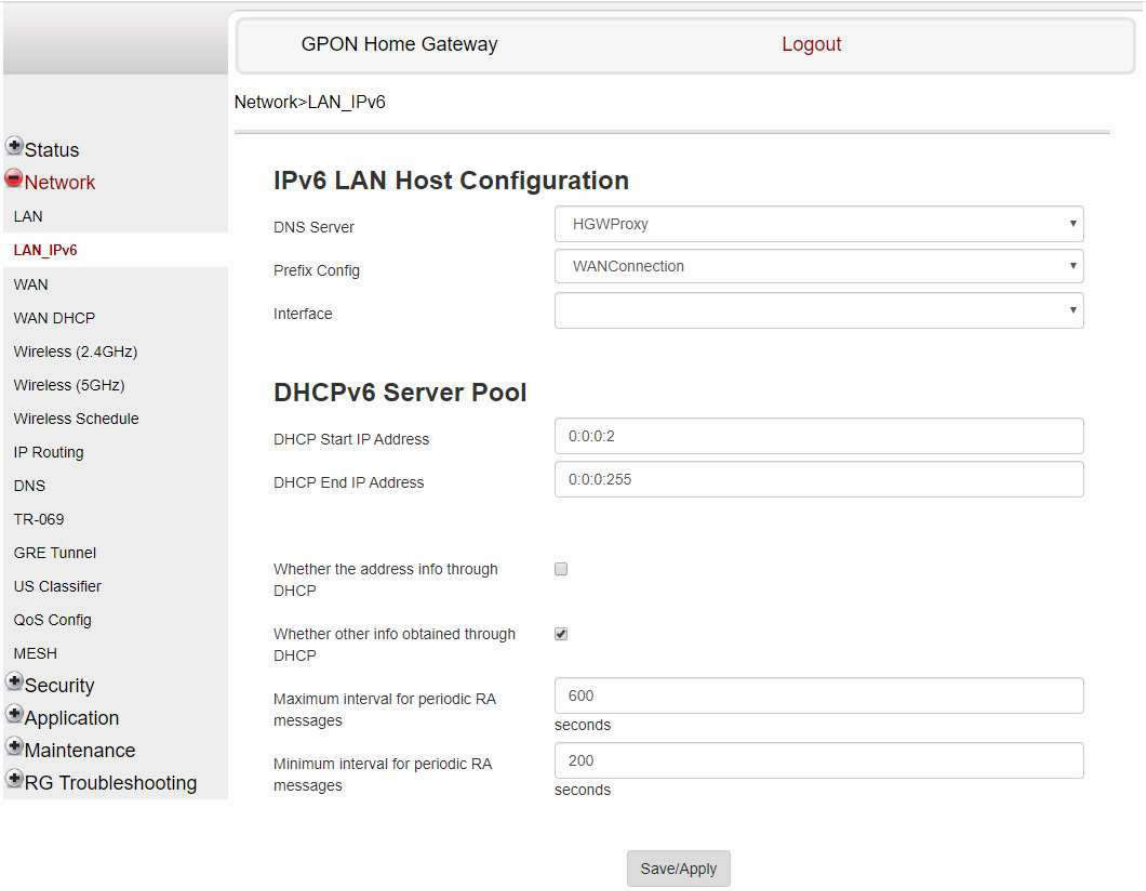
End of steps

8.18 Configuring LAN IPv6

1

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

Figure 8-15 LAN IPv6 page



2

Configure the following parameters:

Table 8-12 LAN IPv6 parameters

Field	Description
IPv6 LAN Host Configuration	

Table 8-12 LAN IPv6 parameters (continued)

Field	Description
DNS Server	Select a DNS server from the list.
Prefix Config	Select a prefix config option from the list, either WANConnection (prefix will be 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 DCHP	Select this checkbox to enable address information retrieval through DHCP.
Whether other info obtained through DHCP	Select this checkbox to enable retrieval of other information through DHCP.
Maximum interval for periodic RA messages	Enter the maximum interval (in seconds) for periodic Router Advertisement messages. The interval range is from 4 to 1800.
Minimum interval for periodic RA messages	Enter the minimum interval (in seconds) for periodic Router Advertisement messages. The interval range is from 4 to 1800.

3

Select or enter the DHCP configuration information.

4

Enter the maximum and minimum intervals for RA messages.

5

Click **Save/Apply**.

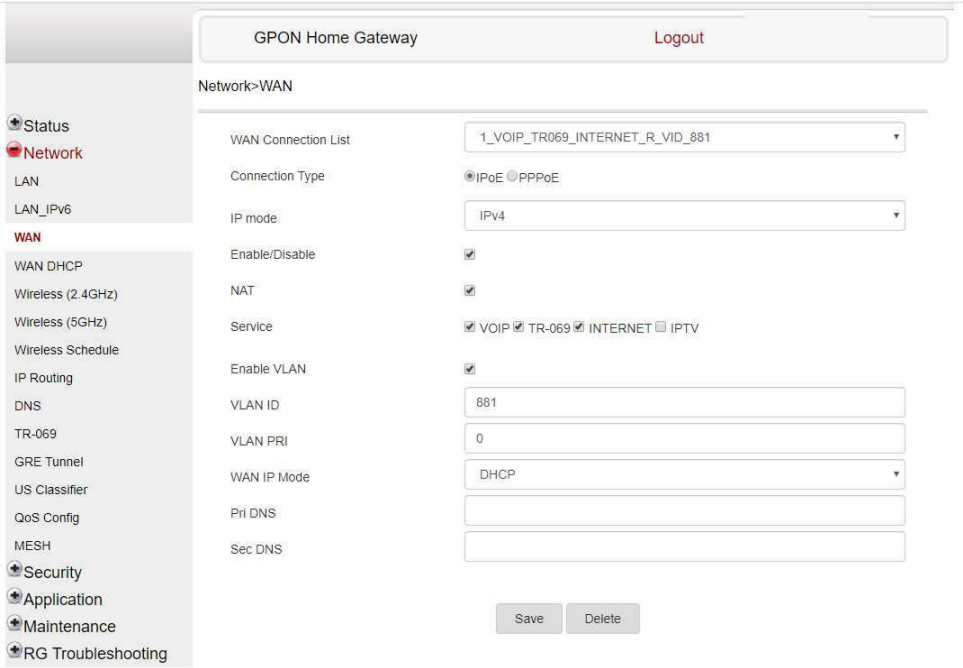
END OF STEPS

8.19 Configuring WAN

1

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

Figure 8-16 WAN page - Route Mode



2

Configure the following parameters for a specific WAN connection.

Table 8-13, “WAN parameters - Route mode” (p. 123) describes the fields in the WAN network window for Route Mode

Table 8-13 WAN parameters - Route mode

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.
Connection mode	This option is only available for the operator ID MSNA, and for some operator-specific operator IDs. Choose a connection mode: Route Mode or Bridge Mode. The default is Route Mode. If you select Bridge Mode, see Figure 8-17, “WAN page - Bridge Mode” (p. 124) and Table 8-14, “WAN network parameters—Bridge Mode” (p. 125)
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.

Table 8-13 WAN parameters - Route mode (continued)

Field	Description
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	Enter the primary Domain Name Server (DNS).
Sec DNS	Enter the secondary Domain Name Server (DNS).

Figure 8-17 WAN page - Bridge Mode

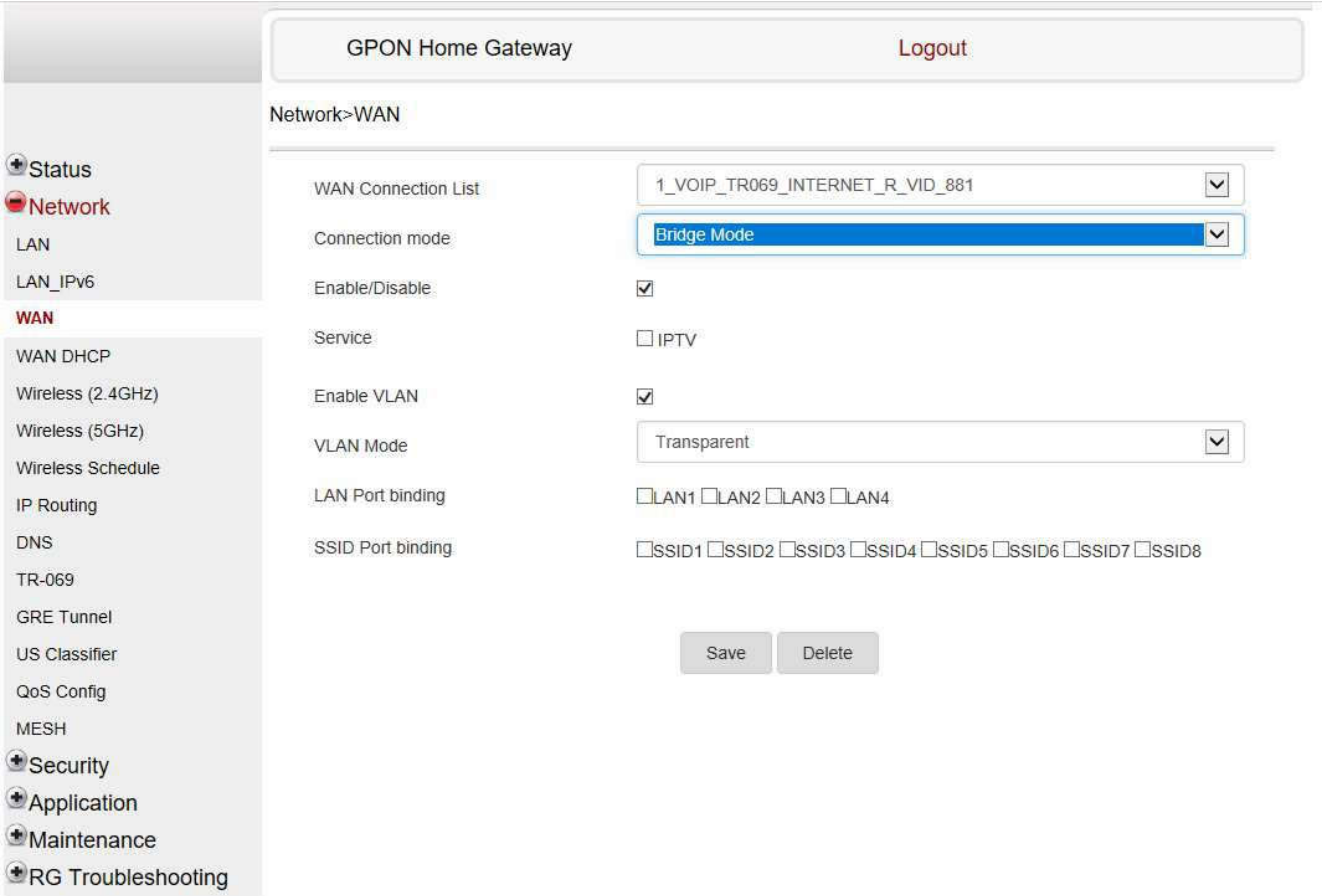


Table 8-14, “WAN network parameters—Bridge Mode” (p. 125) describes the fields in the WAN network page for Bridge Mode.

Table 8-14 WAN network parameters—Bridge Mode

Field	Description
WAN Connection List	Choose a WAN connection from the drop-down menu to set the connection parameters
Connection mode	This option is only available for the operator ID MSNA, and for some operator-specific operator IDs. Choose a connection mode: Bridge Mode.
Enable/Disable	Select this checkbox to enable the WAN connection.
Service	Select this checkbox only if this domain provides IPTV service.
Enable VLAN	Select this checkbox to add a VLAN tag. If this box is selected, you can add a VLAN number.
VLAN Mode	Select a VLAN mode from the drop-down menu.
LAN Port binding	Select a LAN port or ports that are associated with this bridge domain: LAN1, LAN2, LAN3, LAN4, or LAN5. These ports are bridged to the network over the same VLAN when it is added. Port-to-port communication is permitted within the domain.
SSID Port binding	Select a SSID port or ports that are associated with this bridge domain: SSID1, SSID2, SSID3, SSID4, SSID5, SSID6, SSID7, or SSID8. These ports are bridged to the network over the same VLAN when it is added. Port-to-port communication is permitted between devices associated with SSIDs or connected to LAN ports within the domain.

3

Click **Save**to save the configuration.

Click **Delete** to delete the configuration.

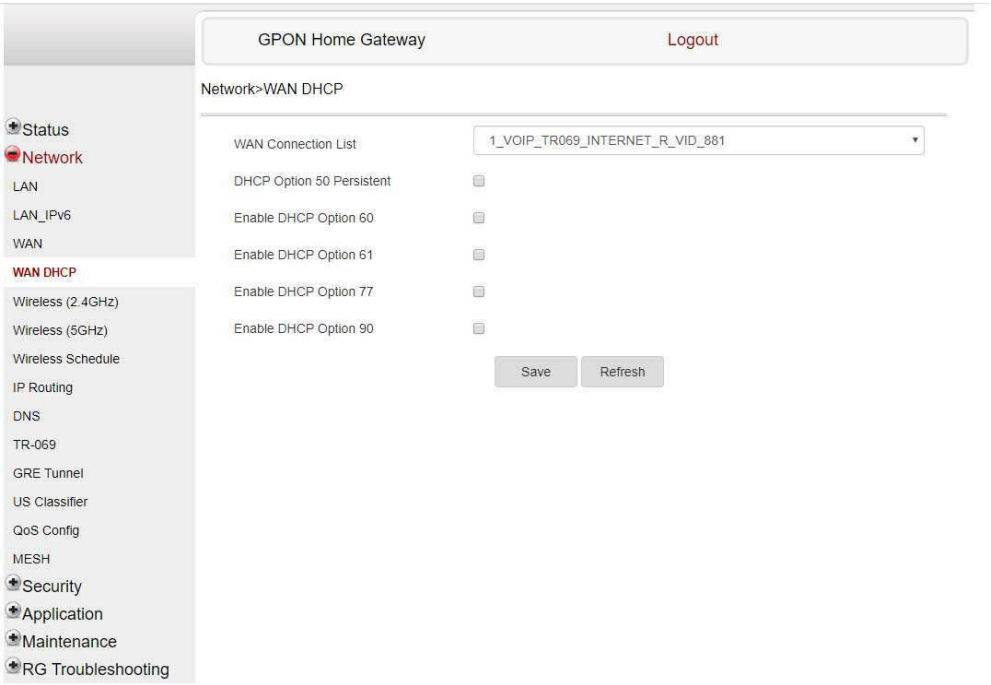
END OF STEPS

8.20 Configuring WAN DHCP

1

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

Figure 8-18 WAN DHCP page



2

Configure the following parameters:

Table 8-15 WAN DHCP 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.

3

Click **Save**.

Click **Refresh** to get the up-to-date information.

END OF STEPS

8.21 Configuring Wireless 2.4GHz

1

Click **Network→Wireless (2.4GHz)** from the left pane in the GPON Home Gateway page. The Wireless (2.4GHz) page displays.

Figure 8-19 Wireless (2.4GHz) page

GPON Home Gateway Logout

Network>Wireless (2.4GHz)

Status
Network
LAN
LAN_Pv6
WAN
WAN DHCP
Wireless (2.4GHz)
Wireless (5GHz)
Wireless Schedule
IP Routing
DNS
TR-069
GRE Tunnel
VS Classifier
QoS Config
MESH
Security
Application
Maintenance
RG Troubleshooting

Enable		
Mode	auto(b/g/n/ax)	v
Bandwidth	20MHz	v
Channel	Auto	v
Transmitting Power	100%	v
WMM	Enable	v
Enable MU-MIMO	Disable	
Total MAX Users	64	

SSID Configuration

SSID Select	SSID1	v
SSID Name	AIHN-AB03	
Enable SSID	Enable	v
SSID Broadcast	Enable	v
Port Mode	Route	v
Isolation	Disable	v
MAX Users	64	
Encryption Mode	WPA2N/PA3 Personal	v
WPA Version	WPA2N/Pi'.3	v
WPA Encryption Mode	AES	v
WPA Key		
	Show password	
Enable WPS	Disable	
Domain Grouping	Enable	

Save Refresh

2

Configure the following parameters:

Table 8-16 Wireless (2.4GHz) parameters

Field	Description
Enable	Select this checkbox to enable Wi-Fi.
Mode	Select a Wi-Fi mode from the list: • **auto (b/g/n/ax)** • **b** • **g** • **n** • **b/g** • **g/n**
Bandwidth	Select from: • **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: • **Low (25%)** • **Medium (50%)** • **High (75%)** • **Maximum (100%)**
WMM	Select **Enable** or **Disable** from the list to enable or disable Wi-Fi multimedia.
Enable MU-MIMO	Select **Enable** or **Disable** from the list to enable or disable MU-MIMO.
Total MAX Users	Enter the number of total MAX users.
SSID Configuration	
SSID Select	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	Select **Enable** or **Disable** from this list.
MAX Users	Enter the number of MAX users.

Table 8-16 Wireless (2.4GHz) parameters (continued)

Field	Description
Encryption Mode	Select an encryption mode from the list: • **OPEN** • **WEP** • **WPA/WPA2 Personal** • **WPA/WPA2 Enterprise** • **WPA2/WPA3 Personal** • **WPA3 Personal**
WPA Version	Select a WPA version from the list: • **WPA2** • **WPA/WPA2** • **WPA3** • **WPA2/WPA3**
WPA Encryption Mode	Select a WPA encryption mode from the list: • **AES** • **TKIP/AES**
WPA Key	Enter the WPA key.
Enable WPS	Enable or disable WPS from this list following the instructions in Step 3.
WPS Mode	Select a WPS mode from the list: PBC (Push Button Connect) or STA PIN (Personal Identification Number) or AP PIN (Access Point Personal Identification Number)
Domain Grouping	This option is only available for the generic Operator ID MSNA and for some customer-specific Operator IDs. Select this checkbox to enable the coexistence of multiple isolated home LAN/WLAN routing domains. Selecting this check box also displays all of the text associated with this field in the table.
Domain Name	Select a domain name from the list, or select this checkbox to create one new domain. Only one domain name can be configured.
Enter Domain Name	Enter the domain name.
WAN Interface	Select a WAN interface from the list.
Number of IP	Select the number of IP addresses from the list; the default is 24.
LAN List	Select a checkbox to enable the LAN: LAN1, LAN2, LAN3, or LAN4.

