Optical line terminals

LTP-8(16)N(T), LTX-8(16)

Quick configuration manual
Firmware version 1.7.0

Contents

1 Introduction

Notes

> ⚠ Notes contain important information, tips or recommendations on device operation and configuration.

Annotation

This manual provides information on safety precautions and installation procedures:

- connection to the OLT LTP-16N(T) or LTX-8(16) (hereinafter the devices) command line interface;
- OLT network parameters configuration;
- VLAN configuration to provide different services on the device;
- IGMP configuration on the device;
- creation and modification of ONT profiles: Cross-connect, Ports, Management;
- creation and modification of OLT profiles: pppoe-ia, dhcp-opt82;
- configuration for operation with built-in ACS;
- addition of ONT subscriber devices.

The following scheme is given as an example, figure 1:

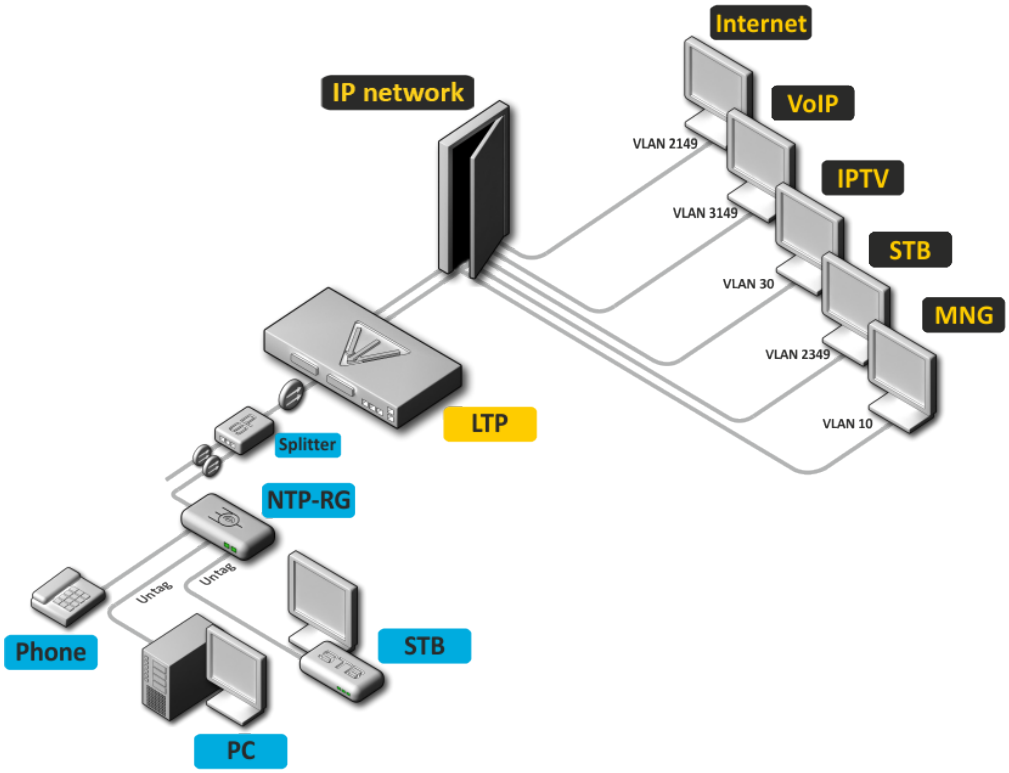


Figure 1 — Example of network configuration

VLAN used for services provision

Service type	VLAN used
Internet	1100
VoIP	1101
IPTV (multicast)	30

Service type	VLAN used
STB	2349
MNG-ONT (acs)	4094
MNG OLT	3470

PC application supporting TELNET or SSH protocol operation or direct connection via the console port (e.g. HyperTerminal) is required.

2 Safety rules and Installation procedure

2.1 Safety requirements

General requirements

Any operation with the equipment should comply with the Rules for the technical operation of consumer electrical installations.

> ⚠ Operations with the terminal should be carried out only by personnel authorized in accordance with the safety requirements.

1. Before operating the device, all engineers should undergo special training.
2. The terminal should be connected only to properly functioning supplementary equipment.
3. The terminal is designed for 24/7 operation under the following conditions:
   - ambient temperature from -5 to +40 °C;
   - relative humidity up to 80 % at +25 °C;
   - atmosphere pressure from 6.0×10*4 to 10.7×10*4 Pa (from 450 to 800 mm Hg).
4. The terminal should be not be exposed to mechanical shock, vibration, smoke, dust, water, and chemicals.
5. To avoid components overheating which may result in device malfunction, do not block air vents or place objects on the equipment.

Electrical safety requirements

1. Prior to connecting the device to a power source, ensure that the equipment case is grounded with an earth bonding point. The earthing wire should be securely connected to the earth bonding point. The resistance between the earth bonding point and earthing busbar should be less than 0.1 Ω.
2. PC and measurement instruments should be grounded prior to connection to the terminal. The potential difference between the equipment case and the cases of the instruments should be less than 1V.
3. Prior to turning the device on, ensure that all cables are undamaged and securely connected.
4. Make sure the device is off, when installing or removing the case.
5. Replacement of power modules is carried out without turning off the power.
6. SFP transceivers installation and removal can be performed both with the power off and with the power on.

2.2 Terminal installation

Check the device for visible mechanical damage before installing and turning it on. In case of any damage, stop the installation, fill in a corresponding document and contact your supplier. If the terminal was exposed to low temperatures for a long time before installation, leave it for 2 hours at ambient temperature prior to operation. If the device was exposed to high humidity for a long time, leave it for at least 12 hours in normal conditions prior to turning it on.

2.2.1 Support brackets mounting

The delivery package includes support brackets for rack installation and mounting screws to fix the terminal case on the brackets. To install the support brackets:

- **Step 1.** Align six mounting holes in the support bracket with the corresponding holes in the side panel of the device.
- **Step 2.** Use a screwdriver to screw the support bracket to the case.
- **Step 3.** Repeat steps 1 and 2 for the second support bracket.

