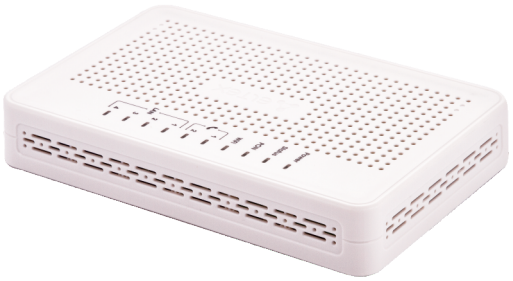
ELTEX
Integrated Networking Solutions

— 1 GPON port
— Gigabit router
— FXS port for analogue phone connection[1]
— USB 2.0 port for USB drive or printer connection[1]
— Wi-Fi 802.11 b/g/n
— Wi-Fi 802.11 a/n/ac



NTU series ONT – high performance multifunctional subscriber terminals that are designed to access modern telephony, IPTV, OTT services as well as high-speed Internet. Furthermore, NTU-X subscriber terminals allow carriers to offer their clients a wide range of services and opportunities to work in a local network.

PON technology

PON technology – one of the most effective last mile solutions today. The technology helps to reduce costs for cable infrastructure and ensures data rates of 2.5 Gbps downlink and 1.25 Gbps uplink. The use of PON technology in access networks allows providing end users with access to IP services.

Universal device

The integrated gigabit router for 4 ports[2] of 10/100/1000BASE-T ensures high-speed connection of devices in a network. The FXS[1] port provides access to IP telephony services, The USB[1] port can be used for USB device connection (USB flash drive, external HDD, printer).

Provided services

- High-speed access to the Internet
- Stream video/High Definition TV/IP TV, Video on Demand (VoD), video conference
- VoIP
- Online educational and entertainment programs

Application

- Providing broadband access services to subscribers in apartment houses, residential areas, campuses or suburban settlements
- Corporate network construction at large strategic enterprises or in office buildings with high requirement in terms of security and data transfer rates

Wireless connection

NTU-RG-1421G-Wac and NTU-RG-5421G-Wac routers support 802.11ac standard, that provides high data rates and delivers modern high performance services to client equipment through the wireless network. Two integrated W-Fi controllers ensure simultaneous dual-band operation: on 2.4 GHz and 5 GHz.

ONT NTU interface configuration

	WAN	LAN	FXS	Wi-Fi	USB
NTU-1	1xGPON	1x1G	–	–	–
NTU-52V	1xGPON	1x100M + 1x1G	1	–	1 x USB2.0
NTU-RG-5402G-W	1xGPON	4x1G	2	802.11n, 2*2 -300Mbps - 2.4GHz	1 x USB2.0
NTU-RG-1421G-Wac	1xGPON	4x1G	1	802.11n, 2*2 - 300Mbps - 2.4GHz 802.11ac, 3*3 - 1.3Gbps - 5GHz	2 x USB2.0
NTU-RG-5421G-Wac	1xGPON	4x1G	1	802.11n, 2*2 - 300Mbps- 2.4GHz 802.11ac, 2*2 - 866Mbps - 5GHz	1 x USB2.0

[1] For NTU-52V, NTU-RG-5402G-W, NTU-RG-1421G-Wac and NTU-RG-5421G-WAC
[2] For NTU-RG-1421G-Wac/NTU-RG-5421G-WAC/NTU-RG-5402G-W

Features and capabilities

PON interface parameters

– 1 GPON port
– Compliance with ITU-T G.984.2, ITU-T G.984.5 Filter, FSAN Class B+, SFF-8472
– Connector type - SC/APC
– Transmission media - fiber-optic cable SMF - 9/125, G.652
– Maximum operating distance - 20 km
– Transmitter:
  1310 nm DFB Upstream Burst Mode Transmitter
  – Data rate: 1244 Mbps
  – Average Launch Power: +0,5..+5 dBm
  – Spectral Line Width: 1 nm (-20 dB)
– Receiver:
  1490 nm APD/TIA Downstream CW Mode Digital Receiver
  – Data rate: 2488 Mbps
  – Receiver Sensitivity: -28 dBm, BER≤$1.0x10^{-10}$
  – Receiver Optical Overload: -4 dBm