3

By default the WPS is enabled in SSID1, if you want to enable it in a different SSID, disable it first from SSID1

1. Go to the SSID1, and in the field **Enable WPS** select Disable.
2. Return to the SSID of your choice and in the field **Enable WPS** select Enable.
3. Save your configuration.
4. Click **WPS Connect**.

5. Connect to this SSID all the necessary devices using the WPS button or entering the PIN in the devices.
6. When all desired devices have been connected, return to the WebGUI, select Disable in the **Enable WPS** field and click **Save** at the bottom of the menu.
7. Select SSID1 in the **SSID Select** field, and enable the WPS in the field **Enable WPS**.
8. Click **Save**.
9. If desired, click **WPS Connect**.

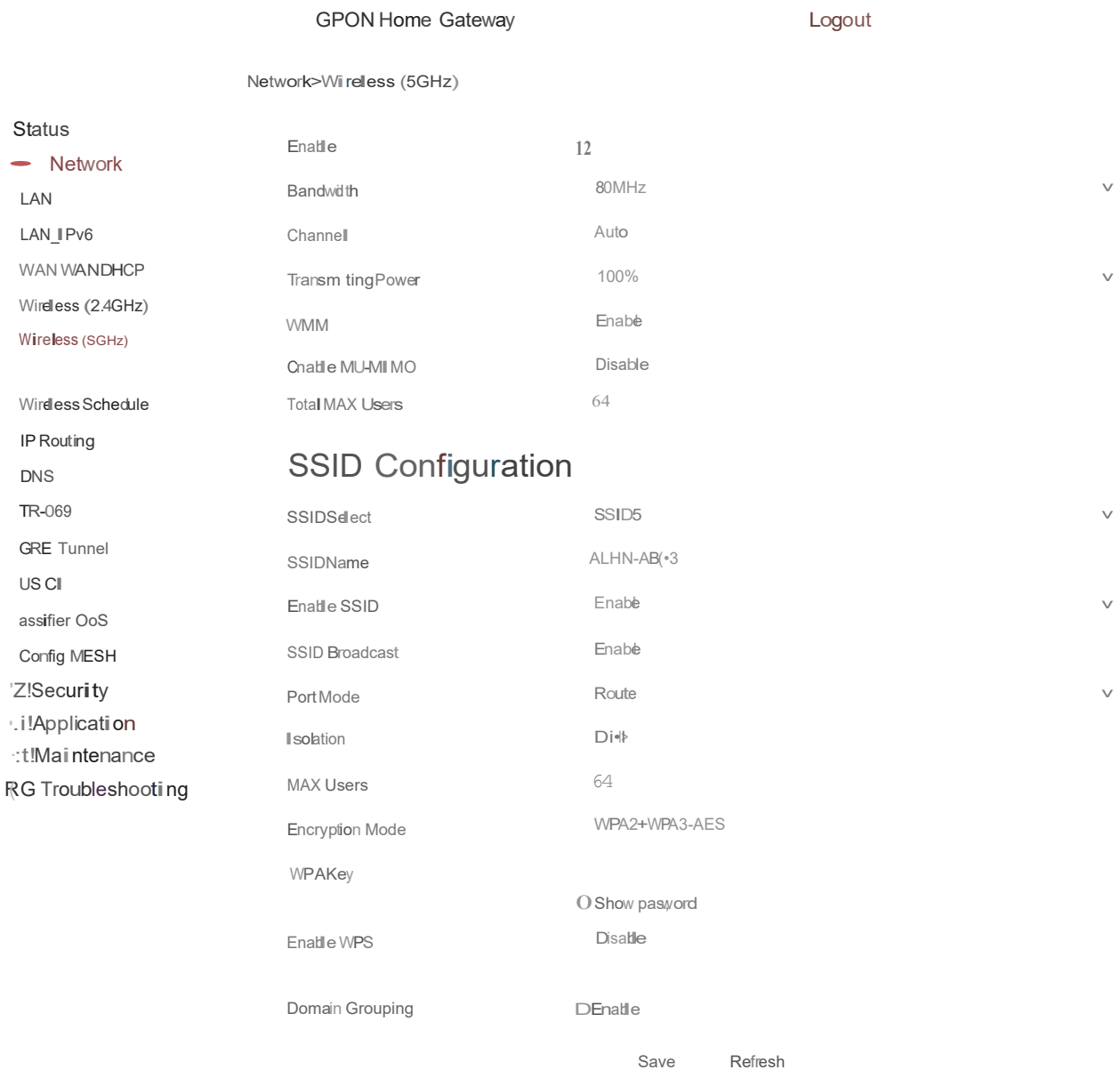
END OF STEPS

8.22 Configuring Wireless 5GHz

1

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

Figure 8-20 Wireless (5GHz) page



2

Configure the following parameters:

Table 8-17 Wireless (5GHz) parameters

Field	Description
Enable	Select this checkbox to enable Wi-Fi.
Bandwidth	Select from: • **20 MHz** • **40 MHz** • **80 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: • Low (25%) • Medium (50%) • High (75%) • Maximum (100%)
WMM	Select **Enable** or **Disable** from the list to enable or disable Wi-Fi 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.
SSID Configuration	
SSID Select	Select the SSID from the list.
SSID Name	Change the name of the selected SSID.
Enable SSID	Select **Enable** or **Disable** 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	Select **Enable** or **Disable** from this list.
MAX Users	Enter the number of MAX users.
Encryption Mode	Select an encryption mode from the list: • **WPA/WPA2 Enterprise** • **WPA2-AES** • **WPA2+WPA**
WPA Key	Enter the WPA key.
Enable WPS	Select enable or disable WPS from the list following the instructions in Step 3.
WPS Mode	Select a WPS mode from the list: PBC (Push Button Connect) or STA PIN (Personal Identification Number) or AP PIN (Access Point Personal Identification Number)
Domain Grouping	
Domain Grouping	This option is only available for the generic Operator ID MSNA and for some customer-specific Operator IDs. Select this check box to enable the coexistence of multiple isolated home LAN/WLAN routing domains. Selecting this check box also displays all of the text associated with this field in the table.
Domain Name	Select a domain name from the list.

Table 8-17 Wireless (5GHz) parameters (continued)

Field	Description
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.

3

By default the WPS is enabled in SSID5, if you want to enable it in a different SSID, disable it first from SSID5.

1. Go to the SSID5, and in the field **Enable WPS** select Disable.
2. Return to the SSID of your choice and in the field **Enable WPS** select Enable.
3. Save your configuration.
4. Click **WPS Connect**.
5. Connect to this SSID all the necessary devices using the WPS button or entering the PIN in the devices.
6. When all desired devices have been connected, return to the WebGUI, select disable in the **Enable WPS** field and click **Save** at the bottom of the menu.
7. Select SSID5 in the **SSID Select** field, and enable the WPS in the field **Enable WPS**
8. Click **Save**.
9. If desired, click **WPS connect**.

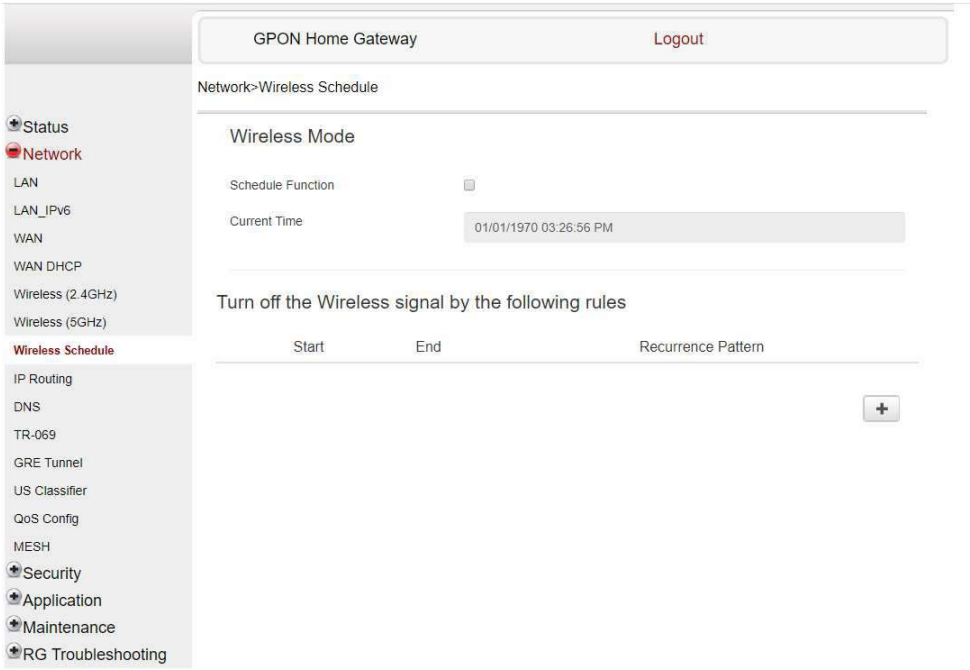
END OF STEPS

8.23 Configuring wireless scheduling

1

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

Figure 8-21 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. Use 24h format (00:00 to 23:59).

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**.

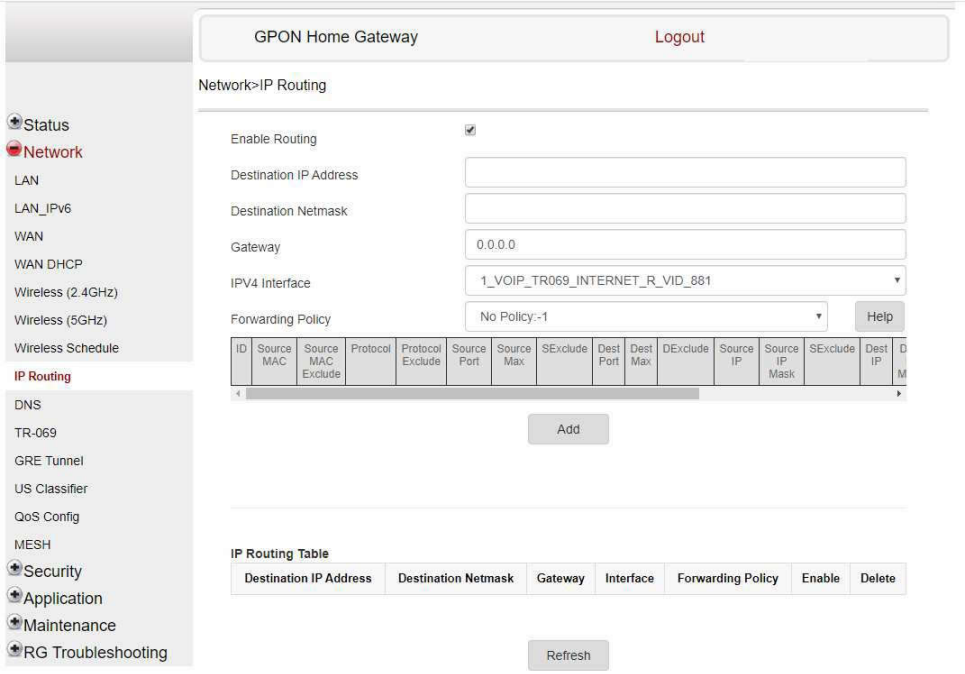
END OF STEPS

8.24 Configuring IP routing

1

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

Figure 8-22 IP Routing page



2

Configure the following parameters:

Table 8-18 IP Routing 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 network page from the list.
Forwarding Policy	Select a forwarding policy from the list.

3

Click **Add**.

You can click **Delete** to delete the IP routing configuration or click **Refresh** to view the up-to-date information.

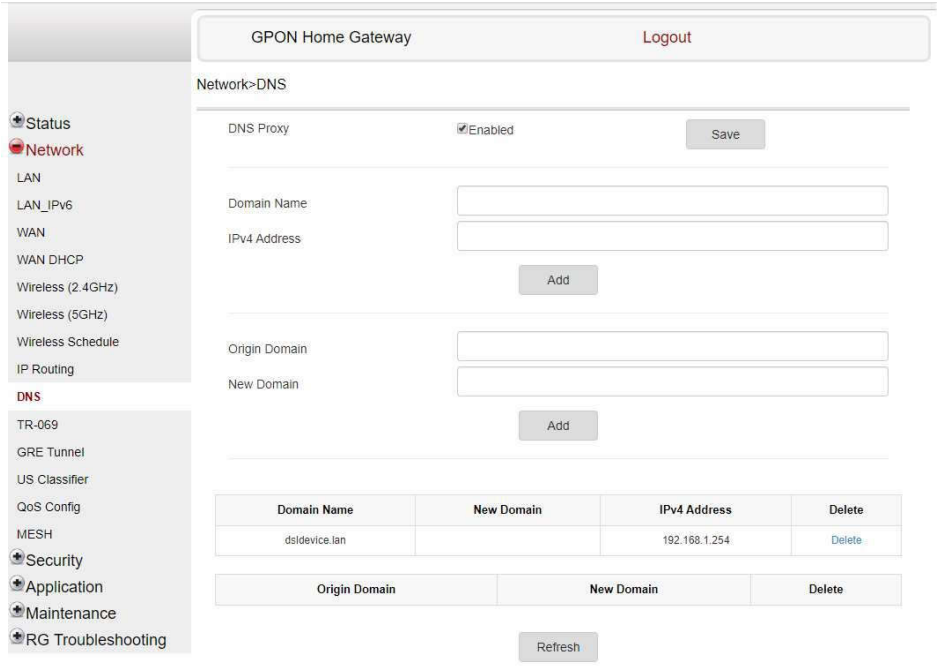
END OF STEPS

8.25 Configuring DNS

1

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

Figure 8-23 DNS page



2

Configure the following parameters:

Table 8-19 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 view the up-to-date information.

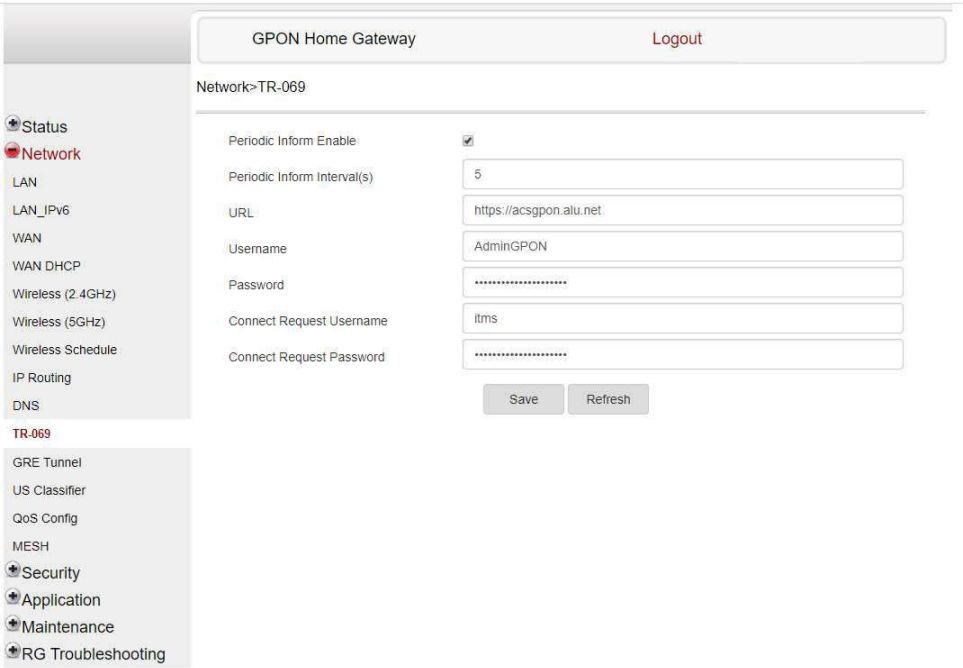
End of steps

8.26 Configuring TR-069

1

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

Figure 8-24 TR-069 page



2

Configure the following parameters:

Table 8-20 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 used to log in to the auto-configuration server.
Password	Enter the password used to log in to the auto-configuration server.
Connect Request Username	Enter the username used to log in to the ONT.

Table 8-20 TR-069 parameters (continued)

Field	Description
Connect Request Password	Enter the password used to log in to the ONT.

3

Click **Save**.

Click **Refresh** to view the up-to-date information.

END OF STEPS

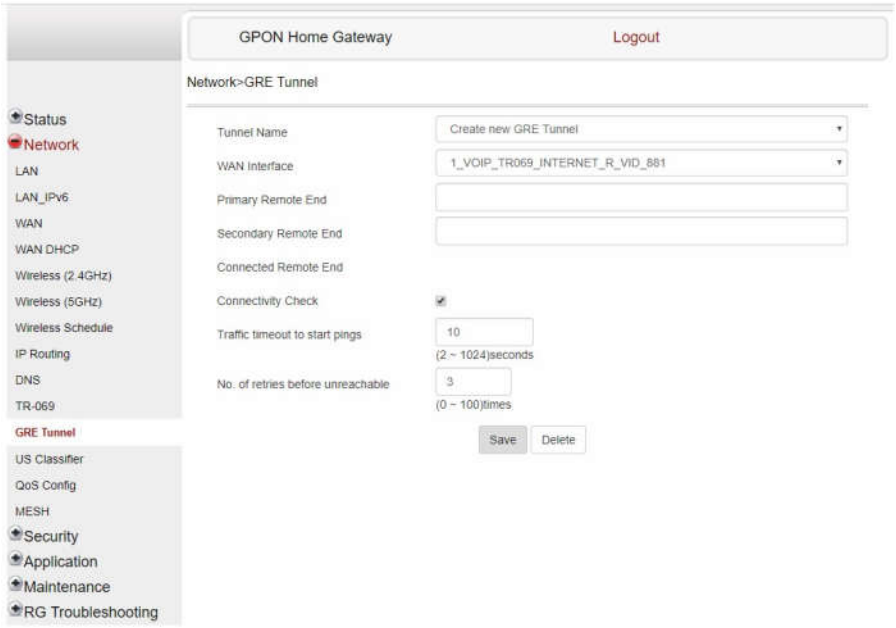
8.27 Configuring GRE tunnel

Note: This feature is available to admin users (super users) only.

1

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

Figure 8-25 GRE Tunnel page



2

Configure the following parameters:

Table 8-21 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 4 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).
No. of retries before unreachable	Enter the number of retries before the tunnel is declared down (0 to 100).