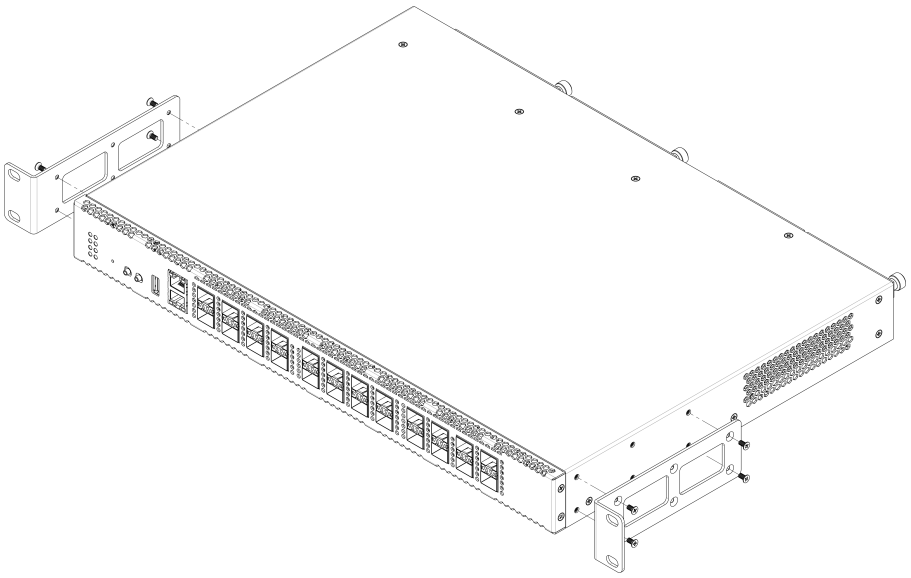


Figure 2 — Support brackets mounting for LTP-8(16)N(T)

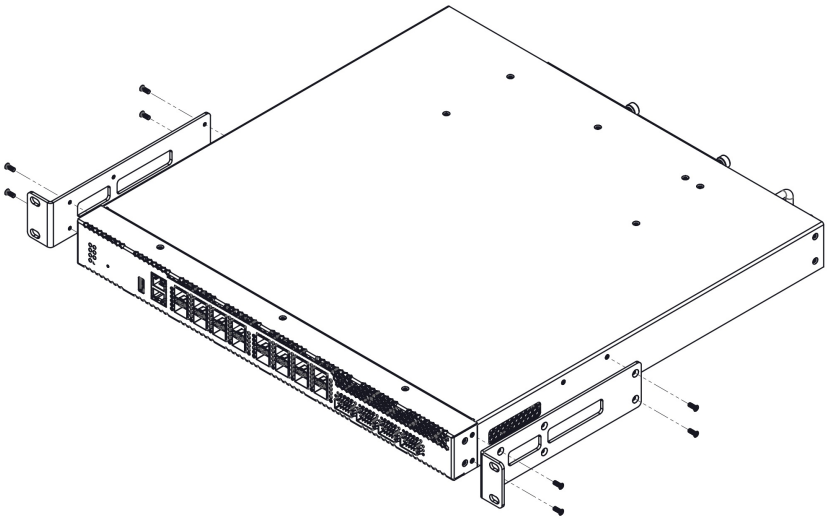


Figure 3 — Support brackets mounting for LTX-8(16)

2.2.2 Terminal rack installation

To install the terminal to the rack:

- **Step 1.** Attach the terminal to the vertical guides of the rack.
- **Step 2.** Align mounting holes in the support bracket with the corresponding holes in the rack guides. Use the holes of the same level on both sides of the guides to ensure the device horizontal installation.
- **Step 3.** Use a screwdriver to attach the terminal to the rack.

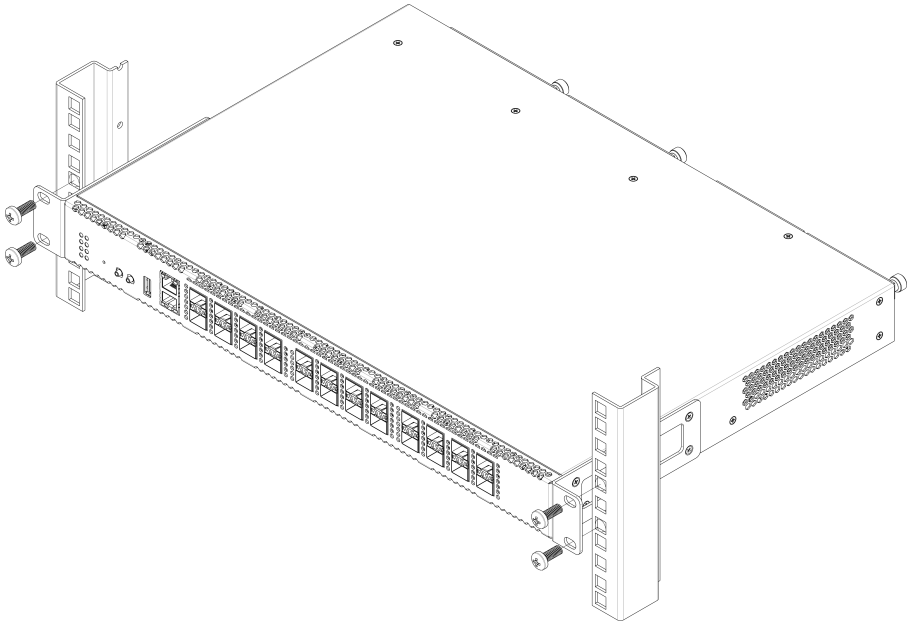


Figure 4 — LTP-8(16)N(T) rack installation

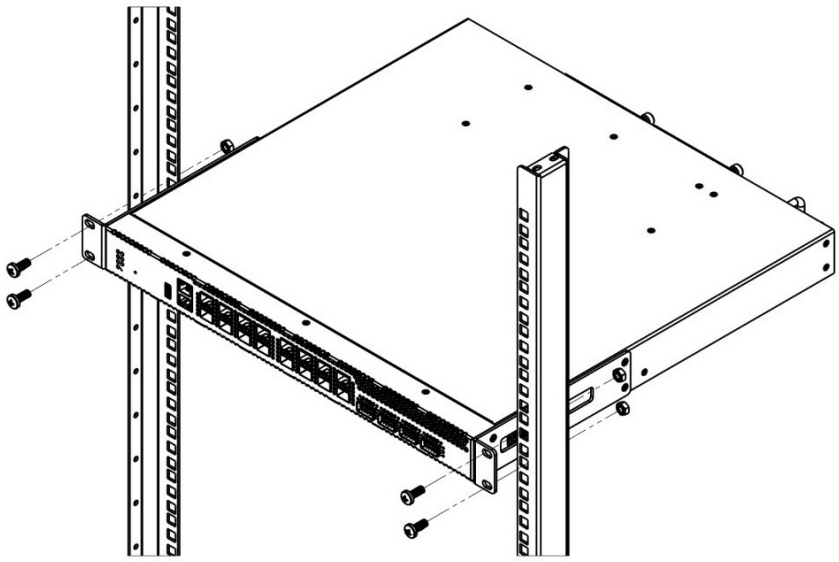


Figure 5 — LTX-8(16) rack installation

The terminal is horizontally ventilated. The side panels have air vents. Do not block the air vents to avoid components overheating and subsequent terminal malfunction.

⚠ To avoid overheating and to provide necessary ventilation of the terminal, sufficient space should be provided above and below the terminal, not less than 10 cm.

2.2.3 Power module installation

Depending on power supply requirements, LTP-8(16)N and LTP-8(16)NT, LTX-8(16)s can be supplemented with either an 220 V, 50 Hz AC power module or a 48 V DC power supply module. The installation location for the power module is shown in Figures 6 and 7.

