





USER GUIDE

Fiber OLT and ONT

Release 1.2.1



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About This Guide

This document provides detailed information about the OLT and ONT products, hardware, and supported features. The guide also explains how to deploy the product along with important safety measures. It is intended for system designers, system installers, and system administrators.

Purpose

The OLT and ONT product documents are intended to instruct and assist personnel in operation, installation, and maintenance of the equipment and ancillary devices. It is recommended that all personnel engaged in such activities must be properly trained.

Cambium Networks disclaims all liability whatsoever, implied or express, for any risk of damage, loss, or reduction in system performance arising directly or indirectly out of the failure of the customer, or anyone acting on the customer's behalf, to abide by the instructions, system parameters, or recommendations made in this document.

Cross-references

References to external publications are shown in italics. Other cross-references, emphasized in blue text in electronic versions, are active links to the references.

This document is divided into topics that are divided into sections. Sections are not numbered but are individually named at the top of each page, and are listed in the table of contents.

Feedback

We appreciate feedback from the users of our documents. This includes feedback on the structure, content, accuracy, or completeness of our documents. To provide feedback, visit our support website: <u>https://support.cambiumnetworks.com</u>.

Important regulatory information

Complying with rules for the country of operation

USA specific information



Caution

This device complies with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

\bigcirc

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.



Note

Note

It is not required to state compliance with EN 60825 when compliance with EN 50689 is stated. It is permitted additionally to refer EN 60825-1:2014 and EN 60825-1:2014/A11:2021.

Canada specific information



Caution

This device complies with Innovation, Science and Economic Development Canada (ISEDC) licenseexempt 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.

Renseignements specifiques au Canada



Attention

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

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

European specific information

Cambium Networks OLT and ONT products are compliant with applicable European Directives required for CE marking:

- Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.
- Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.
- 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS Directive).
- Cambium Networks complies with the European Regulation 2023/988 of 10 May 2023 on General Product Safety. EU Authorized Representative: Cambium Networks Europe B.V., Muiderstraat 1, 1011PZ Amsterdam, Netherlands. Contact Information: GPSR@cambiumnetworks.com.

EU Declaration of conformity

Hereby, Cambium Networks declares that the Cambium Networks OLTand ONT Series of Wireless Ethernet Bridge complies with the essential requirements and other relevant provisions of Directive 2014/30/EU and 2014/35/EU. The declaration of conformity may be consulted at https://www.cambiumnetworks.com/eu_dofc.

United Kingdom (UK) specific information

Cambium Networks OLTand ONT products are compliant with applicable United Kingdom (UK) Regulations required for UKCA marking:

- Electromagnetic Compatibility Regulations 2016 (SI 2016 No.1091)
- Electrical Equipment (Safety) Regulations 2016 (SI 2016 No.1101)
- Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (SI 2012 No. 3032, as amended) (RoHS)

For more details, check <u>https://www.elexon.co.uk/operations-settlement/unmetered-supplies/charge-codes-and-switch-</u>regimes/.

UK Declaration of conformity

Hereby, Cambium Networks declares that the Cambium Networks OLT and ONT Series of Wireless.

Ethernet Bridge complies with the essential requirements and other relevant provisions of Electromagnetic Compatibility Regulations 2016 (SI 2016 No.1091) and Electrical Equipment (Safety) Regulations 2016 (SI 2016 No.1101). The declaration of conformity may be consulted at https://www.cambiumnetworks.com/ukca_dofc.

Application firmware

Download the latest software and install it in the OLT and ONTs before deploying the equipment. Instructions for installing software are provided in this guide.

Ethernet networking skills

The installer must have the ability to configure IP addressing on a PC and to set up and control products using a web browser user interface (UI).

Specific expertise and training for professional installers

To ensure that the OLT and ONT Series is installed and configured in compliance with the requirements of the EU, ISEDC, and the FCC, installers must have the radio engineering skills and training described in this section.

The Cambium Networks technical training program details can be accessed from the following link: https://learning.cambiumnetworks.com/

Legal and Open-Source Software statements

Refer to the OLTand ONT[™] Legal and Open-Source Guide for:

- · Cambium Networks end user license agreement
- Open-Source Software Notices.

Problems and warranty

Reporting problems

If any problems are encountered when installing or operating this equipment, follow this procedure to investigate and report:

- 1. Search this document and the software release notes of supported releases.
- 2. Visit the support website (http://www.cambiumnetworks.com/support).
- 3. Ask for assistance from the Cambium Networks product supplier.
- 4. Gather information from affected units, such as any available diagnostic downloads.
- 5. Escalate the problem by emailing or telephoning support.

Repair and service

If unit failure is suspected, obtain details of the Return Material Authorization (RMA) process from the support website (http://www.cambiumnetworks.com/support).

Hardware warranty

Cambium's standard hardware warranty is for one (1) year from the date of shipment from Cambium Networks or a Cambium distributor. Cambium Networks warrants that hardware will conform to the relevant published specifications and will be free from material defects in material and workmanship under normal use and service. Cambium shall within this time, at its own option, either repair or replace the defective product within thirty (30) days of receipt of the defective product. Repaired or replaced product will be subject to the original warranty period but not less than thirty (30) days.

To register positioner products or activate warranties, visit the support website. For warranty assistance, contact the reseller or distributor. The removal of the tamper-evident seal will void the warranty.



Caution

Using non-Cambium parts for repair could damage the equipment or void warranty. Contact Cambium for service and repair instructions.

Portions of Cambium equipment may be damaged from exposure to electrostatic discharge. Use precautions to prevent damage.

Security advice

Cambium Networks systems and equipment provide security parameters that can be configured by the operator based on their particular operating environment. Cambium recommends setting and using these parameters following industry-recognized security practices. Security aspects to be considered are protecting the confidentiality, integrity, and availability of information and assets. Assets include the ability to communicate, information about the nature of the communications, and information about the parties involved.

In certain instances, Cambium makes specific recommendations regarding security practices, however the implementation of these recommendations and final responsibility for the security of the system lies with the operator of the system.

Warnings, cautions, and notes

The following describes how warnings and cautions are used in this document and all Cambium Networks document sets:

Warnings

Warnings precede instructions that contain potentially hazardous situations. Warnings are used to alert the reader to possible hazards that could cause loss of life or physical injury. A warning has the following format:



Warning text and consequence for not following the instructions in the warning.

Cautions

Cautions precede instructions and are used when there is a possibility of damage to systems, software, or individual items of equipment within a system. However, this damage presents no danger to personnel. A caution has the following format:



Caution

Warning

Caution text and consequence for not following the instructions in the caution.

Notes

A note means that there is a possibility of an undesirable situation or provides additional information to help the reader understand a topic or concept. A note has the following format:



Note text.

Caring for the environment

The following information describes national or regional requirements for the disposal of Cambium Networks supplied equipment and for the approved disposal of surplus packaging.

In the UK and EU countries

The following information is provided to enable regulatory compliance with the European Union (EU) directives and UK regulations identified and any amendments made to these directives and regulations when using Cambium equipment in the UK or EU countries:

• **Disposal of Cambium equipment** - European Union (EU) Directive 2012/19/EU Waste Electrical and Electronic Equipment (WEEE) and UK Statutory Instrument The Waste Electrical and Electronic Equipment Regulations 2013 No. 3113.

Do not dispose of Cambium equipment in landfill sites. For disposal instructions, refer to http://www.cambiumnetworks.com/support/weee-compliance

• **Disposal of surplus packaging** - Do not dispose of surplus packaging in landfill sites. In the EU and UK, it is the individual recipient's responsibility to ensure that packaging materials are collected and recycled according to the requirements of EU and UK environmental law.

In non-EU countries

In non-EU countries, dispose of Cambium Networks equipment and all surplus packaging in accordance with national and regional regulations.

Product Description

Cambium OLT

Cambium OLT is a GPON, XGS-PON, and Combo PON (GPON co-existing with XGS-PON) Optical Defined Networking (ODN) access OLT. Its high-performance access design focuses on SDN deployments. The high-performance design of OLT is optimized for SDN deployments, ensuring maximum interoperability with both Cambium and third-party hardware and software systems.

OLT includes eight Combo PON interfaces to support both GPON (ITU-T G.984) and XGS-PON (ITU-T G.987) PON technologies, simultaneously. Cambium OLT is equipped with either 8 or 16 Combo PON interfaces which supports both GPON and XGS-PON technologies. This capability enables the aggregation of numerous last-mile customer connections, enhancing network scalability and flexibility. It is positioned as the central access controller within the GPON or XGS-PON network architecture. The OLT establishes the direct connections with both Cambium and thirdparty ONTs and ONTs distributed throughout the Optical Distribution Network (ODN). The OLT manages provisioning and delivery of broadband data, voice, and IP television services efficiently through the following devices:

- Optical Line Termination (OLT) A network device that serves as the root element or up-link access controller for an Optical Access Network (OAN).
- Optical Network Unit (ONT) A network element that terminates a leaf, or down-link element of the OAN for a subscriber or another wired or wireless access network.
- Optical Network Terminal (ONT) Provides an OAN UNI or Optical Access Network Port for a single subscriber.

The carrier-grade, temperature-hardened compact hardware design of OLT provides service providers deployment flexibility for diverse environments. With this design, you can create a network, achieve market goals of OLT, and satisfy future network needs.

OLT(as shown in Figure 1) with the temperature-hardened hardware has the following design features:

- 300 Gbps L2 and L3 non-blocking switching capacity
- 2 x SPF28 and 2 x QSFP28 uplink ports
- Operating temperature of -40°F to 149°F (-40°C to +65°C)
- 19 inch Rack Mount Ready 440 mm x 260 mm x 44.5 mm (17.32 in x 10.24 in x 1.75 in)
- 8 or 16 quad channel PON ports for simultaneous GPON and XGS-PON full duplex operation
- Dedicated compute module for ultimate performance and extended feature
- Advanced QoS, VLAN, and statistic engine for maximum performance and transparency.

Figure 1: OLT(16 port and 8 port)



Cambium ONT

Fiber Optical Network Terminal (ONT) terminates the OAN by providing a subscriber port. It serves as an interface between the fiber-optic network and an internal network of the customer. It is installed at the customer's premises. Cambium ONT is a key component in a Fiber to the Home (FTTH) or Fiber to the Premises (FTTP) deployment. Figure 2 shows the Fiber Indoor ONT and Figure 3 shows the Fiber Outdoor ONT.

Figure 2: Fiber GPON ONT and XGS-PON Indoor ONT



Figure 3: Fiber GPON ONT and XGS-PON Outdoor ONT



System Hardware

This section covers the hardware specifications and details for Cambium Fiber including the following subsections:

- Cambium OLT
- Cambium ONTs

Cambium OLT

Cambium OLT is used in fiber-optic communication networks. It serves as the upstream endpoint of a Passive Optical Network (PON) and is reproducible for managing the access to the shared Optical Access Network (OAN) by provisioning the ONTs, broadcasting transmissions to each ONT, and scheduling the upload times. It is a switch for a PON, which can then be transmitted to the individual subscribers. Figure 4 shows the front panel view of Cambium OLT.





Table 1 lists and describes the components of Cambium OLT.

Table 1: Cambium OLTcomponents

ltem	Component	Description	
1	Dual Power Modules	Dual power module slots are used for redundancy. Connect AC/DC power sources to the modules.	
		For AC power module:	
		 Operating voltage: 100 to 240 VAC, 50/60 Hz 3.5 Amps maximum. 	
		• Fuse: T6.3A 250 VAC.	
		For DC power module:	
		 Operating voltage: -38.4 to -72 V DC, normal -48 V input. There is no tolerance for the DC input voltage. 	
		 Maximum DC input current: 290 Watts; 7.56 Amps at -38.4 V DC. 	
		• Fuse: T10A 250 VAC.	
2	LEDs	Indicates the status of the system.	
3	Alarm	Male 9-pin external alarm for remote mounting.	
4	Management port	Out of band 10/100/1000 BaseT management port for OLT management. DHCP assigned by default with fall back IP of 169.254.1.1.	

ltem	Component	Description		
5	1-16 Combo PON Downlink	16 Combo PON SFP+ PON ports, each slot supports a GPON, XGS- PON, or Combo-PON (GPON co-existing with XGS-PON) transceiver.		
6	1-2 (QSFP28 Uplink)	Two QSFP28 slots, each supporting 1 x 100 GbE or 1 x 40 GbE. It also supports breakout with 1-4x 25GbE, 1-4x 10 GbE, and 1-4 1 GbE.		
7	3-4 (SFP28 Uplink)	Two SFP28 slots, each supporting 1 x 25 GbE or 1 x 10 GbE. It also supports 1 x 1 GbE.		
8	Swappable fan module	A swappable fan module to reduce the heat inside the Cambium OLT.		
9	USB port 2.0	USB 2.0 media connection for file transfer.		
10	GPS	Reserved for future Time-of-Day (ToD) and 1 Pulse-per-second (1 pps) timing use.		
11	USB Console port	Use a terminal emulator such as Putty with the following settings 115200 baud rate, 8 data bits, no parity, 1 stop bit, and no flow control in conjunction with a USB Type A to Type A cable (included).		

Cambium OLT(16 port and 8 port) provides the following interfaces:

- PON ports
- OLT Uplink/NNI port
- Alarm interface
- GPS interface
- USB 2.0 interface
- Management interface

Note

- Console port
- Light Emitting Diodes (LEDs)



1-16 AIO interface is applicable to 16-port OLT and 1-8 AIO interface is applicable to 8-port OLT.

PON ports

OLTs are equipped with either 8 or 16 dedicated SFP+ PON ports, each electrically configured with four lanes (TX/RX for GPON and TX/RX for XGS-PON) connected to the integrated PON MAC.

These ports are specifically designed to support certified PON transceivers—available in GPON, XGS-PON, and Combo PON variants—and are managed by the OLT firmware to handle media conversion, bandwidth assignment, encryption, and service scheduling.

Characteristics of GPON

The following combo PON or GPON operation is supported through Cambium-certified GPON transceivers:

- Physical data rate of 1.244 Gbps in upstream
- Data rate of 2.48 Gbps in downstream
- Maximum split ratio of 1:128
- Downstream AES-128 bit encryption and natural upstream isolation due to the nature of splitters.
- Rogue ONT detection
- FEC downstream and upstream
- PON Protection Type B for high availability
- Supports up to 1024 GPON T-CONT/Alloc-ID per PON port
- Supports up to 4096 GPON GEM port-IDs per PON port.

Characteristics of XGS-PON

The following XGS-PON operation is supported through Cambium-certified combo PON or XGS-PON transceivers:

- Physical data rate of 10 Gbps (9953 Mbps) upstream
- Data rate of 10 Gbps (9953 Mbps) downstream
- Maximum split ratio of 1:128 (can be firmware upgraded to 256)
- AES-128 bit Encryption downstream and upstream
- Rogue xONT detection
- FEC downstream and upstream
- PON Protection Type B for high availability
- Supports 2048 T-CONT/Alloc-ID per PON port
- Supports up to 8192XGEM port-IDs per PON port.

OLT Uplink/NNI port

The OLT features two QSFP28 and two SFP28 NNI ports for uplink connectivity. The QSFP28 ports support Ethernet connections at 100G, 40G, 4×25G, 4×10G, and 4×1G, while the SFP28 ports support 25G, 10G, or 1G speeds.

Although the uplink ports are broadly compatible with various Ethernet transceivers, only Cambium-certified transceivers are officially supported and validated for full system certification.

NNI port characteristics

The following are the characteristics of NNI port:

- 2 x QSFP28 ports support:
 - 1 x 100 GbE
 - 1 x 40 GbE
 - 4 x 25 GbE (through breakout cable)
 - 4 x 10 GbE (through breakout cable)
 - 4 x 1 GbE (through breakout cable)
- 2 x SFP28 ports support:
 - 1 x 25 GbE
 - 1 x 10 GbE
 - 1x1GbE
- Option to use some of the uplink interfaces for sub-tending to co-located OLT devices
- QSFP28 or SFP28 port supports Forward Error Correction (FEC) capabilities.

Alarm interface



Note

software version for alarm interface will be supported in future updates, based on user requirements.

Alarm interface is a nine-pin D-type connector, which provides an external communication with the other devices to generate alarms. Figure 5 shows the pin assignment of an alarm port. Table 2 and Table 3 describe the pin number and the corresponding descriptions.

Figure 5: Pin assignment of the alarm port



Table 2: Alarm input pin assignments

Alarm input	Pins	Description
1	3, 7	An open circuit for pins 3 and 7, indicates that there is no alarm on the connected device. OLT registers an alarm when the connected device closes the circuit.

Alarm input	Pins	Description
2	3, 8	An open circuit for pins 3 and 8, indicates that there is no alarm on the connected device. OLT registers an alarm when the connected device closes the circuit.
3	4, 9	An open circuit for pins 4 and 9, indicates that there is no alarm on the connected device. OLT registers an alarm when the connected device closes the circuit.
4	4, 5	An open circuit for pins 4 and 5, indicates that there is no alarm on the connected device. OLT registers an alarm when the connected device closes the circuit.

Table 3: Alarm output pin assignments

Alarm output	Pins	Description
Alarm out asserted	2, 6	OLT closes the circuit for pins 2 and 6, to indicate an alarm to a connected device or piece of equipment.
Alarm out deasserted	1, 6	OLT closes the circuit for pins 1 and 6, to indicate a no-alarm status to a connected device or piece of equipment.

GPS interface

Note



software version for GPS interface will be supported in future updates, based on user requirements.

GPS interface is reserved for future use. It enables OLT to connect to an external GPS device. It is also used to monitor the geographical location of OLT. Table 4 describes the GPS port PIN numbers and corresponding descriptions. An RJ-45 (RS422) connector is used to connect to a GPS receiver to provide Time-of-Day (ToD) and 1 Pulse-per-Second (1 pps) timing information. Figure 6 shows the GPS connector pin layout.

Figure 6: GPS interface



Table 4: GPS connector pin definitions

PIN number	Signal name	Description	
1	Data out N	Reserved.	
2	Data out P	Reserved.	
3	Sync in N	Gets 1 PPS information through GPS antenna.	
4	GND	Connects to chassis ground.	

PIN number	Signal name	Description	
5	GND	Connects to ground.	
6	Sync in P	Gets 1 PPS information through GPS antenna.	
7	Data in N	Gets ToD information through GPS antenna.	
8	Data in P	Gets ToD information through GPS antenna.	

USB 2.0 interface

The USB 2.0 interface on the OLTs front panel is used for media connectivity, enabling file transfers such as firmware updates.

Management interface

The MGMT port is a dedicated out-of-band 100/1000Base-T Ethernet interface (RJ45) for local management access. It is part of the management bridge and is always assigned a static, non-routable link-local IP address of 169.254.1.1/16.

The system obtains an IP address through static assignment or via DHCP (default). If a DHCP lease is not acquired, the system automatically falls back to the default IP address of 192.168.0.1/24.

Figure 7: Management interface



Console port

The USB console port provides serial console access. Use a USB cable Type A male to A male cable, which is provided with the OLT package, to connect the console port to a USB port on the system. Figure 8 shows the console port of OLT.

Figure 8: Console port



For local management, use a system with terminal emulation software configured using the following parameters:

- VT100
- Terminal emulation
- 115200 bps

- No parity, 8 data bits, 1 stop bit
- No flow control
- UTF-8

Light Emitting Diodes (LEDs)

Three LED indicators are provided on the front panel of OLT to indicate the Power status (PWR), System Status (SYS), and an Alarm (ALM). Figure 9 shows the LEDs in OLT. Table 5 describes the system LED indications and their status.

