



Alcatel-Lucent 7368

INTELLIGENT SERVICES ACCESS MANAGER ONT
G-010G-P PRODUCT GUIDE

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This document was originally written in English. If there is any conflict or inconsistency between the English version and any other version of a document, the English version shall prevail.

Preface

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

Scope

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

Audience

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

Required knowledge

The reader must be familiar with general telecommunications principles.

Acronyms and initialisms

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

Assistance and ordering phone numbers

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

For ordering information, contact your Alcatel-Lucent sales representative.

Alcatel-Lucent quality processes

Alcatel-Lucent's ONT manufacturing, testing, and inspecting practices are in compliance with GR-1252-CORE and TL 9000 requirements. These requirements are documented in the Operations Quality Plan 8BD-00023-4204-QRZZA, the Alcatel North American Quality Manual 8BD-00001-0000-QRZZA, and the Wireline Network Quality Manual 8AB-83179-0001-QRAAA.

The quality plans and 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.

Safety information

For safety information, see the appropriate safety guidelines chapter.

Documents

Documents are available using ALED or OLCS.

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

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

Procedure 2 To access individual documents

Individual PDFs of customer documents are also accessible through the Alcatel-Lucent Customer Support website.

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

Special information

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



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



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



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



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

Procedures with options or substeps

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

Procedure 3 Example of options in a procedure

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

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

Procedure 4 Example of required substeps in a procedure

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

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

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.

Procedure 5 To search multiple PDF files for a common term

- 1 Open Adobe Acrobat Reader.
- 2 Choose Edit→Search from the Acrobat Reader main menu. The Search PDF panel appears.
- 3 Enter the search criteria.

- 4 Click on the All PDF Documents In radio button.
- 5 Select the folder in which to search using the drop-down menu.
- 6 Click on the Search button.

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

Preface

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.

Environmental labels

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

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.

Environmental related labels

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

Products below Maximum Concentration Value (MCV) label

Figure 1 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 1 Products below MCV value label



18986

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

Figure 2 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 2 Products above MCV value label



18985

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

Hazardous Substances Table (HST)

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

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

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

Other environmental requirements

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

ONT environmental requirements

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

Storage

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

Transportation

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

Stationary use

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

Thermal limitations

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

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

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. Alcatel-Lucent products shipped to the EU after 1 July 2006 comply with the EU RoHS Directive.

Alcatel-Lucent has implemented a material/substance content management process. The process is described in: Alcatel-Lucent 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.

End-of-life collection and treatment

Electronic products bearing or referencing the symbol shown in Figure 3, 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 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, Alcatel-Lucent will offer to provide for the collection and treatment of Alcatel-Lucent products bearing the logo shown in Figure 3 at the end of their useful life, or products displaced by Alcatel-Lucent equipment offers. For information regarding take-back of equipment by Alcatel-Lucent, or for more information regarding the requirements for recycling/disposal of product, contact your Alcatel-Lucent account manager or Alcatel-Lucent take back support at takeback@alcatel-lucent.com.

ETSI ONT safety guidelines

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

Safety instructions

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

Safety instruction boxes

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

The following is an example of the Danger box.



Danger – Possibility of personal injury.

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

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

The following is an example of the Warning box.



Warning 1 – Possibility of equipment damage.

Warning 2 – Possibility of data loss.

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

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

The following is an example of the Caution box.



Caution 1 – Possibility of service interruption.

Caution 2 – 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.

Safety-related labels

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

Table 1 provides sample safety labels on the ONT equipment.

Table 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 and compliant with Japan VCCI emissions standards.

Figure 1 shows the PSE certification.

Figure 1 PSE certification

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

19841

Safety standards compliance

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

EMC, EMI, and ESD compliance

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

- 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)

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).

Environmental standard compliance

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

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.

Resistibility requirements compliance

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

Acoustic noise emission standard compliance

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

Electrical safety guidelines

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



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

Note 2 – The ONTs comply with BS EN 61140.

Power supplies

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

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.

Protective earth

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

ESD safety guidelines

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



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

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

Laser safety guidelines

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

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



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

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



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

Laser classification

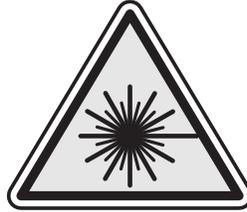
The ONT is classified as a Class 1 laser product based on its transmit optical output.

Laser warning labels

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

Figure 2 shows a laser product label.

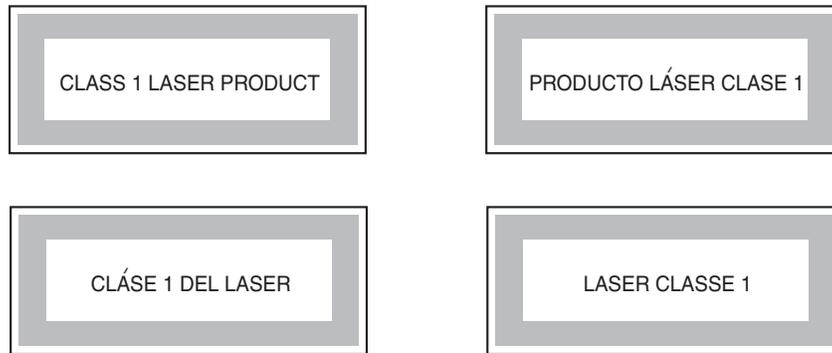
Figure 2 Laser product label



18455

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

Figure 3 Laser classification label

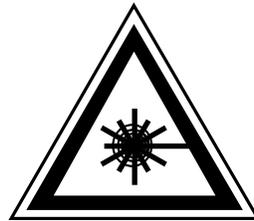


18992

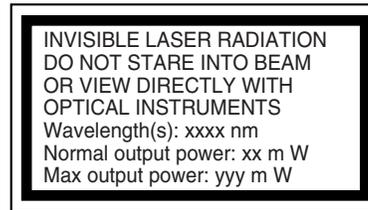
Figure 4 shows a laser warning label and an explanatory label for laser products. Labels and warning may be provided in other languages. The explanatory label provides the following information:

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

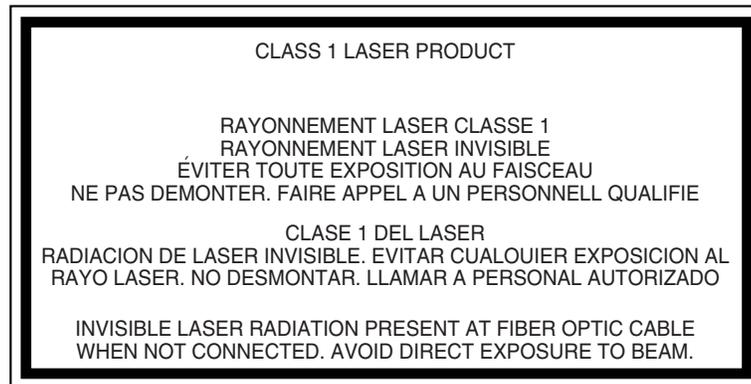
Figure 4 Laser warning labels



Laser Warning Label



Laser Warning Label



Laser Warning Label

18993

Transmit optical output

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

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 are exposed to a laser beam. Operating personnel must observe the instructions on the laser explanatory label before plugging in the optical module.



Danger – Risk of eye damage by laser radiation.

Location class

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

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, Alcatel-Lucent 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.

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.

Safety instructions

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

Safety instruction boxes in customer documentation

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

The following is an example of the Danger box.



Danger – Possibility of personal injury.

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

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

The following is an example of the Warning box.



Warning 1 – Possibility of equipment damage.

Warning 2 – Possibility of data loss.

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

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

The following is an example of the Caution box.



Caution 1 – Possibility of service interruption.

Caution 2 – 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.

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 1 provides examples of the text in the various ONT safety labels.

Table 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.

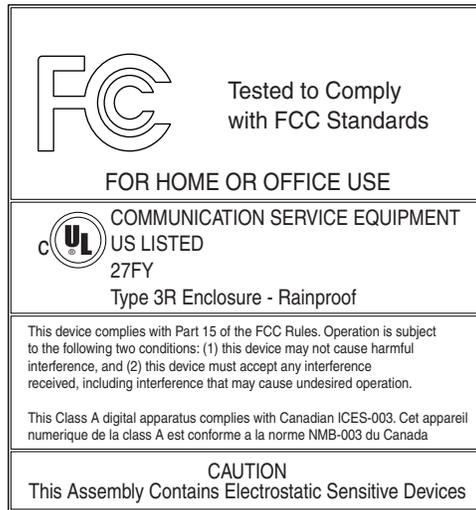
(1 of 2)

Description	Label text
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.

(2 of 2)

Figure 1 shows a sample safety label on the ONT equipment.

Figure 1 Sample safety label on the ONT equipment



18533

Safety standards compliance

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



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

EMC, EMI, and ESD standards compliance

The ONT equipment complies with the following requirements:

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

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

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

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

Equipment safety standard compliance

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

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

Laser product standards compliance

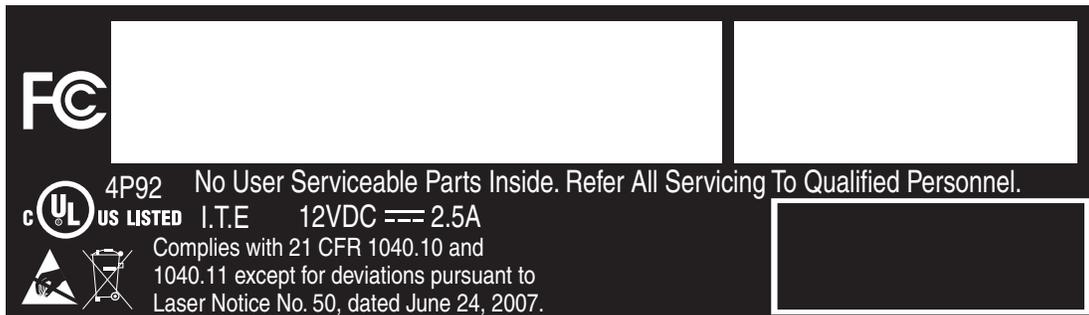
The ONT equipment complies with 21 CFR 1040.10 and CFR 1040.11, except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007” or to 21 CFR 1040.10 U.S. Center for Devices and Radiological Health (CDRH) of the Food and Drug Administration (FDA) Laser Notice 42 for ONTs containing Class 1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

Per CDRH 21 CFR 10.40.10 (h) (1) (iv) distributors of Class 1 laser products, such as ALU 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 2 shows a laser product label.

Figure 2 Sample laser product label showing CDRH 21 CFR compliance



22813

Resistibility requirements compliance

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

Laser safety guidelines

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

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



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

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



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

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

a) “Class 1 Laser Product”

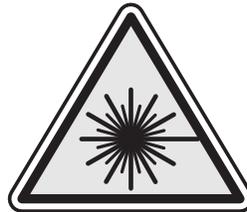
b) “Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.”

Laser warning labels

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

Figure 3 shows a laser product label.

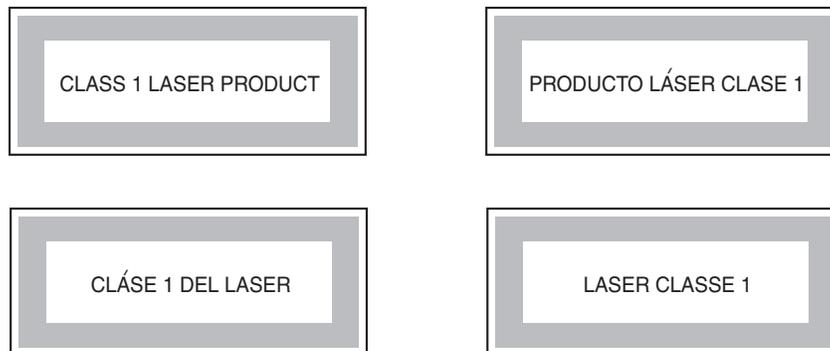
Figure 3 Laser product label



18455

Figure 4 shows a laser classification label. Laser classification labels may be provided in other languages.