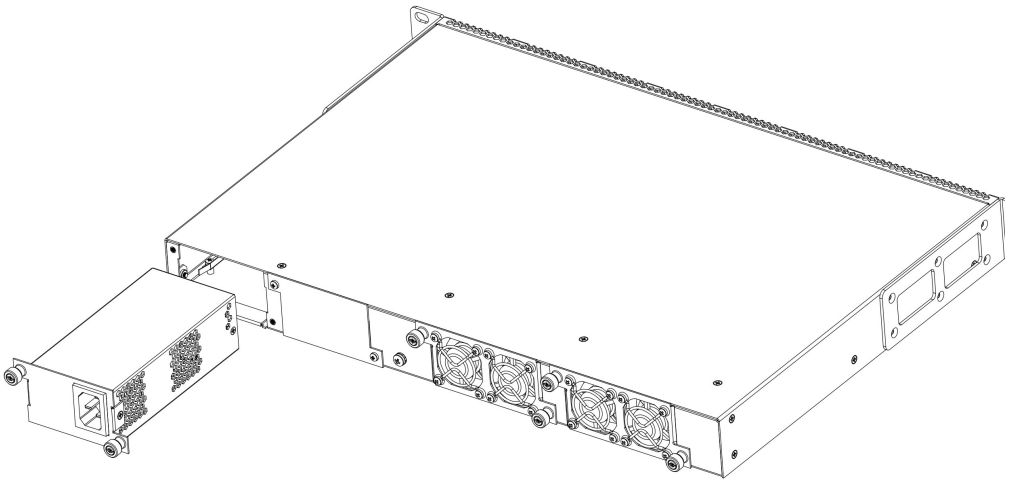


Figure 6 — Power module installation for LTP-8(16)N(T)

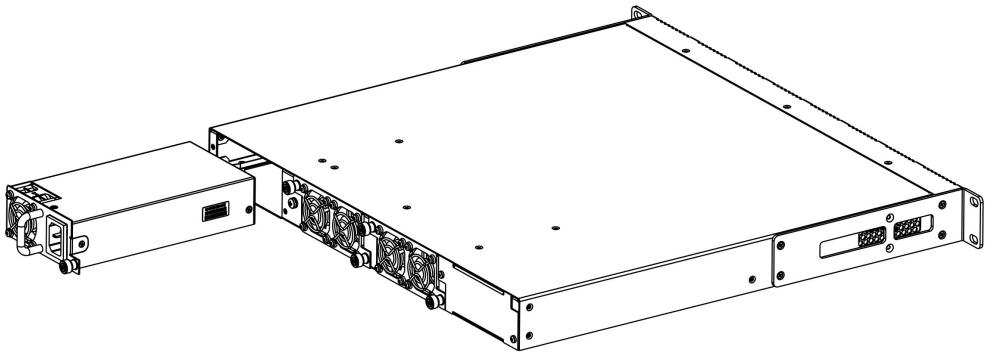


Figure 7 — Power module installation for LTX-8(16)

The devices can operate both with single power module and two power modules. Second power module is necessary if device is used in conditions requiring increased reliability. When using two power supply modules, it is allowed to supply power from different power supplies (with different voltages).

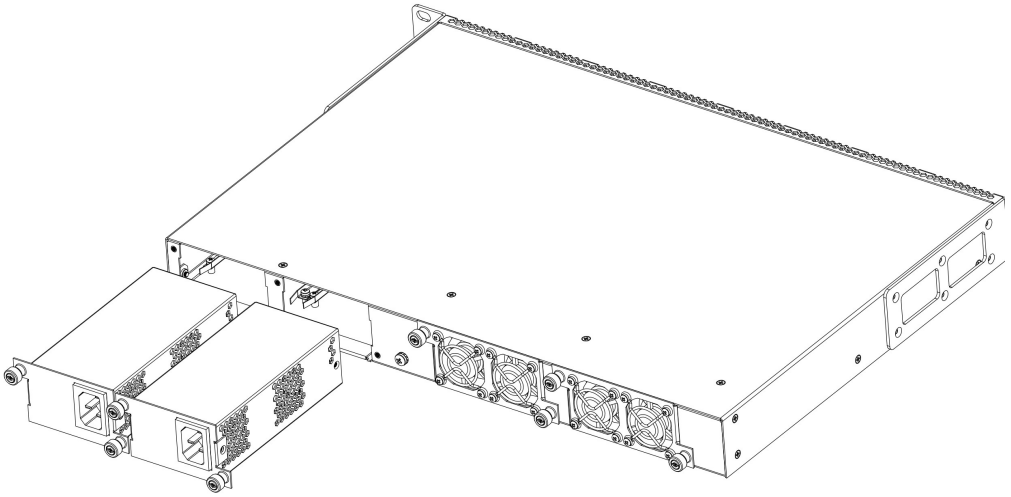


Figure 8 — Power modules installation for LTP-8(16)N(T)

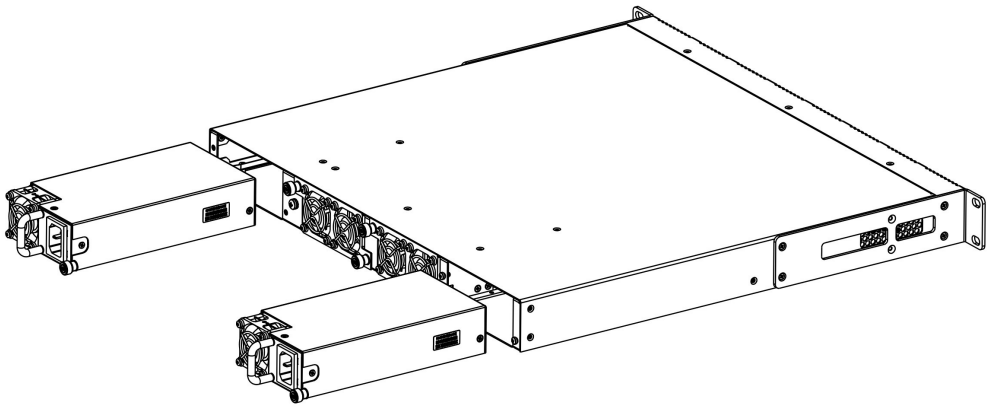


Figure 8 — Power modules installation for LTX-8(16)

Locations for installing power modules are electrically equivalent. From the point of device usage, as for LTP-8(16)N(T), power module located closer to the edge is considered the main one, closer to the center is a backup one. For LTX-8(16), power module located from the left side is considered the main one, power module from the right is a backup one. Power modules can be installed and removed without shutting down the device. When installing or removing additional power modules, the device continues to operate without restarting.

Power module installation procedure:

- **Step 1.** Install the power module into the device as shown in figures 8 and 9;
- **Step 2.** Screw the power module to the case;
- **Step 3.** Turn the power on.