LAN interfaces parameters

NTU-1
– 1 port of Ethernet 10/100/1000 Base-T (RJ-45)
NTU-52V
– 1 port of Ethernet 10/100/1000BASE-T (RJ-45)
– 1 port of Ethernet 10/100BASE-T (RJ-45)
NTU-RG-1421G-Wac/NTU-RG-5402G-W/NTU-RG-5421G-Wac
– 4 ports of Ethernet 10/100/1000BASE-T (RJ-45)

FXS interfaces parameters

– 1 FXS port for NTU-52V/NTU-RG-1421G-Wac/NTU-RG-5421G-Wac
– 2 FXS ports for NTU-RG-5402G-W
– SIP
– Audiocodecs: G.729 (A), G.711(A/U), G.723.1
– Fax transmission: G.711, T.38
– Loop resistance up to 2 kΩ
– Supported dialing technologies: pulse/frequency (DTMF)
– Caller ID issuing

Wireless module parameters

NTU-RG-5402G-W
– Supported standards: 802.11 a/b/g/n
– MIMO 2x2
– Frequency range: 2400 ~ 2483.5 MHz
– Security: WEB; WPA/WPA2
Operating channels
– 802.11b/g/n: 1-13
Data rates[1]
– 802.11b: 1; 2; 5.5 and 11 Mbps
– 802.11g: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps
– 802.11n: from 6.5 to 300 Mbps (from MCS0 до MCS15)
Maximum output power of the transmitter[2]
– 802.11b (11 Mbps): 17 dBm
– 802.11g (54 Mbps): 15 dBm
– 802.11n (MCS7): 15 dBm

Modulation
– IEEE 802.11b: DQPSK, DBPSK, CCK
– IEEE 802.11g: BPSC, QPSC, 16QAM, 64QAM, OFDM
– IEEE 802.11n: BPSC, QPSC, 16QAM, 64QAM with OFDM
NTU-RG-1421G-Wac/NTU-RG-5421G-Wac
– Supported standards: 802.11 a/b/g/n/ac
– Frequency range 2400 ~ 2483.5 MHz, 5150 ~ 5350 MHz, 5650 ~ 5850 MHz
– Simultaneous Dual Band
– Modulation: CCK, BPSK, QPSK, 16 QAM, 64 QAM, 256 QAM
Operating channels
– 802.11b/g/n: 1-13
– 802.11a/n/ac: 36-64, 132-165
Data rates[1]
– 802.11b: 1; 2; 5.5 and 11 Mbps
– 802.11g: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps
– 802.11n: 300 Mbps (20 MHz channel)
– 802.11ac:
  – 1300 Mbps (80 MHz) for NTU-RG-1421G-Wac
  – 866 Mbps (80 MHz) for NTU-RG-5421G-Wac
Maximum output power of the transmitter[2]
– 802.11b (11 Mbps): 17 dBm
– 802.11g (54 Mbps): 15 dBm
– 802.11n (MCS7): 15 dBm
– 802.11ac (MCS0): 19 dBm

USB interface parameters

– 1 USB 2.0 port - for USB device connection (NTU-52V/NTU-RG-5402G-W/NTU-RG-5421G-Wac)
– 2 USB 2.0 ports - for USB device connection (NTU-RG-1421G-Wac)

Supported standards

– ITU-T G.984.x - GPON
– ITU-T G.988 OMCI specification
– IEEE 802.1D
– IEEE 802.1Q
– IEEE 802.1P

Functional features

– TR-069
– “Bridge” and “Router” (including virtual ones) operation modes
– Support for PPPoE (auto, PAP, MSCHAP and CHAP authorization)
– Support for IPoE (DHCP-client and static)
– DHCP server on LAN side
– Multicast traffic transmission via Wi-Fi
– DNS (Domain Name System)
– DynDNS (Dynamic DNS)
– UPNP (Universal Plug and Play)
– NAT (Network Address Translation)
– NTP (Network Time Protocol)
– QoS (Quality of Service)
– IGMP Snooping

[1]The maximum wireless data rate is defined according to IEEE 802.11n/ac standard. The real bandwidth can be different. Conditions of the network operation, environment, the amount of traffic, building materials and constructions as well as network service data can decrease the real bandwidth. The environment can influence on the network coverage range.
[2]The value of the maximum output power will vary according to the rules of radio frequency regulation in your country.

