– **up to 8 PON ports, 1U case**
– **remote management via CLI, SNMP**
– **compliance with G.988, G.984.x and TR-156 standards**
– **ability to provide cable TV together with data transmission**
– **optimal solution for a small village or an apartment building**



LTP-4X rev.B



LTP-8X rev.B

Optical Line Terminal (OLT) is designed to provide broadband access over Passive Optical Network (PON).

GPON interfaces are used to connect the optical distribution network (PON). You can connect up to 128 subscriber optical terminals via a single fiber for each interface. Access to the operator's transport network is provided through 10 Gigabit or combined Gigabit uplink interfaces.

OLT LTP allow operators to build scalable, fault tolerant "last mile" networks to ensure the highest safety standards. OLT manages subscriber devices, traffic switching and connection to the transport network.

Broadband access using FTTH technology is the highest quality version of the Triple Play service delivery, as it provides high data rates over long distances. The main advantage of PON technology is the lack of electrically powered active nodes within the section from OLT to ONT, which greatly reduces the network operating cost. Furthermore, PON technology saves on cabling infrastructure by reducing the total length of the optical fiber, as only one fiber for a group of up to 128 subscribers is used within the section from the central node to the splitter.

## INTERFACES OF OLT GPON

| Name | Number of PON ports | Number of Uplink ports | Maximum number of ONT |
|---|---|---|---|
| **OLT LTP-4X** | 4 | 4 combo ports of 10/100/1000Base-T/1000Base-X<br>2 ports of 10GBase-X SFP+ | 512 |
| **OLT LTP-8X** | 8 | 4 ports of 10/100/1000Base-T,<br>4 combo ports of 10/100/1000Base-T/1000Base-X<br>2 ports of 10GBase-X SFP+ | 1024 |

## Features and capabilities

### INTERFACES

**LTP-4X**

**Uplink**

– 2 ports of 10GBase-X (SFP+)/1000Base-X
– 4 combo ports of 10/100/1000Base-T/ 1000Base-X (SFP)

**Downlink**

– 4 ports of 2,5/1,25 Gbps GPON (SFP)

**LTP-8X**

**Uplink**

– 2 ports of 10GBase-X (SFP+)/1000Base-X
– 4 combo ports of 10/100/1000Base-T/ 1000Base-X (SFP)
– 4 ports of 10/100/1000Base-T

**Downlink**

– 8 ports of 2,5/1,25 Gbps GPON (SFP)

### Port modes

– Duplex/half-duplex mode
10/100/1000 Mbps - electric ports
– Duplex 1/10 Gbps - optic ports

### SFP PON parameters[1]

– Medium - single-mode optical fiber - 9/125, G.652
– Splitting ratio - up to 1:128
– Support for RSSI (Received Signal Strenght Indication)
– Support for DDM (parameters output in CLI):
  – Digital RSSI
  – Module Temperature
  – Supply Voltage
  – Laser Bias Current
  – Tx Optical Power Output

**Class B+**

– compliance with ITU-T G.984.2, FSAN Class B+, SFF-8472 standards
– Max. link distance: 20 km
– Transmitter: 1490nm DFB Laser
  – Data rate: 2488 Mbps
  – Average launch power: +1,5..+5 dBm
  – Spectral line width: -20 dB 1.0 nm
– Receiver: 1310nm APD/TIA Detector/Amplifier
  – Data rate: 1244 Mbps
  – Receiver sensitivity: -28 dBm
  – Receiver optical overload: -8 dBm

**Class C++**

– Compliance with ITU-T G.984.2, FSAN Class C++, SFF-8472 standards
– Max link destination: 40 km
– Transmitter: 1490nm DFB Laser
  – Data rate: 2488 Mbps
  – Average launch power: +7..+10 dBm
  – Spectral line width: -20 dB 1.0 nm
– Receiver: 1310nm APD/TIA Detector/Amplifier
  – Data rate: 1244 Mbps
  – Receiver sensitivity: -32 dBm
  – Receiver optical overload: -12 dBm
  – Receiver burst mode dynamic range: 20 dB

### SWITCH

– Ethernet switch - Marvell Packet Processor
– Bandwidth - 128 Gbps
– MAC table- 16K entries
– Support for up to 4K VLAN complying to 802.1Q
– Quality of Service (QoS)