Figure 4 Laser classification label



18992

Figure 5 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 5 Laser warning labels



18993

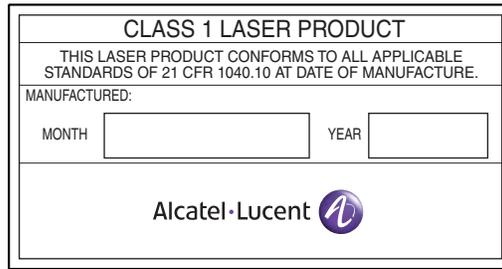
Laser classification

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

Figure 6 Sample laser product safety label on the ONT equipment



18532

Transmit optical output

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

Normal laser operation

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

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



Danger — Risk of eye damage by laser radiation.

Location class

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

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.

Power supplies

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

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).

Protective earth

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

ESD safety guidelines

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



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

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

Alcatel-Lucent 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.

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, Alcatel-Lucent 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.

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1.1 G-010G-P part numbers and identification

Table 1-1 provides identification information for the G-010G-P indoor ONT.

Table 1-1 G-010G-P part number and identification

Mnemonic	Ordering kit part number	Provisioning part number	Description	CLEI	CPR	ECI/Bar code
G-010G-P	3FE 45457 AA customer-specific	3FE 45458 AA	GPON G-series ONT unit, 1 Ethernet interface. Includes ac/dc power cord with European (EU) variant plug.	—	—	—
	3FE 45457 AB	3FE 45458 AB	GPON G-series ONT unit, 1 Ethernet interface. Includes ac/dc power cord with European (EU) variant plug.	—	—	—

Contact your Alcatel-Lucent technical support representative for more information on supported power supplies.

1.2 G-010G-P general description

G-010G-P indoor ONT provides a subscriber interface for the 7360 ISAM FX and 7302 ISAM. The ONT terminates the PON interface and converts it to a user interface that directly connects to subscriber devices.

This ONT provides the following functions:

- fully G.984 series GPON standard compliant
- advanced data features such as VLAN tag manipulation, classification, and filtering
- IGMP v2/3 snooping
- support for multicast GEM port
- G984.4 standard-compliant ONT Management Control Interface (OMCI) for ONT management and provisioning
- auto-negotiation and MDI/MDIX auto-sensing
- AES decryption with key generation and switching
- optics that support received signal strength indication (RSSI)
- FEC in both directions
- performance monitoring and alarms

1.3 Optical parameters

The upstream wavelength operation for the G-010G-P ONT is as follows:

- minimum: 1290 nm
- typical: 1310 nm
- maximum: 1330 nm

For more details about the optical parameters, see the section “ONT optical budget” in the *Product Overview* guide.

1.4 G-010G-P software and installation feature support

For information on installing or replacing the G-010G-P indoor ONTs see:

- [Install a G-010G-P indoor ONT](#)
- [Replace a G-010G-P indoor ONT](#)

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

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

1.5 G-010G-P interfaces and interface capacity

Table 1-2 describes the supported interfaces and interface capacity for G-010G-P indoor ONTs.

Table 1-2 G-010G-P 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-010G-P	–	–	1	–	–	–	–	–	1

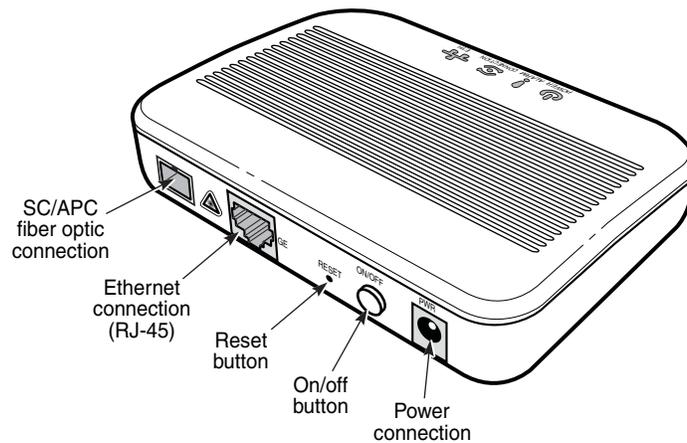
Other features of these indoor ONTs include:

- reset button
- on/off button
- power connection

G-010G-P connections and components

Figure 1-1 shows the physical connections for G-010G-P indoor ONTs.

Figure 1-1 Physical connections on G-010G-P indoor ONTs



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The G-010G-P indoor ONT supports data services from one 10/100/1000BASE-T Ethernet port (CAT5 or better UTP cable). Full-duplex operation and auto-negotiation between 10 Mb/s, 100 Mb/s, and 1000 Mb/s are also supported.



Note — The G-010G-P indoor ONT is suitable for connection to intrabuilding or non-exposed wiring or cabling only.

Table 1-3 describes the physical connections for G-010G-P indoor ONTs.

Table 1-3 G-010G-P indoor ONT connections

Connection ⁽¹⁾	Description
Fiber optic port	The SC/APC connection is provided through a fiber optic cable.
Ethernet port	This connection is provided through an Ethernet RJ-45 cable. One Ethernet connection is supported. The Ethernet port supports both data and in-band video services.

(1 of 2)

Connection ⁽¹⁾	Description
Reset button	Pressing the Reset button for less than 10 seconds reboots the ONT, keeping the key parameter values and the LOID/SLID. Pressing the Reset button for 10 seconds resets the ONT to its factory defaults, except for the LOID/SLID. Pressing the Reset button for any length of time will cause all LEDs to blink.
ON/OFF button	This button turns the ONT on or off.
Power	This connection is provided through a power cable with a barrel connector.

(2 of 2)

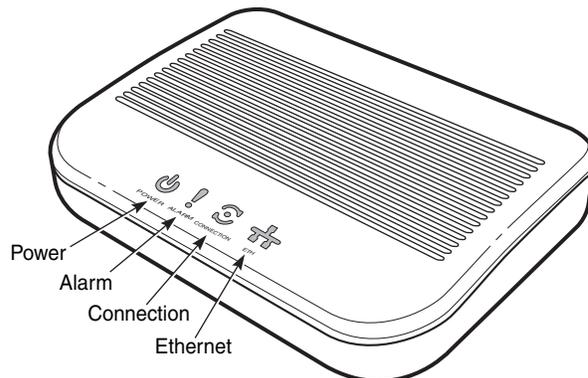
Note

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

1.6 G-010G-P LEDs

Figure 1-2 shows the G-010G-P indoor ONT LEDs.