Features and capabilities

Functional features
– IGMP Proxy
– UPNP, SMB, FTP-alg, Print Server
– VLAN in accordance with IEEE 802.1Q

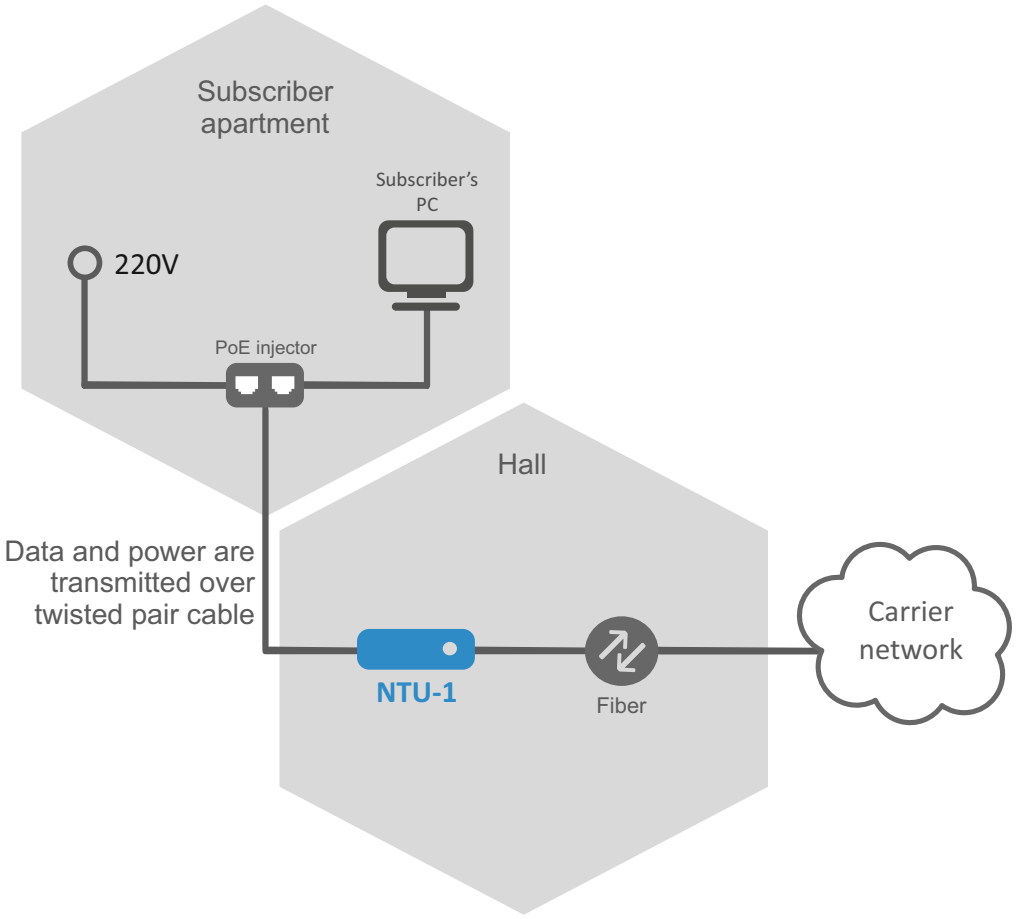
Security features
– Rate limiting per port
– FEC coding

Configuration and monitoring
– In accordance with TR-142:
  – remote management via OMCI
  – remote management via TR-069
  – local management via WEB/CLI
  – firmware update via OMCI, TR-069, HTTP, TFTP

Physical parameters and environment conditions
– Dimensions - 112x100x32 mm, desktop case (NTU-1)
– Dimensions - 147×110×24 mm, desktop case (NTU-52V)
– Dimensions - 187x120x32 mm, desktop case (NTU-RG-1421G-Wac/NTU-RG-5402G-W/NTU-RG-5421G-Wac)
– Power supply: 12V/2A DC adapter;
  NTU-1. Capability to use remote supply using Ethernet cable (UTP CAT-5E) up to 40 m*.
– Maximum power consumption:
  – NTU-1 - 5W
  – NTU-52V - 10 W
  – NTU-RG-1421G-Wac/
  – NTU-RG-5402G-W/
  – NTU-RG-5421G-Wac - 15 W
– Range of operating temperatures: from +5 to +40 °C
– Relative humidity: 80% max.