### PHYSICAL PARAMETERS

– Power supply[1]:
  – 220 V (150-250 V) AC, 50 Hz
  – 48 V (-36..-72 V) DC
– Power consumption: no more than 55 W
– Operating temperature: from +5°to 40°C
– Operating humidity: 80%
– Dimensions: with internal power module 430x44x259 mm, 19'', 1U

### STANDARDS

– ITU-T G.988 GPON
– ITU-T G.984x GPON
– IEEE 802.3i 10BASE-T Ethernet
– IEEE 802.3u 100BASE-T Fast Ethernet
– IEEE 802.3ab 1000BASE-T Gigabit Ethernet
– IEEE 802.3z Fiber Gigabit Ethernet
– ANSI/IEEE 802.3 NWay auto-negotiation
– IEEE 802.3x Full Duplex and flow control
– IEEE 802.3ad Link aggregation
– IEEE 802.1p Protocol for Traffic Prioritization
– IEEE 802.1Q Virtual LANs
– IEEE 802.1ad Provider Bridges (QinQ)
– IEEE 802.1v VLAN Classification by Protocol and Port
– IEEE 802.3ac VLAN tagging
– IEEE 802.1d MAC bridges
– IEEE 802.1w Rapid Reconfiguration of Spanning Tree
– IEEE 802.1s Multiple Spanning Trees

[1] Type of required power supply is defined while ordering

## Features and capabilities

### MORE FEATURES

– Port mirroring, VLAN mirroring
– MAC table: 16K per switch, 4K per port
– MAC addresses limiting
– Support for STP, RSTP, MSTP
– Support for ERPSv2
– Support for QoS: 802.1p, DSCP, WRR
– Port isolation, port isolation within a VLAN
– Unicast/multicast/broadcast traffic restrictions
– Support for ACL IPv4
– Support for QinQ with compliance to IEEE 802.1ad
– Up to 1024 multicast groups
– IGMP/MLD Fast Leave
– IGMP/MLD Proxy
– IGMP/MLD Snooping
– IGMP/MLD Querier
– DHCPv4 Snooping
– IPv4 Source address guard
– DHCPv4/DHCPv6 Relay Agent (opt.82, ip-helper)
– PPPoE Intermediate agent
– LLDP (802.1ab)
– Storm Control
– Policy
– Utilization by ONT services