3

Click **Save**.

Click **Delete** to delete the configuration.

END OF STEPS

8.28 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 will be 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.

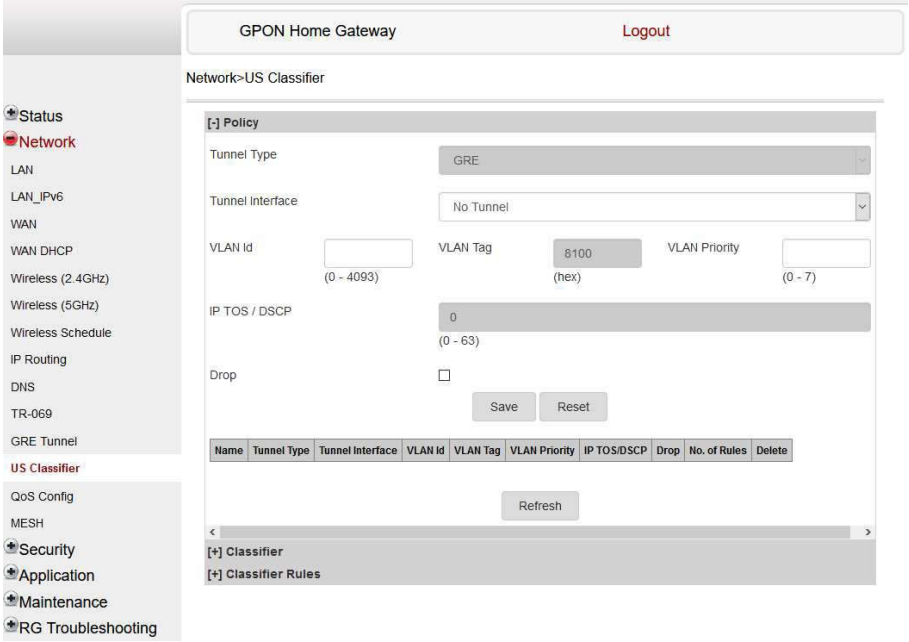
Up to 16 policies can be created, with up to 8 classifiers and 32 classifier rules.

1

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

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

Figure 8-26 US Classifier Policy page



2

Select a tunnel interface.

Table 8-22 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**.

Click **Reset** to reset the policy configured.

Click **Refresh** to view the up-to-date information.

Click **Delete** for the applicable policy in the policy table, to delete a policy.

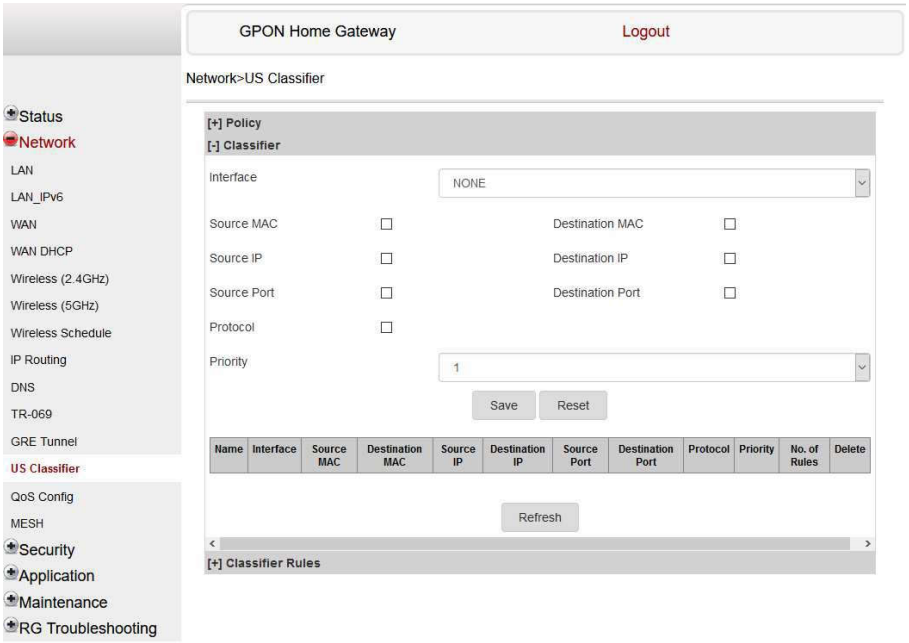
Note: A policy can only be deleted if it is not associated with any classifier rules.

4

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 8-27 US Classifier page



5

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 8-23 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.

Table 8-23 US Classifier parameters (continued)

Field	Description
Source IP	Click to enter a source IP address.
Destination IP	Click to enter a destination IP address.
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.

6

Click **Save**.

Click **Reset** to reset the classifier configured.

Click **Refresh** to view the up-to-date information.

Click **Delete** for the applicable classifier in the classifier table, to delete a classifier.

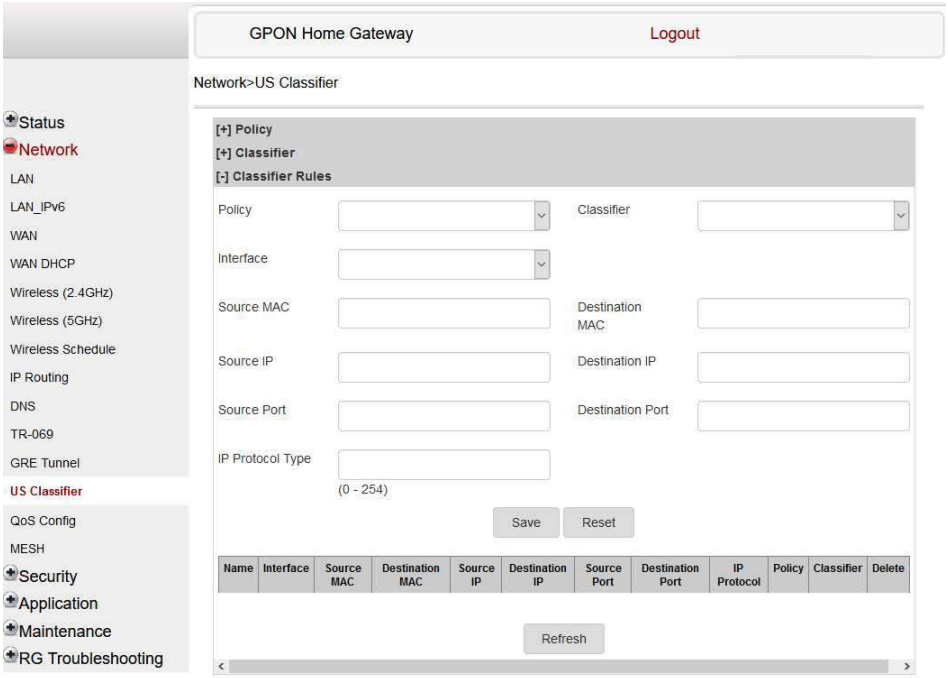
Note: A classifier can only be deleted if it is not associated with any classifier rules.

7

Select the **Classifier Rules** tab.

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

Figure 8-28 US Classifier Rules page



8

Configure the classifier rule.

Table 8-24 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.

9

Click **Save**.

Click **Reset** to reset the rules configured.

Click **Refresh** to view the up-to-date information.

Click **Delete** for the applicable classifier rules in the classifier rules table, to delete a classifier.

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

END OF STEPS

8.29 Configuring QoS

1

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

Figure 8-29 QoS Config page (L2 packet sizes)

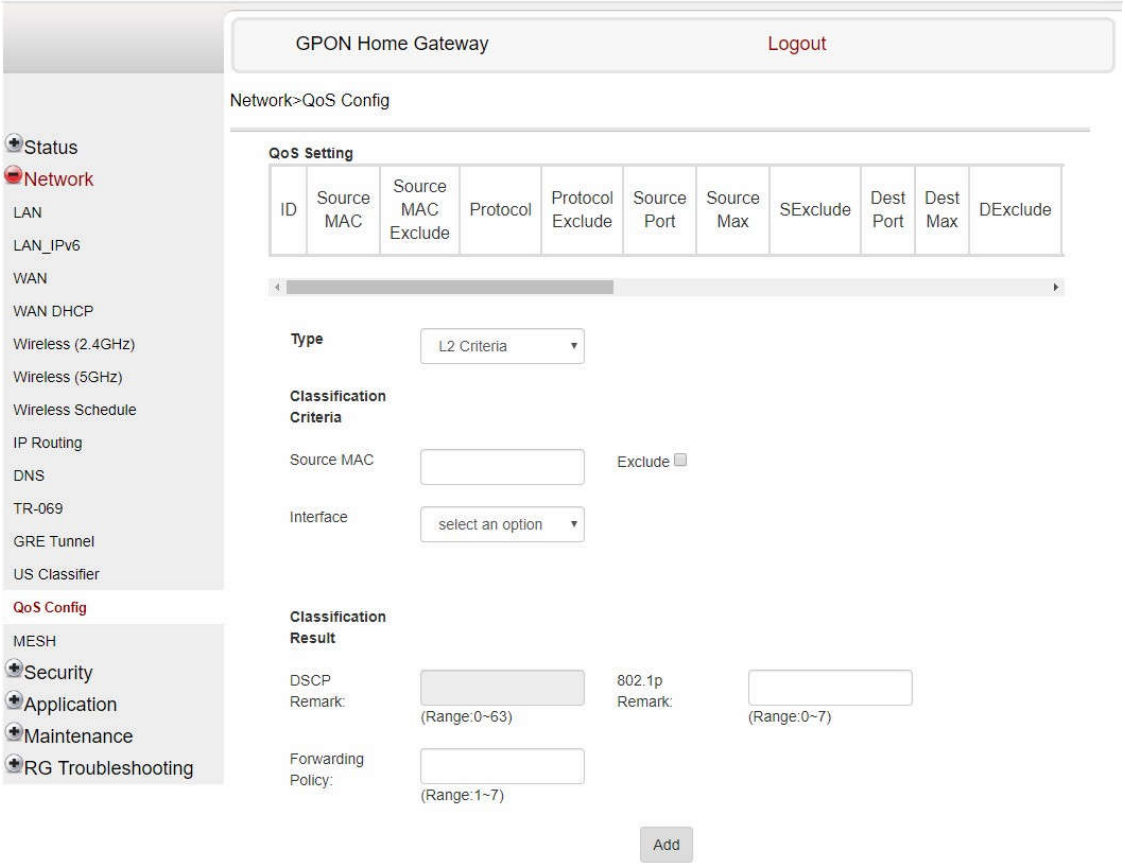
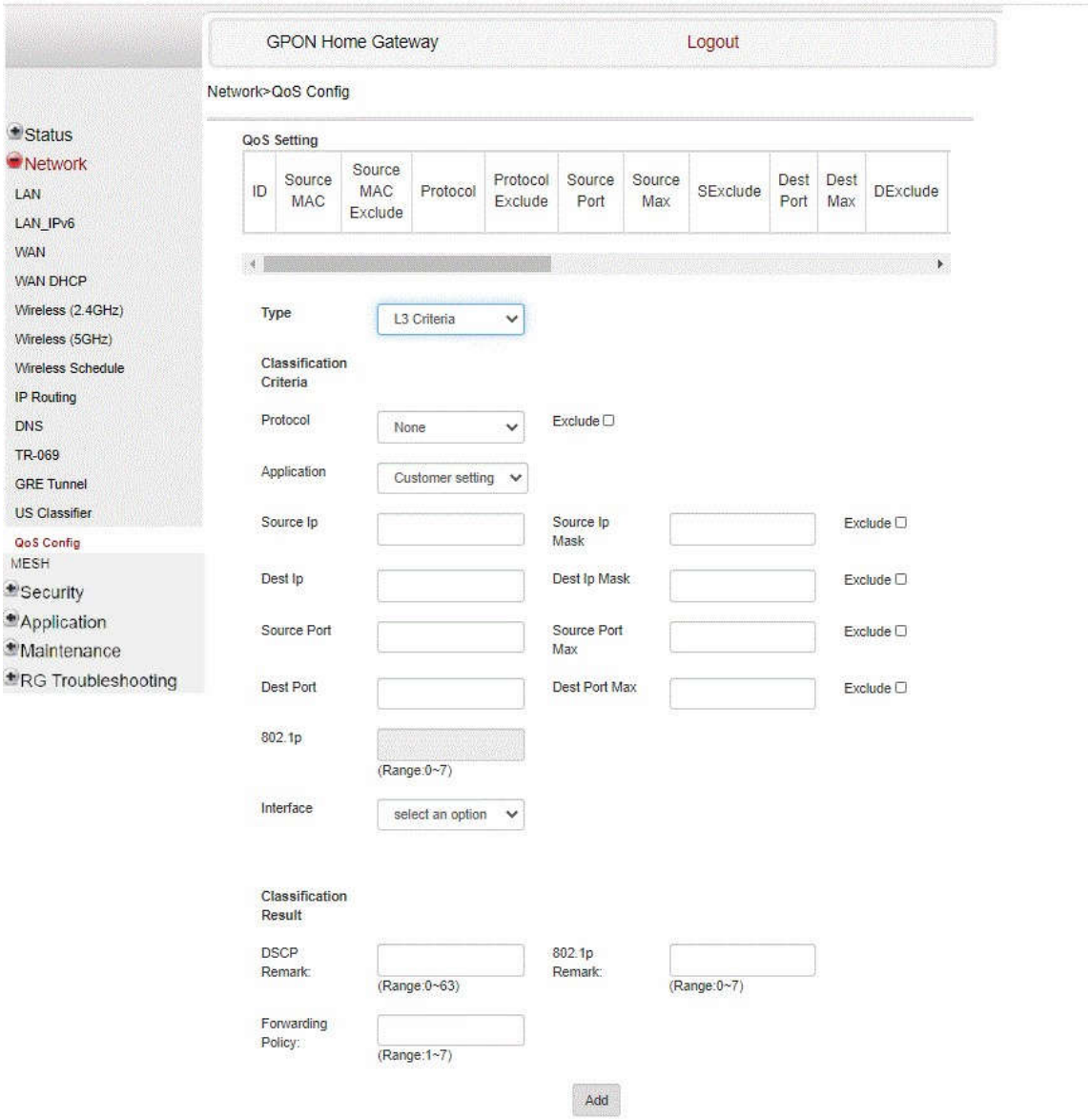


Figure 8-30 QoS Config page (L3 packet sizes)



2

Configure the following parameters:

Table 8-25 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 Select the **Exclude** checkbox to exclude the source MAC address.
Interface	Select an interface from the list.
Classification Result	
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.

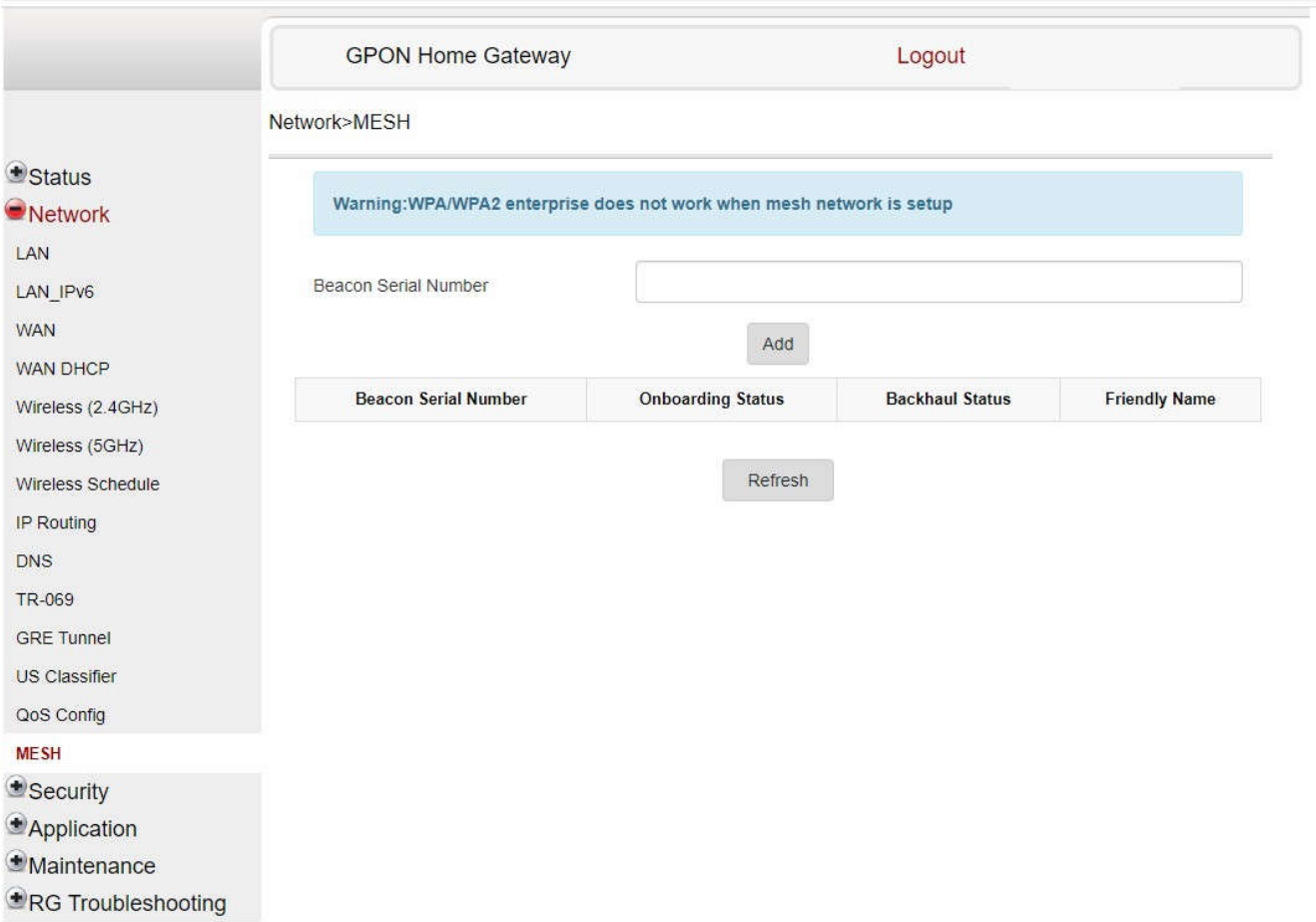
End of steps

8.30 Configuring Mesh

1

Click **Network** → **Mesh** from the left panel on the GPON Home Gateway window. The Mesh page displays.