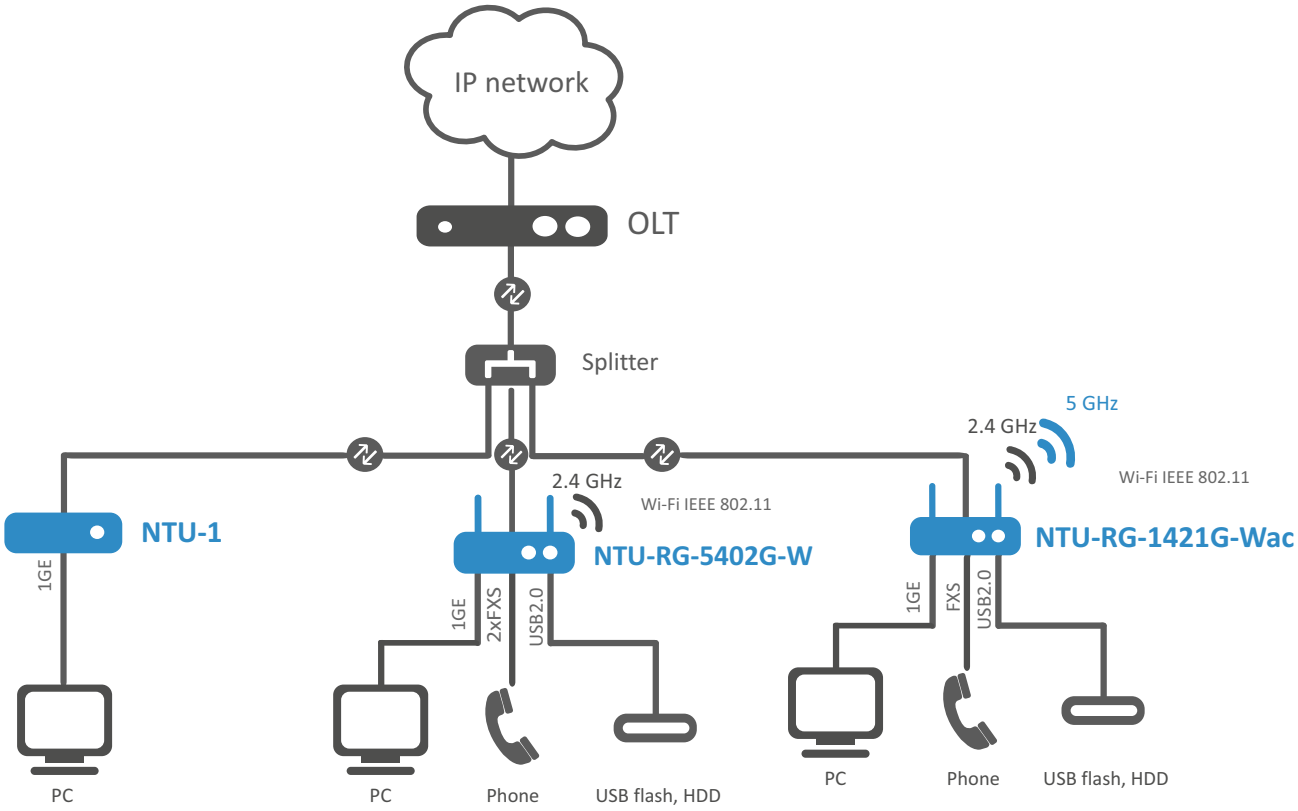
* When using GRT-130100A, SSM-1330-1000A power units