### MANAGEMENT AND MONITORING

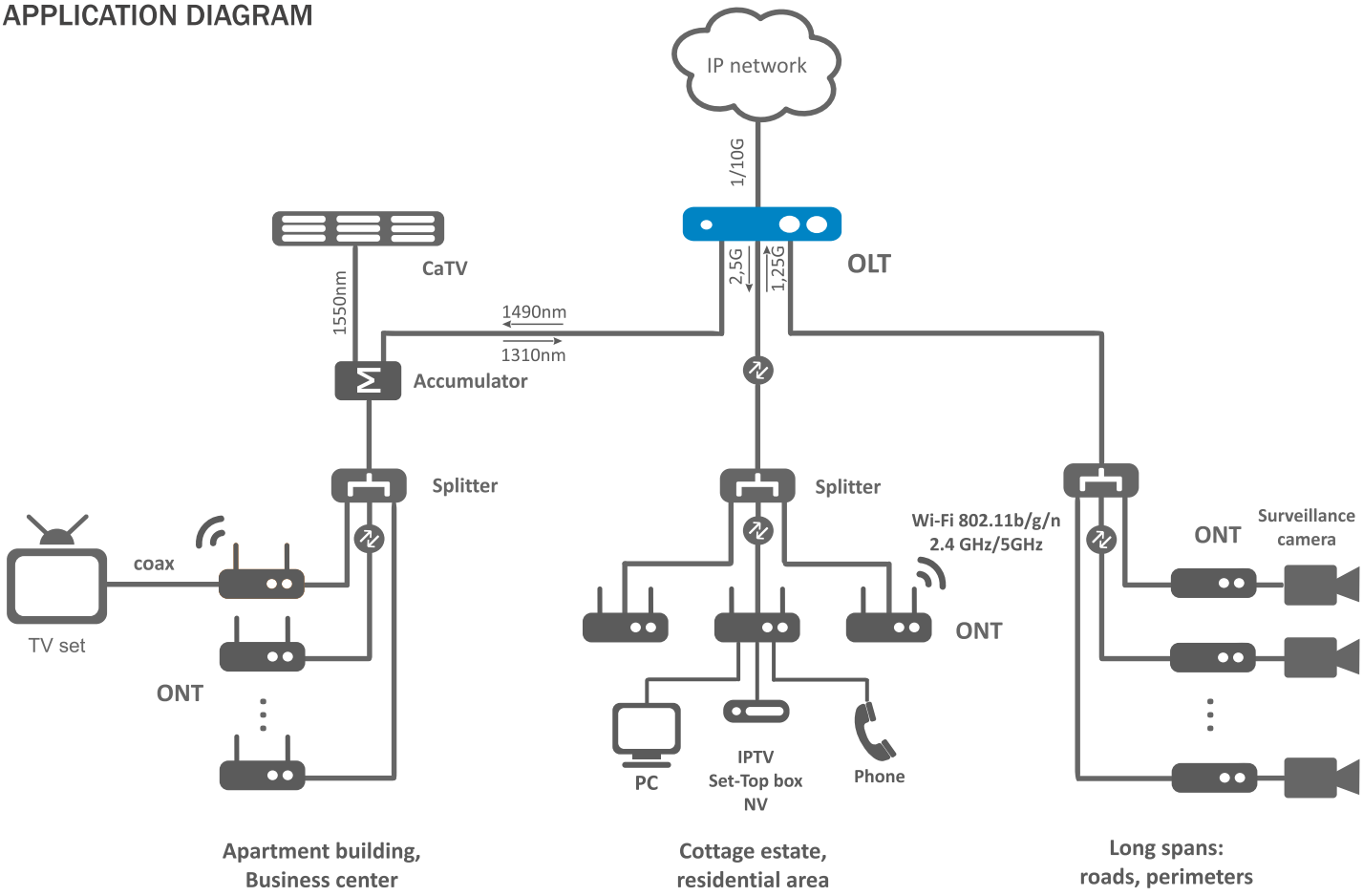
– Support for RADIUS, TACACS+
– Management and monitoring via CLI, SNMP
– Access restriction: by password, by IP address, by priveledge level
– Support for several management interfaces

## Centralized management system

Eltex.EMS is a united management system for Eltex Equipment.
– search, add, configure, monitor state of OLT/ONT and other network elements
– main parameters and power supply monitoring
– monitoring of physical and logical interfaces statistics
– subscriber ports management: configurations, profiles
– administration of mass firmware update system for customer PON devices
– online graphics of various static parameters
– graphic displaying of physical ports` state
– launch of main configuration tools: ssh, telnet

Statistics:
– centralized gathering, storage and processing of operation, event and alarm logs
– gathering and storage of alarm messages
– quick CPE search in optical trees
– information on number of active PON subscribers in a network
– Internet, VoIP and IPTV services monitoring and statistics
– statistics of PON subscribers activity
– centralized device messages gathering via Syslog
– logging of all users` actions in the system

## APPLICATION DIAGRAM




## ORDERING INFORMATION

| Name | Description | Image |
|---|---|---|
| **OLT LTP-4X rev.B** | OLT LTP-4X, 4 ports of SFP-xPON, 4 combo ports of 10/100/1000Base-T/1000Base-X, 2 ports 10GBase-X SFP+, embedded switch L2+, RSSI |  |
| **OLT LTP-8X rev.B** | OLT LTP-8X, 8 ports of SFP-xPON, 4 port of 10/100/1000Base-T, 4 combo ports of 10/100/1000Base-T/1000Base-X, 2 ports of 10GBase-X SFP+, embedded switch L2+, RSSI |  |
| **Power modules** | | |
| **PM160-220/12** | Power module PM160-220/12, 220 VAC, 160W |  |
| **PM100-48/12** | Power module PM100-48/12, 48 VDC, 100W |  |
| **Related software** | | |
| **EMS-OLT** | EMS-OLT option of Eltex.EMS for management and monitoring of Eltex networks: 1 OLT | |

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About Eltex

**Eltex** company is a leading Russian developer and manufacturer of telecommunication equipment with 25 years of history. Integrity of solutions and seamless integration capability into Customer infrastructure is a priority area of company development.