Figure 8-31 Mesh page



2

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

The following information displays:

Table 8-26 Mesh parameters

Field	Description
Beacon Serial Number	Indicates the serial number of the extender Nokia Wi-Fi beacon device.
Onboarding Status	Indicates whether the extender Nokia Wi-Fi 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.

Table 8-26 Mesh parameters (continued)

Field	Description
Friendly Name	Indicates the friendly name that is defined while on-boarding the extender Nokia Wi-Fi beacon using the Nokia Wi-Fi 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.

3

Click **Add** to add the Nokia Wi-Fi beacon information to the table.

4

Click **Refresh** to update the information in the table.

End of steps

Security configuration

8.31 Overview

8.31.1 Purpose

This chapter describes the security configuration tasks supported by G-2426G-B ONTs

8.31.2 Contents

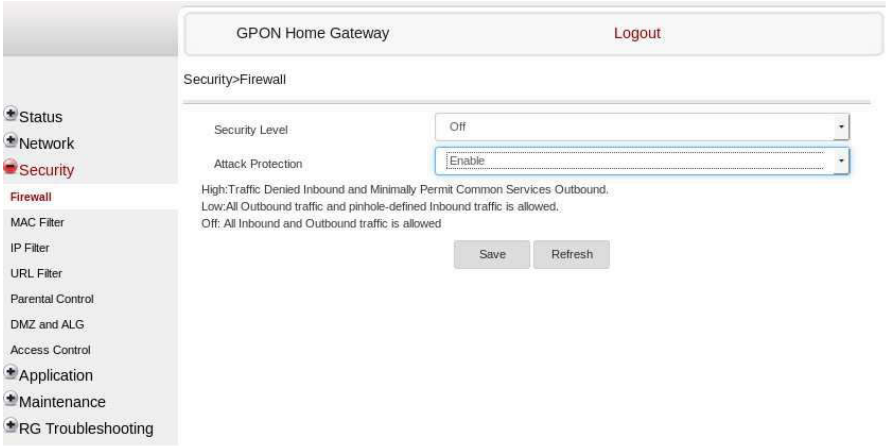
8.31 Overview	151
8.32 Configuring the firewall	151
8.33 Configuring the MAC filter	152
8.34 Configuring the IP filter	154
8.35 Configuring the URL filter	155
8.36 Configuring parental control	156
8.37 Configuring DMZ and ALG	165
8.38 Configuring access control	167

8.32 Configuring the firewall

1

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

Figure 8-32 Firewall page



2

Configure the firewall.

Table 8-27 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 view the up-to-date information.

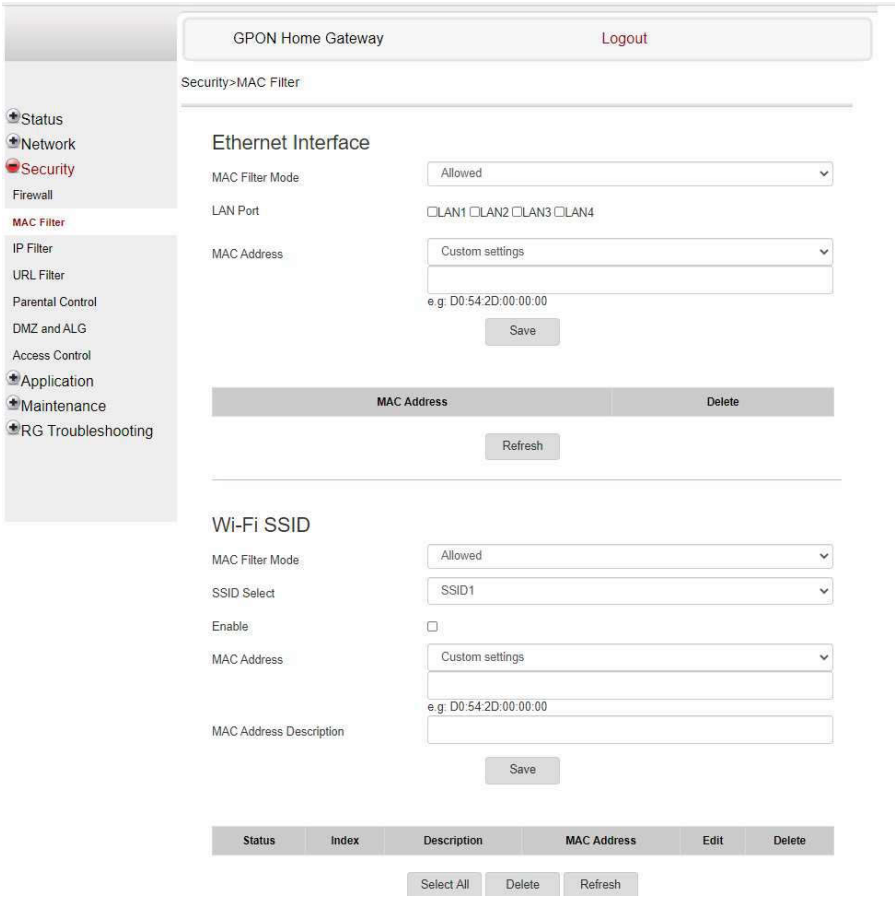
END OF STEPS

8.33 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 8-33 MAC Filter page



2

Configure the following parameters:

Table 8-28 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	
MAC Filter Mode	Select the MAC filter mode from the list: Blocked or Allowed.

Table 8-28 MAC Filter parameters (continued)

Field	Description
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 description of the MAC Address.

3

Click **Add**.

Click **Delete** to delete a specific MAC filter or click **Select All**and click **Delete** to delete all the MAC filters.

Click **Refresh** to view the up-to-date information.

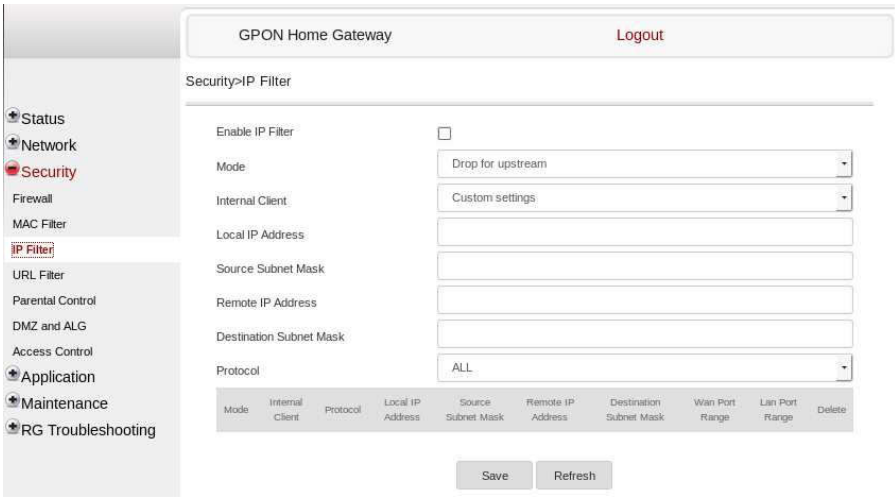
END OF STEPS

8.34 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 8-34 IP Filter page



2

Configure the following parameters:

Table 8-29 IP Filter parameters

Field	Description
Enable IP Filter	Select this checkbox to enable an IP filter.
Mode	Select an IP filter mode from the list: • **Drop for upstream** • **Drop for downstream** • **Accept for upstream** • **Accept for downstream**
Internal Client	Select an internal client from the list: • **Custom settings**: uses the IP address input below • **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 view the up-to-date information.

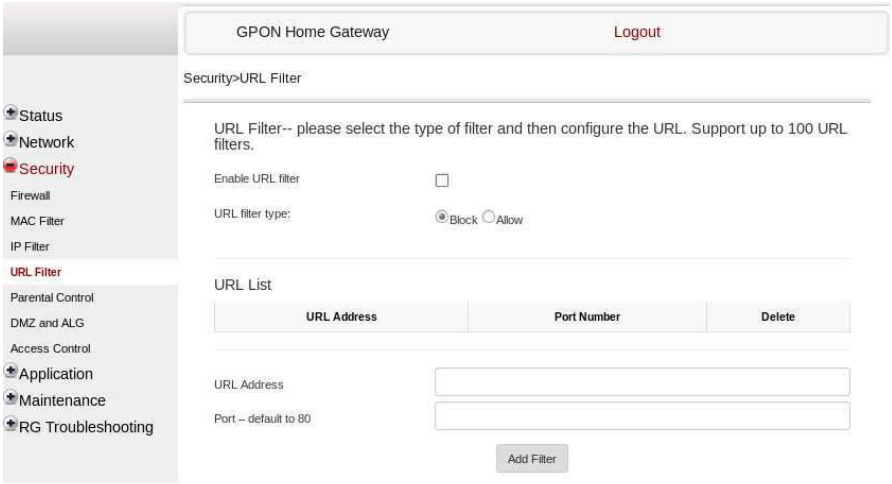
END OF STEPS

8.35 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 8-35 URL Filter page



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

2

Configure the following parameters:

Table 8-30 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.

3

Click **Add Filter**.

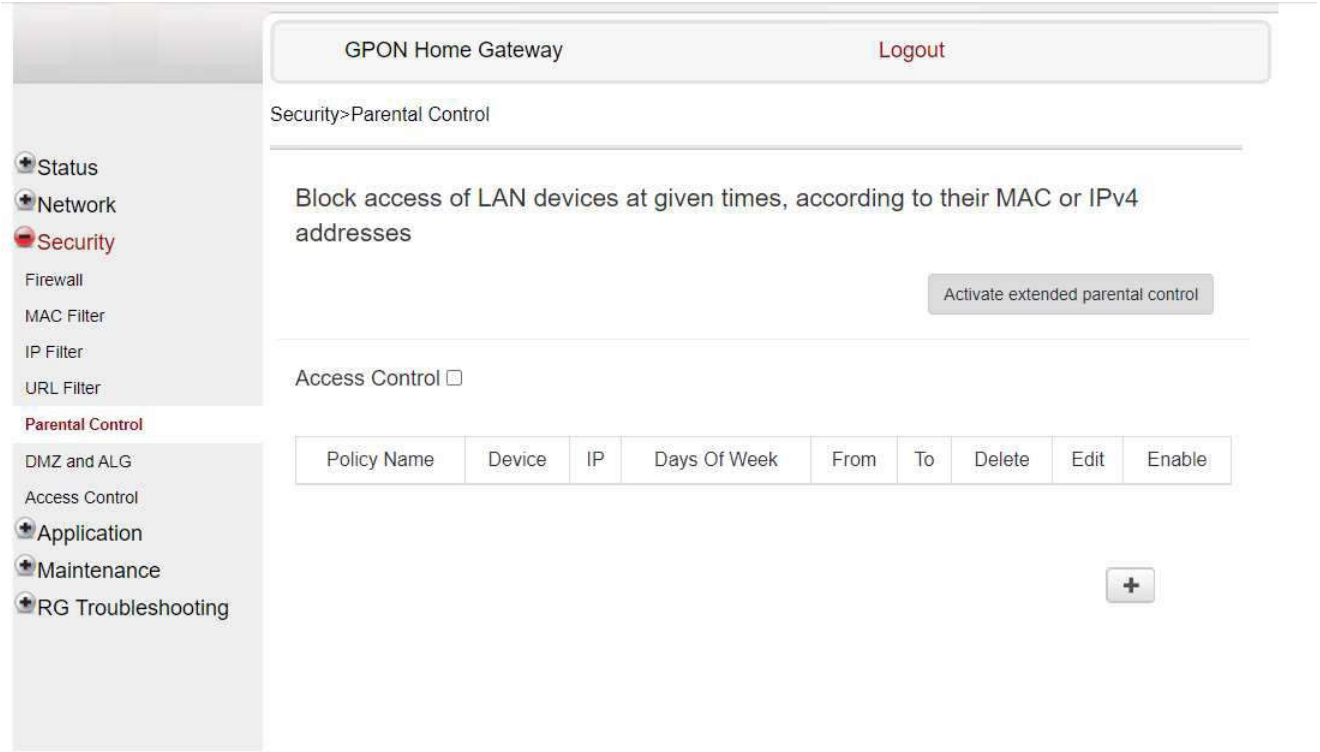
END OF STEPS

8.36 Configuring parental control

1

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

Figure 8-36 Default Parental Control page



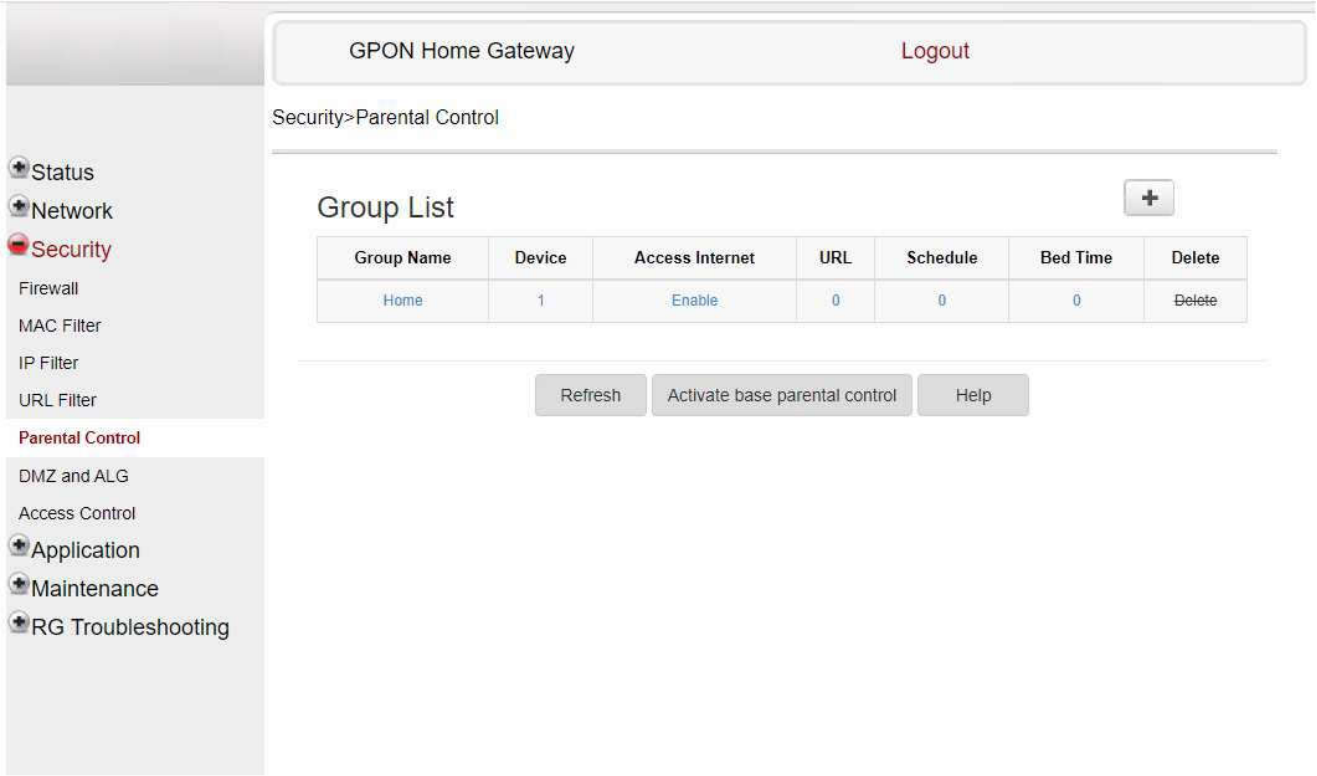
2

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.