Figure 1-2 G-010G-P indoor ONT LEDs



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Table 1-4 provides G-010G-P indoor ONT LED descriptions.

Table 1-4 Indoor ONT LEDs (G-010G-P)

Indicator	LED color and behavior	LED behavior description
POWER	Green Off	Operating on AC power Power off
ALARM	Off Red solid	Power of the optical signal received in the optical port of the ONT is within its working margins: Optical B+: Optical power >-27dBm Power of the optical signal received in the optical port of the ONT is below the threshold: Optical B+: Optical power <-27dBm

(1 of 2)

Indicator	LED color and behavior	LED behavior description
CONNECTION (PON in 3FE 45457 AA variant)	Green Green flashing Off	Optical OK; ranged ONT is ranging Optical power off (LOS/LOF)
ETHERNET (LAN in 3FE 45757 AA variant)	Green Green flashing Off	LAN connected, no traffic Traffic on port No LAN link

(2 of 2)

1.7 G-010G-P detailed specifications

Table 1-5 lists the physical specifications for G-010G-P indoor ONTs.

Table 1-5 G-010G-P indoor ONT physical specifications

Description	Specification
Length	4.7 in. (12 cm)
Width	3.5 in. (9 cm)
Height	1.1 in. (2.7 cm)
Weight [within ± 0.5 lb (0.23 kg)]	0.7 lb (329 g)

Table 1-6 lists the power consumption specifications for G-010G-P indoor ONTs.

Table 1-6 G-010G-P indoor ONT power consumption specifications

Mnemonic	Maximum power (Not to exceed)	Condition	Minimum power	Condition
G-010G-P	2.3 W	1 Gig-E operational	2.6 W	Idle

Table 1-7 lists the environmental specifications for G-010G-P indoor ONTs.

Table 1-7 G-010G-P indoor ONT environmental specifications

Mounting method	Temperature range and humidity	Altitude
Desk or wall mounted	Operating: 32°F to 104°F (0°C to 40°C) ambient temperature 5% to 95% relative humidity, non-condensing	Contact your Alcatel-Lucent technical support representative for more information
	Storage: Contact your Alcatel-Lucent technical support representative for more information	Contact your Alcatel-Lucent technical support representative for more information

1.8 G-010G-P GEM ports and T-CONTs

Table 1-8 lists the maximum number of supported T-CONTs and GEM ports. Not all ONTs will be supported in all of the releases indicated the table. See the appropriate release Customer Release Notes for the most accurate list of supported devices.

Table 1-8 G-010G-P indoor ONT capacity for GEM ports and T-CONTs

ONT or MDU	Maximum	Notes
GEM ports per indoor or outdoor ONT	32 per UNI	32 are present: 30 are available, 2 are reserved for multicast and debugging
T-CONTs per indoor or outdoor ONT	9	9 are present, 1 is reserved for OMCI

1.9 G-010G-P performance monitoring statistics

The following section identifies the supported performance monitoring statistics for G-010G-P 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 1-9 provides statistics for ONTENET type counters
- Table 1-10 provides statistics for ONTL2UNI type counters
- Table 1-11 provides statistics for PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCES, and PONONTTCFLOW type counters
- Table 1-12 provides statistics for PONONTTC aggregate type counters



Note 1 – Although the G-010G-P ONT supports FEC in both upstream and downstream directions (see section 1.11, “G-010G-P standards compliance”), FEC statistics is not supported.

Note 2 – If you have trouble accessing G-010G-P ONTs performance monitoring statistics using TL1, please contact your Alcatel-Lucent support representative for more information about how to access and retrieve performance monitoring type counters.

Table 1-9 G-010G-P ONTENET performance monitoring statistics

ONT	ONTENET statistics													
	FCSE	EC	LC	RBO	SCF	MCF	DT	IMTE	CSE	AE	IMRE	FTL	TBO	SQE
G-010G-P ⁽¹⁾	✓	✓	✓	✓	✓	✓	✓			✓		✓		

Note

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

Table 1-10 G-010G-P ONTs ONTL2UNI performance monitoring statistics

ONT	ONTL2UNI statistics										
	FRAMES	BYTES	MCFRAMES	DSDRPDFRMS	USDRPDFRMS	USFRAMES	DSFRAMES	USBYTES	DSBYTES	USMCFRAMES	DSMCFRAMES
G-010G-P (1)			✓	✓	✓	✓	✓	✓	✓		

Note

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

Table 1-11 G-010G-P ONTs PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCES, PONONTTCFLOW performance monitoring statistics

ONT	PONONTTC, PONONTMCTC, PONONTTCHSI, PONONTTCES, PONONTTCFLOW statistics (1)					
	TXBLOCKS	TXFRAGS	RXBLOCKS	RXFRAGS	LOSTFRAGS	BADGEMHDRS
G-010G-P (2)	✓	✓	✓	✓		

Notes

- (1) The following PONONTTC PM counters are not supported RXFRAGS, TXFRAGS, RXBLOCKS, TXBLOCKS, and TXFRAGS. The following PONONTTCHSI PM counters are not supported TXFRAGS and RXFRAGS.
- (2) A 5 second polling window limitation exists on the ONT, therefore the margin of error for each 15-min window is 5 seconds

Table 1-12 G-010G-P ONTs PONONTTC aggregate performance monitoring statistics

ONT	PONONTTC (aggregate) statistics					
	TXBLOCKS	TXFRAGS	RXBLOCKS	RXFRAGS	LOSTFRAGS	BADGEMHDRS
G-010G-P (1)						

Note

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

1.10 G-010G-P functional blocks

Table 1-13 describes the supported interfaces for G-010G-P indoor ONTs.