Figure 9: LEDs in OLT



Table 5: Cambium OLT - LED indications

LED	Color	Status	Description
PWR	Green	ON	The power is ON.
		OFF	The power is OFF or there is a power failure.
SYS	Green	ON	Device is ON and it is functioning.
		Blinking	Device is booting.
		OFF	Device is not ready or failed.
ALM	Red	ON	Hardware failure is detected or an external alarm is received.
		OFF	Device is functioning normally.
Uplink 1 and 2	Green	ON	Uplink interfaces 1 and 2, each have four parallel data transmission lanes. Uplink interface 1 has lanes 0-3 when starting from 0 or 1-4 when starting from 1. Uplink interface 2 has lanes 4-7 when starting from 0 or 5-8 when starting from 1. Each lane has an LED that displays the uplink state. The lane is linked up, as shown in Figure 10.
		OFF	The lane is not linked up.
Uplink 3 and 4 Link	Green	ON	Uplink interfaces 3 and 4, each has a link (LNK) LED and an activity (ACT) LED. A 25 GbE or 10 GbE link is up, as shown in Figure 11
		OFF	The Ethernet link is down.

LED	Color	Status	Description
Uplink 3 and 4 Activity	Green	Blinking	The interface is transmitting or receiving Ethernet traffic.
		OFF	The interface is not transmitting or receiving Ethernet traffic.
PON 1-16	Administrative	ON	Port is enabled.
	status - Green (Left)	OFF	Port is administratively disabled or no link.
	Port status - Green	ON	Link is established.
	(Right)	Blinking	Port is transmitting or receiving data.
		OFF	No link is established.
MGMT	Green (Left)	Blinking	The port is transmitting/to or receiving from an Ethernet device.
		ON	The port is connected at 1000 Mbps.
		OFF	The port is not connected at 1000 Mbps or to an Ethernet device.
	Amber (Right)	Blinking	The port is transmitting/to or receiving from an Ethernet device.
		ON	The port is connected at 100 Mbps.
		OFF	The port is not connected at 100 Mbps or to an Ethernet device.

Figure 10: Uplink 1 and 2 lane LEDs



Figure 11: Uplink 3 and 4 LNK and ACT LEDs



Cambium ONTs

Cambium ONTs terminate an Optical Access Network (OAN) providing a subscriber port intended for a single subscriber. This topic contains the following sections:

- Indoor ONT
- Outdoor ONT
- Interfaces of indoor ONT
- Interfaces of outdoor ONT
- LEDs on ONT

Indoor ONT

Figure 12 shows the front view of indoor ONT.

Figure 12: Front view of indoor ONT



Figure 13 shows the rear view of the indoor ONT.





Table 6: Fiber indoor ONT components

Ports	Component	Description		
		GPON ONT (SGX Series)	XGS-PON ONT (SXX Series)	
1	PON	GPON	XGS-PON	
2	LAN	1 Gigabit Ethernet	2.5 Gigabit Ethernet	
3	RESET	Reset button	Reset button	
4	POWER	Power button	Power button	

Outdoor ONT

Figure 14 shows the front view of outdoor ONT.

Figure 14: Front view of outdoor ONT



Figure 15 shows the ports of outdoor ONT. Figure 15: *Outdoor ONT ports*



Table 7: Fiber outdoor ONT interfaces

Ports	Interfaces	Description		
		GPON ONT (SGT Series)	XGS-PON ONT (SXT Series)	
1	PoE Ethernet Port	Power over Ethernet (PoE)	Power over Ethernet (PoE)	
2	RESET	Reset button	Reset button	
3	PON port	GPON	XGS-PON	

Interfaces of indoor ONT

Table 8 describes the interfaces of indoor ONT.

Table 8: Indoor ONT interfaces

Interface	Description		
	GPON	XGS-PON	
Speed	2.488 Gbps/1.244 Gbps	9.95328 Gbps	
Downstream Wavelength	1480 - 1500	1575 ~ 1580	
Upstream Wavelength	1290 - 1330	1260 ~ 1280	
ONT TX power	0.5-5 dBm	4 dBm to 9 dBm	
ONT ER min	> 10	6	
ONT RX Sen	-28 dBm	-28 dBm	
Receive Power Range	-28 dBm to -8 dBm	-28 dBm to -8 dBm	
LAN	10/100/1000 Base—T Ethernet LAN	10/100/1000/2500 Base—T Ethernet LAN	
Reset button	Short press to reboot (< 10 seconds)	Short press to reboot (< 10 seconds)	
	Long Press to reset to defaults (> 10 seconds)	Long Press to reset to defaults (> 10 seconds)	
Power	12 VDC 1 Amp Power Jack 9.5 mm x 5.5 mm x 2.5 mm	DC power jack: 9.5 mm X 5.5 mm X 2.5 mm	

Interfaces of outdoor ONT

Table 9 describes the interfaces of outdoor ONT.

Table 9: Outdoor ONT interfaces

Interface	Description				
	GPON	XGS-PON			
PHY Rate	2.488 Gbps/1.244 Gbps	9.95328 Gbps/9.95328 Gbps			
Downstream Wavelength	1490 nm	1577 nm			
Upstream Wavelength	1310 nm	1270 nm			
ONT TX power	0.5 dBm to 5 dBm	4 dBm to 9 dBm			
ONT ER min	>10	6			
ONT RX Sen	-28 dBm	-28 dBm			
Receive Power Range	-28 dBm to -8 dBm	-28 dBm to -8 dBm			
LAN	10/100/1000 Base—T Ethernet LAN	10/100/1000/2500 Base—T Ethernet LAN			
Reset button	Short press to reboot (< 10 seconds)	Short press to reboot (< 10 seconds)			
	Long Press to reset to defaults (> 10 seconds)	Long Press to reset to defaults (> 10 seconds)			
PoE Ethernet port	30V DC 0.5A Cambium PoE included reversible polarity supported	30V DC 0.5A Cambium PoE included reversible polarity supported			

LEDs on ONT

Three LED indicators are provided on the front panel of ONTs to indicate the status of power, PON, and LAN. Table 10 describes the system LED indications and the status of GPON ONT.

Table 10: System LED indications for GPON ONT

LED	Color	Status	Description
POWER	Green	ON	The power is ON.
		OFF	The power is OFF or there is a power failure.
		Blinking	Booting.

LED	Color	Status	Description
PON	Blue/Red	Blue ON	PON link to 05 (Operational).
		Blue OFF	PON link down or no link is connected.
		Blue blinking	PON is attempting to link.
		Red ON	Optical transmitter of the device is powered off.
		Red blinking	Received optical power of the device is lower than the optical receiver sensitivity.
LAN	Green/Red	Green ON	1G link is up.
		Green OFF	Link is down.
		Green blinking	Indicates traffic.
		Red ON	10M/100M link is up.
		Red OFF	Link is down.
		Red blinking	Indicates traffic.

Table 11 describes the system LED indications and the status of XGS-PON ONT.

Table 11: System	LED indications	for XGS-PON ONT

LED	Color	Status	Description
POWER	Green	ON	The power is ON.
		OFF	The power is OFF or there is a power failure.
		Blinking	Booting.
PON	Blue/Red	Blue ON	PON link to 05 (Operational).
		Blue OFF	PON link down or no link is connected.
		Blue blinking	PON is attempting to link.
		Red ON	Optical transmitter of the device is powered off.
		Red blinking	Received optical power of the device is lower than the optical receiver sensitivity.

LED	Color	Status	Description
LAN	Green/Red	Green ON	1G/2.5G link is up.
		Green OFF	Link is down.
		Green blinking	Indicates traffic.
		Red ON	10M/100M link is up.
		Red OFF	Link is down.
		Red blinking	Indicates traffic.

Preparing for Configuration

This section provides basic information about the OLT and ONT products and the prerequisite tasks. This information helps you to set up the system before proceeding with the configuration of the OLT and ONT products.

This topic contains the following sections:

- Safety precautions
- Regulatory compliance
- Configuring the management PC
- Accessing the OLTUI

Safety precautions

Before installing OLT, ensure the following:

- Ensure that the rack is correctly and securely installed to prevent it from falling or becoming unstable.
- Dangerous voltage above 240V AC is always present while the Power Supply Module is plugged into an electrical outlet. Remove all rings, jewelry, and other potentially conductive materials before working with this device.
- Never insert foreign objects into the chassis, power supply, or any other component, even when the power supply is turned OFF, unplugged, or removed.
- Ensure that the main power is fully disconnected from the device by unplugging all power cords from their outlets. For safety, verify that the power outlets and plugs are easily reachable by the operator.
- Do not handle electrical cables which are not insulated. This also includes network cables.
- Keep water and other fluids away from the equipment to minimize electrical hazards.
- Comply with electrical grounding standards during all phases of installation and operation of the product. Do not allow the equipment chassis, network ports, power supply, or mounting brackets to contact any device, cable, object, or person attached to a different electrical ground. Also, do not connect the device to external storm grounding sources.
- Perform installation or removal of the chassis or any module in a static-free environment. Proper use of anti-static body straps and mats are strongly recommended.
- Installation must be performed by a trained professional. Use only included/recommended cables, power cords, AC power supplies, and batteries. The power cord should not be used with other electric equipment than specified by Cambium Networks.
- Modules must be kept in anti-static packaging when it is not installed in the chassis.
- Do not ship or store this product near strong electromagnetic, electrostatic, magnetic, or radioactive fields.
- Do not disassemble the chassis.

Electrical Safety Instructions

This topic lists the instructions specific to electrical safety.

Consider the following electrical safety instructions:

- Compliance is required with respect to voltage, frequency, and current requirements indicated on the manufacturer's label. Connection to a different power source than those specified may result in improper operation, damage to the equipment, or pose a fire hazard if the limitations are not followed.
- There is no operator serviceable parts inside this equipment. Service should be provided only by a qualified service technician.
- This equipment is provided with a detachable power cord which has an integral safety ground wire intended for connection to a grounded safety outlet.

- Do not substitute the power cord with the one that is not provided and approved. Never use an adapter plug to connect to a 2-wire outlet as this defeats the continuity of the grounding wire.
- The equipment requires the use of the ground wire as a part of the safety certification, modification or misuse can provide a shock hazard that can result in serious injury or death.
- Contact a qualified electrician or the manufacturer if there are questions about the installation prior to connecting the equipment.
- Protective earthing is provided by a listed AC power module. Building installation provides appropriate short-circuit backup protection. That is protective bonding must be installed in accordance with the local national wiring rules and regulations.

Regulatory compliance

This topic describes the following:

- Compliance with safety standards lists the safety specifications against which the OLT and ONTs has been tested and certified.
- Compliance with relevant EMC regulations describes how the OLT and ONTs comply with the EMC regulations that are in force in various countries.



Caution

Intentional or unintentional changes or modifications to the equipment must not be made unless under the express consent of the party responsible for compliance. Any such modifications could void the user's authority to operate the equipment and will void the manufacturer's warranty.



Attention

Les changements ou modifications intentionnels ou non intentionnels à l'équipement ne doivent pas être effectués sauf avec le consentement exprès de la partie responsable de la conformité. De telles modifications pourraient annuler l'autorisation de l'utilisateur à faire fonctionner l'équipement et annulera la garantie du fabricant.

Compliance with safety standards

This section lists the safety specifications against which the OLT and ONTs are tested and certified. It also describes how to keep RF exposure within safe limits.

Electrical safety compliance

The following are the safety warnings:

- Class 1 LASER product and IEC 60825-1:2014
- Class 1 Consumer LASER Product and EN 50689:2021
- Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

• The PoE (Power over Ethernet) devices that supply or receive power and their connected Ethernet cables must be all completely indoors.



Caution

- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- Hazardous Moving Parts. Keep body parts away from fan blades.
- The RJ-45 jacks are not used for telephone line connection.
- Use a UL listed or CSA Certified DC power source to connect to DC PSU.

Table 12: Safety compliance specifications

Region	Specification
USA	UL 62368-1
Canada	CSA C22.2 No.62368-1
Europe	EN 62368-1
International	CB certified IEC 62368-1 Edition 3

Federal Communications Commission (FCC) EMC Statement

• This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operations.

- Changes or modifications not expressly approved by the party responsible for compliance could void user's authority to operate the equipment.
- This equipment has been tested and found to comply with the limits for a Class B digital device., pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Innovation, Science and Economic Development Canada ICES Statement

CAN ICES-003(B) / NMB-003(B)

CE EMC Statement



Warning

This equipment is compliant with Class B of EN55032. In a residential environment this equipment may cause radio interference.

OLTand ONT - Sample product labels

Figure 16: Fiber 8 port OLT label



AC: Power Rating: 100 — 240V-; 50/60Hz, 35A max. Power Consumption: 290 Watt max. DC: Power Rating: -38 4V == -72V ==, 7.56A max.

Power Consumption 290 Watt max.

This device complian with Part Soft the FCC Bules, Operation is subject, to the following inveconditions: [] this device may not cause harmful interference, and (2) this device must accept any interference, modeling, including, interference that may cause undesired operation.

"Laite on Bietlawi suojamaadoituskoskettimila varaabettuun pistonaisen" "Appannan skall anaituse tii jordat uttag" CAN ICES-003(A)/ NMB-003(A)





MSN: F6KY006B8F0D

ESN: FCT165200000

MADE IN TAIWAN

Figure 18: Fiber indoor GPON ONT back label



Figure 19: Fiber indoor XGS-PON ONT back label



Figure 20: Fiber outdoor GPON ONT back label


Figure 21: Fiber outdoor GPON ONT back label



Configuring the management PC

You must configure the PC (for example, using Windows PC) or laptop to set up the IP address (169.254.1.100) with a subnet mask of 255.255.0.0 to access the Cambium OLTon the link local address of 169.254.1.1. This configuration enables the PC to communicate with the OLT and ONTs.

To configure the management PC, perform the following steps:

1. On Windows PC, click Start > Settings > Network & Internet.

The Network Status page appears with multiple options on the left navigation column.

2. Select Ethernet > Change adapter settings.

The Network Connections page appears.

3. Select Ethernet and right-click to select Properties.

The Ethernet Properties dialog box appears with the Networking and Sharing tabs, as shown in Figure 22.

Figure 22: The Ethernet Properties dialog box

Ethernet Properties		×
Networking Sharing		
Connect using:		
🚽 Intel(R) Ethemet Connection (11) I219-LM	1	
	<u>C</u> onfig	ure
This connection uses the following items:		
Client for Microsoft Networks		~
File and Printer Sharing for Microsoft Network	etworks	
QoS Packet Scheduler	_	
Internet Protocol Version 4 (TCP/IPv4)		
🗌 🔔 Microsoft Network Adapter Multiplexor I	Protocol	
Microsoft LLDP Protocol Driver		
 Internet Protocol Version 6 (TCP/IPv6) 		\sim
<		>
I <u>n</u> stall <u>U</u> ninstall	P <u>r</u> oper	ties
Description		
Transmission Control Protocol/Internet Protoc	ol. The def	fault
wide area network protocol that provides com	munication	ו ו
across diverse interconnected networks.		
ОК		Cancel

By default, the **Networking** tab is selected.

- 4. Select Internet Protocol Version 4 (TCP/IPv4) from the available list of connections (as shown in Figure 22).
- 5. Click Properties.

The Internet Protocol Version 4 (TCP/IPv4) Properties dialog box appears, as shown in Figure 23.

6. In the **Use the following IP address** section, type an appropriate IP address in the IP address text box as 169.254.1.X and a subnet mask as 255.255.0.0, avoiding 169.254.1.1. Example: 169.254.1.100.

Figure 23: The Internet Protocol Version 4 Properties dialog box

Internet Protocol Version 4 (TCP/IPv4)) Properties	×
General		
You can get IP settings assigned autor this capability. Otherwise, you need to for the appropriate IP settings.	matically if your network supports a ask your network administrator	
Obtain an IP address automatica	lly	
• Use the following IP address:		
IP address:	169.254.1.100	
Subnet mask:	255.255.0.0	
Default gateway:		
Obtain DNS server address autor	matically	
• Use the following DNS server add	resses:	
Preferred DNS server:		
Alternate DNS server:	· · ·	
Validate settings upon exit	Advanced	
	OK Cance	ł

- 7. Leave the **Default gateway** text box blank and click **OK**.
- 8. Connect the PC to OLT management interface with an Ethernet cable, as shown in Figure 24.

Figure 24: PC connection with OLT



9. Ping *169.254.1.1* to confirm connectivity or open a browser and navigate to 169.254.1.1, and verify the OLT IP is connected.

Accessing the OLTUI

To access the OLTUI, perform the following steps:

1. Open the browser, and paste http://169.254.1.1/.

The certificate warning dialog appears on the first connection.

2. Accept the self-signed certificate to proceed as the OLT.

The login page appears, as shown in Figure 25.

Figure 25: The login page

LOG IN
Username
Password
Login

3. Type an appropriate username and password:

Default username: admin

Default password: admin

- 4. Click Login.
- 5. When you log in for the first time, the Please change Default Administrator password window appears.
- 6. Enter a new password in the Administrator Password.
- 7. Confirm the password in the **Confirm Password**.
- 8. Click Save.
- 9. After logging into the UI, the Status page appears, as shown in Figure 26

Figure 26: The Status page

🕐 Cambium Networks		🖒 BLR-QA-1 🥵 USERS CONNECTED 🌐 INTERNET STATUS 📮 NOTIFICATIONS 🌜 🔿 🖹 🔯 O 🕞 🖷 EN IC
nl. Status ≪, OLT Configuration ∨	EQUIPMENT	INTERFACES
b Provisioning ∨ 8, Manitor ∨ 16 Tools ∨		MONT 2 ON 4 6 ON 2 NN 4
	Model Name TO008	
	Date and Time 06 December 2024 09:31:27 am	
	System Uptime 9 days, 22 hours, 46 minutes, 6 seconds	THROUGHPUT THERMAL STATUS
	CPU Usage 0.	196 B
	Memory Usage 21	93% 44.0 °C () 11440 RPM ()
	Software Version 1.2.0	(↑ 14.80 Gbps) 63.7 °C ○ 11713 ЛРМ ○
	Device Name BLR-QA-1	→ 32.66 Gbps 39.5 °C ① 11440 RPM ①
	Electronic Serial Number	37.2 °C (○ 11440 RPM (○
	IP Address 10.110.217.1	All Data 11713 RPM ()
	cnMaestro™ Connected	○ 14.80 Gbps ○ 32.46 Gbps
	ONU OUTAGES	*Daily uptime SLA 998-14a-24
	WEEKLY DAILY	ONLINE OFFLINE
Rupport Community Forum D 2024 Camburn Networks, M lägtis Sissened Wassen 2-20	20 27 18 9 0 27 har 20 har 20 har	

UI controls

It is recommended to familiarize yourself with the UI controls (as described in Table 13). These UI controls are required for viewing, and managing OLT and ONT configurations.

Table 13: List of UI controls

UI Control	UI Control name	Description
D	Change UI Theme	Toggle light and dark mode.
·,ọ,·		
$\bar{\mathbb{U}}$	Notifications	Displays the notifications.
\bigcirc	Undo Configuration	Reverts changes to the last saved state.
	Trial Configuration mode	Trial Configuration mode allows temporary changes that automatically revert after 10 minutes if not saved.
	Apply Configuration	To apply the configuration changes.