NTU-1 with the PoE injector Use Case

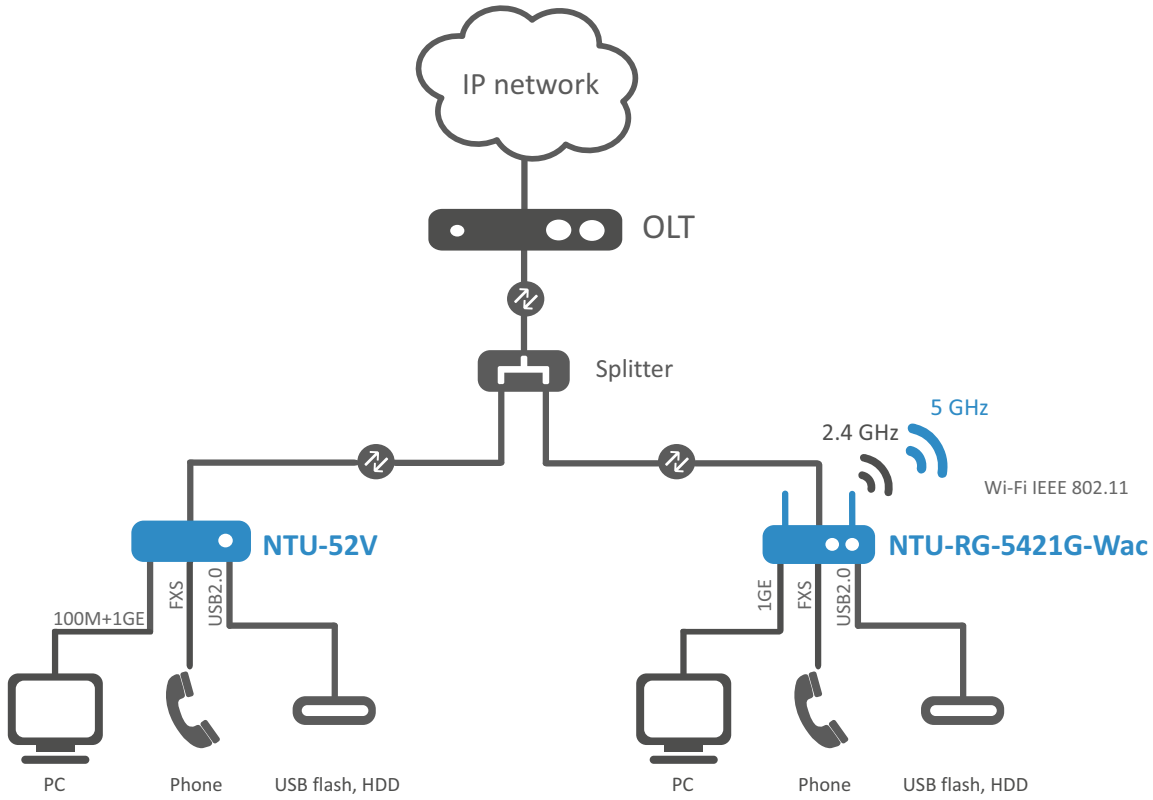


NTU-1 can be installed in the hall to the shield to which the fiber is connected. Twisted pair is supplied to the apartment and connected to 12V power supply with PoE injector.

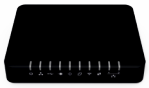
NTU-1, NTU-RG-5402G-W, NTU-RG-1421G-Wac Use Case



NTU-52V, NTU-RG-5421G-Wac Use Case



Ordering information

Name	Description	Image
NTU-1	ONT NTU-1, 1 PON port, 1 port of LAN 10/100/1000Base-T	
NTU-52V	ONT NTU-52V, 1 PON pon, 1 port of LAN 10/100BASE-T, 1 port of LAN 10/100/1000BASE-T, 1xFXS, 1xUSB	
NTU-RG-5402G-W	ONT NTU-RG-5402G-W, 1 PON port, 4 ports of LAN 10/100BASE-T, 2xFXS, 1xUSB, Wi-Fi (802.11n, 2*2 - 300Mbps - 2.4GHz)	
NTU-RG-1421G-Wac	ONT NTU-RG-1421G-Wac, 1 PON port, 4 ports of LAN 10/100/1000BASE-T, 2xUSB, 1xFXS, Wi-Fi (802.11n, 2*2 - 300Mbps - 2.4GHz + 802.11ac, 3*3 - 1.3Gbps - 5GHz)	
NTU-RG-5421G-Wac	ONT NTU-RG-5421G-Wac, 1 PON port,4 ports of LAN 10/100/1000Base-T, 1xUSB, 1xFXS, Wi-Fi (802.11n, 2*2 - 300Mbps - 2.4GHz + 802.11ac, 2*2 - 866Mbps - 5GHz)	
Related sofrware		
ACS-CPE-512	ACS-CPE-512 option of Eltex.ACS system for Eltex CPE autoconfiguration: 512 subscriber devices	
ACS-CPE-1024	ACS-CPE-1024 option of Eltex.ACS system for Eltex CPE autoconfiguration: 1024 subscriber devices	

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About Eltex

Eltex company is a leading Russian developer and manufacturer of telecommunication equipment with 26 years of history. Integrity of solutions and seamless integration capability into Customer infrastructure is a priority area of company development.