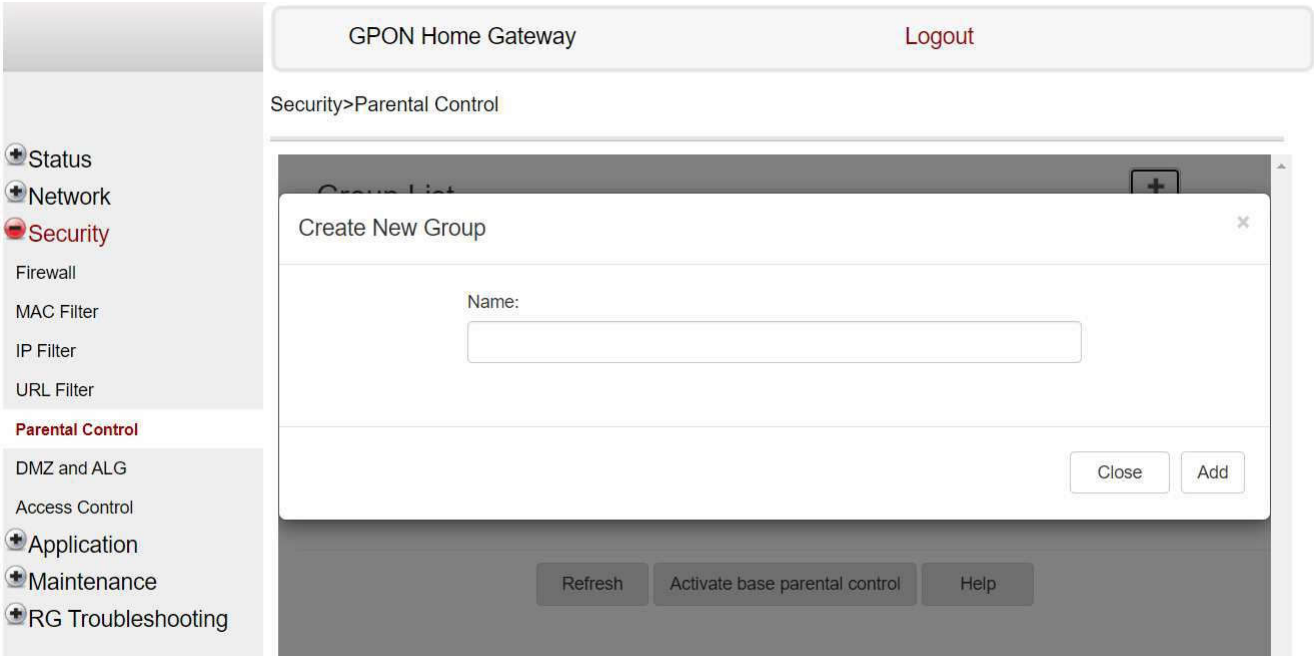
Figure 8-37 Advanced Parental control page



4

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

Figure 8-38 Create new group page



5

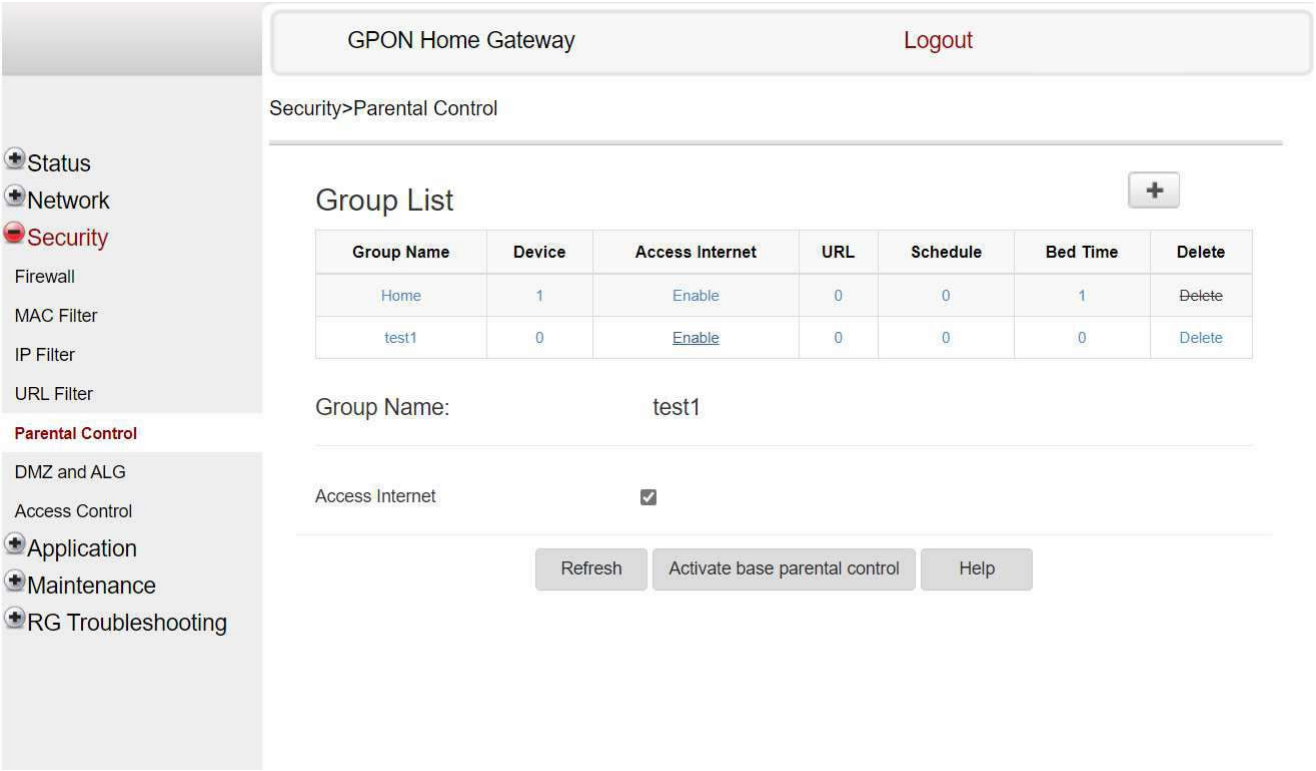
Click **Add**.

6

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

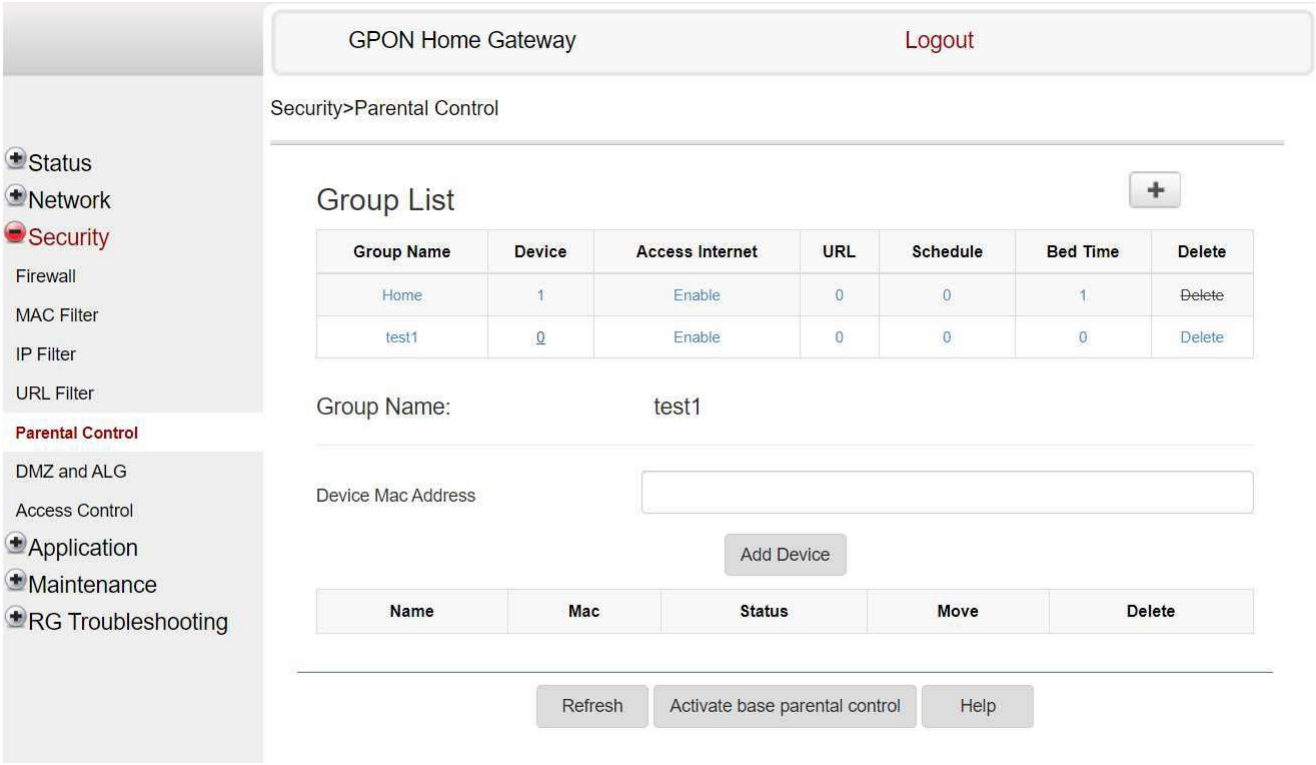
The following page displays the parental control access internet information.

Figure 8-39 Parental control access internet page



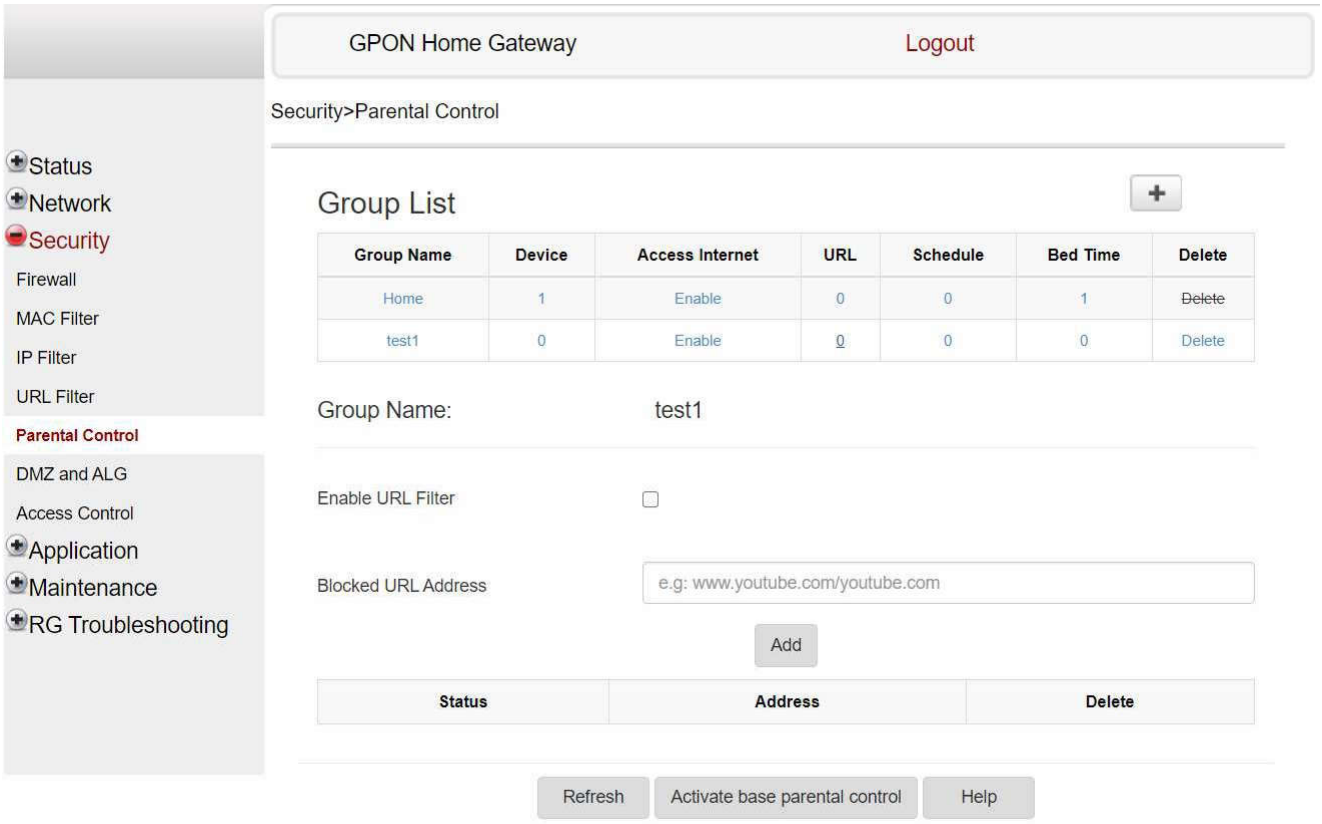
The following page displays the parental control device information.

Figure 8-40 Parental control device page



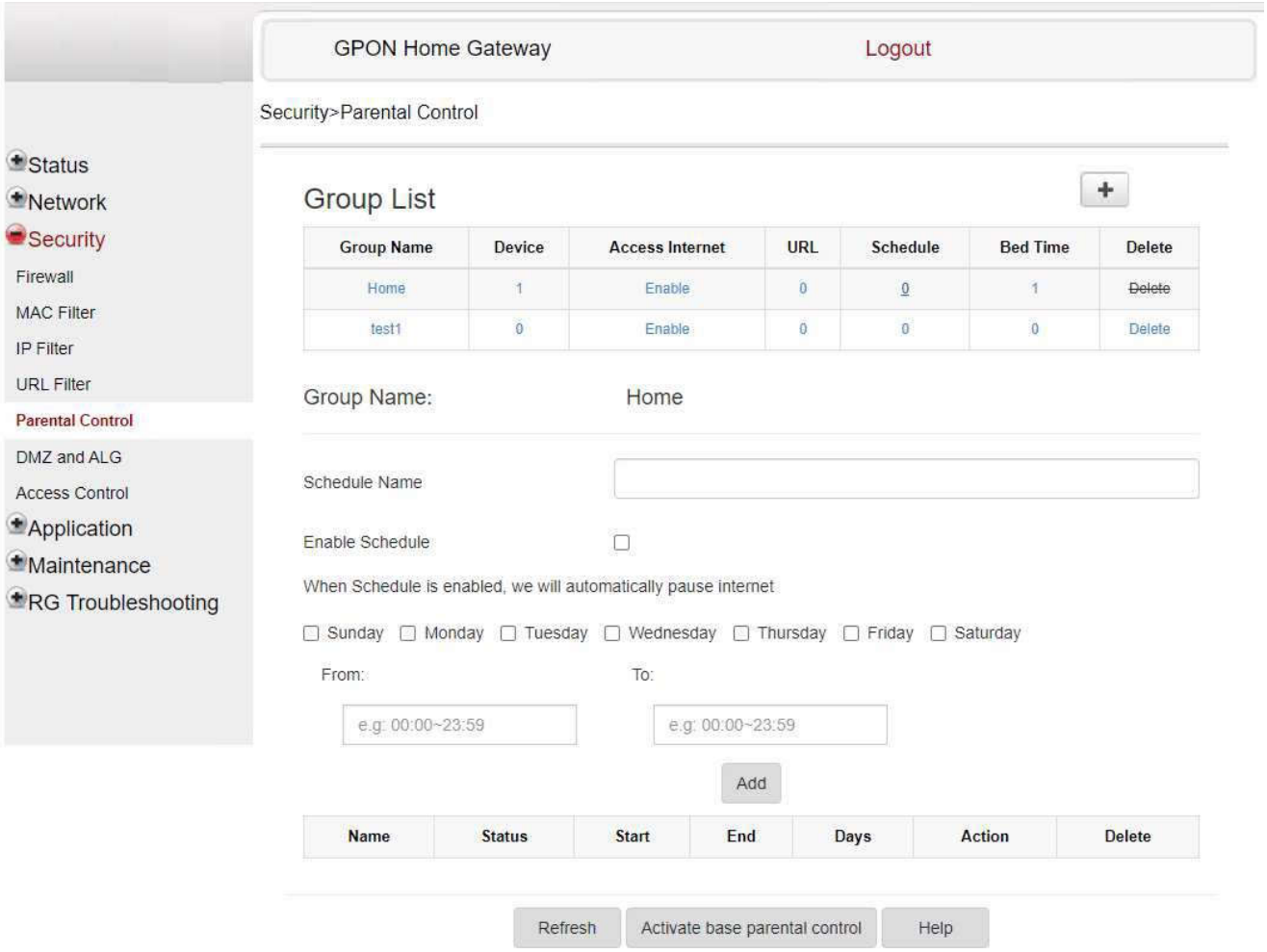
The following page displays the parental control URL information.

Figure 8-41 Parental control URL page



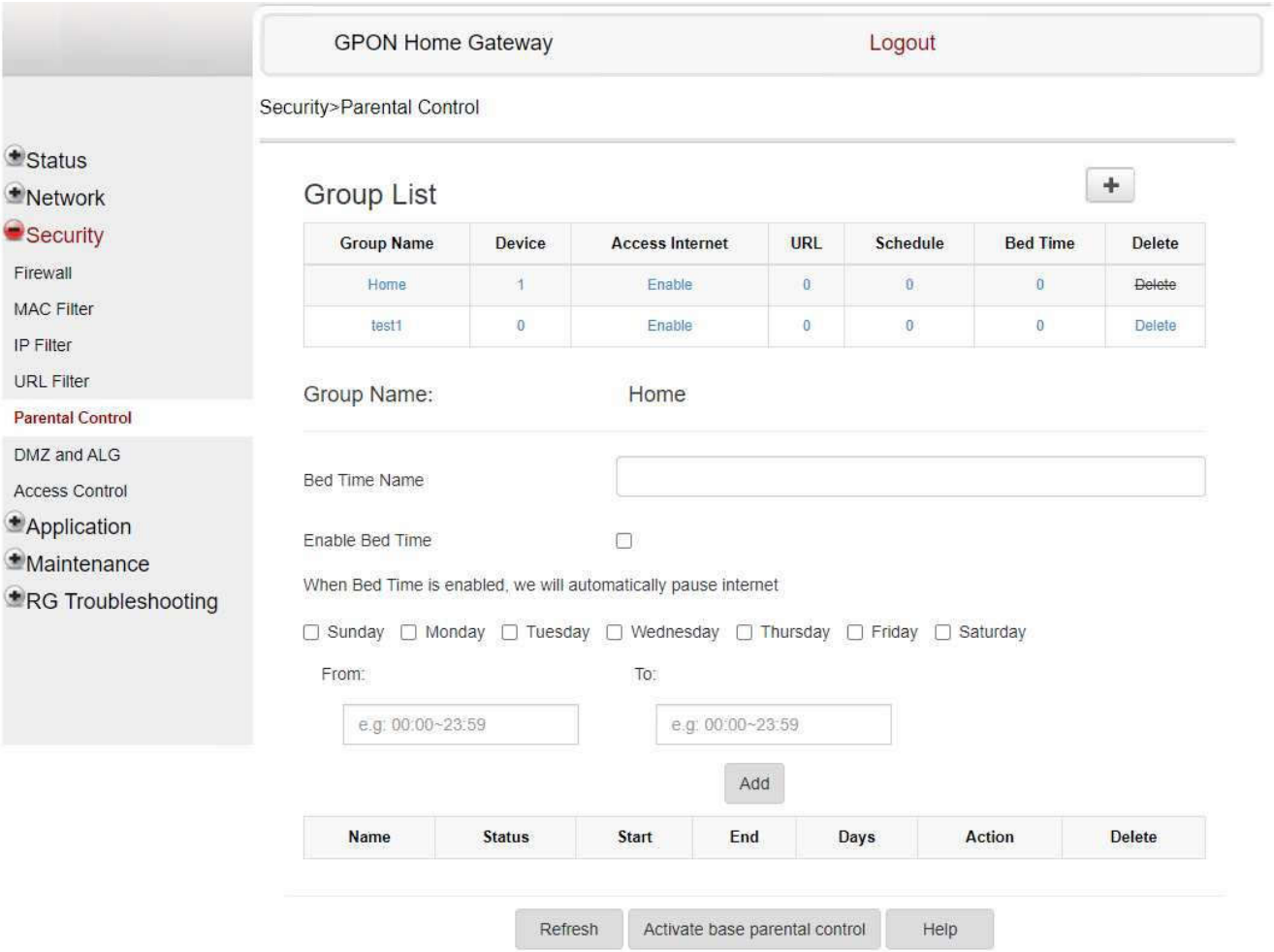
The following page displays the parental control schedule information.

Figure 8-42 Parental control schedule page



The following page displays the parental control bed time information.