UI Control	UI Control name	Description
0	Configuration Lock	Configuration lock ensures ONT updates apply sequentially, preventing system conflicts.
Ċ	Reboot Device	To restart or reboot the system from the UI.
G→	Sign Out	To sign out from the UI.
₫	Connected	Displays the cnMaestro connection status.
ŷŷ	User Connected	Displays the number of users connected.
¢	Internet Status	Displays the internet connection status.
Q	Notification	Displays the notification.
	Columns Filter	Enables users to customize table views by selecting which columns to show or hide for easy navigation.
00	Detailed View	Allows users to expand a row and view more information about specific features.
≡	List View	Displays data in a simplified and linear format.
\rightarrow	Download as CSV	Allows users to export a detailed .csv file of all ONUs device lists and event logs.

Viewing the Status page

After logging into the GUI, the Status page appears, as shown in Figure 27. It describes the status information of OLT.

Figure 27: The Status page

Cambium Networks		6	TCX08-20-09-94 🥵 USERS CONNECTED 🤠 INTERNET STATU) B B O G en (US)
 It Status Q. OLT Configuration ∨ Provisioning ∨ Revision ∨ Monitor ∨ Tools ∨ 	EQUIPMENT Model Name TOSS	^		4 6 9 2 4 2 6 9 2 4 3 5 6 7 3	^
	Date and Time 07 March 2029 662/123 a System Uptime 43 minutes, 1 second CPU Urage CPU Urage Sethware Version Device Name Devi	m 0.2% 31.2%	THROUGHPUT \$5.00 Kbps \$0 Kbps \$40 Kbps All Data		11352 RPM 1140 RPM 11410 RPM 11513 RPM
	ONU OUTAGES WEELX DALY WITH 0 0 0 0 0 0 0 0 0 0 0 0 0		S 500 Hzps S 941 • Daily Uptime SLA 5911-14m 24s • ONLINE = OFFLIN Image: Stress in the stress in th		

Table 14 lists and describes the components in the dashboard page.

Table 14: The dashboard	page	components
-------------------------	------	------------

Elements	Descriptions
Equipment	
Model Name	Displays the model name of the device.
Date and Time	Current system date and time.
System Uptime	Uptime of the system.
CPU Usage	CPU utilization percentage.
Memory Usage	Memory utilization percentage.
Software Version	Current software version.
Device Name	OLT device name.
Electronic Serial Number	OLT MAC address.
MSN	OLT serial number.
IP Address	OLT IP address.
cnMaestro	cnMaestro connection status.
Throughput	Displays the total DL and UL PON throughput.

Elements	Descriptions			
	The DL throughput is displayed by a downward arrow and the UL throughput is displayed by an upward arrow.			
Interfaces				
Ports	ONTs connect using transceivers as follows:			
	 MGMT Port - One dedicated 100/1000Base-T RJ45 Ethernet port for out-of-band management, labeled MGMT. 			
	 PON Ports - Eight SFP+ ports (1–8), each supporting GPON, XGS-PON, or Combo PON transceivers. 			
	 NNI Ports - Two QSFP28 ports (1, 3) and two SFP28 ports (2, 4) for uplinks; support 1G–100G Ethernet, breakout, and FEC. 			
	 PON Ports (TCX16 only) - Additional eight SFP+ ports (9–16) on TCX16 models, also supporting GPON, XGS-PON, or Combo PON transceivers. 			
Thermal Status				
Compute	Displays the Compute Module Temperature such as:			
Module Temperature	Switch Chip Temperature			
	Board Left Temperature			
	Board Right Temperature			
Chassis Fan	Displays the fan speed in RPM for each of the five fans located in the replaceable fan module.			
ONU Outages				
Online/Offline	Displays ONU availability using two views:			
	• Weekly View: Displays the number of ONUs that fell below the selected SLA threshold on each day of the week.			
	• Daily View : Provides per-ONU uptime and outage timelines for the selected day, detailing offline durations and status transitions.			
	The Daily Uptime SLA selector defines the maximum allowable downtime per day (Example: 99.9% SLA = 1 minute 26 seconds). ONUs that exceed this downtime are classified as under SLA and counted in the daily outage metrics.			



Note

For information on how to access the Cambium ONT GUI, refer to The Cambium ONT UI section.

OLT Configuration

The configuration page is used to configure the system and network settings for OLT. This section covers the following topics:

- Configuring system settings
- Configuring network settings

Configuring system settings

The System page is used to configure the OLT general device settings. To access and configure the system settings, perform the following steps:

1. From the OLT Status page, navigate to **OLT Configuration** > **System**.

The System page appears, as shown in Figure 28.

Figure 28: The System page

Cambium Networks		🖉 BLR-QA-1 🥵 USERS CONNE		N (US)
II. Status Status OLT Configuration ∧	GENERAL	^	DATE AND TIME	
83 System ♦ Network • Provisioning ∨	Device Name	BLR-QA-1 support@cambiumnetworks.com	O System Time 203-1245 M2113 (○ Undo (○ Undo (○ Seen	
* Tools	OLT Location Max System Users	20 A mint 1 X mar 20		
	• Inactive Logout	Enabled	Administrator Account Cnabled	
	Inactive Logout Period	30 min; 1 max; 60 Measure minutes	Username	
	③ Share Anonymous Crash Reports Web Assess	Enabled	Password Contraction Contraction	
	HTTPS Port	443 <u>mirc1</u> 443 <u>mirc1</u>	CNMAESTRO ^	
	③ S5H Access	Enabled	Remote Management Enabled	
	 Enforce SSH Security O SSH Server Port 	22 nabled	ConMastro URL configuration Cambium ID C0004007	
	Netconf Access	Disabled	🕐 Onboarding Key	
	Netconf Port	10630	NETWORK TIME PROTOCOL (NTP)	
			Time Zone DIT DIT Cashier V Network Time Protocol (NTP) Enabled Enabled V NTF Server IP Assignment Static DHCP V Preferred NTP Server - - - Attenuate NTP Server - - -	
	SIMPLE NETWORK MANAGEMENT PROTOCOL	L (SNMP)	SYSLOG REMOTE	
	SNMP Server	Disabled	Syslog Remote Enabled	
	SNMP Port SNMP Read-only community string	161 v max 05035 SNMP Read-only community string	SYSLOG REMOTE SETTINGS	
	SNMP Read/Write community string	SNMP Read/Write community string	Port O Protocol O Target O	
			Ne data found	

2. Set the values for each parameter, as described in Table 15.

Table 15: The system page elements

Elements	Description
General	
Device Name	OLT device name.
OLT Owner Contact Information	Administrator email address.

Elements	Description
OLT Location	Location where the OLT is installed.
Max System Users	Sets the maximum number of concurrent web sessions (1 to 20).
Inactive Logout	Allows to enable or disable the inactive logout.
Inactive Logout Period	Duration of idol time before the login session is expired and the user is logged out. By default, it is 30 minutes.
Share Anonymous Crash Reports	Allows to enable or disable the sharing of anonymous crash reports.
Web Access	Choose the OLT Web UI access mode:
	HTTP only
	HTTPS only (no redirection)
	HTTPS with HTTP redirection
HTTPS port	Specifies the HTTPS server port. Valid range: 1 to 65535 (default: 443).
SSH Access	Secure Shell (SSH) for remote console access (default: Enabled).
Enforce SSH Security	Enforces stricter SSH security settings for higher security, which may limit compatibility with older SSH clients.
SSH Server Port	Specifies the SSH server port. Valid range: 1 to 65535 (default: 22).
Netconf Access	Enable Netconf Access to push the changes from the Netconf page.
Netconf Port	Configurable Netconf port from 1 to 65535 when Netconf Access is enabled.
Simple Network	Management Protocol (SNMP)
SNMP Server	Toggle SNMP server, disabled by default.
SNMP Port	Configurable SNMP port from 1 to 65535 (default: 161).
SNMP Read- only community string	Defines the shared access secret required for external systems to retrieve SNMP monitoring data without allowing configuration changes.
SNMP Read/Write community string	Defines the shared access secret required for external systems to retrieve and modify device configuration through SNMP.
Date and Time	

Elements	Description
System Time	Allows to select the system time range.
Account Manage	ement
Administrator Account	Toggle the default administrator account (reserved for future use).
Username	Administrator's username (reserved for future use).
Password	Administrator's password.
cnMaestro	
Remote Management	Toggle the cnMaestro device agent to connect or disconnect from the configured cnMaestro service.
cnMaestro URL	Optional. Allows manual entry of the cnMaestro server address, typically used for on-premises deployments. By default, the device uses a discovery process that resolves to the cloud server cloud.cambiumnetworks.com unless manually overridden. For more information, refer to the cnMaestro connection diagram available in the Cambium Community via the tooltip link.
Cambium ID	Optional. Used only when onboarding from the OLT instead of using the recommended claiming process in cnMaestro. This value is the Cambium ID of the target account, found under cnMaestro > Onboard > Settings .
Onboarding Key	Optional. Used only when onboarding from the OLT instead of claiming in cnMaestro. This key is generated in cnMaestro > Onboard > Settings and ties the device to the account.
Network Time P	rotocol (NTP)
Time Zone	Select the OLT's timezone from the drop-down or search for filter options.
Network Time Protocol (NTP)	Toggle Network Time Protocol (NTP). By default, it is enabled.
NTP Server IP Assignment	NTP Server configuration mode Static or DHCP assigned. Select the NTP Server IP Assignment from the following options:
	• Static - Manually configure the Preferred or Preferred and Alternative NTP server by IP or DNS name such as <i>0.us.pool.ntp.org</i> and <i>1.us.pool.ntp.org</i> .
	DHCP - Configure the NTP server from the DHCP response.
Preferred NTP Server	Configure the Preferred NTP server by IP or domain name such as <i>0.us.pool.ntp.org</i> .
Alternate NTP Server	Configure the Alternate NTP server by IP or domain name such as <i>1.us.pool.ntp.org.</i>

Elements	Description
Syslog Remote	
Syslog Remote	Allows to enable or disable the syslog remote.
Syslog Remote S	Settings
Port	Allows to configure the port from 1 to 65535 when Syslog Remote is enabled.
Protocol	Select the protocol from the following options:
	• TCP
	• UDP
Target	Allows to configure the target.
Add	Allows to add the new syslog remote settings.

Configuring network settings

The Network page is used to configure the network of the OLT device and also allows to configure the SFP compatibility with the Switch port as shown in SFP compatibility with Switch port.

To access and configure the network settings, perform the following steps:

1. Log on to the OLT (as described in the Accessing the OLTUI section).

The OLT Status page appears as shown in Figure 27.

2. From the OLT Status page, navigate to **OLT Configuration > Network**.

The Network page appears, as shown in Figure 29.

Figure 29: The Network page

Cambium Networks	
nh. Status	GENERAL ^ ADVANCED ^
ិ System ភ្លូ Network	IP Assignment Sunc DHCP LLDP Duabled
	(Invertifyed with mask Invertified (invertifyed with mask Invertified (invertified (invert
	6. Strawy IPv6 Commy Pv6 O Management Pvr
	DNS 1011012/101010101021111 O Management Part Speed 0 Acco 100 100
	Management Port Discription Monagement Port Management Management Port Management Managemen
	Management Port VLAN ID 1 A root 1 V root coll
	Managamant Part VLAN Priority 0 × mm1
	Enable Port # Inibial Management () O MADIA (VIII) O #FEC () 0.914 () Possibility Possibi
	2 (10) (10) (10) (10) (10) (10) (10) (10)

3. Set the values for each parameter, as described in Table 16.

Table 16: The network page elements

Elements	Description
General	
IP Assignment	IP Assignment of the OLT device. The following are the IP assignment options:
	• Static - Allows the user to configure a static IPv4/IPv6 address.
	• DHCP - IP provided by the DHCP server from the DHCP pool.
IPv4/IPv6 with mask	Lists the IPv4/IPv6 address of the OLT device.
Gateway	IP is defined by the ISP for routing.
Gateway IPv6	Gateway IPv6 address.
DNS	DNS server IP address for URL resolution.
Advanced	
LLDP	Allows to enable or disable the LLDP.
Management Port	
Management Port	To enable/disable the management port.
	The OLT becomes inaccessible through the management interface once it is disabled, including via the backdoor IP address 169.254.1.1.
Management Port	The following are the management port duplex options:
Duplex	 Full - Allows both ends of a connection to transmit and receive data simultaneously.
	• Half - Allows the connection to either transmit or receive data.
Management Port	Speed of the management port. The following are the speed options:
Speed	• Auto
	• 10M
	• 100M
	• 16
Manager and David	
Description	Management port description.
Management Port VLAN Settings	Allows to enable or disable the management port VLAN settings.

Elements	Description
Management Port VLAN ID	Enables configuration of the management port VLAN ID, with a range from 1 to 4094.
Management Port VLAN Priority	Enables configuration of the Management Port VLAN Priority, with a range from 0 to 7.
Uplink Ports	
Enable Port	Enable or disable the uplink port.
Port #	Uplink port number.
Inband Managment	Enable or disable inband management capability on the uplink port.
MGMT VLAN ID	Enables configuration of the inband management VLAN ID, if inband management is enabled.
FEC	Note : An orange icon indicates that modifying the FEC field values will require a reboot.
	The following are the FEC options:
	• Auto
	• FC-FEC
	• RS-FEC
	• OFF
FIR	Note : An orange icon indicates that modifying the FIR field values will require a reboot.
	Allows to select the FIR options such as:
	• HPE
	• GPE
	• HBE
DAC	Note : An orange icon indicates that modifying the DAC field values will require a reboot.
	Allows to enable or disable the DAC.
Speed	Note : An orange icon indicates that modifying the speed field values will require a reboot.
	Select the speed of OLT device. The following are the speed options:

Elements	Description
	• 1G (Breakout mode)
	• 10G (Breakout mode)
	• 25G (Breakout mode)
	• 40G
	• 100G
Description	Type the description for the uplink port. Name and description are distinct attributes of the interface.

SFP compatibility with Switch port

SFP (Small Form-Factor Pluggable) adapters provide Ethernet connectivity through Optical Fiber and copper, offering compatibility with a range of Ethernet and GPON equipment. They support both single-mode and multi-mode fiber, as well as Ethernet cables, providing benefits such as space efficiency, reduced power consumption, and extended transmission range. Various options are available based on transmission speed, cable type, and compatible equipment.

The compatibility between the SPFs and the different switch port is described below:

Table 17: SFP compatibility with switch

			Switch port details							
Manufacturer	Model/Part No	Supported	Connector	OLT	OLT FEC	FIR	DAC	Model	Port Speed	FEC
		Speeds	Туре	Speed	OFF/Auto					
Mikrotik X0	XQ+85MP01D	100G	MPO	100G	OFF	HBE/GPE/HPE	Disable	visable CRS518- 16XS-	Auto/100GbaseCR4/100GbaseSR 4-LR4	FEC-74, Auto, OFF
					Auto	GPE/HPE		2XQ		FEC-91
Mikrotik	S+RJ10	10G	RJ45	10G	OFF/Auto	HBE/GPE	Disable	CRS518- 16XS- 2XQ	Auto/10BseT/10BaseCR/10GbaseS R-LT	FEC-91, FEC- 74, Auto, OFF
Mikrotik	S+AO0005	10G	DAC	10G	OFF/Auto	HPE/GPE/HBE	Enable	CRS518- 16XS- 2XQ	Auto/10GbaseCR/SR-LR/10BaseT	FEC-91, FEC- 74, Auto, OFF
Mikrotik	XS+DA0003	25G	DAC	25G	OFF/Auto	HPE/HBE	Enable	CRS518- 16XS- 2XQ	Auto/25GBaseCR/25GbaseSR-LR	Auto, OFF
Mikrotik	Q+DA0001	Q+DA0001 40G	DAC	40G	OFF	HBE/HPE	Enable	ble CRS518- 16XS- 2XQ	18- Auto/40G baseCR4/40G baseSR4- LR4	FEC-91, Auto, OFF
					Auto]				FEC-74

			Switch port details								
Manufacturer	Model/Part No	Supported	Connector	OLT	OLT FEC	FIR	DAC	Model	Port Speed	FEC	
		Speeds	Туре	Speed	OFF/Auto						
Mikrotik	XQ+DA0001	100G	DAC	100G	OFF	HBE/HPE	Enable	CRS518- 16XS-	Auto/100GbaseCR4/100GbaseSR 4-LR4	FEC-74, Auto, OFF	
					Auto			2XQ		FEC-91	
FS	SFP-10GLR-31	10G	LC	10G	OFF/Auto	HPE	Disable	CRS518- 16XS- 2XQ	Auto/10-CR/10G-LR-SR/10baseT	FEC-91, FEC- 74, Auto, OFF	
FS	SFP-10GSR-85	10G	LC	10G	OFF/Auto	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	Auto/10G-CR/10G-LR-SR/10baseT	FEC-91, FEC- 74, Auto, OFF	
FS	SFPP-PC01	10G	DAC	10G	OFF/Auto	HPE/GPE/HBE	Enable	CRS518- 16XS- 2XQ	Auto/10G-CR/10G-LR-SR/10baseT	FEC-91,FEC- 74,Auto,OFF	
FS	S28-PC01	10G	DAC	25G	OFF/Auto	HBE/HPE	Enable	CRS518- 16XS- 2XQ	Auto/25GBaseCR/25GbaseSR-LR	Auto, OFF	
FS	QSFP-PC001	10G	DAC	40G	OFF	HPE/HBE	Enable	CRS518- 16XS-	Auto/40G baseCR4/40G base SR4- LR4	FEC-91, Auto, OFF	
					Auto			2XQ		FEC-74	
FS Q28-PC	Q28-PC01	10G	DAC	100G	OFF	HPE/HBE	Enable	CRS518- 16XS-	Auto/100GbaseCR4/100GbaseSR 4-LR4	FEC-74, Auto, OFF	
						Auto			2XQ		FEC-91

			Switch port details							
Manufacturer	Model/Part No	Supported Speeds	Connector Type	OLT Speed	OLT FEC OFF/Auto	FIR	DAC	Model	Port Speed	FEC
Ubnt	UC-DAC-SFP+	10G	DAC	10G	OFF/Auto	HPE/GPE/HBE	Enable	CRS518- 16XS- 2XQ	Auto/100GbaseCR4/100GbaseSR 4-LR4	FEC-91, FEC- 74, Auto, OFF
Gigalight GQS-SPO101- LR4T	GQS-SPO101- LR4T	100G	MPO	100G	OFF	HPE/GPE	Disable	CRS518- 16XS-	Auto/100GbaseCR4/100GbaseSR 4-LR4	FEC-74, Auto, OFF
					Auto	HPE/HBE		2XQ		FEC-91
Gigalight GQS-SPO101- 4ER4T	GQS-SPO101- 4ER4T	100G	MPO	100G	OFF	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	Auto/100GbaseCR4/100GbaseSR 4-LR4	FEC-74, Auto, OFF
					Auto					FEC-91
Gigalight GQS-N SR4T	GQS-MPO101- 100G SR4T	IG MPO	100G	OFF	HPE/GPE/HBE	Disable	CRS518- 16XS-	Auto/100GbaseCR4/100GbaseSR 4-LR4	FEC-74, Auto, OFF	
					Auto			2XQ		FEC-91
Gigalight	GQS-SPO111- L24C	GQS-SPO111- 100G 24C	DOG MPO	100G	OFF	HPE/GPE/HBE	Disable	CRS518- 16XS-	Auto/100GbaseCR4/100GbaseSR 4-LR4	FEC-74, Auto, OFF
					Auto			2XQ		FEC-91
Gigalight	GQS-SPO400- ER4C	GQS-SPO400- 40G ER4C	MPO	40G	OFF	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	18- Auto/40G baseCR4/40G baseSR4- LR4	FEC-91, Auto, OFF
					Auto					FEC-74
Gigalight	GQS-SPO400- LR4	40G	МРО	40G	OFF/Auto	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	Auto/40G baseCR4/40G baseSR4- LR4	FEC-91, Auto, OFF

			Switch port details							
Manufacturer	Model/Part No	Supported Speeds	Connector Type	OLT Speed	OLT FEC OFF/Auto	FIR	DAC	Model	Port Speed	FEC
Gigalight	GQS-MPO101- eSR4T	100G	MPO	100G	OFF	HPE/GPE/HBE	Disable	CRS518- 16XS-	Auto/100GbaseCR4/100GbaseSR 4-LR4	FEC-74, Auto, OFF
					Auto			2XQ		FEC-91
Cambium	GSS-MPO250- SRT	25G	MM	25G	OFF/Auto	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	Auto/25GBaseCR/25GbaseSR-LR	Auto, OFF
Cambium	N000082L203A	40G	MPO	40G	OFF	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	Auto/40G baseCR4/40G baseSR4- LR4	FEC-91, Auto, OFF
					Auto					FEC-91
Cambium	SFP-10G-Copper	10G	RJ45	10G	OFF/Auto	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	Auto/10BaseCR/10GbaseLR- SR/10BaseT	FEC-91, FEC- 74, Auto, OFF
Cambium	SFP-10G-SR	10G	LC	10G	OFF/Auto	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	10BaseCR/10baseLR-SR/10BaseT	FEC-91, FEC- 74, Auto, OFF
Cambium	SFP-10G-LR	10G	LC	10G	OFF/Auto	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	Auto/10G -CR/10G-LR-SR/10baseT	FEC-91, FEC- 74, Auto, OFF
Dell	SFP+SR	10G	LC	10G	OFF/Auto	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	Auto/10G -CR/10G-LR-SR/10baseT	FEC-91, FEC- 74, Auto, OFF
DELL	S28-10G-25- GSR-85C	10G	MMF	25G	OFF/Auto	HPE/GPE/HBE	Disable	CRS518- 16XS- 2XQ	Auto/25GBaseCR/25GbaseSR-LR	Auto, OFF

Provisioning the ONT devices

The Provisioning page is used to manage the OLT. This section covers the following topic:

- Settings
- Services
- Profiles
- Devices

Settings

The settings page displays the onboarding, white list, and default uplink configuration of ONTs in the OLT.