2.2.4 Connecting to power supply

- **Step 1.** Mount the device. In case of installation to a 19" form-factor rack, mount the support brackets from the delivery package to the rack.
- **Step 2.** Ground the case of the device. This should be done prior to connecting the device to the power supply. An insulated multiconductor wire should be used for earthing. The device grounding and the earthing wire section should comply with Electric Installation Code. The earth bonding point is located at the right bottom corner of the rear panel.
- **Step 3.** If you intend to connect a PC or another device to the switch console port, the device must be properly grounded as well.
- **Step 4.** Connect the power supply cable to the device.
- **Step 5.** Turn the device on and check the front panel LEDs to make sure the terminal is in normal operating conditions. Indication description is given in LED indication of OLT LTP-8(16)N(T), LTX-8(16). User Manual.

3 Connecting to the terminal command line interface (CLI)

3.1 Connecting via Telnet/SSH

Connect network cable to OOB port of the device. To connect via SSH/Telnet, use the following factory settings:

- **Default IP address:** 192.168.100.2;
- **Default address mask:** 255.255.255.0;
- **Default gateway:** 0.0.0.0;
- **Login:** admin;
- **Password:** password.

⚠ For security reasons, it is recommended to change the default password when connecting for the first time (see Changing the user password section).

If the device does not connect using the factory IP address, connect to it via the COM port using a terminal program and check the network settings (see Connecting via serial port section).

3.2 Connecting via serial port

The null modem cable is used for connection. The null modem cable pin designation is given in Appendix A. RS-232 null-modem cable pin designation.

To connect via the serial port, the following settings must be set:

- **Speed:** 115200 bit/s;
- **Data bits:** 8 bits;
- **Parity:** no;
- **Stop bits:** 1;
- **Flow control:** none;
- **Login:** admin;
- **Password:** password.

⚠ For security reasons, it is recommended to change the default password when connecting for the first time (see Changing the user password section).

⚠ This manual shows an example of LTP-16N configuration. The command syntax is similar for LTX-8(16) and LTP-8N.

Check the network settings with the **show running-config management all** command.

```
Check the network settings:

LTP-16N# show running-config management all
 management ip 192.168.1.2
 management mask 255.255.255.0
 management gateway 0.0.0.0
 management vid 1
```

3.3 Changing the user password

```
Enter the configuration mode:
LTP-16N# configure terminal

Show created users:
LTP-16N(configure)# do show running-config user all

Set new password for the admin:
LTP-16N(configure)# user admin password XXXX

Set new password for the root:
LTP-16N(configure)# user root password XXXX

Apply the configuration:
LTP-16N(configure)# do commit

Save configuration:
LTP-16N(configure)# do save
```

4 Network parameters configuration

For remote device management, set network parameters of the device according to the settings of the network that are intended to be used. Changing network parameters of the device is recommended when connecting to the CLI interface via serial port.

```
Enter the configuration mode:
LTP-16N# configure terminal
```

Set the required network settings, e.g. IP=192.168.205.105, Mask=255.255.255.0, Gateway=192.168.205.230, VLAN=4000.

```
LTP-16N(configure)# management ip 192.168.10.145
LTP-16N(configure)# management mask 255.255.240.0
LTP-16N(configure)# management gateway 192.168.2.1
LTP-16N(configure)# management vid 3470
LTP-16N(configure)# exit

New network settings will be applied after applying/saving the configuration with the commit,
save commands without rebooting the device:

Apply the configuration:
LTP-16N# commit

Save the configuration:
LTP-16N# save

If VLAN will be used for control (in this example, VID=3470), add it to the configuration:

Enter the configuration mode:
LTP-16N# configure terminal


Receive the traffic in VLAN from front-port 1:
LTP-16N(configure)# interface front-port 1
LTP-16N(configure)# vlan allow 3470
LTP-16N(configure)# exit

Apply the configuration:
LTP-16N# commit

Save the configuration:
LTP-16N# save
```

5 Firmware update

For proper operation of the devices, it is recommended to update the firmware.

The relevance of the installed firmware version can be checked with the technical support service of ELTEX Enterprise LLC. A request can be made at https://eltex-co.ru/support/.

Upload the firmware file to the TFTP server (for example, firmware version 1.5.1 build 50).

Next, upload this file to LTP-16N using the following command:

```
Specify firmware file name and TFTP server address:

LTP-16N# copy tftp://192.168.11.40/ltp-16n-1.5.1-build50.fw.bin fs://firmware
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 73.1M  100 73.1M    0     0  3663k      0  0:00:20  0:00:20 --:--:-- 3666k
100 73.1M  100 73.1M    0     0  3663k      0  0:00:20  0:00:20 --:--:-- 3663k

Success!
LTP-16N#
```

Reboot the device with the **reboot** command:

```
Change the image, from which the next boot will be made:

LTP-16N# firmware select-image alternate

Reboot the device:

LTP-16N# reboot
    Do you really want to reboot the system now? (y/n)  y
```

After device loading, the firmware version can be found by the **show version** command:

```
LTP-16N# show version
    Eltex LTP-16N: software version 1.5.1 build 50 (ddd36dcc) on 10.04.2023 12:09
```

6 SNMP, SYSLOG, NTP services configuration

6.1 SNMP configuration

SNMP is used for monitoring and management of network devices.

```
Enter the configuration mode:
LTP-16N# configure terminal

Enable SNMP:
LTP-16N(configure)# ip snmp enable:

Specify version v2 and EMS server address:
LTP-16N(configure)# ip snmp traps 192.168.10.43 type v2

Apply configuration:
LTP-16N(configure)# do commit

Save configuration:
LTP-16N(configure)# do save
```

6.2 SYSLOG configuration

Syslog is used for transmission of system event messages and error notifications to remote servers.

```
Enter the configuration mode:
LTP-16N# configure terminal

Enter the logging configuration:
LTP-16N(configure)# logging

Specify syslog server address:
LTP-16N(config)(logging)# remote server ip 192.168.11.40


Apply configuration:
LTP-16N(config)(logging)# do commit

Save configuration:
LTP-16N(config)(logging)# do save
```

6.3 NTP configuration

NTP is used to synchronize the time of a network device with a server.

```
Enter the configuration mode:
LTP-16N# configure terminal

Enable NTP service:
LTP-16N(configure)# ip ntp enable

Specify NTP server address:
LTP-16N(configure)# ip ntp 192.168.10.43

Specify timezone:
LTP-16N(configure)# ip ntp timezone hours 7

Apply configuration:
LTP-16N(configure)# do commit

Save configuration:
LTP-16N(configure)# do save
```

7 VLAN configuration

```
Configuration mode:
LTP-16N# configure

Receive traffic from front-port 1 to VLAN:
LTP-16N(configure)# interface front-port 1

Add all the necessary VLANs:
LTP-16N(config)(if-front-1)# vlan allow 1101,30,4094,1100,2349

Apply configuration:
LTP-16N(configure)# do commit

Save configuration:
LTP-16N(configure)# do save
```

⚠ If the configuration is not saved, then after reboot, the device will return to the last saved configuration.