Figure 8-43 Parental control bed time page



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

7

Configure the following parameters:

Table 8-31 Parental control parameters

Field	Description
Access Internet	
Access Internet	Select this checkbox to enable internet
Group Name	Displays the selected group name

Table 8-31 Parental control parameters (continued)

Field	Description
Device	
Device MAC Address	Enter the MAC address and click **Add Device**.
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.

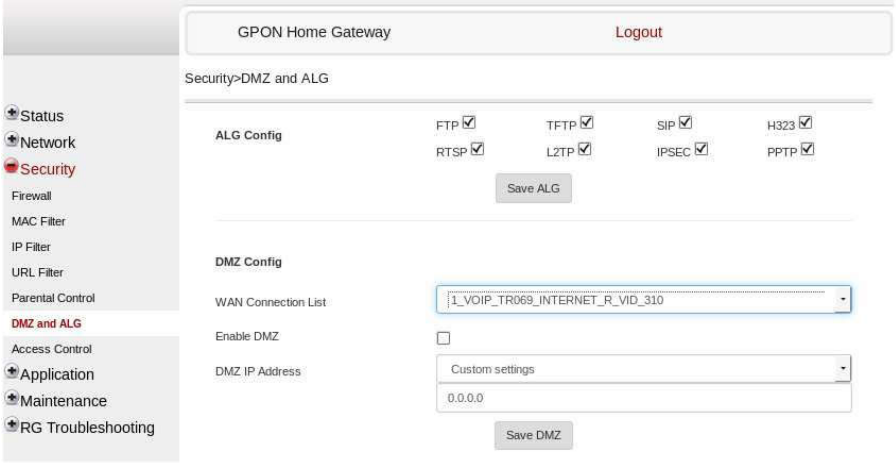
END OF STEPS

8.37 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 8-44 DMZ and ALG page



2

Configure the following parameters:

Table 8-32 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 parameters:

Table 8-33 DMZ parameters

Field	Description
WAN Connection List	Select a WAN connection from the list.
Enable DMZ	Select this checkbox to enable DMZ on the selected 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

8.38 Configuring access control

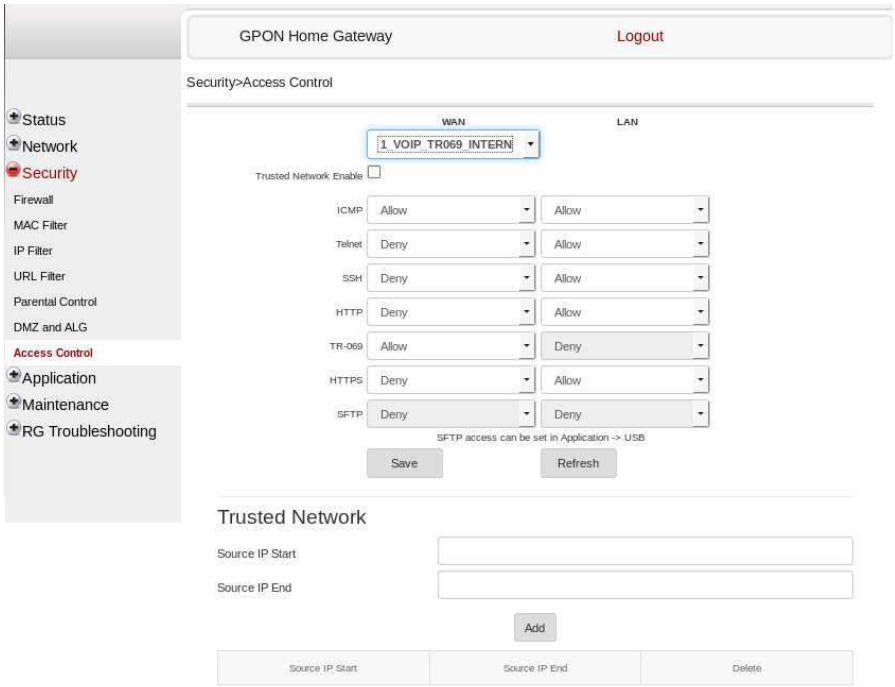
This procedure describes how to configure the access control level (ACL).

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 8-45 Access Control page



2

Configure the following parameters:

Table 8-34 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**.

Click **Refresh** to view the 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 8-35 Trusted Network parameters

Field	Description
Trusted Network	
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

8.39 Overview

8.39.1 Purpose

This chapter describes the application configuration tasks supported by the G-2426G-B ONTs.

8.39.2 Contents

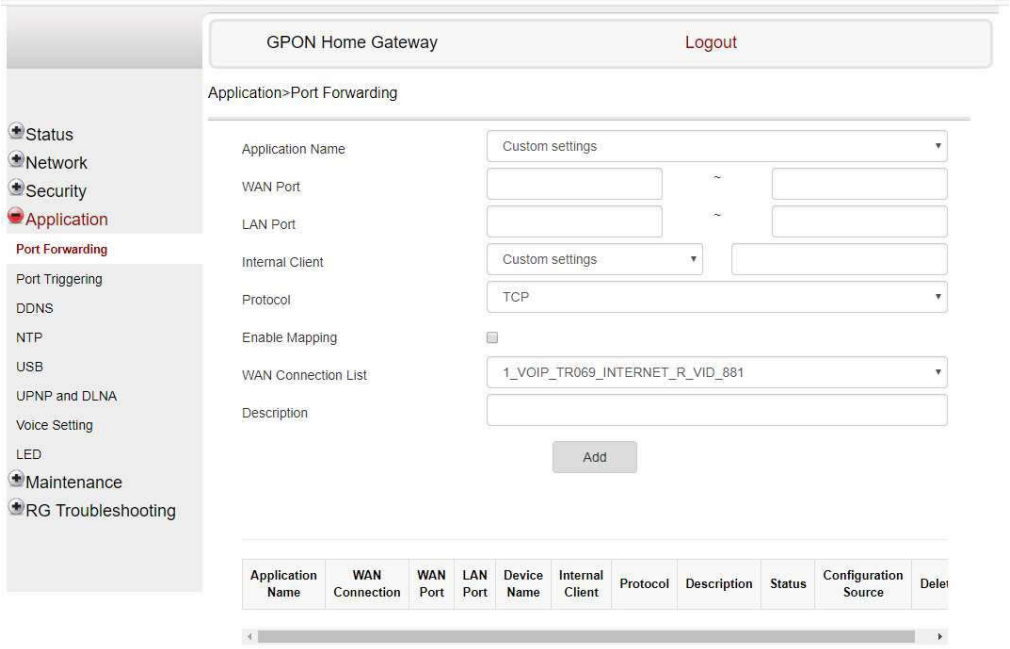
8.39 Overview	169
8.40 Configuring port forwarding	169
8.41 Configuring port triggering	171
8.42 Configuring DDNS	172
8.43 Configuring NTP	173
8.44 Configuring USB	175
8.45 Configuring UPnP and DLNA	176
8.46 Configuring voice	177

8.40 Configuring port forwarding

1

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

Figure 8-46 Port Forwarding page



2

Configure the following parameters:

Table 8-36 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: • **TCP** • **UDP** • **TCP/UDP**
Enable Mapping	Select this checkbox to enable mapping.
WAN Connection List	Select a WAN connection from the list. Note: Only active devices are shown on this list.

Table 8-36 Port Forwarding parameters (continued)

Field	Description
Description	Enter the description.

3

Click **Add**.

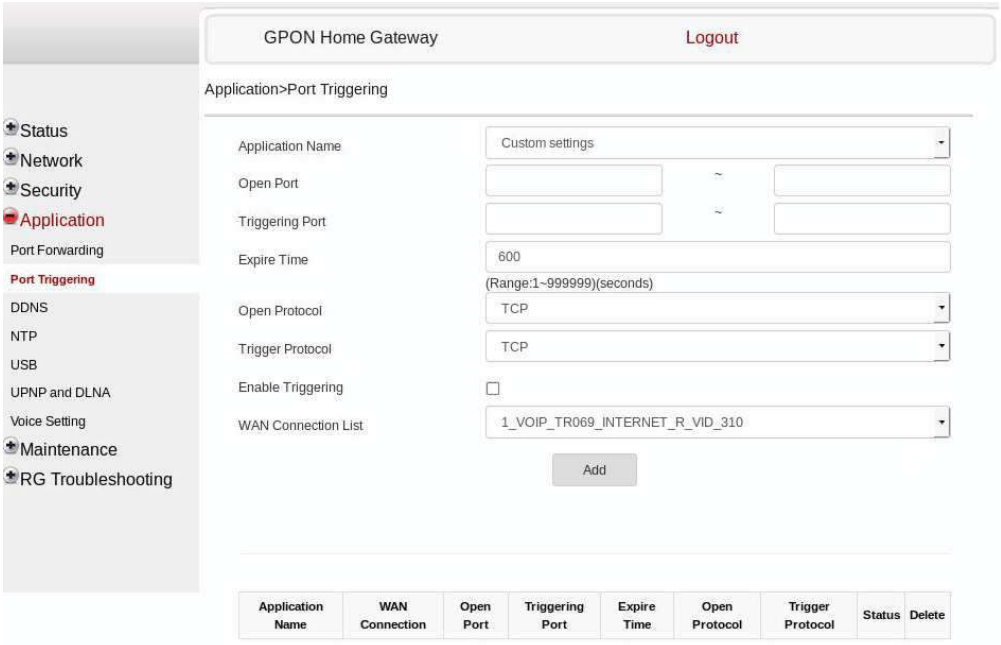
End of steps

8.41 Configuring port triggering

1

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

Figure 8-47 Port Triggering page



2

Configure the following parameters:

Table 8-37 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	Select a WAN connection from the list. Note: Only active devices are shown on this list.

3

Click **Add**.

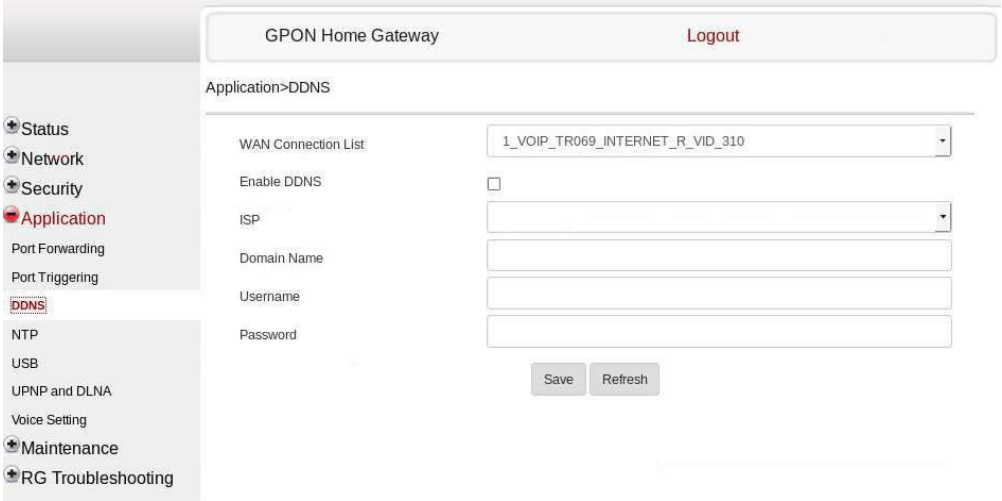
End of steps

8.42 Configuring DDNS

1

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

Figure 8-48 DDNS page



2

Configure the following parameters:

Table 8-38 DDNS parameters

Field	Description
WAN Connection List	Select a WAN connection from the list.
Enable DDNS	Select this checkbox to enable DDNS on the selected WAN connection.
ISP	Select an ISP from the list.
Domain Name	Enter the domain name.
Username	Enter the username.
Password	Enter the password.

3

Click **Save**.

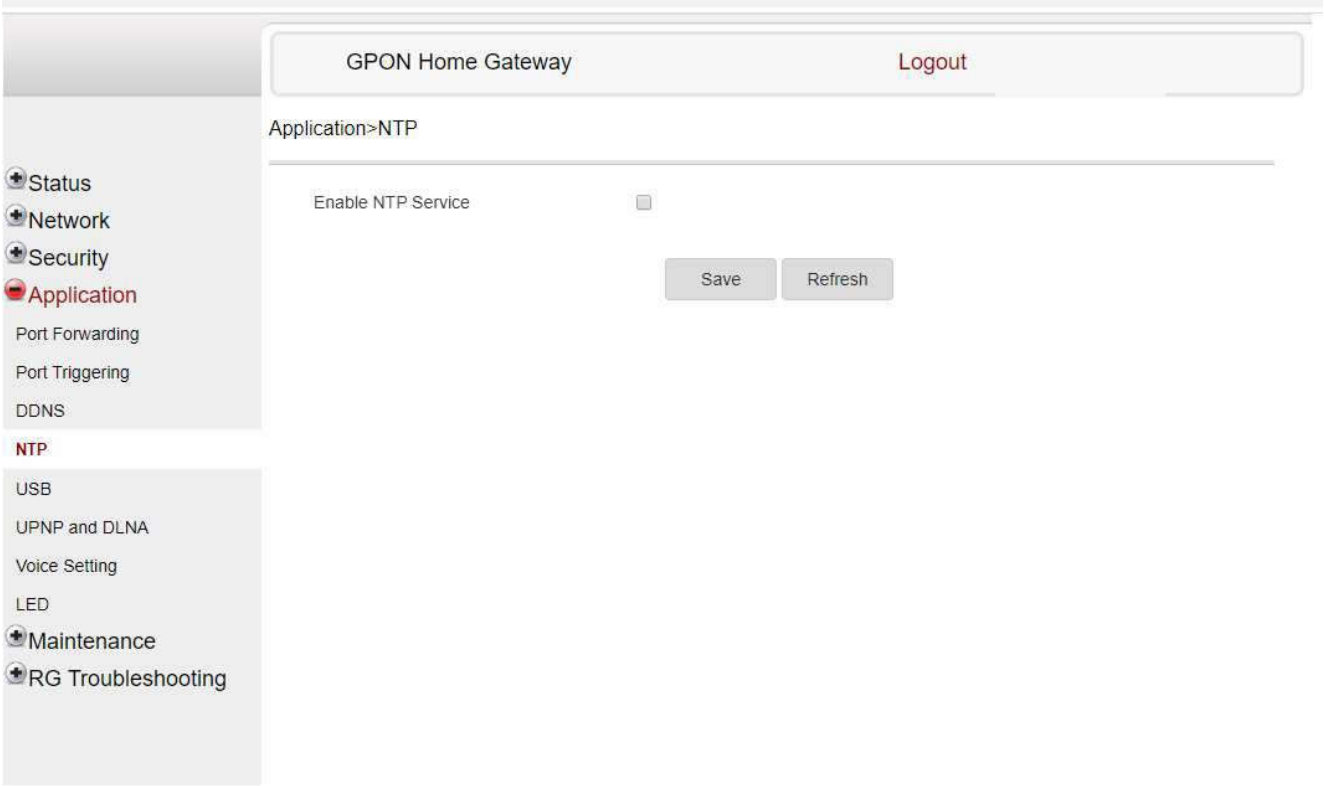
Click **Refresh** to view the up-to-date information.

END OF STEPS

8.43 Configuring NTP

1

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



2

Configure the following parameters:

Table 8-39 NTP parameters

Field	Description
Enable NTP Service	Select this checkbox to enable the NTP service.

3

Click **Save**.

You can click **Refresh** to get the up-to-date information.

End of steps

8.44 Configuring USB

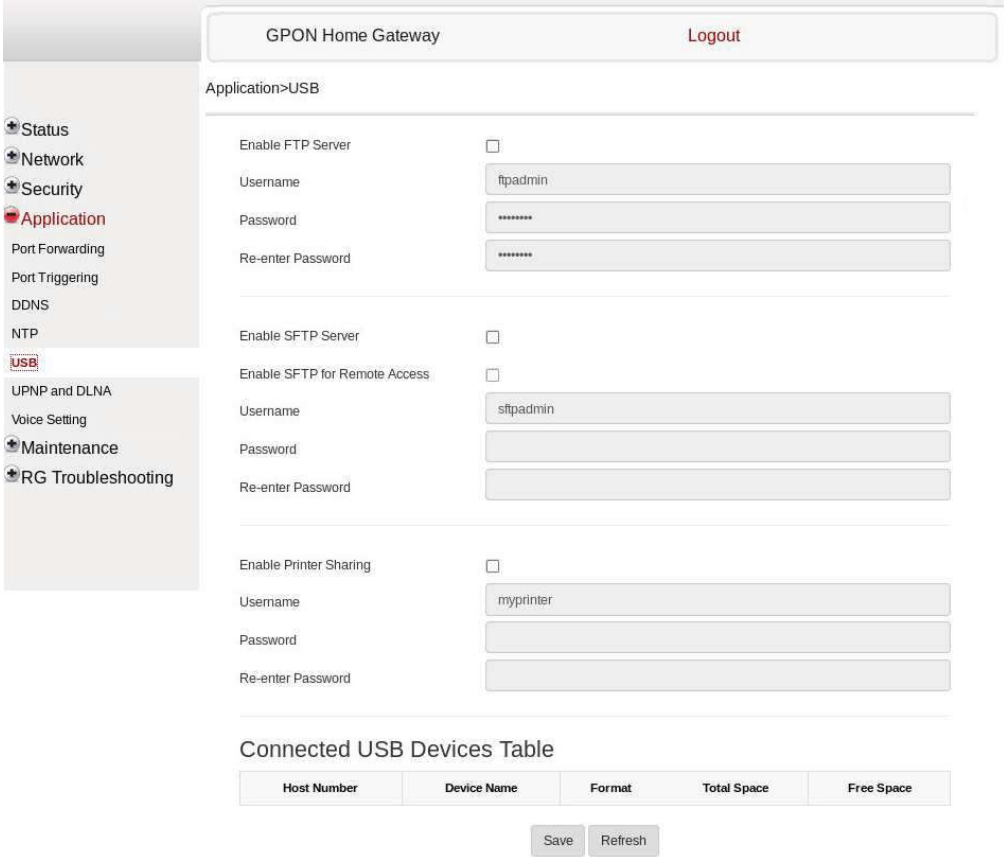
You can connect USB storage devices and USB printers to the USB ports of the device. The USB menu enables you to configure FTP and SFTP for your USB storage devices.

The USB connected devices are shown in overview table on the bottom of the USB page.