To access and configure the ONTs settings, perform the following steps:

1. From the OLT Status page, navigate to **Provisioning** > **Settings**.

The **Settings** page appears as shown in Figure 30.

Figure 30: Settings page

Cambium Networks	
nl. Status �, OLT Configuration ∨	ONBOARDING ^ WHITE LIST ^
% Provisioning ∧ (%) Settings ♥ Services (%) Profiles	force intervejo ONU Roberto Constitution Southead Section Aux Distances Boot Promote Section CANDIDATE DIstances
en Devices € Monitor ✓ ★ Tools ✓	Servid Number 0 HW Type 0 Phy Port 0
	DEFAULT UPLINK ^
	NNI Default nr 4 v
	INTERFACE TO PROPILE
	toterface O Profiles O
	nosi nosi
	m4
	Neme O Description O Uplink O CHAN O SYLAN O IP Mode O O default This is default meregenerer p., Sofault 200 Usingged Dird? DEFAULT TO IMI
	Name official This is default management profile for new corring ONUs Decorption.
	Uptick/her Default A Column Column<

2. Set the values for each parameter, as described in Table 18

Table 18: The Settings page elements

Elements	Description
Onboarding	
Force Interop-ONU Reboots	Reboot third-party ONUs automatically after configuration changes to improve reliability.
Max Distance	Select the maximum distance of the OLT from ONT. The options are:
	• 20 Km - Shorter uplink interval for better throughput.
	• 40 Km - Longer uplink interval for longer distance.

Elements	Description
DHCP Option 82	Network segmentation DHCP option 82 allows you to identify the physical location or subnet where a DHCP request is raised. Toggle DHCP Options 82 to append DHCP requests from the end user gateways with information related to the location of the request, such as OLT PON port and ONT serial number.
	It is disabled by default.
DHCP Option 82 Circuit ID format	Set the circuit_id attribute appended to DHCP request as the the OLT Serial Number and PON Port (default) or Custom which supports the multiple variables. To customize DHCP Option 82, select Custom from drop-down.
DHCP Option 82 Circuit ID value	DHCP Option 82 Circuit ID value. By default, It is applicable when DHCP Option 82 Circuit ID Value is selected as Custom .
DHCP Option 82 Remote ID format	Set the remote_id attribute appended to DHCP request as the the ONT Serial Number (default) or Custom which supports multiple variables. To change it, select Custom from the drop-down.
DHCP Option 82 Remote ID value	DHCP Option 82 Remote ID value. By default, It is applicable when DHCP Option 82 Circuit ID Value is selected as Custom .
White List	
SN-Whitelist	Allows to add the whitelist with the Serial Number.
Candidate	Displays the Serial Number, Hardware Type, and Physical Port.
Default Upink	
NNI Default	Allows to select the NNI default from the drop-down.
Interface to profile	
Interface	Displays the interface details.
Profiles	Displays the profile details of the selected interface.
ONU In-Band Manageme	nt
Note : To use ONU In-Banc upstream of the OLT.	Management, make sure DHCP is configured on the selected VLAN
Name	Displays the name of the ONU In-Band Management.
Description	Displays the description provided.
Uplink Port	Displays the uplink port.
C-VLAN	Displays the VLAN tag ID range from 2 to 4094.
S-VLAN	Displays the outer Q-in-QVLAN tag ID range from 2 to 4094.

Elements	Description
IP Mode	Displays the IP Mode.
Add	Allows to add the new ONU In-Band Management.

3. Click Apply Configuration.

Adding the ONU In-Band Management

To add the ONU In-Band Management, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning** > **Settings**.
- 2. Click ADD.

The new ONU In-Band Management will be added to the list.

- 3. Configure the parameters as shown in Table 18.
- 4. Click Apply Configuration to save the changes.

Editing ONU In-Band Management

To edit the ONU In-Band Management, perform the following steps:

- 1. From the OLT Status page, navigate to Provisioning > Settings.
- 2. Select the required ONU In-Band Management.
- 3. Edit the profile information as shown in Table 18.
- 4. Click Apply Configuration to save the changes.

Copying the ONU In-Band Management

To copy the ONU In-Band Management, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning** > **Settings**.
- 2. Click **Copy** icon.

The new ONU In-Band Management will be added to the list.

- 3. Configure the parameters as shown in Table 18.
- 4. Click Apply Configuration to save the changes.

Deleting the ONU In-Band Management

To delete the ONU In-Band Management, perform the following steps:



Note

Action not allowed if the selected ONU In-Band Management is in use.

- 1. From the OLT Status page, navigate to **Provisioning** > **Settings**.
- 2. Click **Delete** icon.

The ONU In-Band Management will be deleted from the list.

3. Click Apply Configuration to save the changes.

Services

The Services page displays the service profiles and VLAN tag ID of ONTs in the OLT.

To access ONTs services, perform the following steps:

1. From the OLT Status page, navigate to **Provisioning** > **Services**.

The **Services** page appears as shown in Figure 31.

Figure 31: Services page

Cambium Networks		🖒 BLR-QA-1 🥵 USERS CONNECTED 🤀 INTERI	RNET STATUS 💭 NOTIFICATIONS 🕓 🔿 🖻 🛱 🗇 🕞 🖷
ılı Status � OLT Configuration ∨	SERVICE PROFILES		(© kas) []] ≈ ≡ ∧
⁰o Provisioning ∧ (9 Settings	Name 0 Description 0 VLAN Mode 0	Uplink O Upstream CVLANs O Downstream CVLANs O Port O Unsegged	Upstream \$VLANs 0 Downstream \$VLANs 0 Isolation 0 Unagged Untagged V
	Custom300-30 This is default service pr VUR1 This is default service pr VLN Passthrough VFT10 This is default service pr VLN Passthrough VLN Passthrough	NN-3 30 30 Default 101 101 Default 102 102	300 300 ✓ Umagged Umagged ✓ Umagged Umagged ✓
	VPT103 This is default service pr VLAN Passthrough VPT104 This is default service pr VLAN Passthrough VPT105 This is default service pr VLAN Passthrough	Default 103 103 Default 104 104 Default 105 105	Urnagged Urnagged ✓ Urnagged Urnagged ✓ Urnagged Urnagged ✓
	VPT105 This is default service pr VLAN Passthrough VPT107 This is default service pr VLAN Passthrough VPT108 This is default service pr VLAN Passthrough VLAN Passthrough	Default 106 106 Default 107 107 Default 108 108	Umagged Umagged ✓ Umagged Umagged ✓ Umagged Umagged ✓
	Go to	≪ < 1 2 3 4 > ≫	10 / p., ^ Total Rower 36
	DEFAULT 💽 🕷		^
	Name default:		This is default service profile for new coming ONUs Description
	VLAN Mode Access VLAN () Upstream VLAN ID 10	^ mic: 2 mac: 4094	Uplink Port Default ^
	() Isolation		

2. Displays the parameter, as described in Table 19.

Table 19: The Services page elements

Elements	Description
Service Profiles	
Name	Displays the name of the service profiles.
Description	Displays the description provided.
VLAN Mode	Displays the type of VLAN modes as shown in the Table 20.

Elements	Description
Uplink Port	Displays the uplink port.
Upstream C-VLANs	Displays the upstream VLAN tag ID.
Downstream C-VLANs	Displays the downstream VLAN tag ID.
Upstream S-VLANs	Displays the upstream outer Q-in-QVLAN tag ID range from 2 to 4094.
Downstream S-VLANs	Displays the downstream outer Q-in-QVLAN tag ID range from 2 to 4094.
Isolation	Enable possibility to forward traffic between ONTs by OLT.
Add	Allows to add the new service profiles.

VLAN Modes

The following table describes various VLAN mode options, with their corresponding VLAN configurations for upstream and downstream traffic across S-VLAN and C-VLAN settings.

VLAN Modes	Description	Upstream S-VLANs	Downstream S-VLANs	Upstream C-VLANs	Downstream C-VLANs
Access VLAN	Assigns an upstream VLAN tag to untagged User Network Interface traffic.	Untagged	Untagged	Defined	Untagged
Mapped VLAN	Transforms a User Network Interface VLAN tag to a specified upstream tag.	Untagged	Untagged	Defined	Defined Different
	The Mapped VLAN feature enables you to configure the User Network Interface VLAN ID within a range of 2 to 4094.				
VLAN Passthrough	Forwards User Network Interface traffic to the upstream network without modification.	Untagged	Untagged	Defined	Defined Same
Q-in-Q Tunnel	Adds an ONT-specific Inner and Outer VLAN tag to User Network Interface traffic.	Defined	Untagged	Defined	Untagged

Table 20: VLAN Modes

VLAN Modes	Description	Upstream S-VLANs	Downstream S-VLANs	Upstream C-VLANs	Downstream C-VLANs
Q-in-Q Trunk	Encapsulates User Network Interface traffic within an outer VLAN for tunneling across the PON system without modifying the original frames.	Defined	Untagged	Anytag	Anytag
Custom	Expert configuration mode for any other VLAN mapping scenario, e.g., Q- in-Q Passthrough.	Untagged Custom	Untagged Custom	Anytag Custom	Untagged Anytag Custom

Adding the Service Profiles

To add the service profiles, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning** > **Services**.
- 2. Click ADD.

The new service profile will be added to the list.

- 3. Configure the parameters as shown in Table 19.
- 4. Click Apply Configuration to save the changes.

Editing Service Profiles

To edit the service profiles, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning** > **Services**.
- 2. Select the required Service Profiles.
- 3. Edit the profile information as shown in Table 19.
- 4. Enable or Disable Isolation, if required.
- 5. Click Apply Configuration to save the changes.

Copying the Service Profiles

To copy the service profiles, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning** > Services.
- 2. Click **Copy** icon.

The new service profile will be added to the list.



After copying the profile, a warning icon displays to change the service profile's unique name.

- 3. Configure the parameters as shown in Table 19.
- 4. Click Apply Configuration to save the changes.

Deleting the Service Profiles

Note

To delete the service profiles, perform the following steps:



Action not allowed if the selected Service Profile is in use in the Devices - Profiles - ONT Profiles table.

Note

- 1. From the OLT Status page, navigate to **Provisioning** > **Services**.
- 2. Click **Delete** icon.

The service profile will be deleted from the list.

3. Click Apply Configuration to save the changes.

Profiles

The profiles page displays the ONT profiles of ONTs in the OLT.

To access the profile settings, perform the following steps:

1. From the OLT Status page, navigate to **Provisioning** > **Profiles**.

The **Profiles** page appears as shown in Figure 32.

Figure 32: Profiles page

Cambium Networks			(🔿 BLR-LAB-QA	USERS CONNECTE	D 👘 INTERNET STATUS		8800	۰
tatus									
DLT Configuration 🗸	ONU PROFILES							• 🚧 🔟 🕺 ≡	^
trovisioning A									
9 Settings	Neme 0	TX Enable O Max F	ame Size O Max DL O	Max UL 🔾	Description 0	Service Profile ()			
	default	2 1700	0 0	0	This is default ONU profile for	default			
Services	VPTI01	2 1700	0 0	0	This is default ONU profile for	VPT101			
Profiles	O VPT102	✓ 1700	0 0	0	This is default ONU profile for	VPT102			
Devices	O VPT103	✓ 1700	0 0	0	This is default ONU profile for	VPT103			
	VPT104	✓ 1700	0 0	0	This is default ONU profile for	VPT104			
nitor 🗸	O VPT105	✓ 1700	0 0	0	This is default ONU profile for	VPT105			
в 🗸	O VPT106	✓ 1700	0 0	0	This is default ONU profile for	VPT106			
	U VPT107	/ 1700	0 0	0	This is default ONU profile for	VPT107			
	DEFAULT 💽	Ŷ						^	
		Name				TX Enable	Crust 🔵		
		Max Frame Size	1700		min: 1509	Max DL	Untimited Custom		
		Max UI	Unlimited Curp				This is default ONU profile for new coming ONUs		
						Description		4	
		Service Profile	SP Name	Eth #					
					•				

2. Displays the parameter, as described in Table 21.

Table 21: The Profiles page elements

Elements	Description
ONT Profiles	
Name	Displays the name of the ONT profiles.
TX Enable	When the TX Enable setting is disabled, the ONT stops passing traffic. By default, the TX Enable setting is enabled.
Max Frame Size	Displays the maximum frame size range from 1500 to 9000.
	Note:

Elements	Description
	Ensure ONT support for the specified MTU.
	• Cambium Networks GPON ONTs support a maximum of 2000.
	Cambium Networks XGS ONTs support 9000.
Max DL	Displays the selected maximum downlink such as:
	• Custom : allows to select the range from 5 to 2500.
	Unlimited: Select the default value.
Max UL	Displays the selected maximum uplink such as:
	• Custom : allows to select the range from 5 to 2500.
	• Unlimited : Select the default value.
Description	Displays the description of the profiles.
Service Profile	Displays the selected service profile name and Eth.

Adding the ONT Profiles

To add the ONT profiles, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning** > **Profiles**.
- 2. Click ADD.

The new ONT profile will be added to the list.

- 3. Configure the parameters as shown in Table 21.
- 4. Click Apply Configuration to save the changes.

Editing the ONT profiles

To edit the ONT profiles, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning** > **Profiles**.
- 2. Select the required ONT Profiles.
- 3. Edit the profile information as shown in Table 21.
- 4. Enable or Disable Isolation, if required.
- 5. Click Apply Configuration to save the changes.

Copying the ONT Profiles

To copy the ONT profiles, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning** > **Profiles**.
- 2. Click **Copy** icon.

The new ONT profile will be added to the list.

Note



After copying the profile, a warning icon displays to change the ONT profile's unique name.

- 3. Configure the parameters as shown in Table 21.
- 4. Click Apply Configuration to save the changes.

Deleting the ONT Profiles

To delete the ONT profiles, perform the following steps:



Action not allowed if the selected ONT Profile is in use in the Devices > Action > Configure table.

- 1. From the OLT Status page, navigate to Provisioning > Profiles.
- 2. Click **Delete** icon.

Note

The ONT profile will be deleted from the list.

3. Click Apply Configuration to save the changes.

Applying Service Profiles to ONT

To apply the service profiles to ONT, perform the following steps:

Once the Service Profiles are created, you can apply them to ONTs using two methods such as:

- Inherited Way:
 - Create an ONT Profile: After creating a Service Profile, map it to an ONT profile.
 - Apply to Multiple ONTs: Use the mapped Service Profiles within the ONT profile to apply to individual or multiple ONTs.
 - Simplified Management: This method allows for central management and easy bulk application of service profiles to several ONTs through the ONT profile structure.
- Non-Inherited Way:
 - Direct Application to ONT: Apply the Service Profile directly to specific ONTs without creating an ONT profile.

- For Individual ONTs: This approach is ideal for ONTs that need custom profiles differing from bulk ONT profile settings.
- Manual Application: Manually assign each ONT the required Service Profile without using an ONT profile.

Devices

On the Devices page of the OLT, you can configure the following settings:

- Configure
- Software Update
- Reboot
- Quarantine
- Statistics
- Download TSF

To access and configure the ONTs Devices page, perform the following steps:

1. From the OLT Status page, navigate to **Provisioning** > **Devices**.

The **Devices** page appears as shown in Figure 33.