8 IGMP configuration

```
Enable IGMP SNOOPING globally:
LTP-16N(configure)# ip igmp snooping enable

VLAN 30 configuration mode:
LTP-16N(configure)# vlan 30

Enable IGMP SNOOPING in VLAN multicast:
LTP-16N(config)(vlan-30)# ip igmp snooping enable

Enable IGMP query:
LTP-16N(config)(vlan-30)# ip igmp snooping querier enable

Apply configuration:
LTP-16N(configure)# do commit
LTP-16N(configure)# exit
LTP-16N# exit

Save configuration:
LTP-16N# save
```

9 CROSS-CONNECT, MANAGEMENT, PORTS profiles configuration for ONT

```
Enter the configuration mode:
LTP-16N# configure terminal

Create and enter a Cross-Connect profile for the ONT Internet service:
LTP-16N(configure)# profile cross-connect INTERNET
LTP-16N(config)(profile-cross-connect-INTERNET)#

Specify the service VLAN of the Internet service:
LTP-16N(config)(profile-cross-connect-INTERNET)# outer vid 1100

Specify inner VLAN of Internet service on ONT:
LTP-16N(config)(profile-cross-connect-INTERNET)# user vid 10
LTP-16N(config)(profile-cross-connect-INTERNET)# exit

Create and enter a Cross-Connect profile for the ONT SIP VoIP service:
LTP-16N(configure)# profile cross-connect VOIP

Specify the service VLAN of the VoIP service:
LTP-16N(config)(profile-cross-connect-VOIP)# outer vid 1101

Specify inner VLAN of VoIP service on ONT:
LTP-16N(config)(profile-cross-connect-VOIP)# user vid 12
LTP-16N(config)(profile-cross-connect-VOIP)# exit

Create and enter a Cross-Connect profile for the multicast service:
LTP-16N(configure)# profile cross-connect MC_IPTV

Specify the service VLAN of the multicast service:
LTP-16N(config)(profile-cross-connect-MC_IPTV)# outer vid 30

Specify inner VLAN of multicast service on ONT:
LTP-16N(config)(profile-cross-connect-MC_IPTV)# user vid 30

Allow multicasting in this service:
LTP-16N(config)(profile-cross-connect-MC_IPTV)# multicast enable
LTP-16N(config)(profile-cross-connect-MC_IPTV)# exit

Create and enter a Cross-Connect profile for the ONT UC_IPTV service:
LTP-16N(configure)# profile cross-connect UC_IPTV

Specify the service VLAN of the STB unicast service:
LTP-16N(config)(profile-cross-connect-UC_IPTV)# outer vid 2349

Specify inner VLAN of STB unicast service on ONT:
LTP-16N(config)(profile-cross-connect-UC_IPTV)# user vid 11
LTP-16N(config)(profile-cross-connect-UC_IPTV)# exit

Create and enter a Cross-Connect profile for the management ONT service:
LTP-16N(configure)# profile cross-connect ACS

Specify service VLAN for management service:
LTP-16N(config)(profile-cross-connect-ACS)# outer vid 4094

Enable iphost for ACS:
LTP-16N(config)(profile-cross-connect-ACS)# iphost enable
LTP-16N(config)(profile-cross-connect-ACS)# exit
```

```
Create and enter a Management profile:
LTP-16N(configure)# profile management ACS

Specify login for authorization in ACS:
LTP-16N(config)(profile-management-ACS)# username test

Specify password for authorization in ACS:
LTP-16N(config)(profile-management-ACS)# password test_pass

Specify server address:
LTP-16N(config)(profile-management-ACS)# url http://192.168.200.1:9595

Create and switch to multicast profile:
LTP-16N(configure)# profile ports veip

Enable multicast on ONT:
LTP-16N(config)(profile-ports-veip)# veip multicast enable

Configuration of IGMP traffic mapping in VLAN 30 downstream:
LTP-16N(config)(profile-ports-veip)# veip igmp downstream vid 30

Configuration of IGMP traffic mapping in VLAN 30:
LTP-16N(config)(profile-ports-veip)# veip igmp upstream vid 30

Configuration of the multicast groups range:
LTP-16N(config)(profile-ports-veip)# igmp multicast dynamic-entry 1 vid 30 group 224.0.0.1
239.255.255.255

Apply configuration:
LTP-16N(config)(profile-ports-veip)# do commit
        Configuration committed successfully

Save configuration:
LTP-16N(config)(profile-ports-veip)# do save
```

⚠ If the configuration is not saved, then after reboot, the device will return to the last saved configuration.

10 OLT profiles configuration: PPPoE Intermedia Agent, DHCP Relay Agent

10.1 PPPoE Intermedia Agent configuration

```
Enter the configuration mode:
LTP-16N# configure terminal

Add and enter profile configuration:
LTP-16N(configure)# profile pppoe-ia 1

Configure circuit_id format:
LTP-16N(config)(profile-pppoe-ia-1)# circuit-id format %HOSTNAME%%ONTID%

Configure remote_id format:
LTP-16N(config)(profile-pppoe-ia-1)# remote-id format %HOSTNAME%%ONTID%

Apply configuration:
LTP-16N(config)(profile-pppoe-ia-1)# do commit

Save configuration:
LTP-16N(config)(profile-pppoe-ia-1)# do save

Enable PPPoE snooping:
LTP-16N(config)(profile-pppoe-ia-1)# exit
LTP-16N(configure)# ip pppoe
LTP-16N(config)(pppoe)# snooping enable

Assign pppoe-ia 1 profile on OLT:
LTP-16N(config)(pppoe)# pppoe-ia profile 1

Apply configuration:
LTP-16N(configure)# do commit

Save configuration:
LTP-16N(configure)# do save
```

10.2 DHCP Relay Agent configuration

```
Enter the configuration mode:
LTP-16N# configure terminal

Create profile and enter configuration:
LTP-16N(configure)# profile dhcp-opt82 1

Transmit HOSTNAME LTP-16N and id ONT in data about the port from which the request to the DHCP
relay came:
LTP-16N(config)(profile-dhcp-opt82-1)# circuit-id format %HOSTNAME%%ONTID%

Transmit HOSTNAME LTP-16N and id ONT in the ID of the DHCP relay itself:
LTP-16N(config)(profile-dhcp-opt82-1)# remote-id format %HOSTNAME%%ONTID%

Enable DHCP snooping:
LTP-16N(config)(profile-dhcp-opt82-1) exit
LTP-16N(configure)# ip dhcp
LTP-16N(config)(dhcp)# snooping enable

Assign created profile:
LTP-16N(config)(dhcp)# opt82 profile 1

Apply configuration:
LTP-16N(config)(dhcp)# do commit

Save configuration:
LTP-16N(config)(dhcp)# do save
```