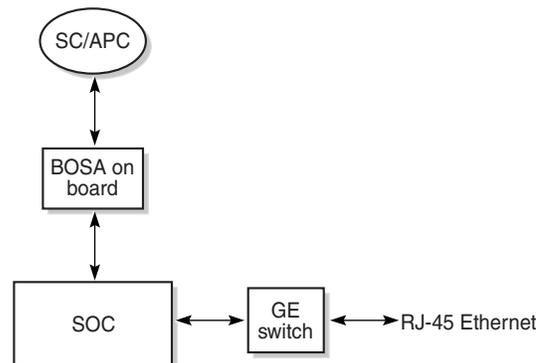
Table 1-13 G-010G-P indoor ONT interfaces

ONT category description	Interface capacity						
	POTS ports	Ethernet ports	VDSL2	MoCA	RF Video	HPNA	Wi-Fi
Single-residence Gigabit Ethernet ONTs (G-010G-P indoor ONTs)	–	1	–	–	–	–	–

The G-010G-P indoor ONTs are single-residence Gigabit Ethernet ONTs. This data-only ONT without POTS or RF video connections transmits Ethernet packets to a single RJ-45 Ethernet port. These ONTs also feature fiber optic and power connectors.

Figure 1-3 shows the SoC-based functional blocks for an indoor ONT with one Gigabit Ethernet port. The G-010G-P ONTs use BOSA on board technology.

Figure 1-3 G-010G-P ONT hardware block



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ONT SoC technology serves as the main hardware block for the G-010G-P ONTs. ONT SoC technology consists of four key elements:

- GPON MAC
The Gigabit Passive Optical Network Media Access Control (GPON MAC) element on the SoC terminates the GPON interface using BOSA on board.

- Ethernet MAC
The SoC provides an Ethernet PHY device (either 10/100BaseT or 10/100/1000BaseT) between the GMII interface and the RJ-45 port.
- control processor
The control processor manages functions related to OMCI, IGMP, and Ethernet services.
- SoC bridge
The SoC bridge provides an integrated data channel between the Ethernet MAC, the GPON MAC, the DSP, the control processor, and the other integrated elements such as flash memory, SDRAM, the local bus controller, and the DUART interface to the craft port if used.

1.11 G-010G-P standards compliance

The G-010G-P indoor ONT is compliant with the following standards:

- 802.3 support for 10/100/1000 Base-T ports
- G.983.3 support for dynamic bandwidth reporting (Piggyback DBRu: Mode 0)
- G.984.3 support for multicast using a single GEM Port-ID for all video traffic
- G.984.3 support for AES with operator enable/disable per port-ID level
- G.984.3 support for FEC in both upstream and downstream directions
- G984.4 (standard and revised) support for OMCI interface for ONT management and provisioning

1.12 G-010G-P special considerations

There are no special considerations for G-010G-P ONTs.

2 – Install a G-010G-P indoor ONT

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2.1 Purpose

This chapter provides the steps to install the G-010G-P indoor ONT at the subscriber residence.

2.2 General

The steps listed in this chapter describe installing and cabling for G-010G-P indoor ONTs and connection to a power converter.

2.3 Prerequisites

You need the following items before beginning the installation:

- all required cables

2.4 Recommended tools

The recommended tools for this DLP are:

- #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
- paper clip
- mounting screws (for wall mounting the ONT) pan head style of screw head, screw size of M4 or #6

2.5 Safety information

Use this procedure to install G-010G-P indoor ONTs.



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

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

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



Warning – This equipment is ESD sensitive. Proper ESD protections should be used when handling the G-010G-P indoor ONT.



Caution – Keep the G-010G-P indoor ONT out of direct sunlight. Prolonged exposure to direct sunlight can damage the unit.



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

Note 2 – Observe the following:

- The G-010G-P indoor ONT should be installed in accordance with the applicable requirements of the NEC or CEC. Local authorities and practices take precedence when there is conflict between the local standard and the NEC or CEC.
- The G-010G-P indoor ONT must be installed by qualified service personnel.
- G-010G-P indoor ONTs must be installed with cables that are suitably rated and listed for indoor use.
- See the G-010G-P ONT unit data sheet documentation for the temperature ranges for this ONTs.

2.6 Procedure

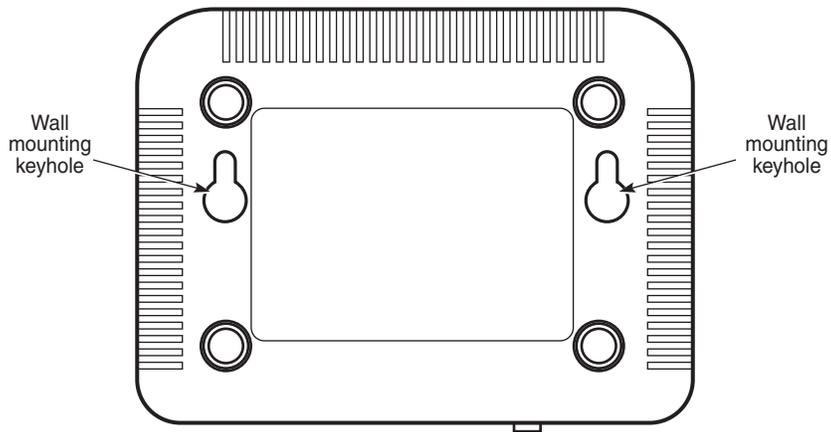
Use this procedure to install G-010G-P indoor ONTs.

- 1 Place the G-010G-P indoor ONT unit:
 - a On a wall, go to step 2.
 - b On a flat surface, such as a desk, horizontally resting on its four plastic feet; go to step 3.

2 – Install a G-010G-P indoor ONT

- 2 Mount the G-010G-P indoor ONT unit on a wall:
 - i Determine where on the wall to mount the ONT. If possible, mount the ONT on a wall stud.
 - ii Use the ONT to mark the wall with the location of the mounting holes. These holes should be the same distance apart as the distance between the centers of the keyholes on the ONT, as shown in Figure 2-1.