Figure 33: Devices page

or fx Conjustive constant consta	oriks		4	BLR-LAB-QA1	CONNE USERS CONNE	CTED 🕼	INTERNET STATUS	Q NOTIFICA	nons 6 O	880	G
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Actions 12.140		XGS-PON ONU	1.2.1-RC3	1.2.0-RC16	XGSPON		Provisioned	Not started	Not started	102 -> 102	
CONFIGURE 1214G		XGS-PON ONU	1.2.1-RC3	1.2.1-RC1	XGSPON		Provisioned	Not started	Not started	103 -> 103	
ACTIONS Control of Control		XGS-PON ONU	1.2.1-8C3	1.2.1-801	XGSPON		Provisioned	Not started	Not started	106 -> 106	
ACTIONS COMBAGUE STATEST COMPARENT SECTOR GPRONUM GENERATION SECTOR GEN		XGS-PON ONU	1.2.1-RC3	1.2.1-RC1	XGSPON	1	Provisioned	Not started	Not started	108 > 108	
CONNOUNC 1340 1340 000 4 Proceed National 201-20 CONNOUNC 1340 010 4 Proceed National 201-20 NOTION 1340 010 4 Proceed National 201-20 NOTION 1340 010 1340 010 4 Proceed National 201-20 Notional 1340 010 1340 010 5 Proceed National 201-20 Notional 1340 0100 5 Proceed National 100-10 Grad C 2 2 3 3 Proceed National 100-10 Actions Connound Supervision GPON ONU PORT 2 Connound		XGS-PON ONU	1.2.1-8C3	1.2.1-801	XGSPON		Provisioned	Not started	Not started	107 -> 107	
ACTIONS COMPAGES SWUPPATE REBOOT QUARANTINE STATETICS DOWNLOADTSF SECTOR GPON ONU PORT 2 GPON ONU PORT 2		G PON ONU Por	1.2.1-RC3	1.2.1-RC1	GPON		Provisioned	Not started	Not started	208 -> 208	
Dotation 13.MS 13.MS NOTO 5 Presented Notation 118-11 Gro C 2 3 3 S		GPON ONU Por	1.2.1-RC3	1.2.1-801	GPON		Provisioned	Not started	Not started	207 -> 207	
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Decorption Contraction Contrac			Max DL 5	peed D University				Max UL Speed 🗆			
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fr			Descri	ption				TX Enable 🗆 🌔	Not started		
server intifies						h		Service Profiles 🗌	SP name Etil VPT203 A	# #0	

2. Displays the parameter, as described in Table 22.

Table	22:	The	Devices	page	elements
-------	-----	-----	----------------	------	----------

Elements	Description			
ONT List				
Select All	Allows to select all ONTs listed.			
Deselect All	Allows to deselect all ONTs listed.			
Select All XGSPON	Allows to select all ONTs that are of the XGSPON type.			
Select All GPON	Allows to select all ONTs that are of the GPON type.			
ONTs Selected	Displays the number of ONTs currently selected.			
Devices				
Device Name	Displays the name assigned to the ONT device.			
Serial Number	Displays the serial number associated with the ONT device for identification.			
Active SW Image	Displays the software version currently active on the ONT device.			
Inactive SW Image	Displays the software version that is inactive but stored on the ONT device.			
ONT Type	Displays the type of ONT.			
	Example: XGSPON or GPON			
PON Number	Displays the specific PON port number to which the ONT is connected.			
State	Displays the current onboarded state of ONT such as:			
	 Provisioned: The ONT is onboarded to the OLT and able to pass data traffic. 			
	• Activated : The ONT is onboarded to the OLT but cannot pass traffic. For example, this occurs when TX Enable is disabled.			
	• Disabled : The ONT is quarantined and unable to operate.			
	 N/A: The ONT is not onboarded to the OLT. Possible reasons include: 			
	The ONT is powered off.			
	The fiber connection to the ONT is disconnected.			
	• The ONT hardware has been replaced with another unit.			
Reboot Status	Displays the reboot process has been Not Started, Started, or Completed.			

Elements	Description		
Upgrade Status	Displays the status of any software upgrade performed on the ONT.		
VLANS	Displays the VLAN IDs configured for the specific ONT device.		
Actions			
Configure	Allows to configure specific settings for the selected ONT. For more information refer to <u>Configure</u> .		
SW Update	Allows to perform a software update for the selected ONT.		
	Note : It is recommended to divide a large number of ONT upgrades into smaller groups, such as 20 to 30 ONTs per batch.		
Reboot	Allows to reboot the selected ONT device.		
Quarantine Allows to isolate the selected ONT from the network for troubleshooting or forced ONT disconnections.			
Statistics	Displays the performance or usage statistics for the selected ONT.		

Configure

The Configure tab allows users to manage settings for ONT ports and provides control over network parameters such as device name, speed limits, and frame sizes, with enabling or disabling specific features as shown in Figure 34.

Figure 34: Configure tab



Configuration of ONT port

To configure the ONT port, perform the following steps:

1. From the OLT Status page, navigate to **Provisioning** > **Devices**.

The **Devices** page appears as shown in Figure 33.

- 2. Select the required devices from the **ONT List**.
- 3. Click Configure.
- 4. Enable Single Edit or Bulk Edit mode.
- 5. Configure the parameters as shown in Table 23.

Table 23: The Configure tab elements

Elements	Description		
Device Name	Allows to edit the name assigned to the ONTs.		
Max DL Speed	Select checkbox to use a custom value of maximum DL speed. Uncheck to inherit value from the ONT profile.		
Description	allows to add descriptions about ONT configuration.		
Max Frame Size	Select checkbox to edit the maximum frame size.		
Max UL Speed	Select checkbox to use a custom value of maximum UL speed. Uncheck to inherit value from the ONT profile.		
ONT Profile	Allows to select the predefined ONT profiles (e.g., VPT203) for quick configuration from the drop-down list.		
TX Enable	Select checkbox to use a custom value of TX. Uncheck to inherit value from the ONT profile.		
	This toggle enables or disables transmission for this port.		
Service Profiles	Select checkbox to use a custom value of maximum UL speed. Uncheck to inherit value from the ONT profile.		
	Allows to include the service profile to the Ethernet interface.		

6. Click Apply Configuration to save the changes.

Deleting the ONT Device

To delete the service profiles, perform the following steps:

- 1. From the ONTs page, navigate to **Provisioning > Devices > Configure** tab.
- 2. Enable Single Edit or Bulk Edit mode.



The ONT devices will be deleted from the list.

4. Click Apply Configuration to save the changes.

Software Update

The Software Update tab allows users to upload and apply firmware updates for GPON and XGS-PON ONTs. Firmware updates enhance functionality and provide necessary bug fixes.

Figure 35: SW Update tab

Cambium Networks		📩 BLR-LAB-QA1	🧐 USERS CONNECTED 🛛 🤀	INTERNET STATUS				
🔒 Status								
a, OLT Configuration ∨	ONU LIST					^		
Catting	Select All Deselect All Select All XGSPON	Select All GPON ONUs Selected: 12						
ty services	DEVICES					. m = .		
Profiles	Device Name O Serial O	Arrive GM Image A Insertius GM Image A	ONUTION O RON Number O	State 0 Rebort Str	atur A Honorada Statur A	VI ANS O		
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⊛ Monitor V	G-PON ONU Por	1.2.1-RC3 1.2.1-RC1	GPON 3	Provisioned Not started	d Not started	206 -> 206		
	G-PON ONU Por	1.2.1-RC1 1.2.0-RC16	GPON 3	Provisioned Not started	d Not started	205 > 205		
🛠 Tools 🗸 🗸	G-PON ONU SN	1.2.1-RC3 1.2.1-RC1	GPON 1	Provisioned Not started	d Not started	202 -> 202		
	XGS-PON ONU	1.2.1-RC3 1.2.0-RC16	XGSPON 1	Provisioned Not started	d Not started	102 -> 102		
	XGS-PON ONU	1.2.1-RC3 1.2.1-RC1	XGSPON 2	Provisioned Not started	d Not started	103 -> 103		
	XGS-PON ONU	1.2.1-RC3 1.2.1-RC1	XGSPON 3	Provisioned Not started	d Not started	106 -> 106		
	XGS PON ONU	1.2.1-RC3 1.2.1-RC1	XGSPON 4	Provisioned Not started	d Not started	108 -> 108		
	XGS-PON ONU	1.2.1-RC3 1.2.1-RC1	XGSPON 4	Provisioned Not started	d Not started	107 -> 107		
	G-PON ONU Por	1.2.1-RC3 1.2.1-RC1	GPON 4	Provisioned Not started	d Not started	208 -> 208		
	G-PON ONU Por	1.2.1-RC3 1.2.1-RC1	GPON 4	Provisioned Not started	d Not started	207 -> 207		
	XGS-PON ONU	1.2.1-RC3 1.2.1-RC1	XGSPON 5	Provisioned Not started	d Not started	110 -> 110		
	ACTIONS					^		
	CONFIGURE SW UPDATE REBOOT QUARANTINE STATISTICS DOWNLOAD TSF							
	SELECTED UPLOV	UPLOAD FIRMWARE IMAGES			CHOOSE FIRMWARE FOR UPDATE			
	G-PON ONU Port 2							
	G-PON ONU Port 3	Select File	Upload file.	Browse.	Select			
	G PON ONU Port 3		United		Unstate			
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	Add-function of the former	Cambium-Fiber-GPON-ONT-v1.2.0.img	ing					
	GHON ONU Port 4	9.09mb						
	G-PON ONU Port 4							
	Tab-PON ONU Port 5	Campion-Hoer-MasPON-UNI-V1.2.0.lmg		۰				

Upload Firmware Images



Note

The remote ONT firmware update is applicable only when the OLT software is upgraded to version 1.2.0 or higher.

To upload the firmware images, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning > Devices > SW Update** tab.
- 2. Select the required or all devices from the **Devices** list.
- 3. Click **Browse** in select file to upload the firmware images.
- 4. Click Upload.
Upon successful upload, the ONT images will appear in the Available Images list with the following options:

- Select All/Deselect All: Allows the user to select or deselect all available firmware images.
- Remove Selected: Allows user to remove the selected firmware images from the list.

Update Firmware

To update the firmware, perform the following steps:

- 1. From the OLT Status page, navigate to Provisioning > Devices > SW Update tab.
- 2. Select the required or all devices from the **Devices** list.
- 3. Select the required firmware images from the drop-down list.
- 4. Click Upgrade.

Reboot

Rebooting the device allows the user to restart ONTs, which will temporary loss of connectivity. Click **Reboot ONT(s)** as shown in Figure 36.

Figure 36: Reboot tab

Cambium Networks	🛃 BLR LAB QA1 🧏 USERS CONNECTED 🔀 INTERNET STATUS 🔒 NOTIFICATIONS 🐇 🔿 👸	🕒 🗿 🕞 🖷 EN (US) ~
il. Status		-
↔ OLT Configuration ∨	ONU LIST	^
% Provisioning 🔨		
Settings	Second Desdect All Control Select All CPON ONUS Selected: 12	
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* 3619765		
Profiles	Pl Device Name 0 Serial 0 Zarber SW Image 0 Institute SW Image 0 ONLI Tune 0 PDN Number 0 State 0 Behaver Status 0 Unorode Status 0	VIANS O
💣 Devices	Genvinite	202 + 202
Monitor	CONVICTOR 121872 12187 CONVICTOR 2 CONVICTOR	205 -> 205
	General Particle 121811 120816 (GPDN 3) Providend Network Particle Network	205 -> 205
🛠 Tools 🛛 🗸	General 1212071 1212071 GON 1 Provisional Networked Networked	202 -> 202
	VICENDATION 121283 120876 VICENT 1 Providend Networked Networked	102 - 102
	VICEPPLONI	103 + 103
	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	106 > 106
	VICEPTN (WILL 1218/2 1218/2 VICEPTN 4 Providenced Networked Networked	108-> 108
	X05P0N ONU 12.1.4C3 12.1.4C1 X05P0N 4 Provisioned Not started Nor started	107 -> 107
	G GPDN DNI IPV. 121-8C3 121-8C1 GPDN 4 Provisioned Not started Not started	208 -> 208
	G GPON DNU Por 12.1-8C1 GPON 4 Provisioned Not started Not started	207 -> 207
	X05P0N ONU 12.1-8C1 12.1-8C1 X05P0N 5 Provisioned Not started Not started	110 -> 110
	ACTIONS CONFIGURE SH LIPGATE REDOOT QUARANTINE STATISTICS DOWINLOAD TSF	^
	SELECTED REBOOT TOOL	
	GARD COLUMN2 GARD COLUMN2 GARD COLUMN2 GARD COLUMN3 GARD COLUMN3 GARD COLUMN3	
	G-PON CNU SH-CMBM0000000	
	NDSPAN ONU Port 1 (C) Reboot OMU(s)	
	X054F0N GNU Pert 2	
	X85-MX KHU Port 3	
	XdS#DN CNU Port 4	
	XISSPON ONU Port 4	
	G-PON DNJ Port 4	
	G-PON DNJ Port 4	
	XXS-RON CRU Fort 5	

Quarantine

The Quarantine tab allows administrators to isolate ONT devices that perform abnormal behavior or need to be restricted access for troubleshooting. When an ONT is in quarantine, it is limited in its network communication to prevent disruptions while still being accessible for necessary maintenance tasks. The state is disabled when an ONT is in quarantine.

Cambium Networks		BLR-QA-1 🥵 USERS CONNECTED (🕼 INTERNET STATUS 🕼 NOTIFICATIONS	😤 🛱 🔿 🕞 🖷 EN (US) 🗸
ulı Status ۹, OLT Configuration ∨	ONU LIST			^
% Provisioning ∧ ⊗ Settings % Services	Select All Develect All Select All X55PON Select All GPON	ONUs Selected: 0		*
D Profiles	Device Name Serial Active SW Image Seech. Seech.	Inactive SW Image 🗘 ONU Type 🗘 PON Number	⊖ State ⊖ Reboot Status ⊖ Upgrade Status ⊖	VLANS 0
ai Deves €, Montor ∨ £ Tools ∨	A THY GOL IV	1318C1 470% 2 1518C1 670% 3 1238C8 670% 3 1238C1 670% 1 1248C1 670% 1 1248C1 870% 1 1248C1 870% 3 1248C1 870% 4 1348C1 670% 4 1348C1 670% 4 1348C1 670% 4 1248C1 870% 5	Dashed Na samed Na samed Probloved Na samed Na samed	200 - 203 206 - 205 207 - 205 207 - 205 102 - 402 103 - 403 104 - 403 107 - 403 207 - 207 208 - 207 208 - 207 209 - 208 209 - 208 200 - 208
	ACTIONS C COMPOSITE SHUPPARE REBOT QUAMANTINE STATISTICS DOW Select ONL. QUARANTINE TOOL SET/UNSET BY SERIAL SN List C Unset Consume Official C Uns	ALOND TSF	SETJUNSET BY SELECTED P Unon Quantum ONLES * Set Quantum ONLES * Set Quantum ONLES	

Set/Unset by Serial Number

To Quarantine the devices by serial number or selected, perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning > Devices > Quarantine** tab.
- 2. If the user selects Set/Unset by Serial Number:
 - Click the **SN List** add ⁺ icon.
 - Enter the Serial Number.

If the user selects Set/Unset by Selected:

• Select the required or all devices from the list.

3. Click Set/Unset Quarantine ONT(s).

Upon successfully setting or unsetting Quarantine for the ONT(s), the device's state will be updated to either **Provisioned** or **Disabled** in the list.

Statistics

Statistics tab provides detailed insights into fiber performance and health monitoring as shown in .

Figure 38: Statistics tab

Cambium Networks		🛃 BLR-LAB-C	QA1 Sers connected	🕼 INTERNET STATUS		11 11 11 11 11 11 11 11 11 11 11 11 11
Status						
Q. OLT Configuration ∨	ONU LIST					~
-	Select All Deselect All X	SSPON Select All GPON ONUS Selected	8: 12			
Settings						
	DEVICES					⊥ □ ≈ = ^
	Device Name O Serial O					
	Search. Q. Search.	Q Active SW Image C Inactive SW In	nege O ONU Type O PON Nur	nber 🗘 State 🗘 Reboot Status	O Upgrade Status O	VLANS ()
@ Monitor >>	G PON ONU Por CMBM000000	2 1.2.1-RC3 1.2.1-RC1	GPON 2	Provisioned Not started	Not started	203 -> 203
	G-PON ONU Por CMBM0000004	A 1.2.1-RC1 1.2.0-RC16	GPON 3	Provisioned Not started	Not started	205 -> 205
🛠 Tools 🗸 🗸	G-PON ONU SN CMBM0000008	D 1.2.1-RC3 1.2.1-RC1	GPON 1	Provisioned Not started	Not started	202 -> 202
	XGS-PON ONU CMBM000000F	7 1.2.1-RC3 1.2.0-RC16	XGSPON 1	Provisioned Not started	Not started	102 -> 102
	XGS-PON ONU CMBM0000011	4 1.2.1-RC3 1.2.1-RC1	XGSPON 2	Provisioned Not started	Not started	103 -> 103
	XGS-PON ONU CMBM0000011	8 1.2.1-RC3 1.2.1-RC1	XGSPON 3	Provisioned Not started	Not started	106 -> 106
	XGS-PON ONU CMBM0000010	3 1.2.1-RC3 1.2.1-RC1	XGSPON 4	Provisioned Not started	Not started	108 -> 108
	XGS-PON ONU CMBM0000010	5 1.2.1-RC3 1.2.1-RC1	XGSPON 4	Provisioned Not started	Not started	107 -> 107
	G-PON ONU Por CMBM0000018	7 1.2.1-RC3 1.2.1-RC1	GPON 4	Provisioned Not started	Not started	208 -> 208
	G-PON ONU Por CMBM0000015	6 1.2.1-RC3 1.2.1-RC1	GPON 4	Provisioned Not started	Not started	207 -> 207
	XGS-PON ONU CMBM0000011	2 1.2.1-RC3 1.2.1-RC1	XGSPON 5	Provisioned Not started	Not started	110 -> 110
	ACTIONS CONFIGURE SWUPDATE REBOOT QUAR ONU LIST	ANTINE STATISTICS DOWNLOAD TSF				^ ± Ⅲ 88 ≡ _∧
	Serial Number 🗘 🛛 Name 🗘	Description 0	T O Distance O HW Typ	e O PON UL Signal O Bank	on Active 🗧 State 🗘	
	CMBM000000F7 XGS-PON	DNU Port 1 N/A 1	0 Km XGSPOP	-18.4 dBm 1.2.1-RC3	8 Provisioned	
	CMBM000000BD G-PON ON	U SN-CM N/A 1	0 Km GPON	-23.2 dBm 1.2.1-RC3	8 Provisioned	
	CMBM00000114 XGS-PON 0	DNU Port 2 N/A 2	0 Km XGSPOM	-23.0 dBm 1.2.1-RC3	8 Provisioned	
	CMBM000000D2 G-PON ON	U Port 2 N/A 2	0 Km GPON	-28.5 dBm 1.2.1-RC3	8 Provisioned	
	CMBM00000118 XGS-PON 0	DNU Port 3 N/A 3	0 Km XGSPOP	-17.3 dBm 1.2.1-RC3	Provisioned	
	CMBM0000091 G-PON ON	LI Port 3 N/A 3	0.Km GPON	.22.5 dBm 1.2.1.8C3	8 Provisioned	
	CMBM0000044 G-PON ON	LI Port 3 N/A 3	0.Km GPON	-22.0 dBm 1.2 1.8C1	Provisioned	
	C1401400000405 XC5 0004		0.000 VCC000	460.40-	Previolation of	
	CMBM00000105 X03-PON	IND PORTA N/A 4	0 km XdSPOP	-16.0 dBm 1.2.1-RC3	Provisioned	
	CMBM00000103 XGS-PON	INU Port 4 N/A 4	0 Km XGSPOM	4 -15.6 dBm 1.2.1-RC3	8 Provisioned	
	CMBM00000187 G-PON ON	U Port 4 N/A 4	0 Km GPON	-21.8 dBm 1.2.1-RC3	8 Provisioned	
	CMBM00000196 G-PON ON	U Port 4 N/A 4	0 Km GPON	-21.6 dBm 1.2.1-RC3	8 Provisioned	
	CMBM00000112 XGS-PON (INU Port 5 N/A 5	0 Km XGSPON	i -16.4 dBm 1.2.1-RC3	8 Provisioned	
	Go to		≪ < 1 >	>		Select A Total Rows: 12

Download ONT TSF from OLT

Operators can now download a comprehensive Technical Support File (TSF) for Cambium ONTs directly from the Devices page. The TSF, packaged as a .zip file, includes logs, configuration data, and other key diagnostic information—streamlining the troubleshooting of one or multiple ONT connections. When contacting Cambium Support, sharing this file along with the OLT TSF from Tools > Backup helps accelerate issue resolution and improves collaboration.