11 Adding and configuring ONT

It is necessary to add ONT ELTX73000140 to the configuration to 2 ONT ID 1 channel and assign all the required profiles to it to provide the services.

```
View connected but not added ONTs:
LTP-16N# show interface ont 2 unactivated
-----------------------------------
pon-port 2 ONT unactivated list
-----------------------------------
        ##    PON-port    ONT ID          Serial         Status         RSSI
EquipmentID        Version
         1            2       n/a    ELTX73000140    UNACTIVATED          n/a
n/a            n/a

Enter the configuration mode:
LTP-16N# configure terminal

enter 2 ONT ID 1 tree:
LTP-16N(configure)# interface ont 2/1

Assign the required ONT to this position:
LTP-16N(config)(if-ont-2/1)# serial ELTX73000140

Assign ports veip profile:
LTP-16N(config)(if-ont-2/1)# profile ports veip

Assign cross-connect INTERNET profile:
LTP-16N(config)(if-ont-2/1)# service 1 profile cross-connect INTERNET

Assign cross-connect VOIP:
LTP-16N(config)(if-ont-2/1)# service 2 profile cross-connect VOIP

Assign cross-connect MC_IPTV profile:
LTP-16N(config)(if-ont-2/1)# service 3 profile cross-connect MC_IPTV

Assign cross-connect UC_IPTV profile:
LTP-16N(config)(if-ont-2/1)# service 4 profile cross-connect UC_IPTV

Assign cross-connect ACS profile:
LTP-16N(config)(if-ont-2/1)# service 5 profile cross-connect ACS

Assign dba «dba 1» profile by default to all services used:
LTP-16N(config)(if-ont-2/1)# service 1 profile  dba dba1
LTP-16N(config)(if-ont-2/1)# service 2 profile  dba dba1
LTP-16N(config)(if-ont-2/1)# service 3 profile  dba dba1
LTP-16N(config)(if-ont-2/1)# service 4 profile  dba dba1
LTP-16N(config)(if-ont-2/1)# service 5 profile  dba dba1

Assign management profile:
LTP-16N(config)(if-ont-2/1)# profile management ACS

Apply configuration:
LTP-16N(config)(if-ont-2/1)# do commit

Save configuration:
LTP-16N(config)(if-ont-2/1)# do save
```

⚠ Up to 128 ONTs per pon port can be connected to LTP-8(16)N(T). Up to 256 ONTs using XGS-PON technology or 128 ONTs using GPON technology can be connected to the LTX-8(16).

12 Configuring the device for operation with built-in ACS

```
Enter the configure view:
LTP-16N# configure terminal

Enter the acs configuration section:
LTP-16N(config)# ip acs

Enable auto configuration server with the acs-server enable command:
LTP-16N(config)(acs)# acs-server enable

Set vlan for ACS operation:
LTP-16N(config)(acs)# acs-server vlan 4094

Specify login for ONT authorization in ACS:
LTP-16N(config)(acs)# acs-server login test

Specify password for ONT authorization in ACS:
LTP-16N(config)(acs)# acs-server password test_pass

Enable DHCP server:
LTP-16N(config)(acs)# dhcp-server enable

Specify the range of IP addresses issued by the server, where the starting and ending addresses
of the range need to be specified:
LTP-16N(config)(acs)# dhcp-server range 192.168.200.10 192.168.207.254

Enable the issue of option 43 in the DHCP-offer package for correct access of subscriber
devices to the ACS:
LTP-16N(config)(acs)# dhcp-server option-43 enable
```

13 Configuring ACS profile for ONT

```
Enter the ACS:
LTP-16N# acs

Enter the ONT profiles configuration mode:
LTP-16N(acs)# profile

Add profile for ONT TEST:
LTP-16N(acs-profile)# add profile TEST

Enter the TEST profile configuration mode:
LTP-16N(acs-profile)# profile TEST

Insert all parameters from the profile from APPENDIX B (as an example, adding one parameter is
shown):
LTP-16N(acs-profile-name='TEST')# set property InternetGatewayDevice.LANDevice.
1.LANHostConfigManagement.DHCPLeaseTime 3600 nocheck
```

14 Adding and configuring subscriber via ACS

In case of question contact the technical support service of ELTEX Enterprise LLC. A request can be made at https://eltex-co.ru/support/.

```
Enter the ACS:
LTP-16N(acs)#

Enter the subscriber configuration mode:
LTP-16N(acs)# user

Add IVANOV subscriber:
LTP-16N(acs-user)# add user IVANOV

Enter IVANOV subscriber configuration mode:
LTP-16N(acs-user)# user IVANOV

Set ONT serial number for IVANOV subscriber. pon_serial for acs must be specified in hex, where
454C5458 is ELTX, 73000140 is the rest of pon_serial:
LTP-16N(acs-user-subscriber='IVANOV')# set pon_serial 454C545873000140

Set ACS profile for IVANOV subscriber:
LTP-16N(acs-user-subscriber='IVANOV')# set profile TEST

Specify login for PPPoE session:
(acs-user-subscriber='IVANOV')# set ppp_login test

Specify password for PPPoE session:
(acs-user-subscriber='IVANOV')# set ppp_password TEST

Specify SIP PROXY address:
(acs-user-subscriber='IVANOV')# set sip_proxy 212.122.111.55

Enable phone port 1:
(acs-user-subscriber='IVANOV')# set voice1_enable enabled

Specify phone number for port 1:
(acs-user-subscriber='IVANOV')# set voice1_number 34234234

Specify password for phone number of port 1:
(acs-user-subscriber='IVANOV')# set voice1_password test
```

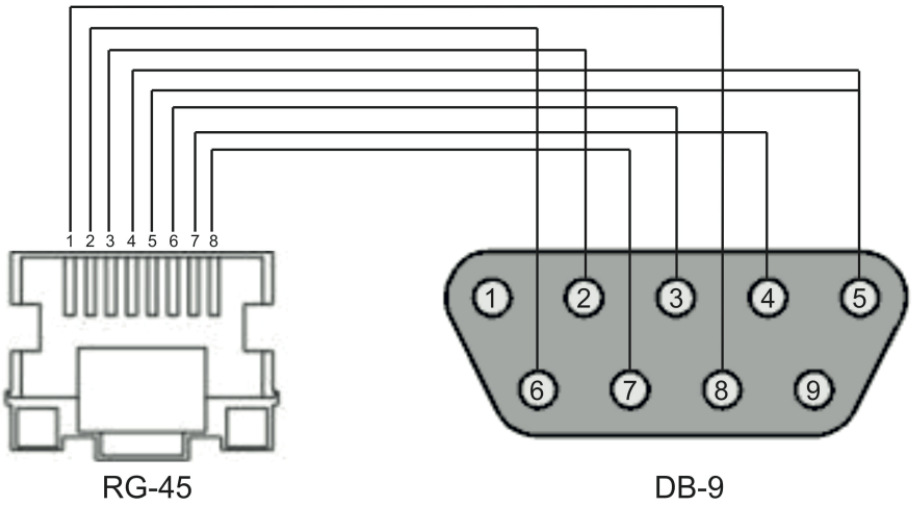
After completing the configuring, it is recommended to reset the subscriber terminal settings to the factory settings:

```
LTP-16N# send omci default interface ont 2/1
```

After subscriber terminal reboot, check all services:

```
View list of connected ONTs added to configuration
LTP-16N# show interface ont 2 online
-----------------------------------
pon-port 2 ONT online list
-----------------------------------
        ##    PON-port    ONT ID          Serial         Status         RSSI
EquipmentID        Version
         1            2         1    ELTX73000140             OK       -16.09        NTU-
RG-5421G-Wac     2.5.0.4323
```

15 APPENDIX A. RS-232 null modem cable wiring diagram



16 Appendix B. ONT NTU-1 configuration

Objective

Configure the terminal in bridge mode, data transmission to the ONT side will be carried out in VLAN 1100. In such a configuration scheme, there will be untagged traffic from the ONT LAN port.