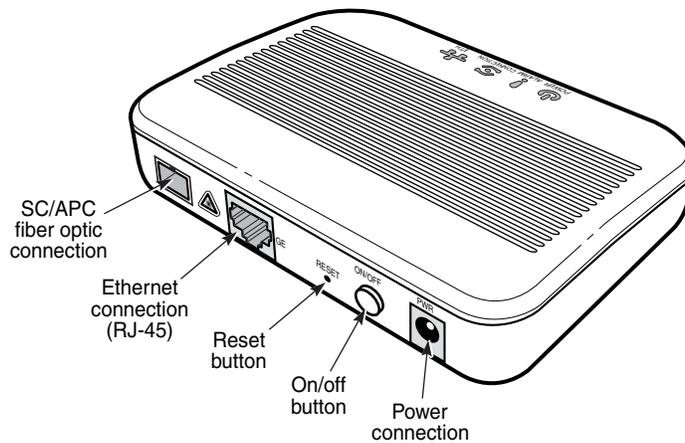
Figure 2-1 Wall mounting keyholes on G-010G-P indoor ONTs



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- 3 Connect the power cable to the ONT. Figure 2-2 shows the G-010G-P indoor ONT.

Figure 2-2 G-010G-P indoor ONT connections



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- 4 Verify that the unit is powered. If there is no power, press the Power button.
- 5 Route the data cable to the RJ-45 Ethernet port; see Figure 2-2 for the location of the Ethernet connection.

6 Connect the SC/APC fiber optic cable.



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



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



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

- a Route the fiber optic cable to the ONT.
- b Loosen the lock screw on the fiber optic connection clip.
- c Lift the connection clip up.
- d Plug the fiber optic cable with the SC/APC adapter into the fiber optic connector on the ONT.
- e Lower the clip so that it secures the fiber optic cable.
- f Tighten the lock screw.

7 If used, configure the SLID.

For more information, see the Chapter [“Configure an G-010G-P indoor ONT”](#), and the *7368 ISAM ONT Configuration, Management, and Troubleshooting Guide*.

8 If necessary, reset the ONT.

- i Locate the reset button on the G-010G-P business ONT as shown in [Figure 2-2](#).
- ii Insert the end of a straightened paper clip or other narrow object into the hole in the reset button to reset the ONT.

9 Verify the ONT LEDs; see the *7368 Hardware and Cabling Installation Guide*.

10 Activate and test the services; see the *7368 Hardware and Cabling Installation Guide*.

11 STOP. This procedure is complete.

2 – Install a G-010G-P indoor ONT

3 — Replace a G-010G-P indoor ONT

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- 3.4 Required tools 3-2
- 3.5 Safety information 3-3
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3.1 Purpose

This chapter provides the steps to replace an G-010G-P indoor ONT.

3.2 General

The steps listed in this chapter describe mounting and cabling for the G-010G-P indoor ONT.

3.3 Prerequisites

You need the following items before beginning the installation:

- all required cables

3.4 Required tools

The required tools are:

- wire strippers
- #2 Phillips screwdriver
- fiber optic splicing tools
- RJ-45 cable plug crimp tool

3.5 Safety information

Use this procedure to install G-010G-P indoor ONTs.



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

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

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



Warning – This equipment is ESD sensitive. Proper ESD protections should be used when handling the G-010G-P indoor ONT.



Caution – Keep the G-010G-P indoor ONT out of direct sunlight. Prolonged exposure to direct sunlight can damage the unit.



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

Note 2 – Observe the following:

- The G-010G-P indoor ONT should be installed in accordance with the applicable requirements of the NEC or CEC. Local authorities and practices take precedence when there is conflict between the local standard and the NEC or CEC.
- The G-010G-P indoor ONT must be installed by qualified service personnel.
- G-010G-P indoor ONTs must be installed with cables that are suitably rated and listed for indoor use.
- See the G-010G-P ONT unit data sheet documentation for the temperature ranges for this ONTs.

3.6 Procedure

Use this procedure to replace an G-010G-P indoor ONT.

- 1 Deactivate the ONT services at the P-OLT.

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

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

Example:

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

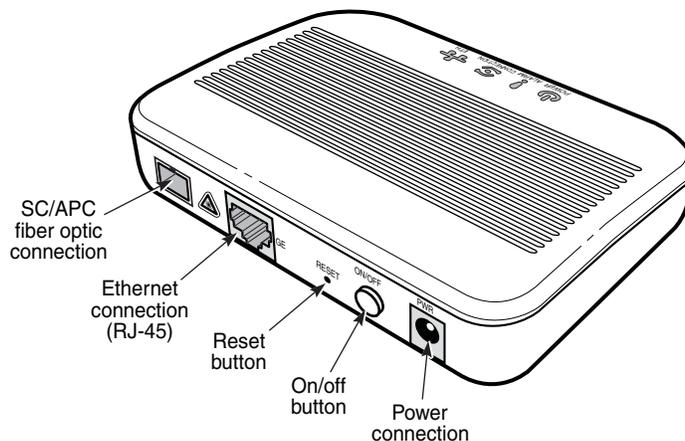
- ii If the ONT is in service, place the ONT in OOS state.

Example:

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

- 2 Disconnect the power and Ethernet cables; see Figure 3-1.

Figure 3-1 G-010G-P indoor ONT



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- 3 Disconnect the SC/APC fiber optic cable from the G-010G-P indoor ONT.



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

- a Loosen the lock screw on the fiber optic connection clip.
- b Lift the connection clip up.

- c Unplug the fiber optic cable with SC/APC adapter from the fiber optic connector; see Figure 3-1 for location of the fiber optic connector
 - d Lower the clip and tighten the lock screw.
- 4 Replace the G-010G-P indoor ONT with a new unit.
 - 5 Reattach the power cable to the ONT.
 - 6 Reattach the Ethernet cable directly to the Ethernet connection on the ONT.
 - 7 Verify that the unit is powered. If there is no power, press the Power button.
 - 8 If used, configure the SLID.

For more information, see the chapter “Configure an G-010G-P indoor ONT”, and the *7368 ISAM ONT Configuration, Management, and Troubleshooting Guide*.



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.

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



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

- 10 Reattach the fiber optic cable.



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



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



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

- a Route the fiber optic cable to the ONT.
- b Loosen the lock screw on the fiber optic connection clip.
- c Lift the connection clip up.

3 — *Replace a G-010G-P indoor ONT*

- d Plug the fiber optic cable with SC/APC adapter into the fiber optic connector; see Figure 3-1
 - e Lower the clip so that it secures the fiber optic cable.
 - f Tighten the lock screw.
- 11 Verify the ONT LEDs, voltage status, and optical signal levels; see the *7368 Hardware and Cabling Installation Guide*.
- 12 If necessary, reset the ONT.
- i Locate the reset button on the G-010G-P business ONT; see Figure 3-1 for the location of the Reset button.
 - ii Insert the end of a straightened paper clip or other narrow object into the hole in the reset button to reset the ONT.
- 13 Activate and test the services; see the *7368 Hardware and Cabling Installation Guide*.
- 14 STOP. This procedure is complete.