Figure 39: Download TSF tab

Cambium Networks	
ul. Status 역, OLT Configuration ∨	ONU LIST ^
♣ Provisioning ∧ ♠ Settings ♥ Services	Source A1 Source A1 (K200) Source A1 (K200) ONUS Selected: 0 DEVICES III IIII IIII IIII IIII IIII IIII IIII IIII IIIIIIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
© Profiles	Image: Series Series Annew Winnage 0 Marker Winnage 0 ONU Type 0 PON Number 0 Series 0 Number 0 <
	ACTIONS ACTIONS CONFIGURE SIX UPDATE REBOOT QUARANTING STATISTICS DOWNLOAD TSF Select DOWL DOWNLOAD TSF TOOL Deveload Technical Support Pla DNUgg & Deveload

To download technical support file ONU(s), perform the following steps:

- 1. From the OLT Status page, navigate to **Provisioning > Devices > Download TSF** tab.
- $2. \hspace{0.1in} \text{Select the required or all devices from the } \textbf{Devices} \text{ list.}$
- 3. Click Download.

Downloads the TSF .zip file successfully.

Monitoring

The Monitor page is used to monitor the performance of the OLT. It has the following pages:

- Performance
- <u>ONU</u>
- Event Log

Performance

The performance page displays the performances of the NNI ports and PON ports. To access and monitor the performance of the OLT, perform the following steps:

1. From the OLT Status page, navigate to **Monitor** > **Performance**.

The Performance page appears, as shown in Figure 40.

Figure 40: The performance page

Cambium Networks		BLR-LAB-QA1	USERS CONNECTED	🕼 INTERNET STATUS	Q NOTIFICATIONS	608	8 0 G	EN (US)
aL Status ≪ OLT Configuration ∨ Se Provisioning ∨	TOOLS						Reset Stars	
€ Monitor ∧	MANAGEMENT INTERFACES	DNS 0	Gateway 0	Netmark 0	MAC 0		□ :: = /	×
 ⑦ EventLog ★ Tools ∨ 	ma1 192.168.0.1	10.110.12.110. 10.110.12.111	10.110.217.254	255.255.255.0	PC:11:65:20:02:24			
	UPLINK INTERFACES						□ 88 = /	<u> </u>
	Interface Name () Mode MNI-1 UNKO MNI-2 GQS-	II 0 Serial V Number N NOWN	endor O Utilization Tota o ambium Net 23	0				
	NNI-3 UNK NNI-4 UNK	IOWN IOWN	0					
	PON INTERFACES							
	Interface Name O Mode	d O Vendor Si Name N C1-SIP-H-1 Zyxel U	erial Onu Count O Iumber 1	Utilization Total 0	HW Type 0 XGSPON			
	PON-1-2 POM PON-2-1 POM PON-2-1 POM PON-2-1 POM	C1-SFP-H-1 Zyxel U 115FP-H1 Zyxel U	W984004376 2 W986005213 2	79 19	GPON XGSPON			
	PON-3-1 POM PON-3-2 POM	C1SFP-H1 Zyxel U C1SFP-H1 Zyxel U	W9B6005004 2 W9B6005004 2	14	XGSPON GPON			
	PON-4-1 POM PON-4-2 POM PON-5-1 POM	215FP-H1 Zyxel U 215FP-H1 Zyxel U 215FP-H1 Zyxel U	W986005348 2 W986005348 2 W986005182 2	14 79 14	XGSPON GPON XGSPON			
	PON-5-2 POM PON-6-1 POM	C15EP-H1 Zyxel U C1-SEP-H-1 Zyxel U	W986005182 2 W984004589 2	79 14	GPON XGSPON			
	PON-6-2 POM PON-7-1 POM PON-7-1 POM PON-7-1 POM	C1-SEP-H-1 Zyxel U C1SEP-H1 Zyxel U	W984004589 2 W986004919 2	79	GPON XGSPON			
	PON-8-1 POM PON-8-2 POM	15FP-H1 Zyxel U C15FP-H1 Zyxel U	W986005366 2 W986005366 2	14	XGSPON GPON			

The performance page has the following attributes:

- Tools
- Management Interfaces
- Uplink Interfaces
- PON Interfaces

Tools

Reset Stats is used to reset the statistics of the OLT as shown in Figure 41.

Figure 41: Tools

TOOLS

Perform the following steps to reset stats:

- 1. From the OLT Status page, navigate to Monitor > Performance > Tools.
- 2. Click Reset Stats.

Cambium Networks window appears as shown in Figure 42.

Figure 42: Cambium Networks window

Cambium Networks	CAMBIUM NETWORKS		
tl. Status �, OLT Configuration ∨ �; Provisioning ∨	Are you sure you want to reset state.	7 Cel Reset Stats	Reset Stats
⊛ Monitor ∧	MANAGEMENT INTERFACES		□ 88 ≡ ^
ONU Event Log	Interface Name () IP () DNS () Gatew ma1 192,168.0.1 10,110,12,110,10,110,12,111 10,110,12,110,10,110,12,111	y 0 Netmask 0 MAC 0 217.254 255.255.0 FC:11:65:20:02:24	
≮ Tools Υ	THROUGHPUT CHART - UPLINK INTERFACES		~
	UPLINK INTERFACES		
	Interface Name 0 Model 0 Seniti Number 0 Winder Name 0 Winder Name 0 Winder Name 0 Winder Name 0 Nam 0 Name 0 Name 0 </th <th>0 tutitation freat 0 0 0. 0 0 0</th> <th></th>	0 tutitation freat 0 0 0. 0 0 0	
	THROUGHPUT CHART - PON INTERFACES		^
	(ma		PON1-2-IN PON1-2-OUT

3. Click Reset Stats.

Management Interfaces

Management interfaces display the configuration information of the OLT as shown in Figure 43.

Figure 43: Management Interfaces - Normal view

MANAGEMENT INTERFAC	ES					Ⅲ 88	^
Interface Name 🗘	IP 🗘	DNS 🗘	Gateway 🗘	Netmask ()	MAC 0		

Table 24 describes the elements in the management interfaces.

Table 2	24: E	lements	in	the	management	interfaces

Element	Description
Interface Name	Interface Name
IP	IP address of the interface.

Element	Description
DNS	Domain name of the interface.
Gateway	Gateway IP address of the interface.
Netmask	IP address of the Netmask.
MAC	MAC address of the interface.

Uplink Interfaces

Uplink Interfaces displays the information on the NNI ports as shown in Figure 44.

```
Figure 44: Uplink Interfaces - Normal view
```

UPLINK INTERFACES [
	Interface Name 🗘	Model 🗘	Serial Number	Vendor Name	Utilization Total 🗇		
	NNI-1	UNKNOWN			0		
	NNI-2	GQS-MPO101-eSR4T	M2304260301	Cambium Net	23		
	NNI-3	UNKNOWN			0		
úl.	NNI-4	UNKNOWN			0		

Table 25 describes the elements in the uplink interfaces.

Table 25: Elements in the PON interface

Throughput Chart Uplink Interfaces

The Throughput chart displays the Uplink interfaces throughput data over time intervals of 1 day, 1 week, or 1 month, based on the selected option.

Perform the following steps, to view the throughput chart:

- 1. From the OLT Status page, navigate to Monitor > Performance > Uplink Intefaces.
- 2. Click the chart icon of the required interface.

Throughput Chart Uplink Interfaces appears as shown in Figure 45.

Figure 45: Throughput chart for Uplink Interfaces



PON Interfaces

PON interfaces display the information about the ONTs connected to the OLT as shown in Figure 46.

Figure 46: PON Interfaces - Normal view

Cambium Networks				🖒 BLR-Q	A-9 🥴 USER	IS CONNECTED	INTERNET STATUS	60	•	EN
Status OLT Configuration ∨	PON INTERFACES								 = ^	
b Provisioning ∨	Interface Name 0	Model 0	• Vendor Name 🗘	Serial Number	Onu Count 🔅	Utilization Total 🔅	HW Type 0			
R Monitor ^	@ PON-1-1		Cambium Networks		16	0%	XGSPON			
Performance	@ PON-1-2		Cambium Networks		16	0%	GPON			
() ONU	@ PON-2-1		Cambium Networks		0	0%	GPON			
Every Lor	PON-3-1		Cambium Networks		16	0%	XISSPON			
Tests	2 PON-3-2		Cambium Networks		16	0%	GPON			
, 1085 V	@ PON-4-1		Cambium Networks		0	0%	GPON			
	2 PON-5-1		Cambium Networks		16	0%	XGSPON			
	2 PON-5-2		Cambium Networks		16	0%	GPON			
	2 PON-6-1		Cambium Neovorks		16	0%	XGSPON			
	2 PON-6-2		Cambium Networks		15	0%	GPON			
	2 PON-7-1		Cambium Networks		0	0%	GPON			
	2 PON-8-1		Cambium Networks		0	0%	GPON			
	PON-9-1		Cambium Networks		16	0%	XGSPON			
	PON-9-2		Cambium Networks		16	0%	GPON			
	2 PON-10-1		Cambium Networks		15	0%	XISSPON			
	2 PON-10-2		Cambium Networks		16	0%	GPON			
	_									

Table 26 describes the elements in the PON interfaces.

Table 26: Elements in the uplink interface

Throughput Chart PON Interfaces

The Throughput chart displays the PON interfaces throughput data over time intervals of 1 day, 1 week, or 1 month, based on the selected option.

Perform the following steps, to view the throughput chart:

- 1. From the OLT Status page, navigate to Monitor > Performance > PON Intefaces.
- 2. Click the chart icon of the required interface.

Throughput Chart PON Interfaces appears as shown in Figure 47.

Figure 47: Throughput chart for PON Interfaces



ONU

The ONT page displays the list of ONTs connected to the OLT and their information.

To access and monitor the ONT list, perform the following steps:

1. From the OLT Status page, navigate to **Monitor** > **ONU**.

The ONU List page appears, as shown in Figure 48.

Figure 48: ONU List

Cambium Networks			්	BLR-LAB-QA	vi 🧟 USER	S CONNECTED	🗊 INTERNET STAT	JS Q NOTIFICATIO	ins 💪 ·	0	8	Ð	兽 EN (US)
ili Status � OLT Configuration ∨	ONU LIST										÷		^
% Provisioning ∨	Serial Number 0	Name 0 XGS-PON ONU Port 1	Description 0	OLT Port 0	Distance 0	HW Type 0 XGSPON	PON UL Signal 0	SW Version Active Bank 0 1.2.0-RC14	State 0 Provisioned				
Performance		G-PON ONU SN-CM G-PON ONU SN-CM	N/A N/A	1	0 Km 0 Km	GPON GPON	-23.2 dBm -23.2 dBm	1.2.0-RC14 1.2.0-RC14	Provisioned				
© Event Log Tools ∨		XGS-PON ONU Port 2 XGS-PON ONU SN-C	N/A N/A	2	0 Km 0 Km	XGSPON XGSPON	-19.3 dBm -17.1 dBm	1.2.0-RC14 1.2.0-RC14	Provisioned Provisioned				
		G-PON ONU SN-CM G-PON ONU Port 2	N/A N/A	2	0 Km 0 Km	GPON GPON	-22.5 dBm -21.6 dBm	1.2.0-RC14 1.2.0-RC14	Provisioned Provisioned				
		XGS-PON ONU Port 3 XGS-PON ONU Port 3	N/A N/A	3	0 Km 0 Km	XGSPON	-14.2 dBm -26.3 dBm	1.2.0-RC14 1.2.0-RC14	Provisioned				
		G-PON ONU Port 3 G-PON ONU Port 3	N/A N/A	3	0 Km 0 Km	GPON GPON XOSPON	-22.5 dBm -23.5 dBm	1.2.0-RC14	Provisioned Provisioned				
	Go to				« < <mark> </mark>	2 3 >	>				Sele	ct A Total Rov	ds: 31

2. Table 27 lists and describes the elements in the ONT List page.

Table 27: Elements in the ONT list

Element	Description
Serial Number	Serial number of the ONT.
Name	Name of the ONT.
Description	Displays the description of the ONU.
OLT Port	PON port number of OLT where ONTs are connected.
Distance	Distance between the OLT and ONT in meters.
HW Type	Displays the type of hardware. The following are the hardware types:
	• GPON
	• XGS-PON
PON UL Signal	The optical power level received by the OLT from the ONT.
SW Version Active Bank	Displays the software version active bank.
State	Displays the state of PON ports such as:
	Provisioned

Element	Description
	Activated
	Disable

Event Log

The Event Log page displays the operations performed in the OLT. To access and monitor the event logs, perform the following steps:

1. From the OLT Status page, navigate to Monitor > Event Log.

The Event Log page appears, as shown in Figure 49.

Figure 49: The Event Log page

ambium Networks	🖉 BLR-LAB-O	QA1 🥵 USERS CONNECTED 🤀 INT	
us Configuration ∨ Isioning ∨	EVENT LOG		Starts J. Countarting J. Ⅲ 88 Ξ .
onitor ^	Date/Time 0	Topic O	Information \Diamond
Performance	yyyy-MM-dd	Select ~	Search. Q
DNU	 19 October 2024 06:26:27 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working
Event Log	 I9 October 2024 06:26:27 pm 	NNI/state_change	Id: 4, PhyId: 2, LinkState: Link_down, BALState: Active_working
~	 19 October 2024 06:23:51 pm 	NNI/state_change	Id: 4, PhyId: 2, LinkState: Link_up, BALState: Active_working
	October 2024 06:23:51 pm	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_down, BALState: Active_working
	 19 October 2024 06:21:38 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working
	I9 October 2024 06:21:38 pm	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_down, BALState: Active_working
	October 2024 06:18:22 pm	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working
	© 19 October 2024 06:18:22 pm	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_down, BALState: Active_working
	 19 October 2024 06:17:40 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working
	 19 October 2024 06:17:40 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_down, BALState: Active_working
	 19 October 2024 06:15:49 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working
	© 19 October 2024 06:15:49 pm	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_down, BALState: Active_working
	 19 October 2024 06:13:29 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working
	© 19 October 2024 06:13:29 pm	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_down, BALState: Active_working
	 19 October 2024 06:11:59 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working
	© 19 October 2024 06:11:59 pm	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_down, BALState: Active_working
	In October 2024 06:08:50 pm	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working
	 19 October 2024 06:08:50 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_down, BALState: Active_working
	 19 October 2024 06:06:33 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working
	In October 2024 06:06:33 pm	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_down, BALState: Active_working
	 19 October 2024 06:05:35 pm 	NNI/state_change	Id: 4, Phyld: 2, LinkState: Link_up, BALState: Active_working

- 2. To clear the event log list, click **Clear**.
- 3. To download the event log, click **Download**.

Table 28 describes the events and their descriptions.

Table 28: ONT events and description

Events	Descriptions
Date/Time	Displays the timestamp of the logged event, indicating when the event occurred, displayed in the format YYYY-MM-DD and the exact time (hh:mm am/pm).
Торіс	Displays the specific category of the event being logged.
	Example : The events are related to NNI/state_change, which refers to a change in the state of the Network-to-Network Interface (NNI).
Information	Displays the detailed information about the event. It typically includes parameters such as:
	• Id: The identifier of the interface or device affected by the event.
	Phyld: The physical identifier of the interface.
	• LinkState: Indicates whether the link is up or down.
	 BALState: Shows the operational state of the Broadband Access Layer, in this case, Active_working.

Configuring Tools

The Tools page is used to upgrade, backup, and restore the OLT. It has the following pages:

- Software Upgrade
- Backup / Restore
- Netconf
- Ping
- Traceroute
- Packet Capture

Software upgrade

The Software Upgrade page is used to upgrade the OLT firmware. To upgrade the OLT software, perform the following steps:

1. From the dashboard page, navigate to **Tools** > **Software Upgrade**.

The OLT Software Update page appears, as shown in Figure 50.

Figure 50: The Software Upgrade page

Cambium Networks	🖉 BLR-LAB-QA1 🥵 USERS	CONNECTED INTERNET STATUS ON NOTIFICATIONS	6 0 8 8 0 G • En (US) -
ıl. Status			
🔩 OLT Configuration 🗸	OLT SOFTWARE UPDATE	^	
⁰o Provisioning ∨	Software Version 1.2.0-RC14		
€ Monitor ✓			
🛠 Tools 🔷 🔨	Update Options O URL @ Local Hile		
 Software Update 	Upload file.	Browse.	
🖀 Backup / Restore	Upgrade		
🖗 Ping			
+🖶 Traceroute			
Packet Capture			

- If you are upgrading the software using the URL, then select the URL option as the value of the Update Options
 parameter in the OLT Software Upgrade section. Then, type the URL of the location where you want to
 download the software.
- 3. If you are upgrading the software using the downloaded software image file, then select the **Local** option. Browse the folder and select the upgrade software image file.

To ensure the integrity of the OLT software image file, User can verify the MD5 and SHA256 checksums provided by cambium networks.

After downloading the file from the support site, compare the generated checksum with the following values:

Algorithm	Hash
SHA256	1839C89DCC333D9F3B1E0B399AEA8AA8D054B3620518987443445BA2CBEB28D4
MD5	7E679544EAA646E48438EFD4FBD7EAE4

If the checksums match, the file is confirmed to be corruption-free.

- 4. Click Upgrade to start the upgrade process.
- 5. After upgrading the OLT software, reboot OLT.

Backup and restore

The Backup/Restore page is used to take the backup of the configuration file and restore it to the OLT.

To download and restore the configuration file, perform the following steps:

1. From the Status page, navigate to **Tools** > **Backup** / **Restore**.

The Backup/Restore page appears as shown in Figure 51.

Figure 51: The Backup / Restore page

Cambium Networks	🛃 BLR-LAB-QA1 🛛 🥵 USERS CO	NNECTED 6 IN	TERNET STATUS	6 0 8 8	0 🕞 🖲 EN (US) 🗸
II. Status	BACKUP CONFIGURATION	~	RESTORE CONFIGURATION		~
∾ Provisioning ∨	Download Configuration		Select File	Upload file.	Browse
€ Monitor ∨	oonninger callinger artist.			ٹ Upload	
O Software Update					
Ping	FACTORY DEFAULT CONFIGURATION	^	BACKUP TECHNICAL SUPPORT FILE		^
·任 Traceroute @ Packet Capture	Retain Remote Access Enabled Reset to Factory Defaults Reset Device		Download Technical Support File	Download الى	

2. Click Download under Backup Configuration.

1	2
	řЛ
5	

Note:

Enabling Retain Remote Access preserves all network settings, including the OLT out-band and in-band configurations, after a factory reset.

Disabling Retain Remote Access resets all network settings to their factory default state.

It is recommended to enable Retain Remote Access during a factory reset when the OLT is deployed in a production network.

- 3. Enable Retain Remote Access and click Reset Device to reset the device to the factory default configuration.
- 4. To restore the configuration, click Browse under Restore Configuration.
- 5. Browse and select the configuration file and then click **Upload**.
- 6. Under Backup Technical Support File, click Download Technical Support File to download the support file.

This support file is used to diagnose the errors in the configuration file.

Ping

The Ping page is used to ping ONTs and receive the information from ONTs. To ping ONT, perform the following steps:

1. From the Status page, navigate to **Tools** > **Ping**.

The **Ping** page appears, as shown in Figure 52.