1

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

Figure 8-49 USB page



2

Configure the following parameters:

Table 8-40 USB parameters

Field	Description
Enable FTP server	Select this checkbox to enable using an FTP server.
Username	Enter the username for the FTP server.
Password	Enter the password for the FTP server.
Re-enter Password	Re-enter the password for the FTP server.
Enable SFTP server	Select this checkbox to enable using an SFTP server.
Enable SFTP for Remote Access	Select this checkbox to enable SFTP for remote access.
Username	Enter the username for the SFTP server.
Password	Enter the password for the SFTP server.
Re-enter Password	Re-enter the password for the SFTP server.
Enable Printer Sharing	Select this checkbox to enable printer sharing. Printer sharing is disabled by default.
Username	Enter the username for the SFTP server.
Password	Enter the password for the SFTP server.
Re-enter Password	Re-enter the password for the SFTP server.
Connected USB Devices Table	For each printer that is connected to the ONT, the following fields are displayed: • Host Number for example: Printer1, Printer2 • Device Name: name or identification for the USB device • Format: displays the storage format (applies only to a USB storage device) • Total space (applies only to a USB storage device) • Free space (applies only to a USB storage device)

3

Click **Save**.

Click **Refresh** to view the up-to-date information.

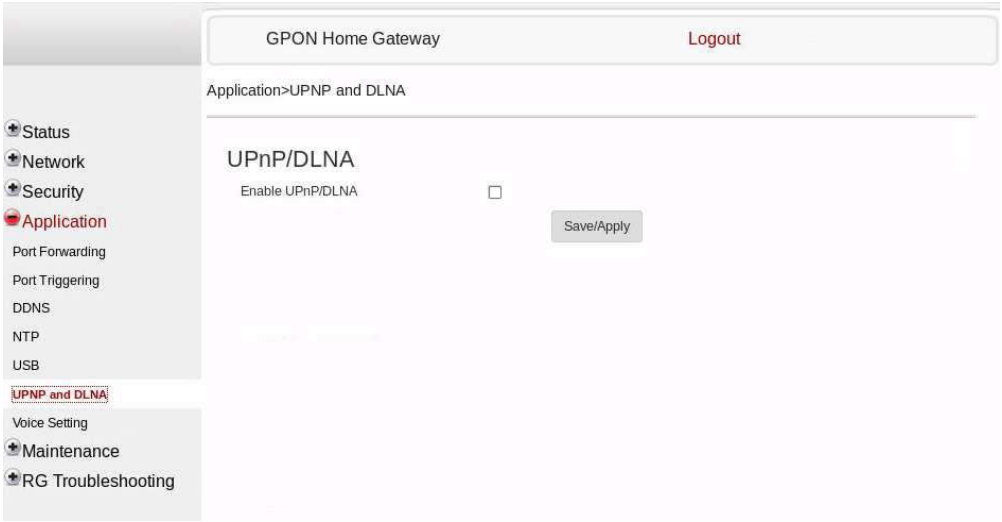
End of steps

8.45 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 8-50 UPnP and DLNA page



2

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

3

Click **Save/Apply**.

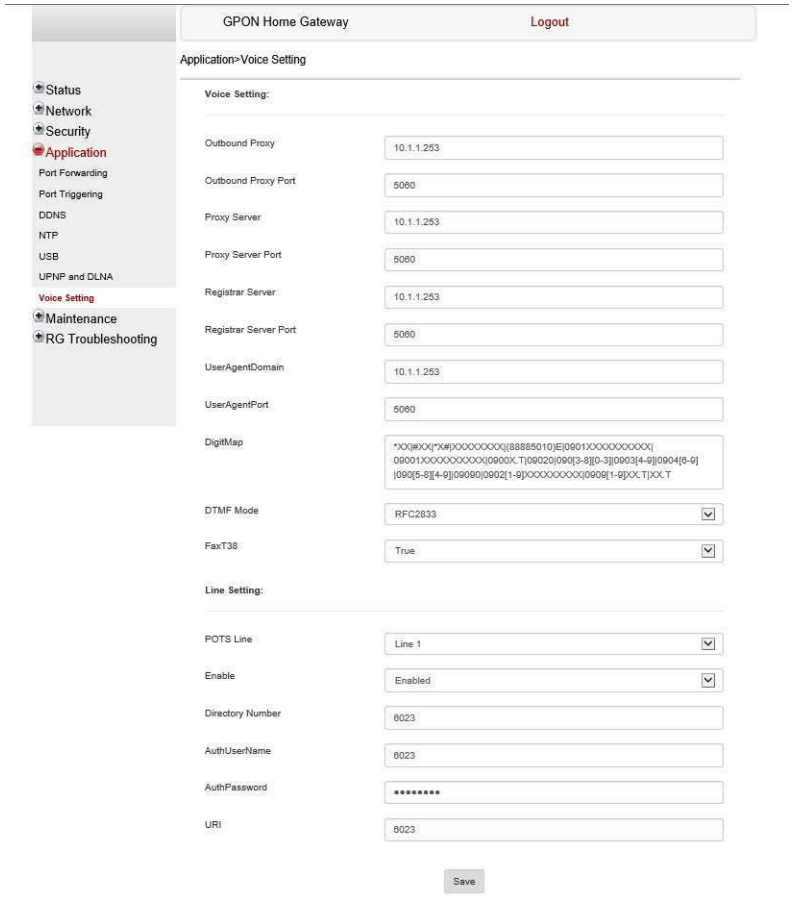
END OF STEPS

8.46 Configuring voice

1

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

Figure 8-51 Voice Setting page



2

Configure the following parameters:

Table 8-41 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.

Table 8-41 Voice Setting parameters (continued)

Field	Description
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 user name.
AuthPassword	Enter a password for the user.
URI	Enter the Uniform Resource Identifier of the SIP URL.

3

Click **Save**.

End of steps

Maintenance

8.47 Overview

8.47.1 Purpose

This chapter describes the maintenance tasks supported by G-2426G-B ONTs.

8.47.2 Contents

8.47 Overview	180
8.48 Configuring the password	180
8.49 Configuring LOID	182
8.50 Configuring SLID	183
8.51 Managing the device	184
8.52 Backing up the configuration	185
8.53 Restoring the configuration	185
8.54 Upgrading firmware	186
8.55 Rebooting the device	187
8.56 Resetting to factory defaults	188
8.57 Diagnosing WAN connections	189
8.58 Viewing log files	191

8.48 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:

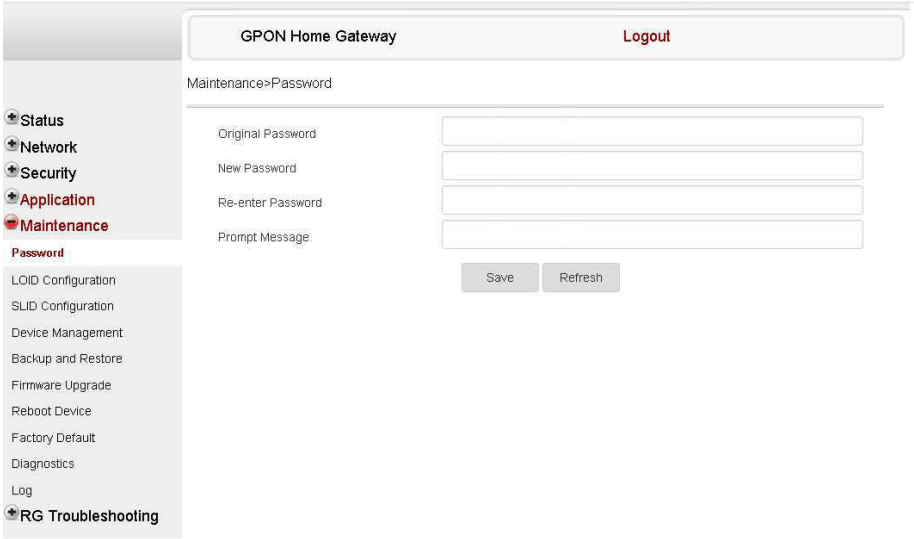
- the password is too short
- the password is too long

- 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 8-52 Password page



2

Configure the following parameters:

Table 8-42 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 view the up-to-date information.

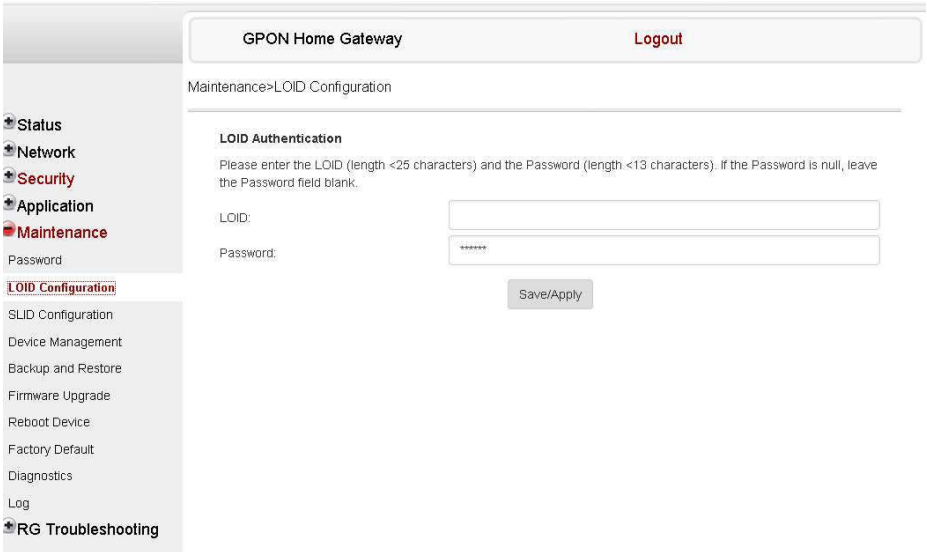
END OF STEPS

8.49 Configuring LOID

1

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

Figure 8-53 LOID Config page



2

Configure the following parameters:

Table 8-43 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**.

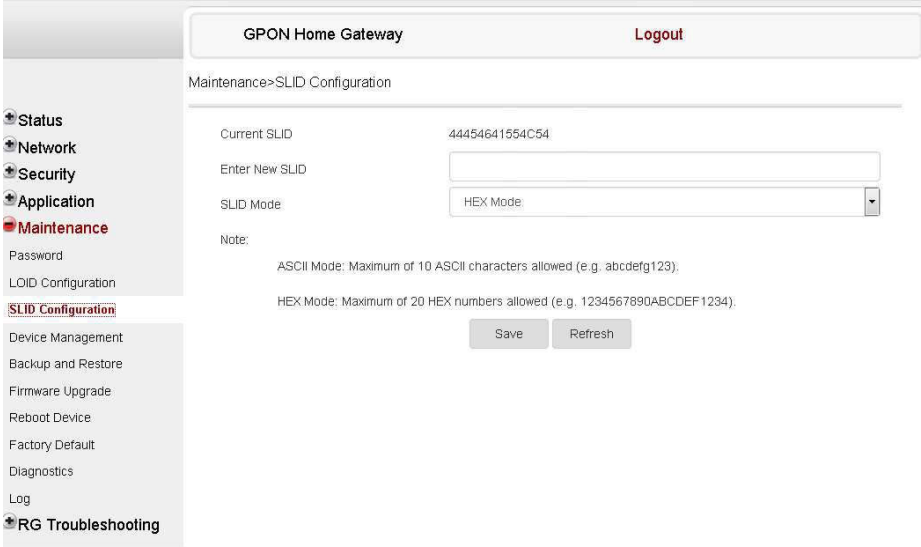
END OF STEPS

8.50 Configuring SLID

1

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

Figure 8-54 SLID Configuration page



2

Configure the following parameters:

Table 8-44 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 view the up-to-date information.

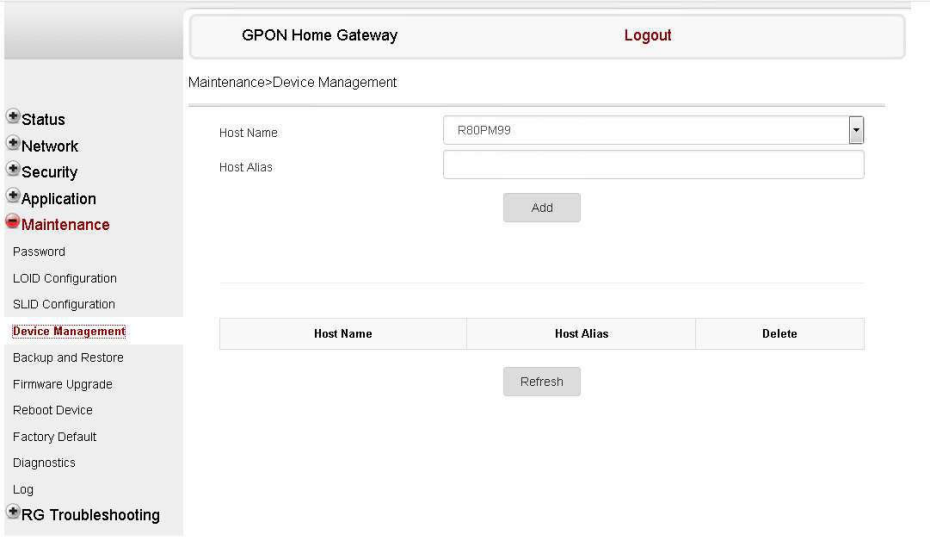
END OF STEPS

8.51 Managing the device

1

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

Figure 8-55 Device Management page



2

Configure the following parameters:

Table 8-45 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 **Delete** to delete a specific host name.

Click **Refresh** to get the up-to-date information.

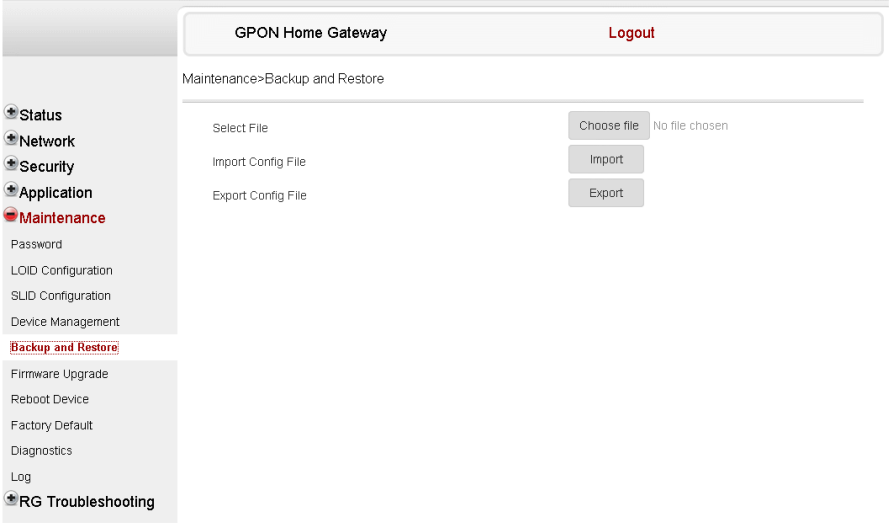
END OF STEPS

8.52 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 8-56 Backup and Restore page



2

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

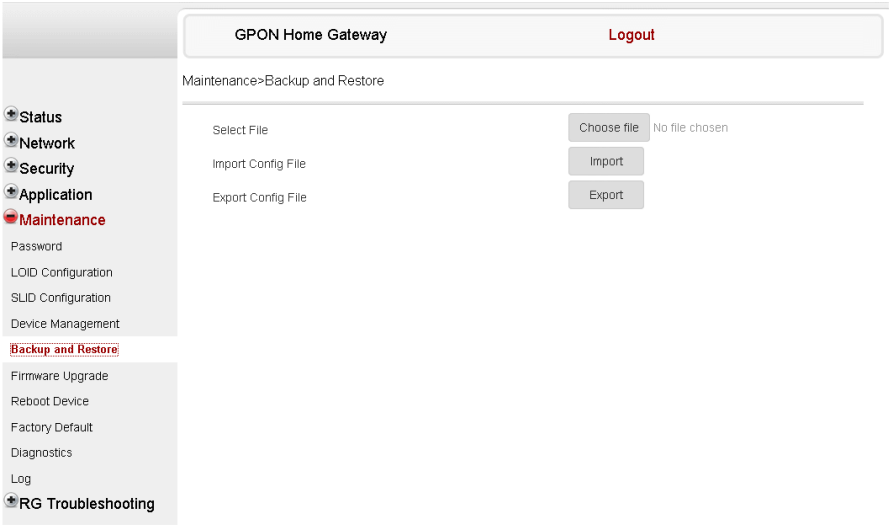
END OF STEPS

8.53 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 8-57 Backup and Restore page



2

Click **Choose file** and select the backup file.

3

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

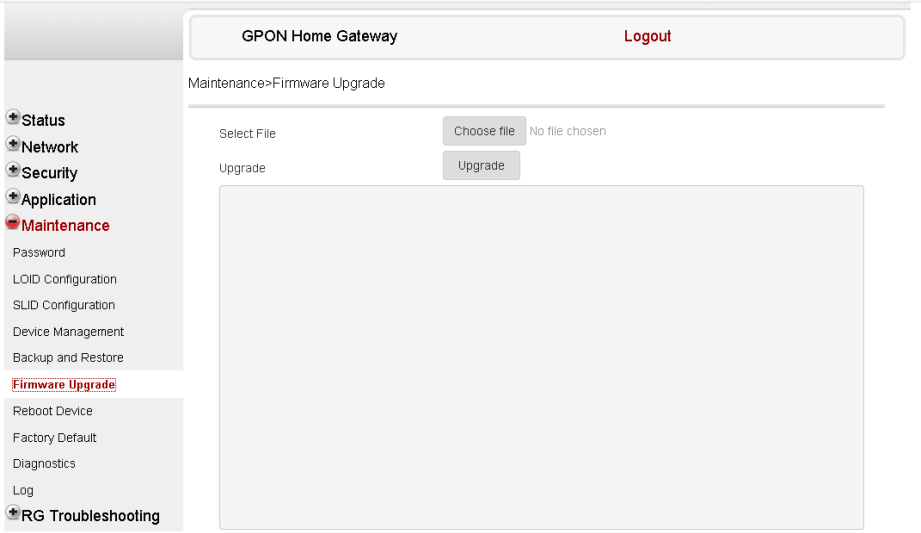
END OF STEPS

8.54 Upgrading firmware

1

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

Figure 8-58 Firmware Upgrade page



2

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

3

Click **Upgrade** to upgrade the firmware.