4 — Configure an G-010G-P indoor ONT

4.1 General 4-2

4.2 Configuring the G-010G-P ONT using Telnet 4-2

4.3 Configuring the G-010G-P ONT using the Web GUI 4-6

4.1 General

For the OLT to communicate with the ONT, the ONT must be connected to the PON and the OLT must know either the serial number of the ONT or the subscriber location ID (SLID) of the ONT.

The SLID is a decimal number, a hexadecimal number, or an alphanumeric string that uniquely identifies an ONT on a PON.

The SLID can be entered or changed with a laptop connected to an Ethernet port on the ONT through an HTTP client.

This chapter describes how to configure the G-010G-P using Telnet or the Web GUI. For more configuration information, refer to documentation provided with your OLT.

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

4.2 Configuring the G-010G-P ONT using Telnet

You can use the Telnet option to:

- retrieve the SLID
- modify the SLID (admin level account only)
- retrieve the software version
- retrieve the serial number
- retrieve the basic ONT configuration information
- change the password
- perform an upgrade (admin level account only)

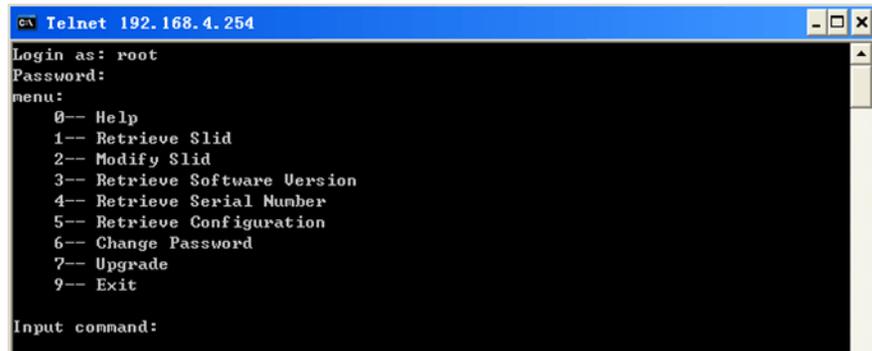
Procedure 4-1 Telnet login

- 1 Power up the G-010G-P ONT and connect a computer or laptop to the first Ethernet port on the ONT using an Ethernet cable.
- 2 Disconnect the ONT fiber from the PON.
- 3 Set the IP address on the PC Ethernet port to 192.168.4.254.
- 4 Set the subnet mask to 255.255.255.0.
- 5 Telnet to 192.168.4.254
- 6 Enter the username and password.

For the admin account, the username is *root* and the password is *admin*; for the user account, the username is *guest* and the password is also *guest*.

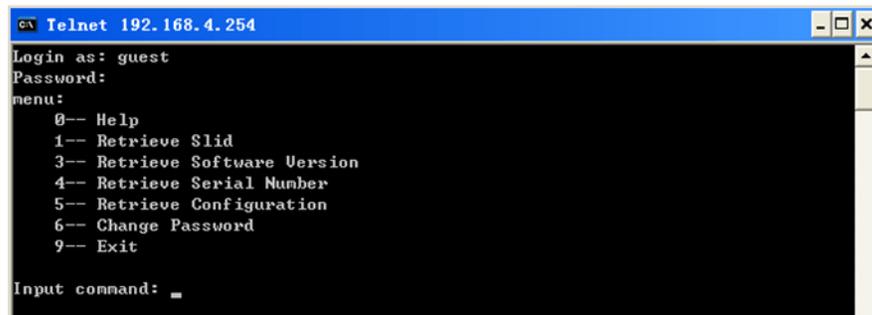
Figure 4-1 shows the Telnet menu for admin accounts. Figure 4-2 shows the Telnet menu for user accounts.

Figure 4-1 Telnet window for admin account



```
Telnet 192.168.4.254
Login as: root
Password:
menu:
0-- Help
1-- Retrieve Slid
2-- Modify Slid
3-- Retrieve Software Version
4-- Retrieve Serial Number
5-- Retrieve Configuration
6-- Change Password
7-- Upgrade
9-- Exit
Input command:
```

Figure 4-2 Telnet window for user account



```
Telnet 192.168.4.254
Login as: guest
Password:
menu:
0-- Help
1-- Retrieve Slid
3-- Retrieve Software Version
4-- Retrieve Serial Number
5-- Retrieve Configuration
6-- Change Password
9-- Exit
Input command: _
```

The Help menu (0) provides details for modifying the SLID (2), changing the password (6), or performing an upgrade (7).

The Exit option (9) terminates the Telnet connection.

- 7 STOP. This procedure is complete.

Procedure 4-2 SLID retrieval

- 1 In the Telnet window, enter the command for retrieving the SLID: 1.
The application displays the current SLID.
- 2 STOP. This procedure is complete

Procedure 4-3 SLID modification (admin account only)

- 1 In the Telnet window, enter the command for modifying the SLID: 2.
- 2 Enter the new SLID and press Enter.

4 – Configure an G-010G-P indoor ONT

For ASCII mode, the SLID can be an alphanumeric string of 10 characters or less, using 0-9, a-z, and A-Z, for example: abcdef1234.

For Hex mode, the SLID can be a string of 20 characters or less, using 0-9, a-f, and A-F, with a 0x prefix, for example: 0x1234567890ABCDEF1234.

- 3 Reboot the ONT for the new SLID to take effect.
 - 4 STOP. This procedure is complete
-

Procedure 4-4 Software version retrieval

- 1 In the Telnet window, enter the command for retrieving the SLID: 3.
The application displays both the active and passive software partitions.
 - 2 STOP. This procedure is complete
-

Procedure 4-5 Serial number retrieval

- 1 In the Telnet window, enter the command for retrieving the serial number of the ONT: 4.
The application displays the serial number of the ONT.
 - 2 STOP. This procedure is complete
-

Procedure 4-6 Configuration information retrieval

- 1 In the Telnet window, enter the command for retrieving the basic configuration information for the ONT: 5.
The application displays the default IP address, serial number, software version (active and passive partition), and SLID for the ONT.
 - 2 STOP. This procedure is complete
-

Procedure 4-7 Password change

- 1 In the Telnet window, enter the command for changing the password: 6.
- 2 Enter the new password.
The maximum length for the password is 8 characters.