Solution

A distinctive feature of ONT NTU-1 is its operation in bridge mode only. Full configuration is performed by OLT using OMCI protocol without using an ACS server.

```
Enter the configuration mode:
LTP-16N# configure

Receive traffic from front-port 1 to VLAN:
LTP-16N(configure)# interface front-port 1
LTP-16N(config)(if-front-1)# vlan allow 1100

Apply configuration:
LTP-16N(configure)# do commit

Save configuration:
LTP-16N(configure)# do save
```

Cross-connect and Ports profile configuration:

```
Enter the configuration mode:
LTP-16N# configure terminal

Create and enter the Cross-Connect profile for NTU-1:
LTP-16N(configure)# profile cross-connect 1100_bridge

Specify bridge operation mode:
LTP-16N(config)(profile-cross-connect-1100_bridge)# ont-mode bridge

Assign this Cross-connect to bridge group 10:
LTP-16N(config)(profile-cross-connect-1100_bridge)# bridge group 10

Specify service VLAN for this service:
LTP-16N(config)(profile-cross-connect-1100_bridge)# outer vid 1100
LTP-16N(config)(profile-cross-connect-1100_bridge)# exit

LTP-16N(config)(profile-ports-NTU1)# do commit

Create and enter profile for NTU-1:
LTP-16N(configure)# profile ports NTU1

Add port 1 to bridge group 10:
LTP-16N(config)(profile-ports-NTU1)# port 1 bridge group 10

Apply configuration:
LTP-16N(config)(profile-ports-NTU1)# do commit

Save configuration:
LTP-16N(config)(profile-ports-NTU1)# do save
```

Adding and configuring ONT NTU-1:

```
Enter the configuration mode:
LTP-16N# configure terminal

Enter 2 ONT ID 2 tree:
LTP-16N(configure)# interface ont 2/2

Assign the required ONT to this position:
LTP-16N(config)(if-ont-2/2)# serial ELTX7C000F2C

Assign ports NTU-1 profile:
LTP-16N(config)(if-ont-2/2)# profile ports NTU1

Assign cross-connect NTU-1 profile:
LTP-16N(config)(if-ont-2/2)# service 1 profile cross-connect 1100_bridge

Assign DBA profile by default:
LTP-16N(config)(if-ont-2/2)# service 1 profile dba dba1

Apply configuration:
LTP-16N(config)(if-ont-2/2)# do commit

Save configuration:
LTP-16N(config)(if-ont-2/2)# do save
```

Configuration example of transmitting multiple VLANs in TRUNK mode via ONT NTU-1

In the current firmware version, it is possible to transmit up to 8 VLANs in trunk mode via ONT NTU-1.

In the example, transmission of VLANs 100 and 200 will be considered.

```
Configuration mode
LTP-16N# configure
```

```
Receive traffic in VLAN from front-port 1
LTP-16N(configure)# interface front-port 1
LTP-16N(config)(if-front-1)# vlan allow 100,200

Apply configuration:
LTP-16N(config)(if-front-1)# do commit

Save configuration:
LTP-16N(config)(if-front-1)## do save
```

Cross-connect and Ports profile configuration:

```
Enter the configuration mode:
LTP-16N# configure terminal

Create and enter a Cross-Connect profile for the NTU-1:
LTP-16N(configure)# profile cross-connect NTU100

Set bridge operation mode:
LTP-16N(config)(profile-cross-connect-NTU100)# ont-mode bridge

Assign this Cross-connect to bridge group 20:
LTP-16N(config)(profile-cross-connect-NTU100)# bridge group 20

Specify service VLAN for this service:
LTP-16N(config)(profile-cross-connect-NTU100)# outer vid 100

Specify user VLAN for this service:
LTP-16N(config)(profile-cross-connect-NTU100)# user vid 100
LTP-16N(config)(profile-cross-connect-NTU100)# exit

Create and enter a Cross-Connect profile for NTU-1:
LTP-16N(configure)# profile cross-connect NTU200

Set bridge operation mode:
LTP-16N(config)(profile-cross-connect-NTU200)# ont-mode bridge

Assign this Cross-connect to bridge group 20:
LTP-16N(config)(profile-cross-connect-NTU200)# bridge group 20

Specify service VLAN for this service:
LTP-16N(config)(profile-cross-connect-NTU200)# outer vid 200

Specify user VLAN for this service:
LTP-16N(config)(profile-cross-connect-NTU200)# user vid 200
LTP-16N(config)(profile-cross-connect-NTU200)# exit
```

```
Create and enter profile for NTU-1:
LTP-16N(configure)# profile ports trunk

Add port 0 to bridge group 20:
LTP-16N(config)(profile-ports-trunk)# port 1 bridge group 20

Apply configuration:
LTP-16N(config)(profile-ports-trunk)# do commit

Save configuration:
LTP-16N(config)(profile-ports-trunk)# do save
```

Adding and configuring ONT NTU-1:

```
Enter the configuration mode:
LTP-16N# configure terminal

Enter 2 ONT ID 2 tree:
LTP-16N(configure)# interface ont 2/2

Assign the required ONT to this position:
LTP-16N(config)(if-ont-2/2)# serial ELTX7C000F2C

Assign ports NTU1 profile:
LTP-16N(config)(if-ont-2/2)# profile ports trunk

Assign cross-connect NTU-1 profiles:
LTP-16N(config)(if-ont-2/2)# service 1 profile cross-connect NTU100
LTP-16N(config)(if-ont-2/2)# service 2 profile cross-connect NTU200

Assign default DBA profiles:
LTP-16N(config)(if-ont-2/2)# service 1 profile dba dba1
LTP-16N(config)(if-ont-2/2)# service 2 profile dba dba1

Apply configuration:
LTP-16N(config)(if-ont-2/2)# do commit

Save configuration:
LTP-16N(config)(if-ont-2/2)# do save
```