Cambium Networks		🖒 BLR-LAB-QAT 🦉 USERS CONNECTED	🖸 🤀 INTERNET STATUS 🖉 NOTIFICATIONS 🕓 🕤 🖪) 🛱 O 🕞 🖷 (US) 🗸
uli Status �_ OLT Configuration ∨	PING	^	PING RESULTS	^
°o Provisioning ∨ ® Monitor ∨	IP Address Version	IPv4 O IPv6	PPNG 32(00) bytes of data. 40 bytes from 10.110.217.1: tomp.seq? tid=64 time=0.047 ms 40 bytes from 10.110.217.1: tomp.seq? tid=64 time=0.018 ms	A
★ Tools ^ O Software Update	IPv4 Address, Fully Qualified Domain Name, or Hostname		40 bytes from 10.110.217.1: icmp_seq=3 td=64 time=0.017 ms 40 bytes from 10.110.217.1: icmp_seq=4 td=64 time=0.018 ms ping statistics	
Backup / Restore	Number of Packets (-c) Packet Size (-s)	4 min: 1 max: 100	4 packets transmitted, 4 received, 0% packet loss, time 98ms rtt min/lang/max/mdev = 0.017/0.025/0.047/0.012 ms	v
₩ Ping -E Traceroute	TTL (-t)	64 mai: 1 mai: 1 mai: 128		
Packet Capture	Timeout (-W)	1 network and a		
	Network Interface (-I)	Network Interface (-I)		
	Start Ping	SortPrig		

- 2. Select the IP address type from the below options:
 - IPv4
 - IPv6
- 3. Type IPv4 Address, Fully Qualified Domain Name, or Hostname.
- 4. Select Number of Packets. It ranges from 1 to 100.
- 5. Select Packet Size. It ranges from 1 to 65507.
- 6. Select TTL. It ranges from 1 to 128.
- 7. Select **Timeout**. It ranges from 1 sec to 300 sec.
- 8. Type the Network Interface name.
- 9. Click Start Ping.

The ping results are displayed under **Ping Results** section.

Traceroute

The Traceroute page is used to trace the data packets of OLT. To traceroute the ONT, perform the following steps:

1. From the Status page, navigate to **Tools** > **Traceroute**.

The Traceroute page appears, as shown in Figure 53.

Figure 53: The Traceroute page

Cambium Networks		🖒 BLR-LAB-QA1 🛛 🧐 USERS CONNECTED	🕼 INTERNET STATUS	0 G S EN (US)
ili Status				
🔍 OLT Configuration 🗸	TRACEROUTE	^	TRACEROUTE RESULTS	^
⁰o Provisioning ∨			traceroute to	*
🔍 Monitor 🗸 🗸	IP Address Version	IPv4) 0.039 ms 0.010 ms 0.009 ms	v
🛠 Tools 🔷 🔨	IPv4 Address, Fully Qualified Domain Name, or Hostname			
O Software Update	Don't fragment	Enabled		
Backup / Restore	Network Interface (-i)	Network Interface (-i)		
A Ping				
+E Traceroute	Trace method	ICMP ECHO UDP UDPLITE		
Packet Capture	Max Hops	30 ^ mint 1 v mecc 255		
	Packet Length	1 min: 1		
	start iraceroute	Sarchaceoute		

- 2. Type IPv4 Address, Fully Qualified Domain Name, or Hostname.
- 3. Enable/disable Don't fragment option. By default it is disabled.
- 4. Type Network Interface.
- 5. Select the Trace method from the following options:
 - ICMP ECHO Internet Control Message Protocol (ICMP) ECHO. Checks if a host is reachable and measures response time.
 - **UDP** User Datagram Protocol. Sends data without establishing a connection, good for fast but less reliable communication.
 - UDPLITE User Datagram Protocol Lite. Detects errors in data transmission, useful for real-time multimedia over unstable networks.
- 6. Select Max Hops. It ranges from 1 to 255.
- 7. Select Packet Length. It ranges from 1 to 65507.
- 8. Click Start Traceroute.

The traceroute results are displayed under Traceroute Results section.

Packet Capture

The Packet Capture page is used to trace the data packets of OLT. Beta feature enables comprehensive switch traffic capture on OLT interfaces, making it ideal for initial setup and testing. Users can download the captured data as .pcap files for detailed analysis using tools like Wireshark. As the capture utilizes a 1 Gbps link between the OLT switch and the

compute module, it is recommended to perform captures during periods of low system load to reduce performance impact.

To Packet Capture the ONT, perform the following steps:

1. From the Status page, navigate to **Tools** > **Packet Capture**.

The Packet Capture page appears, as shown in Figure 54.

Figure 54: The Packet Capture page

Cambium Networks		🖄 TCX08-20-02-29 🧏 USERS CONN	ECTED 🛱 INTERNET STATUS 🚨 NOTIFICATIONS	60880	🕒 🕞 💿 (US) 🗸
🛋 Status					
🔩 OLT Configuration 🗸	PACKET CAPTURE (BETA)				^
‱ Provisioning ∨					o mini 1
6, Monitor 🗸 🗸		Duration	20 Measure s		~ max: 180
🛠 Tools 🔷 🔿		Flow	Both Upstream Downstream		
🖀 Backup / Restore		Verbocity Level			
🙉 Ping		Start Packet Capture	Start		
+E Traceroute					
Packet Capture	BACKET CADTI DE DECLILTS				
	PACKET CAPTORE RESOLTS				
	No Deta				¢
	DOWNLOAD RESULTS				^
		Download Results	🕁 Download		

2. lists and describes the elements in the Packet Capture page.

Elements	Description
Packet Capture	
Duration	Displays the duration of packet capture range from 1 to 180.
Flow	Select anyone of the following flows:
	• Both
	Upstream
	Downstream
Verbocity Level	Select anyone of the following Verbocity Level:
	• 0
	• 1
	• 2

Table 29: Packet Capture

3. Click Start.

Packet Capture results appears.

4. Click Download.

Packet capture will be downloaded successfully in **.pcap** files.

The Cambium ONT UI

Using the ONT UI, you can configure, view, and manage the ONT configurations. This topic contains the following sections:

- GPON ONT User Interface
- XGS-PON ONT User Interface

GPON ONT UI

Using the GPON ONT UI, you can configure, view, and manage the GPON ONT configurations. This topic contains the following sections:

- Accessing the GPON ONT UI
- Configuring the GPON ONT UI
- Monitoring
- Configuring Tools

Accessing the GPON ONT UI

For accessing the ONT UI, refer to Accessing the OLTUI section. After logging into the UI, the ONT Status page appears.

UI controls

Before configuring the UI of ONT, familiarize yourself with the UI controls (as described in List of UI controls table).

Viewing the Status page

After logging into the UI, the Status page appears, as shown in Figure 55. The status page describes the status information of the GPON ONT.

Figure 55: The Status page

Cambium Networks			
② Status			
9 Configuration ~	Status		
Monitor v			
[®] Tools ~	System Info		
	Date and Time:	03 December 2024 21:37:22	
	System Uptime:	16 hours, 7 minutes, 31 seconds	
	System CPU Load:	-	4.9%
	Memory Usage:		42.4%
	SW Version:	1.2.0	
	Device Name:	CMBM-FC1165	
	IP Address:	192.168.0.2	
	ESN:	FC11650020A2	
	MSN:	F6ZF01GC2G52	
	PON SN:	CMBM05F5E847	
	TX Power:	2.5 dBm	
	RX Power:	-12.7 dBm	
	Bias Current:	15.1 mA	
	Voltage:	3.2 V	
	Temperature:	45.9 °C	
	ONU Current State:	Operation State - Associated	
	ONU Previous State:	Initial State - Off-Sync	

Table 30 lists and describes the elements on the status page.

Table 30: The status page elements

Elements	Descriptions
System Info	

Elements	Descriptions
Date and Time	Current system date and time.
System Uptime	Uptime of the system.
System CPU Load	Percentage of the CPU usage.
Memory Usage	Percentage of the memory usage.
SW Version	Software version used.
Device Name	Name of the OLT device.
IP Address	IP address of the OLT device.
ESN	ESN number of the OLT device.
MSN	MSN number of the OLT device.
PON SN	PON serial number of the device.
Tx Power	Transmitting power of the ONT.
Rx Power	Receiving power of the ONT.
Bias Current	Bias current to the ONT.
Voltage	Voltage to the ONT.
Temperature	Temperature of the device.
ONT Current State	Current state of the ONT.
ONT Previous State	Previous state of the ONT.

Configuring the GPON ONT UI

The configuration page has the following pages:

- Configuring network settings
- <u>Configuring system settings</u>

Configuring system settings

The System page is used to configure the ONT system. Figure 56 shows the system page of GPON ONT.

Figure 56: The System page

Cambium Networks				(\$\phi \expression \overline \ov
Status				
Configuration	System			
() System	Congutation > system			
Y Network				
🖵 Monitor 🗸	General		Account Management	
√ ⁰ Tools ~	Device Name:	CM8M-FC1165	Administrator Account:	
	Inactive Logout.®	Endie	Usemame:	admin
	Institus Logout Barind	30	Password:	••••••
	macuve cogour renos.	measure: minutes min: 1 max: 60		
	 Web Access: 	HTTP HTTPS HTTP and HTTPS	Network Time Protocol (NTP)	
		443		
	O HITSPOR	min: 1 max 65535	Network Time Protocol (NTP):	Enable 🕘
	SSH Access:	Enable	NTP Server IP Assignment:	Static DHCP
	 SSH Server Port: 	22	Preferred NTP Server:	poolintpiorg
		min: 1 max 65535	Alternate NTP Server:	time.cloudtare.com
			Time Zone:	(UTC) GMT - Greenwich Mean Time ~
<				

Table 31: The system page elements

Elements	Description
General	
Device Name	Name of the ONT device.
Inactive Logout	The user can enable or disable the inactive logout.
Inactive Logout Period	Logout time of ONT if ONT is inactive. By default, it is 30 minutes.
Web Access	Select the following protocols:
	• HTTP
	• HTTPS
	HTTP and HTTPS
HTTPS port	An extension of HTTP for secure communication over an encrypted SSL/TLS connection.
SSH Access	Secure Shell (SSH) is a protocol for secure remote login and other secure network services over an insecure network. The user can Enable
SSH Server Port	The user can define SSH Server port number from 1 to 65535.
Account Manager	nent
Administrator	The user can Enable/Disable the administrator account.

Elements	Description
Account	
Username	Username of the administrator account.
Password	Password of the administrator account.
Network Time Pro	otocol (NTP)
Network Time Protocol (NTP)	Allows to enable or disable the NTP.
NTP Server IP Assignment	Allows to select the following NTP Server IP Assignment:StaticDHCP
Preferred NTP Server	Enter the preferred NTP server.
Alternate NTP Server	Enter the alternate NTP server.
Time Zone	Select the preferred time zone.

Configuring network settings

The Network page displays the network configuration information of the ONT. Figure 57 shows the Network page of the GPON ONT.

Cambium Networks				(🕫 🖱 🛛
Status Configuration ^	Network Configuration - Hassish			
@ System Υ Network				
🖵 Monitor 🗸 🗸	General		Advanced	
√ ^p Tools v	IP Assignment:	Static	LLDP:	Disable
	IP Address:	192.166.0.2		
	Subnet Mask:	255,255,255,0		
	Gateway:	Gateway		
	DNS 1:	DNS 1		
	DNS 2:	DNS 2		

Figure 57: The Network page

Table 32 describes the elements in the network configuration page.

Table 32: The network page elements

Elements	Description	
General		
IP Assignment	 IP Assignment of the OLT device. The following are the IP assignment options: Static - Allows the user to configure a static MAC address and assign it to a specific VLAN ID and a specific port. The MAC addresses configured in this manner are immune to automatic MAC address aging and migration. DHCP - IP provided by the DHCP server from the DHCP pool. 	
IP Address	IP address of the OLT device.	
Subnet Mask	IP address of the subnet.	
Gateway	IP is defined by the ISP for routing.	
DNS 1	DNS 1 server IP address for URL resolution.	
DNS 2	DNS 2 server IP address for URL resolution.	
Advanced		
LLDP	Allows to enable or disable the LLDP.	

Monitoring

The Monitor page has the following pages:

- Performance
- Network

Performance

The performance page displays the performances of the NNI ports and PON ports. Figure 58 shows the performance page of the GPON ONT.

Figure 58: The Performance page

Cambium Networks				(11 5 6 0 8
Configuration	Performance Mariter > Performance			
Ø System Y Network	PON		Tools	
Monitor A A A A	DL Stream 8W Kbits:	0	Reset Stats: Rever Stats	
♥ Network P Tools ^	DL Stream Type: UL Stream BW Kbits:	0		
It Software Upgrade	Ber: HW Type:	0		
t). Ping (J) Traceroute	MAC: RX Broadcast Packets:	PC1116500201C 12003		
	RX Bytes: RX Drops Packets: RX From Parkets:	0		
	RX Multicast Packets: RX Packets:	0 79127		
	Status: TX Broadcast Packets:	1 188		
	TX Bytes: TX Drops Packets: TX Errors Packets:	7667340 0 0		
	TX Multicast Packets: TX Packets:	3640 70892		
	TX Power: RX Power:	2.7 dBm -23.0 dBm		
	Bias Current: Voltage: Temperature:	12.8 mA 3.2 V 44.4 °C		
	ONU Current State: ONU Previous State:	Operation State - Associated Ranging State		
	ONU ID: VLAN ID: VA AN ID: Instant	1 100 100		
¢	VLVI VLVI VLVI VLVI VLVI VLVI VLVI VLVI	100		

Table 33 describes the elements in the performance page of GPON ONT.

Table 33: Elements in the performance page

Element	Description	
DL Stream BW Kbits	Stream bandwidth of downlink.	
DL Stream Type	Stream type of downlink.	
UL Stream BW Kbits	Stream bandwidth of uplink.	
UL Stream Type	Stream type of uplink.	
Ber	Displays bit error rate.	
НW Туре	Type of the hardware.	
MAC	MAC address of the ONT	
RX Broadcast Packets	Receiving broadcast packets.	
RX Bytes	Number of bytes received.	
RX Drops Packets	Number of drops packets received.	
RX Errors Packets	Number of error packets received.	
RX Multicast Packets	Number of multicast packets received.	
RX Packets	Number of packets received.	
RX Unicast Packets	Number of unicast packets received.	

Element	Description	
Status	Status of the ONT.	
TX Broadcast Packets	Transmitting broadcast packets.	
TX Bytes	Number of bytes transmitted.	
TX Drops Packets	Number of drops packets transmitted.	
TX Errors Packets	Number of error packets transmitted.	
TX Multicast Packets	Number of multicast packets transmitted.	
TX Packets	Number of packets transmitted.	
TX Power	Transmitting power.	
RX Power	Receiving power.	
Bias Current	Current for the Bias.	
Voltage	Voltage of the ONT.	
Temperature	Temperature of the ONT.	
ONT Current State	Current state of the ONT.	
ONT Previous State	Previous state of the ONT.	
ONT ID	ID of the ONT.	
VLAN ID	ID of the VLAN.	
VLAN ID Inner	ID of the inner VLAN.	

Network

The Network page displays the network information of the GPON-PON ONT. To access and monitor the network settings, perform the following steps:

1. From the ONT Status page, navigate to **Monitor** > **Network**.

The Network page appears, as shown in Figure 59.

Figure 59: The Network page

Cambium Networks		
C Status]	
Oconfiguration ~	Network	
	Monitor > Network	
Monitor ^		
#* Performance	Network	
👳 Network	INCLINUTE	
a th Tools ~	Name:	br0
	Name:	192.168.0.2
	DNS:	127.0.0.1::1
	Gateway:	not set
	Netmask:	255.255.255.0
	Speed:	1000 Mb/s
	Name:	full
	Auto-Negotiation:	enable
	MAC:	FC:11:65:00:20:1C
	RX Broadcast Packets:	53
	RX Bytes:	468377
	RX Drops Packets:	0
	RX Errors Packets:	0
	RX Multicast Packets:	317
	RX Packets:	3963
	TX Broadcast Packets:	138
	TX Bytes:	595898
	TX Drops Packets:	0
	TX Errors Packets:	0
	TX Multicast Packets:	12
4	TX Packets:	3796

2. Table 34 describes the elements in the GPON ONT network page.

Table 34: The network page elements

Element	Description
Name	Name of the ONT.
Name	IP address of the ONT.
DNS	IP address of the DNS.
Gateway	Gateway of the ONT.
Netmask	IP address of the netmask.
Speed	Type of the hardware.
Name	Name of the ONT.
Auto-Negotiation	You can enable or disable the auto-negotiation.
MAC	MAC address of the ONT
RX Broadcast Packets	Receiving broadcast packets.
RX Bytes	Number of bytes received.
RX Drops Packets	Number of drops packets received.
RX Errors Packets	Number of error packets received.
RX Multicast Packets	Number of multicast packets received.

Element	Description
RX Packets	Number of packets received.
TX Broadcast Packets	Transmitting broadcast packets.
TX Bytes	Number of bytes transmitted.
TX Drops Packets	Number of drops packets transmitted.
TX Errors Packets	Number of error packets transmitted.
TX Multicast Packets	Number of multicast packets transmitted.
TX Packets	Number of packets transmitted.

Configuring Tools

The Tools page has the following pages:

- Software Upgrade
- Backup and restore
- Ping
- Traceroute

Software Upgrade

The Software Upgrade page is used to the upgrade the GPON ONT firmware.

To upgrade the ONT software, perform the following steps:

1. From the dashboard page, navigate to **Tools** > **Software Upgrade**.

The Software Upgrade page appears, as shown in Figure 60.

Figure 60: The Software Upgrade page

Status Configuration	Software Upgrade	
Monitor ^	Tools > Software Upgrade	
41 Performance	ONT Software Info	ONT Software Upgrade
	SW Version:	Upgrade Options: URL O Local
🕘 Software Upgrade		Browse-
Backup / Restore		
t), Ping		
(1) Traceroute		

2. If you are upgrading the software using the URL, then select the **URL** option as the value of the **Update Options** parameter in the **ONT Software Upgrade** section. Then, type the URL of the location where you want to download the software.

- 3. If you are upgrading the software using the downloaded software image file, then select the **Local** option. Browse the folder and select the upgrade software image file.
- 4. Click Upgrade to start the upgrade process.
- 5. After upgrading the ONT software, reboot ONT.

Backup and restore

The Backup/Restore page is used to take the backup of the configuration file and restore it to the GPON ONT. Figure 61 shows the Backup/Restore page of GPON ONT.

Figure 61: The ONT GPON Backup/Restore page

Cambium Networks			8 🙁 🗆 🖉
 Status Configuration + 	Backup / Restore took - Sakup / Retron		
Monitor A A A	Backup Configuration	Restore Configuration	
P Network	Download Configuration: Counted	Select File:	Browsa.
 G Software Upgrade Backup / Restore Restore 		Restore Configuration:	Uphad
() Ping ()) Traceroute	Factory Default Configuration	Backup Technical Support File	
	Reset to Factory Defaults: Reset Device	Download Technical Support File:	Download

To download the configuration file, perform the following steps:

- 1. Click Download under Backup Configuration.
- 2. Click Reset Device under Factory Default Configuration to reset the device to the factory default configuration.

To restore the configuration, perform the following steps:

- 1. Click Browse under Restore Configuration and select the configuration file and then click Upload.
- 2. Click **Download Technical Support File** under **Backup Technical Support File** to download the support file. This support file is used to diagnose the errors in the configuration file.

Ping

The Ping page is used to ping ONTs and receive the information from ONTs. Figure 62 shows the ping page of GPON ONT.