- 3 Enter the new password again; the entry must match the one in step 2 exactly.
- 4 STOP. This procedure is complete

Procedure 4-8 Software upgrade (admin account only)

- 1 Open an FTP server on the PC and place the new ONT software in the appropriate folder.
- 2 In the Telnet window, enter the command for performing a software upgrade: 7.
- 3 Enter the upgrade command:

```
upgrade <filename> <serverIP> <username> <password>
```

For example:

```
FE12345ABCD01 192.168.4.2 root admin
```

The ONT will reboot automatically with the new software; see Figure 4-3.

Figure 4-3 Telnet window for software upgrade

```
C:\WINDOWS\system32\cmd.exe
4-- Retrieve Serial Number
5-- Retrieve Configuration
6-- Change Password
7-- Upgrade
9-- Exit

Input command: 7

This command upgrade flash file system from local ftp server.
Usage: upgrade [FILENAME] [SERVERIP] [USERNAME] [PASSWORD].
FILENAME:
  Remote image name for downloading.
upgrade FE45464A0CK09 192.168.4.2 admin 123456
command line = ftpget 192.168.4.2 -u admin -p 123456 /tmp/temp FE45464A0CK09
Starting download 'FE45464A0CK09' from Ftp server'192.168.4.2' ...
Done.
Starting save 'FE45464A0CK09' to Flash Partition 3 ...
file[/tmp/temp] length=6258692
Check base image file CRC ... cal_crc <7516d53f> ori_crc <7516d53f> Success.
```

- 4 STOP. This procedure is complete

4.3 Configuring the G-010G-P ONT using the Web GUI

You can use the Web GUI to:

- provision the SLID
- retrieve basic ONT configuration information

Procedure 4-9 Web GUI configuration

- 1 Power up the G-010G-P ONT and connect a computer or laptop to the first Ethernet port on the ONT using an Ethernet cable.
- 2 Set the IP address on the PC Ethernet port to 192.168.4.254.
- 3 Set the subnet mask to 255.255.255.0.

Note that the PC IP and the SLID must be in the same subnet.

- 4 Open a web browser on the PC and enter the IP address of the ONT in the address bar.

The default gateway IP address is `http://192.168.4.254`.

The login window appears; see Figure 4-4.

Figure 4-4 Log in window

- 5 Enter the user name and password in the Log in window.

The default user name is *admin* and the default password is also *admin*.



Caution — If you reset the router to recover the default username and password, all other router configuration settings will also be restored to their factory default values.



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

- 6 Click OK.

The SLID configuration window appears.

- 7 Enter the new SLID in the New ONT ID field of the SLID configuration window (Figure 4-5).

For ASCII mode, the SLID can be an alphanumeric string of 10 characters or less, using 0-9, a-z, and A-Z, for example: abcdef1234.

For Hex mode, the SLID can be a string of 20 characters or less, using 0-9, a-f, and A-F, with a 0x prefix, for example: 0x1234567890ABCDEF1234.

Figure 4-5 SLID Configuration window

ONT install

Alcatel-Lucent

This menu will allow to configure ONT for correct in-service operation

Attention: using an incorrect value for the ONT identifier may cause service interruption

New ONT ID (PLOAM psw) Update

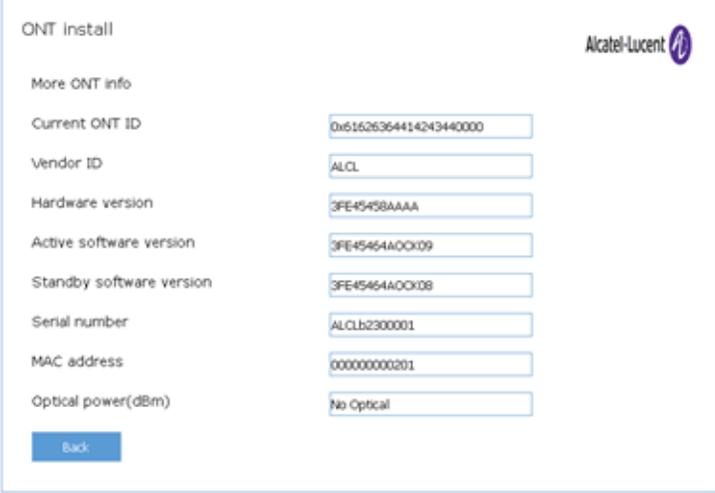
ONT ID

0x1526364414243440000

More info

- 8 Click Update.
- 9 Click More Info to view the basic ONT configuration information, as shown in Figure 4-6.

4 – Configure an G-010G-P indoor ONT

Figure 4-6 ONT configuration information window

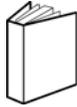
ONT Install Alcatel-Lucent 

More ONT info

Current ONT ID	<input type="text" value="0x1526364414243440000"/>
Vendor ID	<input type="text" value="ALCL"/>
Hardware version	<input type="text" value="3FE45458AAAA"/>
Active software version	<input type="text" value="3FE45454A00X09"/>
Standby software version	<input type="text" value="3FE45454A00X08"/>
Serial number	<input type="text" value="ALCLb2300001"/>
MAC address	<input type="text" value="000000000201"/>
Optical power(dBm)	<input type="text" value="No Optical"/>

- 10 Click Back to return to the SLID configuration window.
 - 11 Reboot the ONT for the new SLID to take effect.
 - 12 STOP. This procedure is complete.
-

Customer documentation and product support



Customer documentation

<http://www.alcatel-lucent.com/myaccess>

Product manuals and documentation updates are available at [alcatel-lucent.com](http://www.alcatel-lucent.com). If you are a new user and require access to this service, please contact your Alcatel-Lucent sales representative.



Technical Support

<http://support.alcatel-lucent.com>



Documentation feedback

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