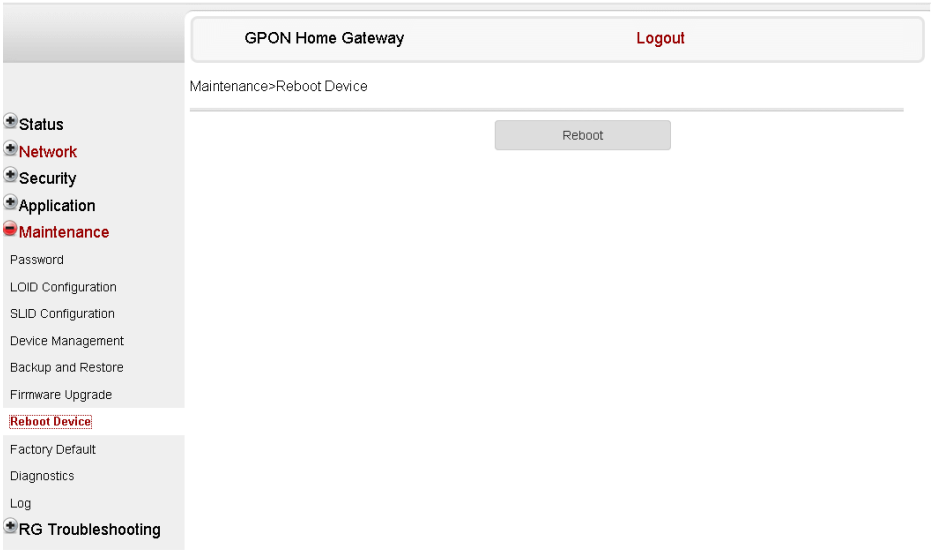
END OF STEPS

8.55 Rebooting the device

1

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

Figure 8-59 Reboot Device page



2

Click **Reboot** to reboot the ONT.

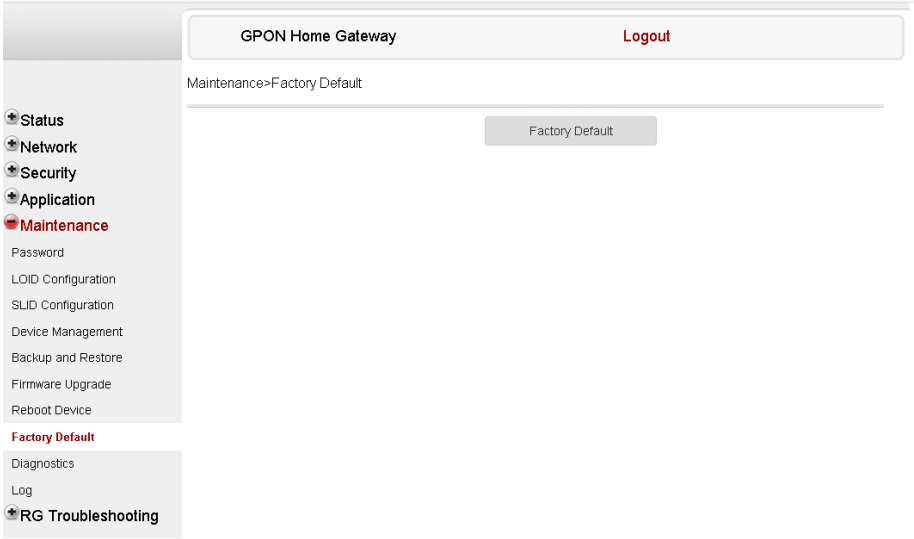
END OF STEPS

8.56 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 8-60 Factory Default page



2

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

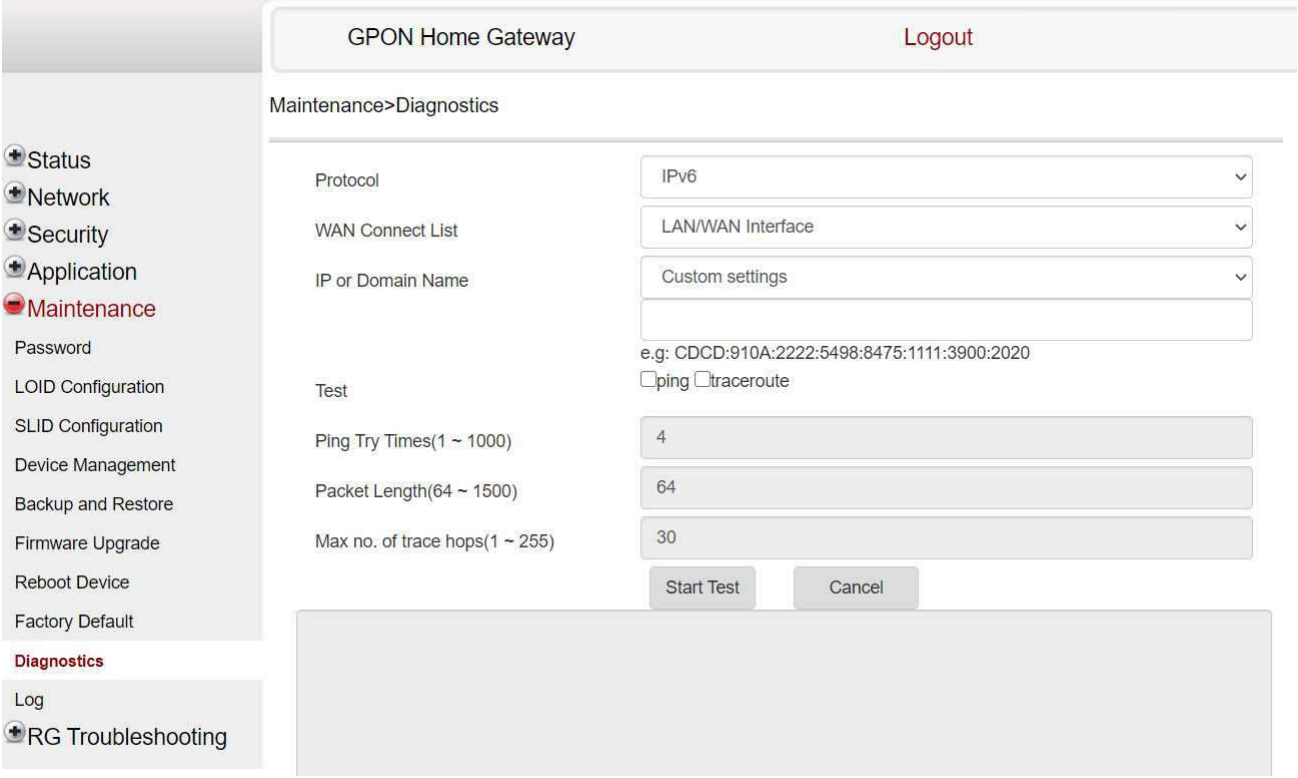
END OF STEPS

8.57 Diagnosing WAN connections

1

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

Figure 8-61 Diagnostics page



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 (64-1024); 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.

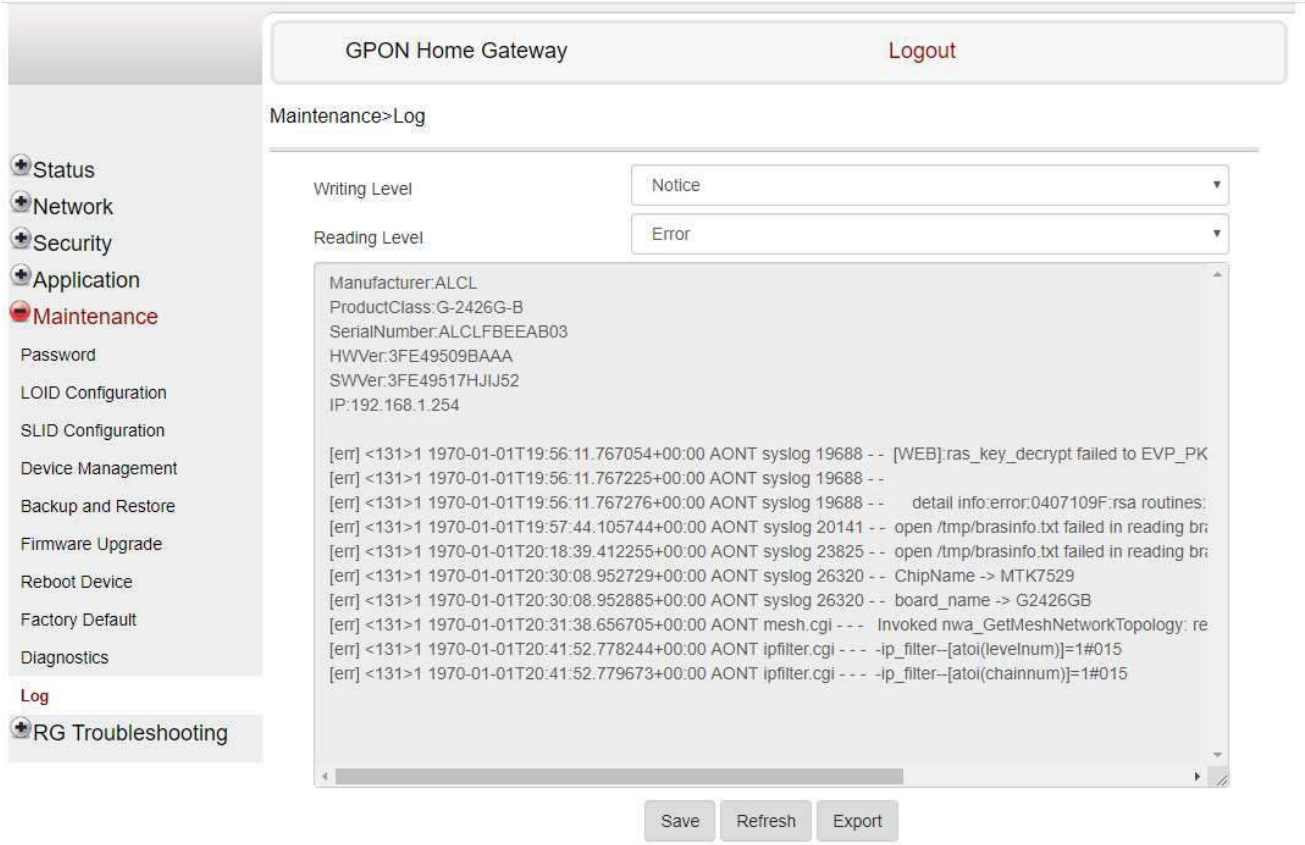
END OF STEPS

8.58 Viewing log files

1

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

Figure 8-62 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.

You can click **Save** to save the information.

You click **Refresh** to view the up-to-date information.

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

End of steps

RG Troubleshooting Counters

8.59 Overview

8.59.1 Purpose

This section describes the RG troubleshooting counters GUI procedures.

8.59.2 Contents

8.59 Overview	193
8.60 Viewing Residential Gateway (RG) troubleshooting counters	193

8.60 Viewing Residential Gateway (RG) troubleshooting counters

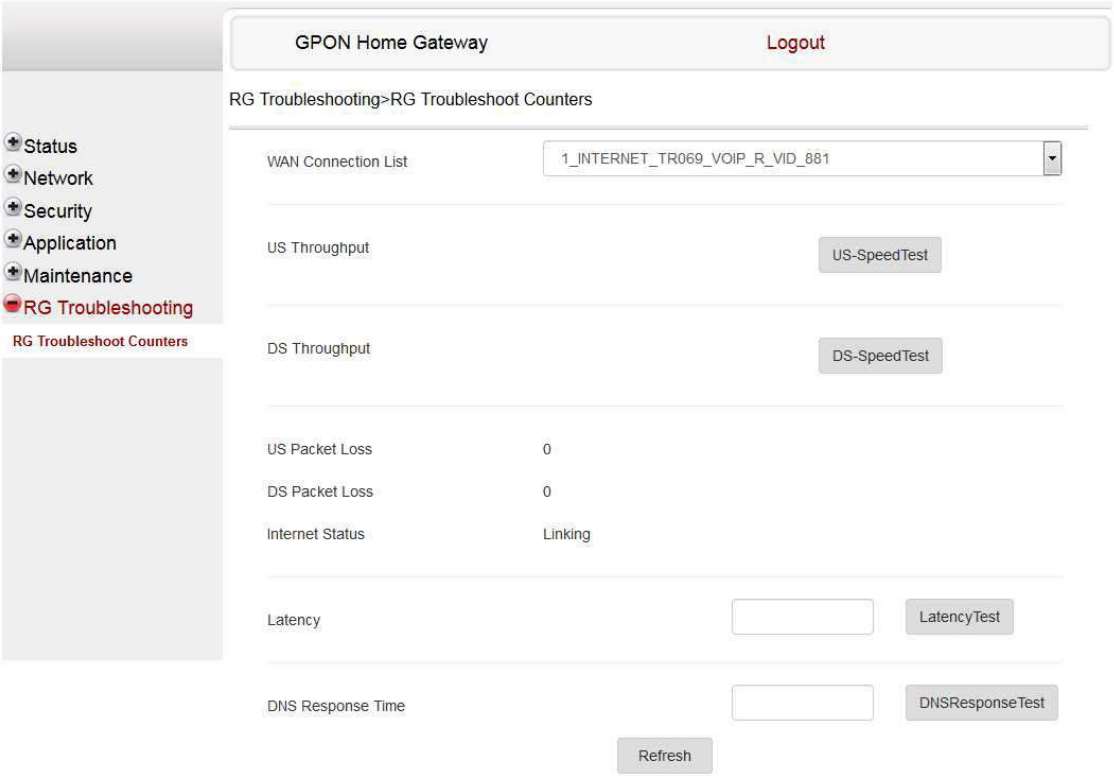
The Troubleshooting Counters feature enables service providers and end users to monitor the performance of their broadband connection.

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

1

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

Figure 8-63 RG Troubleshooting Counters page



2

Configure the following parameters:

Table 8-46 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	Displays the number of upstream packages lost.
DS Packet Loss	Displays the number of downstream packages lost.
Internet Status	Indicates whether the broadband connections is active (UP) or not (DOWN).

Table 8-46 RG Troubleshooting Counters parameters (continued)

Field	Description
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.

3

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

End of steps

9 ONT configuration file over OMCI

9.1 Overview

9.1.1 Purpose

9.1.2 Contents

9.1 Overview	197
9.2 Purpose	197
9.3 Supported configuration file types	197
9.4 ONT configuration file over OMCI	199

9.2 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.

9.3 Supported configuration file types

Table 9-1, “Supported configuration files” (p. 198) describes the configuration file types that are supported from Nokia ONT R05.02.00 and later.

Table 9-1 Supported configuration files

File Index	Description	Details	Supported ONTs/DPU
PRE	ONT pre-configuration file	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. The pre-configuration file includes the factory default value for the residential gateway. Note: the pre-configuration file does not work with SFU ONTs; therefore, this feature applies only to Residential Gateway ONTs. The pre-configuration file can be used as is, but Nokia provides its customers with the flexibility to customize the pre-configuration file. This pre-configuration file enables operators to change the default behavior by downloading a customized pre-configuration based on customer inputs. This PRE XML file includes a custom OPERID. The Nokia defined index for the PRECONFIG file is: "PRE"	All Nokia GPON and 10 GPON ONT.
CFG	ONT configuration delta file	The XML-based CFG file updates the configurable parameters (the PRE settings) in the existing PRE file of a deployed ONT, where required. This configuration file enables operators to change the deployed behavior by downloading customized updates in the CFG file. This file is used only to modify the parameters in the PRE file; it is not used for service provisioning. No OPERID is required, because the update is based on the OPERID used for the PRE file. The Nokia defined index for the PRECONFIG DELTA file is: "CFG"	All Nokia GPON and 10GPON ONT.
XML	Voice XML file	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. This file enables operators to change the voice behavior by downloading the updated voice XML file. Nokia recommends using this procedure, rather than embedded voice XML files. The Nokia defined index for the Voice XML file is: "XML"	All Nokia GPON and 10 GPON ONT.

Table 9-1 Supported configuration files (continued)

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

9.3.1 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.

9.3.2 Download configuration file

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

Table 9-2 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)	—	✓	✓	✓
MTK(eg.G240WF)	—	✓	✓	✓

9.4 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.

9.4.1 Configuring an ONT using a configuration file via legacy method

1

Upload the ABCXXXXVER 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 , 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:

a. If **pland-cfgfileX= Disabled** and **dnload-cfgfileX= Disabled** ,

   no file will be downloaded to the ONT.

b. If **pland-cfgfileX=FILENAME1** and **dnload-cfgfileX= Disabled** ,

   FILENAME1 will be downloaded and FILENAME1 will be made active. An ONT reboot is required.

c. If **pland-cfgfileX=Disabled** and **dnload-cfgfileX= FILENAME2**

   FILENAME2 will be downloaded and FILENAME2 will be made passive. An ONT reboot is not required.

d. If **pland-cfgfileX=FILENAME3** and **dnload-cfgfileX= FILENAME 4**, 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.

9.4.2 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 9.3 “Supported configuration file types” (p. 197).

b. Tar the **ABCXXXXVER** raw configuration file:

```
tar -cf ABCXXXXVER.tar ABCXXXXVER
```

Where

ABCXXXXVER

Is the name of the file created in step i.

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

c. Rename **ABCXXXXVER** to **ABCXXXXVER**.org

d. Remove the “.tar” extension from **ABCXXXXVER**.tar file.

2

Upload the ABCXXXXVER 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 , 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:

a. If **pland-cfgfileX= Disabled** and **dnload-cfgfileX= Disabled** ,

no file will be downloaded to the ONT.

b. If **pland-cfgfileX=FILENAME1** and **dnload-cfgfileX= Disabled** ,

FILENAME1 will be downloaded and FILENAME1 will be made active. An ONT reboot is required.

c. If **pland-cfgfileX=Disabled** and **dnload-cfgfileX= FILENAME2**

FILENAME2 will be downloaded and FILENAME2 will be made passive. An ONT reboot is not required.

d. If **pland-cfgfileX=FILENAME3** and **dnload-cfgfileX= FILENAME 4**, 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.