17 APPENDIX C. Example of profile for NTU-RG-5421G-Wac

```
set property InternetGatewayDevice.LANDevice.1.LANHostConfigManagement.DHCPLeaseTime 3600
nocheck
set property InternetGatewayDevice.LANDevice.1.LANHostConfigManagement.IPInterface.1.Enable 1
nocheck
set property InternetGatewayDevice.LANDevice.1.LANHostConfigManagement.IPInterface.
1.IPInterfaceAddressingType Static nocheck
set property InternetGatewayDevice.LANDevice.1.LANHostConfigManagement.IPInterface.
1.IPInterfaceIPAddress 192.168.1.1 nocheck
set property InternetGatewayDevice.LANDevice.1.LANHostConfigManagement.IPInterface.
1.IPInterfaceSubnetMask 255.255.255.0 nocheck
set property InternetGatewayDevice.LANDevice.1.LANHostConfigManagement.MaxAddress 192.168.1.100
nocheck
set property InternetGatewayDevice.LANDevice.1.LANHostConfigManagement.MinAddress 192.168.1.20
nocheck
set property InternetGatewayDevice.LANDevice.1.LANHostConfigManagement.SubnetMask 255.255.255.0
nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.1.BridgeEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.1.BridgeName TR-HSI nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.2.BridgeEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.2.BridgeName HSI nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.3.BridgeEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.3.BridgeName IPTV nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.4.BridgeEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.4.BridgeName VoIP nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.5.BridgeEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.5.BridgeName Bridge nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.1.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.1.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.1.FilterInterface 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.10.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.10.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.10.FilterInterface 11 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.11.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.11.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.11.FilterInterface 12 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.12.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.12.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.12.FilterInterface 13 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.13.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.13.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.13.FilterInterface 14 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.14.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.14.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.14.FilterInterface 16 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.15.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.15.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.15.FilterInterface 5 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.16.FilterBridgeReference 2 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.16.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.16.FilterInterface 17 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.17.FilterBridgeReference 2 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.17.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.17.FilterInterface 5 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.18.FilterBridgeReference 3 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.18.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.18.FilterInterface 18 nocheck
```

```
set property InternetGatewayDevice.Layer2Bridging.Filter.19.FilterBridgeReference 3 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.19.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.19.FilterInterface 5 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.20.FilterBridgeReference 4 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.20.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.20.FilterInterface 5 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.2.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.2.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.2.FilterInterface 2 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.3.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.3.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.3.FilterInterface 3 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.4.FilterBridgeReference 4 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.4.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.4.FilterInterface 4 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.5.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.5.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.5.FilterInterface 6 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.6.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.6.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.6.FilterInterface 7 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.7.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.7.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.7.FilterInterface 8 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.8.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.8.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.8.FilterInterface 9 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.9.FilterBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.9.FilterEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Filter.9.FilterInterface 10 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.1.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.1.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.1.MarkingInterface 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.10.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.10.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.10.MarkingInterface 12 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.11.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.11.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.11.MarkingInterface 13 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.12.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.12.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.12.MarkingInterface 14 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.13.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.13.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.13.MarkingInterface 5 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.13.VLANIDUntag 0 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.14.MarkingBridgeReference 2 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.14.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.14.MarkingInterface 5 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.15.MarkingBridgeReference 3 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.15.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.15.MarkingInterface 5 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.15.VLANIDUntag 0 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.16.MarkingBridgeReference 4 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.16.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.16.MarkingInterface 5 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.16.VLANIDUntag 0 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.2.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.2.MarkingEnable 1 nocheck
```

```
set property InternetGatewayDevice.Layer2Bridging.Marking.2.MarkingInterface 2 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.3.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.3.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.3.MarkingInterface 3 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.4.MarkingBridgeReference 4 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.4.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.4.MarkingInterface 4 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.5.EthernetPriorityMark 0 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.5.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.5.MarkingEnable TRUE nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.5.MarkingInterface 7 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.6.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.6.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.6.MarkingInterface 8 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.7.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.7.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.7.MarkingInterface 9 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.8.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.8.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.8.MarkingInterface 10 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.9.MarkingBridgeReference 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.9.MarkingEnable 1 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.9.MarkingInterface 11 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.1.Enable 1
nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
2.AddressingType DHCP nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
2.ConnectionType IP_Routed nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.2.Enable 1
nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
2.NATEnabled 1 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
2.X_ELTEX_RU_FirewallEnabled 1 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
2.X_RTK_ServiceType 1 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.3.Enable 1
nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
3.AddressingType Static nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
3.ConnectionType IP_Routed nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
3.ExternalIPAddress 192.168.21.21 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
3.SubnetMask 255.255.255.0 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
3.DefaultGateway 192.168.21.1 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
3.NATEnabled 0 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
3.X_RTK_IGMPProxy 1 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.4.Enable 1
nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
4.ConnectionType IP_Routed nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
4.AddressingType DHCP nocheck
```

```
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
4.DNSEnabled 1 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
4.NATEnabled 0 nocheck
set property InternetGatewayDevice.WANDevice.1.WANConnectionDevice.1.WANIPConnection.
4.X_RTK_ServiceType 4 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.13.VLANIDMark 10 nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.2.VLANID 10 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.14.VLANIDMark 30 nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.3.VLANID 30 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.15.VLANIDMark 12 nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.4.VLANID 12 nocheck
set property InternetGatewayDevice.Layer2Bridging.Marking.16.VLANIDMark 11 nocheck
set property InternetGatewayDevice.Layer2Bridging.Bridge.5.VLANID 11 nocheck
```

18 APPENDIX D. ONT/PON interfaces states table

ONT states description

ONT state	Description
FAIL	Failure in ONT operation
INIT	ONT initialization
AUTH	ONT is in authentication process
MIB UPLOAD	"MIB upload" request is sent to ONT
CONFIG	ONT is in configuration process
OK	ONT is in operation
BLOCKED	ONT is blocked
FWUPDATING	ONT is in firmware update process
OFFLINE	ONT is disabled at the moment

PON interface states

Value	Description
INIT	PON-port initialization
FAIL	Failure in PON-port operation
CONFIG	PON-port is in configuration process
SHUTDOWN	PON-port is disabled (PON-port configuration is set to shutdown)
OK	PON-port is in normal operation state

19 List of changes

Firmware version	Document version	Issue date	Revisions
1.7.0	Issue 9	29.12.2023	Synchronization with firmware version 1.7.0
1.6.3	Issue 8	31.10.2023	Synchronization with firmware version 1.6.3
1.6.2	Issue 7	30.09.2023	Synchronization with firmware version 1.6.2 Added support for LTP-8N
1.6.0	Issue 6	14.08.2023	Synchronization with firmware version 1.6.0
1.5.1	Issue 5	31.05.2023	Synchronization with firmware version 1.5.1 Added support for LTX-8(16)
1.5.0	Issue 4	28.04.2023	Synchronization with firmware version 1.5.0 Added support for built-in ACS
1.4.0	Issue 3	22.07.2022	Synchronization with firmware version 1.4.0
1.3.1	Issue 2	28.02.2022	Synchronization with firmware version 1.3.1
1.3.0	Issue 1	03.11.2021	First issue

TECHNICAL SUPPORT

For technical assistance in issues related to handling Eltex Ltd. equipment, please, address to Service Center of the company:

http://www.eltex-co.com/support

Visit Eltex official website to get the relevant technical documentation and software, to use our knowledge base.

http://www.eltex-co.com/

http://www.eltex-co.com/support/downloads/