Figure 62: The Ping page of GPON ONT

Cambium Networks		
Status Configuration Monitor	Ping tes + Ping	
41 Performance 10 Network	Ping	
J ^b Tools ^	IP Address Version: IPv4 Address, Fully Qualified Domain Name, or Hostname:	IPv4 @ Pv6 IPv4 Addres, Fully Qualified Domain Name, or Hostname
ු Backup / Restore හු Ping	Number of Padets (-d)	Number of Reckets (-c) mirc 1 max 100
(j) Traceroute	Packet Size (-s):	Packet Size (-4) mix: 1 max 65507
	π.(φ	TTL (-0 mic 1 max 128
	Start Ping:	Set Re
	Ping Results:	
		\$

To ping ONT, perform the following steps:

- 1. Select the IP address type from the below options:
 - IPv4
 - IPv6
- 2. Type IPv4 Address, Fully Qualified Domain Name, or Hostname.
- 3. Select Number of Packets. It ranges from 1 to 100.
- 4. Select Packet Size. It ranges from 1 to 65507.
- 5. Select TTL. It ranges from 1 to 128.
- 6. Click Start Ping.
- 7. The ping results are displayed under **Ping Results** section.

Traceroute

The Traceroute page is used to trace the data packets of the GPON ONT. Figure 63 shows the traceroute page.

Figure 63: The Traceroute page

Cambium Networks		6) 🖒 🗉 🔄 🕅
Status		
O Configuration +	Traceroute	
U Monitor		
ut Performance		
	Traceroute	
	IPv4 Address, Fully Qualified Domain Name, or Hostname:	IPv4 Address, Fully Qualified Domain Name, or Hostname
🐵 Software Upgrade	Do not fragment packets (-F):	(bushe
Backup / Restore	Trace method (-1):	O ICMP ECHO. ○ UDP
t), Ping	Display TTL (-I):	() Studio
(j) Traceroute	Verbose (-v):	Deade
	Start Traceroute:	Start Tracemute
	Traceroute Results:	
		*

To traceroute, perform the following steps:

- 1. Type IPv4 Address, Fully Qualified Domain Name, or Hostname.
- 2. Enable/disable **Don't fragment**. By default, it is disabled.
- 3. Select Trace method from the following options:
 - ICMP ECHO Internet Control Message Protocol (ICMP) ECHO. Checks if a host is reachable and measures response time.
 - **UDP** User Datagram Protocol. Sends data without establishing a connection. It is good in speed but the reliable communication is less.
- 4. Enable/disable **Display TTL**. By default, it is disabled.
- 5. Enable/disable Verbose. By default, it is disabled.
- 6. Click Start Traceroute.
- 7. The traceroute results are displayed under Traceroute Results section.

XGS-PON ONT UI

Using the Fiber XGS-PON ONT UI, you can configure, view, and manage the XGS-PON ONT configurations. This topic contains the following sections:

- Accessing the XGS-PON ONT UI
- Configuring the XGS-PON ONT UI
- Monitoring
- Configuring Tools

Accessing the XGS-PON ONT UI

For accessing the ONT UI, refer to Accessing the OLT UI section. After logging into the UI, the ONT Status page appears.

UI controls

Before configuring the UI of ONT, familiarize yourself with the UI controls (as described in List of UI controls table).

Viewing the Status page

After logging into the UI, the Status page appears, as shown in Figure 64. The status page describes the status of the XGS-PON ONT.

Figure 64: The Status page

Status Configuration System Y Network	Status			
 System Y Network 				
	System Info			
Monitor ^	Date and Time:	24 October 2024 19:26:43		
	System Uptime:	4 minutes, 12 seconds		
	System CPU Load:	•	1.1%	
iools •	Memory Usage:		53.5%	
Journale obligane	SW Version:	1.2.0		
Backup / Restore	Device Name:	pn/321-sfu-qspi-pon		
n Ping	IP Address:	192.168.40.2		
) Traceroute	ESN:	FC1165003ACA		
	MSN:	F6ZF03PFSCDR		
	PON SN:	CMBM05F5EEDB		
	TX Power:	6.0 dBm		
	RX Power:	-13.0 dBm		
	Bias Current:	37.0 mA		
	Voltage:	3.0 V		
	Temperature:	37.0 °C		
	ONU Current State:	O5.1, Associated state		
	ONU Previous State:	O4, Ranging state		

Table 35 describes the elements on the status page.

 Table 35: The status page elements

Elements	Descriptions
System Info	

Elements	Descriptions
Date and Time	Current system date and time.
System Uptime	Uptime of the system.
System CPU Load	Percentage of the CPU usage.
Memory Usage	Percentage of the memory usage.
SW Version	Software version used.
Device Name	Name of the OLT device.
IP Address	IP address of the OLT device.
ESN	ESN number of the OLT device.
MSN	MSN number of the OLT device.
PON SN	PON serial number of the device.
Tx Power	Transmitting power of the ONT.
Rx Power	Receiving power of the ONT.
Bias Current	Bias current to the ONT.
Voltage	Voltage to the ONT.
Temperature	Temperature of the device.
ONU Current State	Current state of the ONT.
ONU Previous State	Previous state of the ONT.

Configuring the XGS-PON ONT UI

The configuration page has the following pages:

- Configuring system settings
- Configuring network settings

Configuring system settings

The system page is used to configure the XGS-PON ONT system. To access and configure the system settings, perform the following steps:

- 1. From the ONT Status page, navigate to **Configuration** > **System**.
- 2. The System page appears, as shown in Figure 65

Figure 65: The System page of XGS-PON ONT

Cambium Networks XGS-PON				8 O 5 5 4
Configuration ^	System Configuration > System			
Y Network	General		Account Management	
d ^{ass} Tools 🗸 🗸 🗸	Device Name:	Cambium-0D8	Administrator Account:	
	Inactive Logout:	Enable	Username:	admin
	Inactive Logout Period. ⁹	30 measure: minutes min: 1 max: 60	Password:	•••••••••••••••••••
	Web Access:	○ HTTP ○ HTTPS ○ HTTP and HTTPS		
	HTTPS Port	443 min: 1 max: 65535		
	SSH Access:	Enable		
	SSH Server Port:	22 min: 1 max: 65525		

3. Set the values for each parameter, as described in Table 36

Table 36: The system page elements

Elements	Description			
General				
Device Name	Name of the ONT device.			
Inactive Logout	The user can enable or disable the inactive logout.			
Inactive Logout Period	Logout time of ONT if ONT is inactive. By default, it is 30 minutes.			
Web Access	Select the following protocols. The following are the options:			
	• HTTP			
	• HTTPS			
	HTTP and HTTPS			
HTTPS port	An extension of HTTP for secure communication over an encrypted SSL/TLS connection.			
SSH Access	Secure Shell (SSH) is a protocol for secure remote login and other secure network services over an insecure network. The user can enable/disable the SSH access.			
SSH Server Port	Type the SSH Server port number from 1 to 65535.			
Account Management				
Administrator	Enable or disable the administrator account.			

Elements	Description	
Account		
Username	Type the username of the administrator account.	
Password	Type the password of the administrator account.	

Configuring network settings

The network page displays the network configuration information of the ONT. To access and configure the network settings, perform the following steps:

1. From the ONT Status page, navigate to **Configuration** > **Network**.

The Network page appears, as shown in Figure 66

Figure 66: The Network page of XGS-PON ONT

Cambium Networks				a 🤨 🗈 🙆 🕲
Status Configuration System Nutriends	Network Configuration > Network			
Monitor	General		Advanced	
ut Performance	IP Assignment	Static	LLDP:	Duate
	IP Address:	192.168.40.2		
由 Software Upgrade	Subnet Mask	255.255.255.0	Ethernet Port	
🔂 Backup / Restore	Gateway:	192.168.40.3	 Ethernet Port: 	Trakle
t) Ping	DNS 1:	DNS 1	Ethernet Port Settings:	Manual O Auto-Negotiate
	DNS 2	DNS 2	O Supported modes:	10baseT Haif 🔽 10baseT Fuil 💟 100baseT Haif 💟 100baseT Fuil 1000baseT Haif 💟 1000baseT Fuil
c				

2. Set the values for each parameter, as described in Table 37

 Table 37: The network page elements

Elements	Description		
General			
IP Assignment	 IP Assignment of the OLT device. The following are the IP assignment options: Static - Allows the user to configure a static MAC address and assign it to a specific VLAN ID and a specific port. The MAC addresses configured in this manner are immune to automatic MAC address aging and migration. DHCP - IP provided by the DHCP server from the DHCP pool. 		
IP Address	Type the IP address of the OLT device.		
Elements	Description		
---------------	--	--	--
Subnet Mask	Type the IP address of subnet.		
Gateway	IP defined by the ISP for routing.		
DNS	DNS 1 server IP address for URL resolution.		
Advanced			
LLDP	Allows to enable or disable the LLDP.		
Ethernet Port			
Ethernet Port	Allows to enable or disable the Ethernet Port.		
Ethernet Port	Allows to select Ethernet Port Settings such as:		
Settings	• Manual		
	Auto-Negotiate		
Supported	Allows to enable or disable supported modes such as:		
modes	• 10baseT Half		
	• 10baseT Full		
	• 100baseT Half		
	• 100baseT Full		
	• 1000baseT Half		
	• 1000baseT Full		
	• 2500baseT Full		

Monitoring

The Monitor page has the following pages:

- <u>Performance</u>
- Network

Performance

The performance page displays the performances of the NNI ports and PON ports. To access and monitor the performance of the ONT, perform the following steps:

1. From the ONT Status page, navigate to **Monitor** > **Performance**.

The Performance page appears, as shown in Figure 67

Figure 67: The Performance page of XGS-PON ONT

Cambium Networks				8 🙂 🗟 🖄 D
Status Configuration ^	Performance			
@ System	Monitor > Performance			
an Manuark				
Monitor	PON		Tools	
.↓† Performance	DL Stream BW Kbits:	0	Reset State	Reput State
12 Network	DL Stream Type:	0		
	UL Stream BW Kbits:	0		
P Tools Y	UL Stream Type:	0		
	Ber:	0		
	HW Type:	2		
	MAC:	FC:11:65:00:01:C4		
	RX Broadcast Packets:	0		
	RX Bytes:	27813		
	RX Drops Packets:	0		
	RX Errors Packets:	0		
	RX Multicast Packets:	0		
	RX Packets:	381		
	Status:	0		
	TX Broadcast Packets:	0		
	TX Bytes:	27886		
	TX Drops Packets:	0		
	TX Errors Packets:	0		
	TX Multicast Packets:	0		
	TX Packets:	382		
,	TX Power:	-40.0 dBm		
	RX Power:	-40.0 dBm		
	Bias Current:	0.0 mA		
	Voltage:	3.0 V		
	Temperature:	36.0 °C		
	ONU Current State:	O1.1, Initial off-sync state		
	ONU Previous State:	O6, Intermittent LOS state		
	ONU ID:	N/A		
	VLAN ID:	not set		
	VLAN ID Inner:	N/A		
¢				

2. Table 38 describes the elements in the performance page of XGS-PON ONT.

Table 38: Elements in the performance page

Element	Description
DL Stream BW Kbits	Stream bandwidth of downlink.
DL Stream Type	Stream type of downlink.
UL Stream BW Kbits	Stream bandwidth of uplink.
UL Stream Type	Stream type of uplink.
Ber	Ber.
НW Туре	Type of the hardware.

Element	Description
MAC	MAC address of the ONT
RX Broadcast Packets	Receiving broadcast packets.
RX Bytes	Number of bytes received.
RX Drops Packets	Number of drops packets received.
RX Errors Packets	Number of error packets received.
RX Multicast Packets	Number of multicast packets received.
RX Packets	Number of packets received.
RX Unicast Packets	Number of unicast packets received.
Status	Status of the ONT.
TX Broadcast Packets	Transmitting broadcast packets.
TX Bytes	Number of bytes transmitted.
TX Drops Packets	Number of drops packets transmitted.
TX Errors Packets	Number of error packets transmitted.
TX Multicast Packets	Number of multicast packets transmitted.
TX Packets	Number of packets transmitted.
TX Power	Transmitting power.
RX Power	Receiving power.
Bias Current	Current for Bias.
Voltage	Voltage of ONT.
Temperature	Temperature of ONT.
ONT Current State	Current state of ONT.
ONT Previous State	Previous state of ONT.
ONT ID	ID of ONT.
VLAN ID	ID of VLAN.
VLAN ID Inner	ID of the inner VLAN.

Network

The Network page displays the network information of the XGS-PON ONT. To access and monitor the network settings, perform the following steps:

1. From the ONT Status page, navigate to Monitor > Network.

The Network page appears, as shown in Figure 68

Figure 68: The Network page of XGS-PON ONT

Cambium Networks					Q	\$ Ð	8 0	8
Status Configuration ^	Ne Cor	etwork						
Y Network		Canada						
Ut Performance		General IP Assignment:	Static					
		IP Address:	192.168.0.2					
		Subnet Mask: Gateway:	255.255.255.0 Gateway					
		DNS:	DNS					

2. Table 39 describes the elements in the XGS-PON ONT network page.

 Table 39: The network page elements

Element	Description
General	
IP Assignment	Displays the IP assignment types. The following are the types:
	• Static
	• DHCP
IP Address	IP address of the ONT device.
Subnet Mask	Subnet Mask of the ONT device.
Gateway	Gateway of the ONT.
DNS	Name of the DNS.

Configuring Tools

The Tools page has the following pages:

- Software upgrade
- Backup and restore
- Ping
- Traceroute

Software upgrade

The Software Upgrade page is used to the upgrade the XGS-PON ONT firmware.

To upgrade the ONT software, perform the following steps:

1. From the Status page, navigate to **Tools** > **Software Upgrade**.

The **Software Upgrade** page appears, as shown in Figure 69.

Figure 69: The Software Upgrade page

Cambium Networks			8 O 6 ± 1
Status Configuration Monitor	Software Upgrade Toos - Software Upgrade		
	ONT Software Info	ONT Software Upgrade	
🖂 Backup / Restore	SW Version:	Upgrade Options:	URL O Local
t), Ping		Browle	
(j) Traceroute		UT UT AND	
		Upgrade	

- If you are upgrading the software using the URL, then select the URL option as the value of the Update Options
 parameter in the ONT Software Upgrade section. Then, type the URL of the location where you want to
 download the software.
- 3. If you are upgrading the software using the downloaded software image file, then select the **Local** option. Browse the folder and select the upgrade software image file.
- 4. Click **Upgrade** to start the upgrade process.
- 5. After upgrading the ONT software, reboot ONT.

Backup and restore

The backup and restore page is used to take the backup of the configuration file and restore it to the XGS-PON ONT.

To download and restore the configuration file, perform the following steps:

1. From the Status page, navigate to **Tools** > **Backup** / **Restore**.

The Backup/Restore page appears as shown in Figure 70

Figure 70: The Backup/Restore page of XGS-PON ONT

Cambium Networks		
Status Configuration Monitor	Backup / Restore	
ال Tools م ن Software Upgrade	Backup Configuration Restore Configuration	
Backup / Restore	Download Configuration: Download Select File: Browse	b
は, Ping (1) Traceroute	Restore Configuration:	3
	Factory Default Configuration Backup Technical Support File	
	Reset to Factory Defaults: Reset Dowloo Download Technical Support File: Dowlo	Sad

- 2. Click Download under Backup Configuration.
- 3. Click Reset Device under Factory Default Configuration to reset the device to the factory default configuration.
- 4. To restore the configuration file, click **Browse** under **Restore Configuration**.
- 5. Browse and select the configuration file and then click Upload.
- 6. Click Download Technical Support File under Backup Technical Support File to download the support file.

This support file is used to diagnose the errors in the configuration file.

Ping

The Ping page is used to ping ONTs and receive the information from ONTs. To ping ONT, perform the following steps:

1. From the Status page, navigate to **Tools** > **Ping**.

The Ping page appears, as shown in Figure 71

Figure 71: The Ping page of XGS-PON ONT

Cambium Networks		🚷 🔿 🗟 (e) 🏗 D
Status Configuration Monitor	Ping Tools - Ping	
Tools ^ A Software Upgrade	Ping	
🖂 Backup / Restore	IP Address Version:	O IPv4 ◎ IPv6
th Ping	IPv4 Address, Fully Qualified Domain Name, or Hostname:	IPv4 Address, Fully Qualified Domain Name, or Hostname
(t) Traceroute	Number of Packets (-c):	Number of Packets (-c) min: 1 max: 100
	Packet Size (-s):	Packet Size (s) min: 1 max: 65507
	ТП. (-0:	TTL (-1) mirc 1 marc 128
	Start Ping:	Start Ping
	Ping Results:	
K		\$

- 2. Select the IP address type from the below options:
 - IPv4
 - IPv6
- 3. Type IPv4 Address, Fully Qualified Domain Name, or Hostname.
- 4. Select Number of Packets. It ranges from 1 to 100.
- 5. Select Packet Size. It ranges from 1 to 65507.
- 6. Select TTL. It ranges from 1 to 128.
- 7. Click Start Ping.
- 8. The ping results are displayed under **Ping Results** section.

Traceroute

The Traceroute page is used to trace the data packets of the XGS-PON ONT. To traceroute the ONT, perform the following steps:

1. From the Status page, navigate to **Tools** > **Traceroute**.

The Traceroute page appears, as shown in Figure 72

Figure 72: The Traceroute page of XGS-PON ONT

Cambium Networks		🚷 🙂 🗟 🖄 D
Status		
♥ Configuration	Traceroute	
🖵 Monitor 🗸		
් Tools ^	Traceroute	
🗃 Backup / Restore	IPv4 Address, Fully Qualified Domain Name, or Hostname:	IPv4 Address, Fully Qualified Domain Name, or Hostname
t) Ping	Do not fragment packets (-F):	Disable
① Traceroute	Trace method (-I):	ICMP ECHO UDP
	Display TTL (-I):	Daabe
	Verbose (-v):	Disable
	Start Traceroute:	Start Traceroute
	Traceroute Results:	
		0

- 2. Type IPv4 Address, Fully Qualified Domain Name, or Hostname.
- 3. Enable/disable **Don't fragment**. By default, it is disabled.
- 4. Select **Trace method** from the following options:
 - ICMP ECHO Internet Control Message Protocol (ICMP) ECHO. Check if a host is reachable and measures response time.

- **UDP** User Datagram Protocol. Sends data without establishing a connection, good for fast but less reliable communication.
- 5. Enable/disable **Display TTL**. By default, it is disabled.
- 6. Enable/disable Verbose. By default, it is disabled.
- 7. Click Start Traceroute.
- 8. The traceroute results are displayed under Traceroute Results section.

Operation and Troubleshooting

This topic contains the following section:

• Replacing the power module of OLT

Replacing the power module of OLT

The OLThas dual swappable and redundant power modules on the left on the front panel. To replace the power module, perform the following steps:

- 1. Turn off the power supplies connected to the power module.
- 2. Remove the green power connector block or the power cord.



3. Remove screws of the power module using a screw driver.



4. Press the power module latch to the left to release it.



5. Slide the power module out.



6. For a AC/DC power module, replace the fuse if it is burnt. If the fuse is working, then replace malfunctioning AC/DC power module.



7. Slide the power module in to the block.



8. Install the power module screws.



9. Re-insert the power connector block or power cord in the front of the power module.



10. Turn on the power supplies.

Cambium Networks

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